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BELL & HOWELL COMPANY

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

September 3, 1968 Volume 854 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of June 1968

Examiner affirmed	121
Examiner affirmed in part	14
Examiner reversed	30
Total	165

Adjudicated Patents

(Ct. Cl.) Rongred and Erwin Patent No. 2,687,102 (52—9), for TRUSS SUPPORT. Claims 1, 2, and 4 *Held* invalid. *Erwin Newman Co. v. U.S.*, 393 F.2d 819; 157 USPQ 705.

(C.A. Ill.) Blake Patent No. 2,704,663 (267—1), for LEVELING DEVICE, *Held* valid and infringed. *Blake v. Bassick Co.*, 392 F.2d 879; 147 USPQ 71.

(C.A. Wis.) Ortman Patent No. 2,707,030 (166—88), for PUMP INSTALLATION. Claims 1 and 3 *Held* valid and infringed. *Ortman v. Massas*, 291 F.2d 677; 157 USPQ 1.

(C.A.N.Y.) Crosby Patent No. 2,851,532 (179—15), for MULTIPLE COMMUNICATION SYSTEM, *Held* invalid. *Preuss v. General Electric Co.*, 392 F.2d 29; 157 USPQ 177.

(C.A. Calif.) Souza Patent No. 2,925,625 (264—320), for CONTRAST COLOR EMBOSSED PLASTICS AND METHOD OF PRODUCTION, *Held* invalid. *Dymo Industries, Inc. v. Com-Tech, Inc.*, 391 F.2d 335; 156 USPQ 611.

(C.A. Ill.) McCormick Patent No. 2,962,979 (104—7), for METHOD OF CORRECTING EXISTING TRACK ALIGNMENTS AND MEANS FOR PRACTICING SAME. Claims 1, 2, 5, 7 and 8 *Held* valid but not infringed. *Norberg Mfg. Co. v. Jackson Vibrators Inc.*, 393 F.2d 192; 157 USPQ 294.

(C.A.N.Y.) Weiss Patent No. 2,999,977 (220—20), for PAPERBOARD CARRIER, *Held* invalid. *Continental Can Co. v. Old Dominion Box Co.*, 393 F.2d 321; 157 USPQ 353.

(C.A. Minn.) Just, Maximoff, and Kalmar Patent No. 2,995,617 (174—153), for SELF-LOCKING TERMINAL. Claims 1 to 3, 5 to 7, and 9 *Held* invalid. *National Connector Corp. v. Malco Mfg.*, 392 F.2d 766; 157 USPQ 401.

(C.A. Calif.) Souza Patent No. 2,996,822 (206—59), for CONTRAST COLOR EMBOSSED PLASTICS, *Held* invalid. *Dymo Industries, Inc. v. Com-Tech, Inc.*, 291 F.2d 335; 156 USPQ 611.

(C.A.N.Y.) Peterson Patent No. 3,003,436 (105—454), for METHOD AND APPARATUS FOR PROTECTING VEHICLE LOADS, *Held* invalid. *Pullman Inc. v. ACF Industries Inc.*, 393 F.2d 83; 157 USPQ 289.

(C.A. Calif.) Souza Patent No. 3,036,945 (206—59), for EMBOSSABLE PLASTIC ASSEMBLY, *Held* invalid. *Dymo Industries, Inc. v. Com-Tech, Inc.*, 391 F.2d 335; 156 USPQ 611.

(C.A. Pa.) Niles Patent No. 3,050,186 (206—57), for PACKAGING FOR SMALL UNIFORM ARTICLES. Claims 1 and 2 *Held* invalid. *Allen-Bradley Co. v. Air Reduction Co.*, 391 F.2d 282; 157 USPQ 184.

(C.A. Minn.) Just, Maximoff, Kalmar and Krause Patent No. 3,086,074 (174—148), for SELF-ORIENTATING TERMINAL CONNECTORS. Claims 1 to 4 *Held* invalid. *National Connector Corporation v. Malco Manufacturing Company et al.*, 392 F.2d 766; 157 USPQ 401.

Removal From Register

Pursuant to the provisions of Rule 347 of the Rules of Practice of the United States Patent Office in Patent Cases, letters were directed on May 20, 1968, to Mr. Maxwell J. Perrotta at Apartment #1, Via di Santa Dorotea 3, Roma, Italia, and ℅ Salter & Michaelson, 146 Westminster Street, Providence, Rhode Island, 02903, the last post office address furnished by him to the Committee on Enrollment. No reply was received within the period of thirty days therein set. Accordingly, his name is being removed from the Register of Attorneys.

EDWIN L. REYNOLDS,
Chairman, Committee on Enrollment.

Aug. 7, 1968.

Disclaimer

3,290,897.—*Howard E. Kuehn*, Orange, Conn. DRIVE FOR SHELL TYPE ROLLS. Patent dated Dec. 13, 1966. Disclaimer filed July 1, 1968, by the assignee, *Farrel Corporation*.

Hereby enters this disclaimer to claims 10, 11 and 12 of said patent.

Patents Available for Licensing

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

[Aug. 6, 1968]

The following U.S. patents have been assigned or issued to the Administrator, National Aeronautics and Space Administration, to be held on behalf of the United States of America. In accordance with the provisions of the National Aeronautics and Space Act of 1958 [42 U.S.C. 2457(g)] and the NASA Patent Licensing Regulations [14 C.F.R. 1245.200 et seq.], NASA is prepared to grant royalty-free licenses for these patents.

The NASA Patent Licensing Regulations provide that a nonexclusive, royalty-free, revocable license will be granted to all applicants within a two year period after issuance of the patent to NASA. The regulations also provide that each invention which has not been commercially developed by the end of the second year after the issuance of the patent thereon will be made available for the grant of an exclusive license to practice the invention.

Inquiries and all requests for licenses should be addressed to the Assistant General Counsel for Patent Matters, Code GP, NASA, Washington, D.C., 20546.

2,837,706.	LINE FOLLOWING SERVOSYSTEM.
2,898,889.	MECHANICALLY LIMITED ELECTRICALLY OPERATED HYDRAULIC VALVE SYSTEM FOR AIRCRAFT CONTROLS.

New Applications Received During June 1968

Patents	7469
Designs	383
Plant Patents	5
Reissues	9
Total	7866

Issue—September 3, 1968

Patents	1000—No.	3,399,406	to No.	3,400,405,	incl.
Designs	34—No.	212,149	to No.	212,182,	incl.
Plant Patents	1—No.	2,830			
Reissues	4—No.	26,448	to No.	26,451,	incl.
Total	1039				

2,903,307.	TWO COMPONENT BEARING.
2,926,123.	TEMPERATURE REDUCING COATING FOR METALS SUBJECT TO FLAME EXPOSURE.
2,934,331.	APPARATUS FOR MAKING A METAL SLURRY PRODUCT.
2,940,259.	ROCKET PROPELLANT INJECTOR.
2,944,316.	PROCESS OF CASTING HEAVY SLIPS.
2,945,667.	FLEXIBLE SEAL FOR VALVES.
2,956,772.	LIQUID-SPRAY COOLING METHOD.
2,971,837.	HIGH TEMPERATURE NICKEL-BASE ALLOY.
2,971,838.	HIGH TEMPERATURE NICKEL-BASE ALLOY.
2,974,925.	EXTERNAL LIQUID-SPRAY COOLING OF TURBINE BLADES.
2,984,735.	RUNWAY LIGHT.
2,991,671.	WIRE GRID FORMING APPARATUS.
2,991,961.	JET AIRCRAFT CONFIGURATION.
2,996,212.	SELF SUPPORTING SPACE VEHICLE.
2,997,274.	TURBO-MACHINE BLADE VIBRATION DAMPER.
3,001,363.	SPHERICAL SOLID-PROPELLANT ROCKET MOTOR.
3,001,395.	AIR FRAME DRAG BALANCE.
3,001,739.	AERIAL CAPSULE EMERGENCY SEPARATION DEVICE.
3,004,735.	PARTICLE DETECTION APPARATUS.
3,005,081.	HIGH INTENSITY HEAT AND LIGHT UNIT.
3,005,339.	WIND TUNNEL AIRSTREAM OSCILLATING APPARATUS.
3,008,229.	PROCESS FOR APPLYING A PROTECTIVE COATING FOR SALT BATH BRAZING.
3,010,372.	FOLDING APPARATUS.
3,011,760.	TRANSPIRATION COOLED TURBINE BLADE MANUFACTURED FROM WIRES.
3,012,400.	NOZZLE.
3,012,407.	INSULATING STRUCTURE.
3,016,693.	ELECTRO-THERMAL ROCKET.
3,016,863.	HYDROFOIL.
3,022,672.	DIFFERENTIAL PRESSURE CELL.
3,024,659.	MAGNETICALLY CENTERED LIQUID COLUMN FLOAT.
3,028,122.	LANDING ARRANGEMENT FOR AERIAL VEHICLES.
3,028,126.	THREE AXIS CONTROLLER.
3,028,128.	REENTRY VEHICLE LEADING EDGE.
3,038,077.	INFRARED SCANNER.
3,038,175.	SURVIVAL COUCH.
3,041,587.	ANGULAR MEASUREMENT SYSTEM.
3,041,924.	MOTION PICTURE CAMERA FOR OPTICAL PYROMETRY.
3,045,424.	METHOD FOR CONTINUOUS VARIATION OF PROPELLANT FLOW AND THRUST IN PROPULSIVE DEVICES.
3,049,876.	ANNULAR ROCKET MOTOR AND NOZZLE CONFIGURATION.
3,053,484.	VARIABLE SWEEP WING CONFIGURATION.
3,057,597.	MODIFICATION AND IMPROVEMENTS TO COOLED BLADES.
3,059,220.	APPARATUS FOR COUPLING A PLURALITY OF UNGROUNDED CIRCUITS TO A GROUNDED CIRCUIT.
3,063,291.	HIGH VACUUM CONDENSER TANK FOR ION ROCKET ENGINES.
3,064,928.	VARIABLE SWEEP WING AIRCRAFT.
3,067,573.	TELESCOPING-SPIKE SUPERSONIC INLET FOR AIRCRAFT ENGINES.
3,068,658.	VENTING VAPOR APPARATUS.
3,069,123.	INSTRUMENT SUPPORT WITH PRECISE LATERAL ADJUSTMENT.
3,070,330.	ATTITUDE AND PROPELLANT FLOW CONTROL SYSTEM AND METHOD.
3,070,349.	MULTISTAGE MULTIPLE-REENTRY TURBINE.
3,070,407.	AIR BEARING.
3,072,574.	GAS LUBRICANT COMPOSITIONS.
3,076,065.	HIGH-SPEED LOW-LEVEL ELECTRICAL STEPPING SWITCH.
3,077,599.	COLLAPSIBLE LOOP ANTENNA FOR SPACE VEHICLE.
3,079,113.	VEHICLE PARACHUTE AND EQUIPMENT JETTISON SYSTEM.
3,080,711.	PENSHAPE EXHAUST NOZZLE FOR SUPERSONIC ENGINE.
3,083,611.	MULTI-LOBAR SCAN HORIZON SENSOR.
3,084,421.	REINFORCED METALLIC COMPOSITES.
3,085,165.	ULTRA-LONG MONOSTABLE MULTIVIBRATOR EMPLOYING BISTABLE SEMICONDUCTOR SWITCH TO ALLOW CHARGING OR TIMING CIRCUIT.
3,087,692.	VARIABLE-SPAN AIRCRAFT.
3,088,441.	VALVE ACTUATOR.
3,090,212.	SANDWICH PANEL CONSTRUCTION.
3,090,580.	SPACE AND ATMOSPHERIC REENTRY VEHICLE.
3,093,000.	CHECK VALVE ASSEMBLY FOR A PROBE.
3,093,346.	SPACE CAPSULE.
3,098,630.	ANNULAR SUPERSONIC DECELERATOR OR DROGUE.
3,100,294.	TIME-DIVISION MULTIPLEXER.
3,100,990.	TWO-PLANE BALANCE.
3,102,948.	ELECTRIC ARC WELDING.
3,104,079.	VARIABLE-GEOMETRY WINGED REENTRY VEHICLE.
3,104,082.	VARIABLE SWEEP AIRCRAFT WING.
3,105,515.	PRESSURE REGULATING SYSTEM.
3,106,603.	HIGH VOLTAGE CABLE.
3,108,171.	RADIANT HEATER HAVING FORMED FILAMENTS.
3,110,318.	SLOSH SUPPRESSING DEVICE AND METHOD.
3,112,672.	UMBILICAL SEPARATOR FOR ROCKETS.
3,115,630.	REFLECTOR SPACE SATELLITE.
3,118,100.	ELECTRIC BATTERY AND METHOD OF OPERATING THE SAME.
3,119,232.	ROCKET ENGINE.
3,120,101.	CHANNEL TYPE SHELL CONSTRUCTION FOR ROCKET ENGINE AND THE LIKE.
3,120,361.	LANDING ARRANGEMENT FOR AEROSPACE VEHICLE.
3,120,738.	IGNITION SYSTEM FOR MONOPROPELLANT COMBUSTION DEVICES.
3,121,309.	SPHERICALLY SHAPED ROCKET MOTOR.
3,122,000.	APPARATUS FOR TRANSFERRING CRYOGENIC LIQUIDS.
3,122,098.	APPARATUS AND METHOD FOR CONTROL OF A SOLID FUELED ROCKET VEHICLE.
3,122,885.	INJECTOR FOR BIPROPELLANT ROCKET ENGINES.
3,123,248.	EXPULSION BLADDER EQUIPPED STORAGE TANK STRUCTURE.
3,127,157.	MULTIPLE BELLEVILLE SPRING ASSEMBLY.
3,128,389.	VARIABLE FREQUENCY MAGNETIC MULTIVIBRATOR.
3,128,845.	DESPIN WEIGHT RELEASE.
3,130,940.	HEAT SHIELD.
3,132,342.	ANTENNA SYSTEM USING PARASITIC ELEMENTS AND TWO DRIVEN ELEMENTS AT 90° ANGLE FED 180° OUT OF PHASE.
3,132,476.	THRUST VECTOR CONTROL APPARATUS.
3,132,479.	UNIVERSAL RESTRAINER AND JOINT.
3,132,903.	SLIT REGULATED GAS JOURNAL BEARING.
3,135,089.	DECOMPOSITION UNIT.
3,135,090.	ROCKET MOTOR SYSTEM.
3,136,123.	ROCKET ENGINE INJECTOR.
3,138,837.	METHOD OF MAKING FIBER REINFORCED METALLIC COMPOSITES.
3,139,725.	STEERABLE SOLID PROPELLANT ROCKET MOTOR.
3,140,728.	HIGH PRESSURE FOUR-WAY VALVE.
3,141,340.	GRAVITY DEVICE.
3,141,769.	METHOD OF PRODUCING POROUS TUNGSTEN IONIZERS FOR ION ROCKET ENGINES.
3,141,932.	SWITCHING MECHANISM WITH ENERGY STORAGE MEANS.

3,143,321.	FRANGIBLE TUBE ENERGY DISSIPATION.
3,143,651.	X-RAY REFLECTION COLLIMATOR ADAPTED FOR FOCUS X-RADIATION DIRECTLY ON A DETECTOR.
3,144,219.	MANNED SPACE STATION.
3,144,999.	PROPELLANT BLADE LOADING CONTROL.
3,145,874.	MEANS FOR CONTROLLING RUPTURE OF SHOCK TUBE DIAPHRAGMS.
3,147,422.	ELECTRONIC MOTOR CONTROL SYSTEM.
3,149,897.	PRINTED CABLE CONNECTOR.
3,150,329.	VARIABLE FREQUENCY MAGNETIC COUPLED MULTIVIBRATOR.
3,150,387.	FOAM GENERATOR.
3,152,344.	LIFE PRESERVER.
3,155,992.	LIFE RAFT.
3,156,090.	ION ROCKET.
3,157,529.	BONDED SOLID LUBRICANT COATING.
3,158,172.	HIGH-TEMPERATURE, HIGH-PRESSURE SPHERICAL SEGMENT VALVE.
3,158,336.	ASSEMBLY FOR RECOVERING A CAPSULE.
3,158,764.	TWO-FLUID MAGNETHYDRODYNAMIC SYSTEM AND METHOD FOR THERMAL-ELECTRIC POWER CONVERSION.
3,159,967.	VARIABLE THRUST ION ENGINE UTILIZING THERMALLY DECOMPOSABLE SOLID FUEL.
3,160,825.	TEMPERATURE COMPENSATING MEANS FOR CAVITY RESONATOR OF AMPLIFIER.
3,160,950.	METHOD AND APPARATUS FOR SHOCK PROTECTION.
3,162,012.	FORMED METAL RIBBON WRAP.
3,163,935.	MECHANICAL COORDINATE CONVERTER.
3,164,222.	NON-REUSABLE KINETIC ENERGY ABSORBER.
3,164,369.	MULTISTAGE MULTIPLE-REENTRY TURBINE.
3,165,356.	SHOCK ABSORBING SUPPORT AND RESTRAINT MEANS.
3,166,834.	CATALYST BED REMOVING TOOL.
3,167,426.	NICKEL-BASE ALLOY.
3,168,827.	AIRPLANE TAKE-OFF PERFORMANCE INDICATOR.
3,169,001.	AIRCRAFT WHEEL SPRAY DRAG ALLEVIATOR.
3,169,613.	ELASTIC UNIVERSAL JOINT.
3,169,725.	ERECTABLE MODULAR SPACE STATION.
3,170,286.	INJECTOR VALVE DEVICE.
3,170,290.	LIQUID ROCKET SYSTEM.
3,170,295.	PROPELLANT TANK PRESSURIZATION SYSTEM.
3,170,324.	AERODYNAMIC MEASURING DEVICE.
3,170,471.	INFLATABLE HONEYCOMB.
3,170,486.	TWO-COMPONENT VALVE ASSEMBLY.
3,170,605.	EJECTION VALVE.
3,170,657.	LANDING ARRANGEMENT FOR AERIAL VEHICLE.
3,170,660.	PARACHUTE GLIDER.
3,170,773.	REINFORCED METALLIC COMPOSITES.
3,171,060.	PLASMA ACCELERATOR.
3,171,081.	IONIZATION VACUUM GAUGE.
3,172,097.	BINARY TO BINARY-CODED-DECIMAL CONVERTER.
3,173,246.	COLLOID PROPULSION METHOD AND APPARATUS.
3,173,251.	APPARATUS FOR IGNITING SOLID PROPELLANTS.
3,174,278.	CONTINUOUSLY OPERATING INDUCTION PLASMA.
3,174,279.	ROCKET THRUST CHAMBER.
3,174,827.	PRODUCTION OF HIGH PURITY SILICON CARBIDE.
3,175,789.	LANDING PAD ASSEMBLY FOR AEROSPACE VEHICLES.
3,176,222.	APPARATUS HAVING COAXIAL CAPACITOR STRUCTURE FOR MEASURING FLUID DENSITY.
3,176,499.	HIGH TEMPERATURE TESTING APPARATUS.
3,176,933.	THERMAL CONTROL OF SPACE VEHICLES.
3,177,933.	THERMAL SWITCH.
3,178,883.	ATTITUDE CONTROL FOR SPACECRAFT.
3,180,264.	COUPLING FOR LINEAR SHAPED CHARGE.
3,180,587.	ATTITUDE ORIENTATION OF SPIN-STABILIZED SPACE VEHICLES.
3,181,821.	SPACECRAFT SOFT LANDING SYSTEM.
3,182,496.	ELECTRIC ARC DRIVEN WIND TUNNEL.
3,183,506.	RADAR RANGING RECEIVER.
3,185,023.	OPTICAL INSPECTION APPARATUS.
3,187,583.	SPACE SIMULATOR.
3,188,472.	METHOD AND APPARATUS FOR DETERMINING SATELLITE ORIENTATION UTILIZING SPATIAL ENERGY SOURCES.
3,188,844.	ELECTRICAL DISCHARGE APPARATUS FOR FORMING.
3,189,299.	DYNAMIC PRECESSION DAMPER FOR SPIN STABILIZED VEHICLES.
3,189,535.	MEANS AND METHOD OF DEPOSITING THIN FILMS ON SUBSTRATES.
3,189,726.	HIGH TEMPERATURE HEAT SOURCE.
3,189,794.	RELAY BINARY CIRCUIT.
3,189,864.	ELECTRICAL CONNECTOR FOR FLAT CABLES.
3,191,316.	LUNAR LANDING FLIGHT RESEARCH VEHICLE.
3,191,379.	PROPELLANT GRAIN FOR ROCKET MOTORS.
3,191,907.	CONICAL VALVE PLUG.
3,192,730.	HELIUM REFINING BY SUPERFLUIDITY.
3,193,883.	MANDREL FOR SHAPING SOLID PROPELLANT ROCKET FUEL INTO A MOTOR CASING.
3,194,060.	SEISMIC DISPLACEMENT TRANSDUCER.
3,194,525.	SUPPORTING AND PROTECTING DEVICE.
3,194,951.	LOGARITHMIC CONVERTER.
3,196,261.	FULL BINARY ADDER.
3,196,362.	TEMPERATURE COMPENSATED SOLID STATE DIFFERENTIAL.
3,196,557.	CENTRIFUGE MOUNTED MOTION SIMULATOR.
3,196,558.	MEANS FOR VISUALLY INDICATING FLIGHT PATHS OF VEHICLES BETWEEN THE EARTH.
3,196,598.	INLET DEFLECTOR FOR JET ENGINES.
3,196,675.	OPTICAL TORQUEMETER.
3,196,690.	IMPACT SIMULATOR.
3,197,616.	TEMPERATURE REGULATION CIRCUIT.
3,198,955.	BINARY MAGNETIC MEMORY DEVICE.
3,199,340.	ACCELEROMETER WITH F.M. OUTPUT.
3,199,343.	ELECTRIC PROPULSION ENGINE TEST CHAMBER.
3,199,931.	EXTERNALLY PRESSURIZED FLUID BEARING.
3,200,706.	GAS ACTUATED BOLT DISCONNECT.
3,201,560.	ELECTRIC-ARC HEATER.
3,201,635.	METHOD AND APPARATUS FOR PRODUCING A PLASMA.
3,201,980.	THRUST DYNAMOMETER.
3,202,381.	RECOVERABLE ROCKET VEHICLE.
3,202,398.	LOCKING DEVICE FOR TURBINE ROTOR BLADES.
3,202,844.	ENERGY CONVERSION APPARATUS.
3,202,915.	PARTICLE BEAM MEASUREMENT APPARATUS USING BEAM KINETIC ENERGY TO CHANGE THE HEAT SENSITIVE RESISTANCE OF THE DETECTION PROBE.
3,202,998.	FLEXIBLE FOAM ERECTABLE SPACE STRUCTURE.
3,204,447.	ENTHALPY AND STAGNATION TEMPERATURE DETERMINATION OF A HIGH TEMPERATURE LAMINAR FLOW GAS STREAM.
3,204,889.	SPACE VEHICLE ELECTRICAL SYSTEM.
3,205,361.	LIGHT SENSITIVE DIGITAL ASPECT SENSOR.
3,205,362.	PHOTOSENSITIVE DEVICE TO DETECT BEARING DEVIATION.
3,205,381.	IONOSPHERIC BATTERY.

3,206,141.	SPACE VEHICLE ATTITUDE CONTROL.
3,208,215.	GIMBALED, PARTIALLY SUBMERGED ROCKET NOZZLE.
3,208,272.	SURFACE ROUGHNESS DETECTOR.
3,208,694.	NOSE GEAR STEERING SYSTEM FOR VEHICLE WITH MAIN SKID.
3,208,707.	PIVOTAL SHOCK ABSORBING PAD ASSEMBLY.
3,209,360.	ANTENNA BEAM-SHAPING APPARATUS.
3,209,361.	CASSEGRAINIAN ANTENNA SUBREFLECTOR FLANGE FOR SUPPRESSING GROUND NOISE.
3,210,927.	ELECTRO-THERMAL ROCKETS HAVING IMPROVED HEAT EXCHANGERS.
3,211,169.	SHRINK-FIT GAS VALVE.
3,211,414.	THERMALLY OPERATED VALVE.
3,212,096.	PARABOLIC REFLECTOR HORN FEED WITH SPILLOVER CORRECTION.
3,212,259.	TERTIARY FLOW INJECTION THRUST VECTORING SYSTEM.
3,212,325.	FORCE MEASURING INSTRUMENT.
3,212,564.	HEAT CONDUCTIVE RESILIENTLY COMPRESSIBLE STRUCTURE FOR SPACE ELECTRONIC PACKAGE MODULES.
3,215,572.	LOW VISCOSITY MAGNETIC FLUID OBTAINED BY THE COLLOIDAL SUSPENSION OF MAGNETIC PARTICLES.
3,215,842.	OPTICAL COMMUNICATION SYSTEM.
3,216,007.	ANALOG-TO-DIGITAL CONVERSION SYSTEM.
3,217,624.	ELECTRICALLY-OPERATED ROTARY SHUTTER.
3,218,479.	PHASE DETECTOR ASSEMBLY.
3,218,547.	FLUX SENSING DEVICE USING A TUBULAR CORE WITH TOROIDAL GATING COIL AND SOLENOIDAL OUTPUT COIL.
3,218,850.	THERMO-PROTECTIVE DEVICE FOR BALANCES.
3,219,250.	FLEXIBLE BACK-UP BAR.
3,219,365.	SPHERICAL SHIELD.
3,219,828.	VIBRATING RETICLE STAR TRACKER.
3,220,004.	PASSIVE COMMUNICATION SATELLITE.
3,221,547.	APPARATUS FOR ABSORBING AND MEASURING POWER.
3,221,549.	AIRCRAFT INSTRUMENT.
3,223,374.	MINIATURE VIBRATION ISOLATOR.
3,224,001.	INFLATABLE RADAR REFLECTOR UNIT.
3,224,173.	LIQUID-GAS SEPARATOR SYSTEM.
3,224,263.	NULL-TYPE VACUUM MICROBALANCE.
3,224,336.	MISSILE LAUNCH RELEASE SYSTEM.
3,228,492.	DOUBLE-ACTING SHOCK ABSORBER.
3,228,558.	MEASURING DEVICE.
3,229,099.	ELECTRO-OPTICAL ALIGNMENT CONTROL SYSTEM.
3,229,102.	RADIATION DIRECTION DETECTOR INCLUDING MEANS FOR COMPENSATING FOR PHOTOCELL AGING.
3,229,139.	HIGH TEMPERATURE SPARK PLUG.
3,229,155.	ELECTRIC ARC DEVICE FOR HEATING GASES.
3,229,463.	TRAJECTORY-CORRECTION PROPULSION SYSTEM.
3,229,568.	CONCAVE GRATING SPECTROMETER.
3,229,636.	MISSILE STAGE SEPARATION INDICATOR AND STAGE INITIATOR.
3,229,682.	DEVICE FOR DIRECTIONALLY CONTROLLING ELECTROMAGNETIC RADIATION.
3,229,689.	RESUSCITATION APPARATUS.
3,229,884.	SEGMENTED BACK-UP BAR.
3,229,930.	STRETCH YO-YO DE-SPIN MECHANISM.
3,230,053.	APPARATUS FOR PRODUCING HIGH PURITY SILICON CARBIDE CRYSTALS.
3,230,377.	SELF-STABILIZED THE ODOLITE FOR MANUAL TRACKING USING PHOTOSENSITIVE STABILIZING MEANS.
3,236,066.	ENERGY ABSORPTION DEVICE.
3,237,253.	METHOD OF MAKING SCREEN BY CASTING.
3,238,345.	HYPERSONIC TEST FACILITY.
3,238,413.	MAGNETICALLY CONTROLLED PLASMA ACCELERATOR.
3,238,715.	ELECTROSTATIC ION ENGINE HAVING A PERMANENT MAGNETIC CIRCUIT.
3,238,730.	ANTI-BACKLASH CIRCUIT FOR HYDRAULIC DRIVE SYSTEM.
3,238,774.	PRESSURIZED CELL MICROMETEROROID DETECTOR.
3,238,777.	DIFFERENTIAL TEMPERATURE TRANSDUCER.
3,239,660.	ILLUMINATION SYSTEM INCLUDING A VIRTUAL LIGHT SOURCE.
3,242,716.	APPARATUS FOR MEASURING THERMAL CONDUCTIVITY.
3,243,154.	VIBRATION DAMPING SYSTEM.
3,243,791.	BI-CARRIER DEMODULATOR WITH MODULATION.
3,249,012.	UMBILICAL DISCONNECT.
3,249,013.	REMOTE CONTROLLED TUBULAR DISCONNECT.
3,251,053.	ANALOG TO DIGITAL CONVERTER.
3,252,100.	PULSE GENERATING CIRCUIT.
3,254,395.	METHOD FOR MAKING A ROCKET MOTOR CASING.
3,254,487.	ROCKET MOTOR CASING.
3,257,780.	ZERO GRAVITY SEPARATOR.
3,258,582.	ENERGY MANAGEMENT SYSTEM FOR GLIDER TYPE VEHICLE.
3,258,687.	WIDE RANGE LINEAR FLUXGATE MAGNETOMETER.
3,258,831.	METHOF OF MAKING A MOLDED CONNECTOR.
3,258,912.	METHOD OF IGNITING SOLID PROPELLANTS.
3,258,918.	FLUID DISPENSING APPARATUS AND METHOD.
3,260,055.	AUTOMATIC THERMAL SWITCH.
3,260,204.	VELOCITY PACKAGE.
3,260,326.	WIND-TUNNEL MICROPHONE STRUCTURE.
3,261,210.	SUPERCONDUCTIVE ACCELEROMETER.
3,262,186.	METHOD OF IMPROVING THE RELIABILITY OF A ROLLING ELEMENT SYSTEM.
3,262,262.	ELECTROSTATIC ION ROCKET ENGINE.
3,262,351.	SEPARATION NUT.
3,262,365.	SPACE CAPSULE EJECTION ASSEMBLY.
3,262,395.	HYDRAULIC TRANSFORMER.
3,262,518.	EMERGENCY ESCAPE SYSTEM.
3,262,655.	ALLEVIATION OF DIVERGENCE DURING ROCKET LAUNCH.
3,263,016.	BLACK-BODY FURNACE.
3,263,171.	MICRO CURRENT MEASURING DEVICE USING PLURAL LOGARITHMIC RESPONSE HEATED GILAMENTRARY TYPE DIODES.
3,263,610.	QUICK-RELEASE CONNECTOR.
3,264,135.	METHOD OF COATING CARBONACEOUS BASE TO PREVENT OXIDATION DESTRUCTION AND COATED BASE.
3,270,441.	REDUCED GRAVITY SIMULATOR.
3,270,499.	INJECTOR ASSEMBLY FOR LIQUID FUELED ROCKET ENGINES.
3,270,501.	AERODYNAMIC SPIKE NOZZLE.
3,270,503.	ABLATION STRUCTURES.
3,270,504.	AUTOMATICALLY DEPLOYING NOZZLE EXIT CONE EXTENSION.
3,270,505.	CONTROL SYSTEM FOR ROCKET VEHICLES.
3,270,512.	INTERMITTENT TYPE SILICA GEL ABSORPTION REFRIGERATOR.
3,270,565.	OMNIDIRECTIONAL ACCELERATION DEVICE.
3,270,756.	FLUID FLOW CONTROL VALVE.
3,270,802.	METHOD AND APPARATUS FOR VARYING THERMAL CONDUCTIVITY.
3,270,835.	DEVICE FOR SUPPRESSING SOUND AND HEAT PRODUCED BY HIGH-VELOCITY EXHAUST JETS.
3,270,908.	SPACE CAPSULE.
3,270,985.	REACTANCE CONTROL SYSTEM.
3,270,986.	HAND-HELD SELF-MANEUVERING UNIT.
3,270,988.	MINIMUM INDUCED DRAG AIRFOIL BODY.

3,270,989.	VARIABLE SWEEP AIRCRAFT.
3,270,990.	ABSORPTIVE SPLITTER FOR CLOSELY SPACED SUPERSONIC ENGINE AIR INLETS.
3,271,140.	HIGH TEMPERATURE COBALT-BASE ALLOY.
3,271,181.	METHOD OF COATING CARBONACEOUS BASE TO PREVENT OXIDATION DESTRUCTION AND COATED BASE.
3,271,532.	THREE-AXIS FINGER TRIP CONTROLLER FOR SWITCHES.
3,271,558.	SPECTRAL METHOD FOR MONITORING ATMOSPHERIC CONTAMINATION OF INERT-GAS WELDING SHIELDS.
3,271,594.	TRANSIENT AUGMENTATION CIRCUIT FOR PULSE AMPLIFIERS.
3,271,620.	STARTING CIRCUIT FOR VAPOR LAMPS AND THE LIKE.
3,271,637.	GAS SOLAR DETECTOR USING MANGANESE AS A DOPING AGENT.
3,271,649.	REGENERATIVE BRAKING SYSTEM.
3,273,094.	SUPERCONDUCTING MAGNET.
3,273,355.	HEAT PROTECTIVE APPARATUS.
3,273,381.	MEANS AND METHOD OF MEASURING VISCOELASTIC STRAIN.
3,273,388.	APPARATUS FOR MEASURING ELECTRIC FIELD STRENGTH ON THE SURFACE OF A MODEL VEHICLE.
3,273,392.	HOT WIRE LIQUID LEVEL DETECTOR FOR CRYOGENIC FLUIDS.
3,273,399.	TRAVERSING PROBE.
3,274,304.	METHOD OF MAKING IMPURITY-TYPE SEMICONDUCTOR ELECTRICAL CONTACTS.
3,276,251.	TEST UNIT FREE-FLIGHT SUSPENSION SYSTEM.
3,276,376.	THRUST AND DIRECTION CONTROL APPARATUS.
3,276,602.	CABLE ARRANGEMENT FOR RIGID TETHERING.
3,276,679.	SEPARATOR.
3,276,722.	FLIGHT CRAFT.
3,276,726.	INFLATION SYSTEM FOR BALLOON TYPE SATELLITES.
3,276,865.	HIGH TEMPERATURE COBALT-BASE ALLOY.
3,276,866.	NICKEL-BASE ALLOY CONTAINING Mo-W-Al-Cr-Ta-Zr-C-Nb-B.
3,276,946.	LOW FRICTION MAGNETIC RECORDING TAPE.
3,277,314.	HIGH-EFFICIENCY MULTIVIBRATOR.
3,277,366.	INSERTION LOSS MEASURING APPARATUS HAVING TRANSFORMER MEANS CONNECTED ACROSS A PAIR OF BOLOMETERS.
3,277,373.	SERRODYNE FREQUENCY CONVERTER REENTRANT AMPLIFIER SYSTEM.
3,277,375.	REENTRY COMMUNICATION BY MATERIAL ADDITION.
3,277,458.	CONDITION AND CONDITION DURATION INDICATOR.
3,277,486.	METHOD AND MEANS FOR DAMPING NUTATION IN A SATELLITE.
3,279,193.	METHOD AND CONSTRUCTION FOR PROTECTING HEAT SENSITIVE BODIES FROM THERMAL RADIATION AND CONVECTIVE HEAT.
3,281,963.	TRAINING VEHICLE FOR CONTROLLING ATTITUDE.
3,281,964.	ROTATING SPACE STATION SIMULATOR.
3,281,965.	CONTROLLED VISIBILITY DEVICE FOR AN AIRCRAFT.
3,282,035.	MOLECULAR BEAM VELOCITY SELECTOR.
3,282,091.	INSTRUMENT FOR MEASURING TORSIONAL CREEP AND RECOVERY.
3,282,532.	STABILIZATION OF GRAVITY ORIENTED SATELLITES.
3,282,541.	ATTITUDE CONTROL SYSTEM FOR SOUNDING ROCKETS.
3,282,739.	NON-MAGNETIC BATTERY CASE.
3,282,740.	SEALED BATTERY GAS MANIFOLD CONSTRUCTION.
3,283,088.	MULTIPLE CIRCUIT SWITCH APPARATUS WITH IMPROVED PIVOT ACTUATOR STRUCTURE.
3,283,175.	AC LOGIC FLIP-FLOP CIRCUITS.
3,283,241.	APPARATUS FOR FIELD STRENGTH MEASUREMENT OF A SPACE VEHICLE.
3,286,274.	PRESSURE SUIT TIE-DOWN MECHANISM.
3,286,531.	OMNI-DIRECTIONAL ANISOTROPIC MOLECULAR TRAP.
3,286,629.	MULTI-MISSION MODULE.
3,286,630.	SPACECRAFT SEPARATION SYSTEM FOR SPINNING VEHICLES AND/OR PAYLOADS.
3,286,882.	BOOSTER TANK SYSTEM.
3,286,953.	ROLL ATTITUDE STAR SENSOR SYSTEM.
3,286,957.	FLEXIBLE WING DEPLOYMENT DEVICE.
3,287,031.	INDEXED KEYED CONNECTION.
3,287,174.	PREVENTION OF PRESSURE BUILD-UP IN ELECTROCHEMICAL CELLS.
3,287,496.	DIGITAL TELEVISION CAMERA CONTROL SYSTEM.
3,287,582.	APPARATUS FOR INCREASING ION ENGINE BEAM DENSITY.
3,287,640.	PULSE COUNTING CIRCUIT WHICH SIMULTANEOUSLY INDICATES THE OCCURRENCE OF THE *n*TH PULSE.
3,287,660.	SOLID STATE CHEMICAL SOURCE FOR AMMONIA BEAM MASER.
3,287,725.	PHASE-LOCKED LOOP WITH A SIDEBAND REJECTING PROPERTIES.
3,289,205.	METHOD AND APPARATUS FOR DETERMINING ELECTROMAGNETIC CHARACTERISTICS OF LARGE SURFACE AREA PASSIVE REFLECTORS.
3,295,360.	DYNAMIC SENSOR.
3,295,366.	SUPPORT APPARATUS FOR DYNAMIC TESTING.
3,295,377.	ANGULAR ACCELEROMETER.
3,295,386.	THREE AXIS CONTROLLER.
3,295,512.	FOLDABLE SOLAR CONCENTRATOR.
3,295,545.	LIQUID STORAGE TANK VENTING DEVICE FOR ZERO GRAVITY ENVIRONMENT.
3,295,556.	FOLDABLE CONDUIT.
3,295,684.	HIGH PRESSURE FILTER.
3,295,699.	FOLDING BOOM ASSEMBLY.
3,295,782.	ENDLESS TAPE CARTRIDGE.
3,295,790.	RECOVERABLE SINGLE STAGE SPACECRAFT BOOSTER.
3,295,791.	STORAGE CONTAINER MOUNTING FOR SPACE VEHICLES.
3,295,798.	LANDING GEAR.
3,295,808.	PARALLEL MOTION SUSPENSION DEVICE.
3,296,060.	UNREFINED-CERAMIC FLAME RESISTANT INSULATION AND METHOD OF MAKING THE SAME.
3,296,526.	MICROMETEROID VELOCITY MEASURING DEVICE.
3,296,531.	ELECTROSTATIC PLASMA MODULATOR FOR SPACE VEHICLE RE-ENTRY COMMUNICATION.
3,298,175.	METHOD AND DEVICE FOR COOLING.
3,298,182.	IGNITION MEANS FOR MONOPROPELLANT.
3,298,221.	DENSITOMETER.
3,298,285.	REINFORCING MEANS FOR DIAPHRAGM.
3,298,362.	INSTRUMENT FOR USE IN PERFORMING A CONTROLLER VALSALVA MANEUVER.
3,298,582.	CAMERA FILM FEED HAVING A DETENT MEANS.
3,299,364.	FOLDED TRAVELING WAVE MASER STRUCTURE.
3,299,431.	UNFURLABLE STRUCTURE INCLUDING COILED STRIPS THRUST LAUNCHED UPON TENSION RELEASE.
3,299,913.	ADJUSTABLE TENSION WIRE GUIDE.
3,300,162.	RADIAL MODULE SPACE STATION.
3,300,717.	METHOD AND APPARATUS FOR MEASURING POTENTIALS IN PLASMAS.
3,300,721.	MEANS FOR COMMUNICATION THROUGH A LAYER OF IONIZED GASES.
3,300,847.	PORTABLE ALIGNMENT TOOL.

3,300,949. LIQUID-GAS SEPARATOR FOR ZERO GRAVITY ENVIRONMENT.

3,300,981. ZERO GRAVITY STARTING MEANS FOR LIQUID PROPELLANT MOTORS.

3,301,046. METHOD OF OBTAINING PERMANENT RECORD OF SURFACE FLOW PHENOMENA.

3,301,315. THERMAL CONDUCTIVE CONNECTION AND METHOD OF MAKING SAME.

3,301,507. HYPERSONIC RE-ENTRY VEHICLE.

3,301,511. WING DEPLOYMENT METHOD AND APPARATUS.

3,301,578. CRYOGENIC CONNECTOR FOR VACUUM USE.

3,302,023. APPARATUS FOR PRODUCING THREE DIMENSIONAL RECORDINGS OF FLUORESCENSE SPECTRA.

3,302,040. LINEAR SAWTOOTH VOLTAGE-WAVE GENERATOR EMPLOYING TRANSISTOR TIMING CIRCUIT HAVING CAPACITOR-ZENER DIODE COMBINATION FEEDBACK.

3,302,569. QUICK RELEASE SEPARATION MECHANISM.

3,302,633. UNIVERSAL PILOT RESTRAINT SUIT AND BODY SUPPORT THEREFOR.

3,302,662. ANTIFLUTTER BALL CHECK VALVE.

3,302,960. LOCKING DEVICE WITH ROLLING DETENTS.

3,303,304. DISCRETE LOCAL ALTITUDE SENSING DEVICE.

3,304,028. ATTITUDE CONTROL FOR SPACECRAFT.

3,304,718. DOUBLE OPTIC SYSTEM FOR ION ENGINE.

3,304,724. TANK CONSTRUCTION FOR SPACE VEHICLES.

3,304,729. CRYOGENIC STORAGE SYSTEM.

3,304,768. FATIGUE TESTING DEVICE.

3,304,773. FORCE TRANSDUCER.

3,304,799. PROPORTIONAL CONTROLLER.

3,304,865. SELF-SEALING, UNBONDED, ROCKET MOTOR NOZZLE CLOSURE.

3,305,415. PROCESS FOR PREPARING STERILE SOLID PROPELLANTS.

3,305,636. PHASE-SHIFT DATA TRANSMISSION SYSTEM HAVING A PSEUDO-NOISE SYNC CODE MODULATED WITH THE DATA IN A SINGLE CHANNEL.

3,305,801. VARIABLE TIME CONSTANT SMOOTHING CIRCUIT.

3,305,810. SOLENOID CONSTRUCTION.

3,305,861. CLOSED LOOP RANGING SYSTEM.

3,305,870. DUAL MODE HORN ANTENNA.

3,307,407. MICRO-PARTICLE IMPACT SENSING APPARATUS.

3,308,848. FLUID POWER TRANSMISSION.

3,309,012. THERMAL PUMP-COMPRESSOR FOR SPACE USE.

3,309,961. HERMETICALLY SEALED EXPLOSIVE RELEASE MECHANISM.

3,310,054. FILE CARD MARKER.

3,310,138. VISCOUS-PENDULUM DAMPER.

3,310,256. AERODYNAMIC PROTECTION FOR SPACE FLIGHT VEHICLES.

3,310,258. TECHNIQUE FOR CONTROL OF FREE-FLIGHT ROCKET VEHICLES.

3,310,261. CONTROL FOR FLEXIBLE PARAWING.

3,310,262. SUPERSONIC AIRCRAFT.

3,310,443. METHOD OF FORMING THIN WINDOW DRIFTED SILICON CHARGED PARTICLE DETECTOR.

3,310,978. FIBER OPTIC VIBRATION TRANSDUCER AND ANALYZER.

3,310,980. HYDRAULIC SUPPORT FOR DYNAMIC TESTING.

3,311,315. ENDLESS-TAPE TRANSPORT MECHANISM.

3,311,502. DIDYMIUM HYDRATE ADDITIVE TO NICKEL HYDROXIDE ELECTRODES.

3,311,510. METHOD OF MAKING A SILICON SEMICONDUCTOR DEVICE.

3,311,748. SUN TRACKER WITH ROTATABLE PLANE-PARALLEL PLATE AND TWO PHOTOCELLS.

3,311,772. FOCUSSING SYSTEM FOR AN ION SOURCE HAVING APERTURED ELECTRODES.

3,311,832. MULTIPLE INPUT RADIO RECEIVER.

3,312,101. GAS ANALYZER FOR BI-GASEOUS MIXTURES.

3,316,716. COMPOSITE POWERPLANT AND SHROUD THEREFOR.

3,316,752. METHOD AND APPARATUS FOR DETECTION AND LOCATION OF MICROLEAKS.

3,316,991. AUTOMATIC FORCE MEASURING SYSTEM.

3,317,180. HIGH PRESSURE REGULATOR VALVE.

3,317,341. METALLIC FILM DIFFUSION FOR BOUNDARY LUBRICATION.

3,317,352. METHOD FOR DETERMINING THE STATE OF CHARGE OF BATTERIES BY THE USE OF TRACERS.

3,317,641. METHOD FOR MOLDING COMPOUNDS.

3,317,731. CANOPUS DETECTOR INCLUDING AUTOMATIVE GAIN CONTROL OF PHOTOMULTIPLIER TUBE.

3,317,751. REVERSIBLE RING COUNTER EMPLOYING CASCADED SINGLE SCR STAGES.

3,317,797. MICROELECTRONIC MODULE PACKAGE.

3,317,825. THREE-WIRE GROUND TYPE ELECTRICAL RECEPTACLE TESTER.

3,317,832. SINGLE OR JOINT AMPLITUDE DISTRIBUTION ANALYZER.

3,317,846. LINEAR ACCELERATOR FOR MICROMETEOROIDS HAVING A VARIABLE VOLTAGE SOURCE.

3,318,093. HYDRAULIC DRIVE MECHANISM.

3,318,096. PURGE DEVICE FOR THRUST ENGINES.

3,318,343. TOOL ATTACHMENT FOR SPREADING LOOSE ELEMENTS AWAY FROM WORK.

3,318,622. ALL-DIRECTIONAL FASTENER.

3,319,175. ELECTRONIC AMPLIFIER WITH POWER SUPPLY SWITCHING.

3,319,979. QUICK ATTACH AND RELEASE FLUID COUPLING ASSEMBLY.

3,320,669. LINE CUTTER.

3,321,034. SAMPLE COLLECTING IMPACT BIT.

3,321,154. TRANSPIRATIONALLY COOLED HEAT ABLATION SYSTEM.

3,321,157. DOUBLE-HINGED FLAP.

3,321,159. TECHNIQUES FOR INSULATING CRYOGENIC FUEL CONTAINERS.

3,321,570. PRINTED CIRCUIT BOARD WITH BELLOWS RIVET CONNECTION.

3,321,628. BASELINE STABILIZATION SYSTEM FOR IONIZATION DETECTOR.

3,321,645. SWITCHING CIRCUIT EMPLOYING REGENERATIVELY CONNECTED COMPLEMENTARY TRANSISTORS.

3,321,922. SMALL ROCKET ENGINE.

3,323,356. APPARATUS FOR POSITIONING AND LOADING A TEST SPECIMEN.

3,323,362. POSITIVE DISPLACEMENT FLOWMETER.

3,323,370. MASS MEASURING SYSTEM.

3,323,386. TWO-AXIS CONTROLLER.

3,323,408. OPTICAL ALIGNMENT SYSTEM.

3,323,484. LIQUID FLOW SIGHT ASSEMBLY.

3,323,967. MASKING DEVICE.

3,324,370. ELECTRONIC BEAM SWITCHING COMMUTATOR.

3,324,388. METEOROID SENSING APPARATUS HAVING A COINCIDENCE NETWORK CONNECTED TO A PAIR OF CAPACITORS.

3,324,423. DUAL WAVEGUIDE MODE SOURCE HAVING CONTROL MEANS FOR ADJUSTING THE RELATIVE AMPLITUDES OF TWO MODES.

3,324,659. ELECTROSTATIC THRUSTOR WITH IMPROVED INSULATORS.

3,325,229. AIR BEARING.

3,325 723. VOLTAGE-CURRENT CHARACTERISTIC SIMULATOR.

3,325,749. VARIABLE FREQUENCY OSCILLATOR WITH TEMPERATURE COMPENSATION.

3,326,043. INDUCTIVE LIQUID LEVEL DETECTION SYSTEM.

3,326,407. THIN-WALLED PRESSURE VESSEL.

3,327,298. SYSTEM FOR RECORDING AND REPRODUCING PULSE CODE MODULATED DATA.

3,327,991. VALVE SEAT WITH RESILIENT SUPPORT MEMBER.

3,328,624. HIGH EFFICIENCY IONIZER ASSEMBLY.

3,329,375. ATTITUDE CONTROL AND DAMPING SYSTEM FOR SPACECRAFT.

3,329,918. HIGH VOLTAGE DIVIDER SYSTEM.

3,330,052. SUBGRAVITY SIMULATOR.

3,330,082. CENTRAL SPAR AND MODULE JOINT.

3,330,510. ORBITAL ESCAPE DEVICE.

3,330,549. SHOCK ABSORBER.

3,331,071. SATELLITE COMMUNICATION SYSTEM.

3,331,246. HYPERSONIC TEST FACILITY.

3,331,255. NON-MAGNETIC, EXPLOSIVE ACTUATED INDEXING DEVICE.

3,331,404. APPARATUS FOR PURGING SYSTEMS HANDLING.

3,331,951. TRIGONOMETRIC VEHICLE GUIDANCE ASSEMBLY WHICH ALIGNS THE THREE PERPENDICULAR AXES OF TWO-AXES SYSTEMS.

3,333,152. SELF-REPEATING PLASMA ACCELERATOR.

3,333,788. ARTIFICIAL GRAVITY SPIN DEPLOYMENT SYSTEM.

3,336,725. CANISTER CLOSING DEVICE.

3,336,748. PLASMA DEVICE FEED SYSTEM.

3,337,004. IMPACT ENERGY ABSORBER.

3,337,279. GAS PURGED DRY BOX GLOVE.

3,337,315. METHOD FOR FIBERIZING CERAMIC MATERIALS.

3,337,337. METHOD FOR PRODUCING FIBER REINFORCED METALLIC COMPOSITES.

3,337,790. MERCURY CAPILLARY INTERRUPTER.

3,337,812. CIRCULATOR HAVING QUARTER WAVELENGTH RESONANT POST AND PARAMETRIC AMPLIFIER CIRCUITS UTILIZING THE SAME.

3,339,404. LUNAR PENETROMETER.

3,339,863. SOLAR VANE ACTUATOR.

3,340,099. BONDED ELASTOMERIC SEAL FOR ELECTROCHEMICAL CELLS.

3,340,395. TIME-OF-FLIGHT MASS SPECTROMETER WITH FEED-BACK MEANS FROM THE DETECTOR TO THE LOW SOURCES AND A SPECIFIC COUNTER.

3,340,397. MULTIPLE ENVIRONMENT MATERIALS TEST CHAMBER HAVING A MULTIPLE PORT X-RAY TUBE FOR IRRADIATING A PLURALITY OF SAMPLES.

3,340,430. DIODE AND PROTECTION FUSE UNIT.

3,340,532. TRACKING RECEIVER.

3,340,599. SIMPLE METHOD OF MAKING PHOTOVOLTAIC JUNCTIONS.

3,340,713. SPIN FORMING TUBULAR ELBOWS.

3,340,727. ABLATION PROBE.

3,340,732. METEOROLOGICAL BALLOON.

3,341,151. APPARATUS PROVIDING A DIRECTIVE FIELD PATTERN AND ATTITUDE SENSING OF A SPIN STABILIZED SATELLITE.

3,341,169. FILLER VALVE.

3,341,708. AMPLITUDE MODULATED LASER TRANSMITTER.

3,341,778. OPTIMUM PRE-DETECTION DIVERSITY RECEIVING SYSTEM.

3,341,977. CONFORMING POLISHER FOR ASPHERIC SURFACES OF REVOLUTION.

3,342,055. PROTECTIVE DEVICE FOR MACHINE AND METALWORKING TOOLS.

3,342,066. MODEL LAUNCHER FOR WIND TUNNELS.

3,342,653. METHOD OF MAKING INFLATABLE HONEYCOMB.

3,343,180. STRETCHER.

3,343,189. RESCUE LITTER FLOTATION ASSEMBLY.

3,344,340. REGULATED POWER SUPPLY.

3,344,425. MONOPAUSE TRACKING SYSTEM.

3,345,820. ELECTRON BOMBARDMENT ION ENGINE.

3,345,822. BURNING RATE CONTROL OF SOLID PROPELLANTS.

3,345,840. TUBE DIMPLING TOOL.

3,345,866. MULTILEGGED SUPPORT SYSTEM.

3,346,419. SOLAR CELL MOUNTING.

3,346,515. METHOD OF PRODUCING ALTERNATING ETHERSILOXANE COPOLYMERS.

3,346,724. RANDOM FUNCTION TRACER.

3,346,806. PRESSURE MONITORING WITH A PLURALITY OF IONIZATION GAUGES CONTROLLED AT A CENTRAL LOCATION.

3,346,929. LATCHING MECHANISM.

3,347,046. CONTROL OF TRANSVERSE INSTABILITY IN ROCKET COMBUSTORS.

3,347,057. RAPID COOLING METHOD AND APPARATUS.

3,347,309. SELF ADJUSTING MULTI-SEGMENT, DEPLOYABLE NATURAL CIRCULATION RADIATOR.

3,347,465. PRESTRESSED REFRACTOR STRUCTURE.

3,347,466. NACELLE AFTERBODY FOR JET ENGINES.

3,347,531. STIRRING APPARATUS FOR PLURAL TEST TUBES.

3,347,665. LOW TEMPERATURE ALUMINUM ALLOY.

3,348,048. HORIZON SENSOR WITH A PLURALITY OF FIXEDLY-POSITIONED RADIATION-COMPENSATED RADIATION SENSITIVE DETECTOR.

3,348,053. AMPLIFIER CLAMPING CIRCUIT FOR HORIZON SCANNER.

3,348,152. DIVERSITY RECEIVING SYSTEM.

3,349,814. METHOD AND APPARATUS FOR MAKING A HEAT INSULATING AND ABLATIVE STRUCTURE.

3,350,033. REACTION WHEEL SCANNER.

3,350,034. SATELLITE APPENDAGE TIE-DOWN CORD.

3,350,643. SIGNAL-TO-NOISE RATIO ESTIMATED BY TAKING RATIO OF MEAN AND STANDARD DEVIATION OF INTEGRATED SIGNAL SAMPLES.

3,350,671. HIGH POWER-HIGH VOLTAGE WATERLOAD.

3,350,926. MINIATURE STRESS TRANSDUCER.

3,352,157. INERTIA DIAPHRAGM PRESSURE TRANSDUCER.

3,352,192. SPLIT NUT SEPARATION SYSTEM.

3,353,359. MULTISLOT FILM COOLED PYROLYTIC GRAPHITE ROCKET NOZZLE.

3,354,098. ELASTOMERIC SILAZANE POLYMERS AND PROCESS FOR PREPARING THE SAME.

3,354,320. LIGHT POSITION LOCATING SYSTEM.

3,354,462. EVENT RECORDER.

3,355,861. MIXTURE SEPARATION CELL.

3,355,948. SPHERICAL TANK GAUGE.

3,356,320. DEVICE FOR SEPARATING OCCUPANT FROM AN EJECTION SEAT.

3,356,549. METHOD AND APPARATUS FOR BONDING A PLASTICS SLEEVE ONTO A METALLIC BODY.

3,356,885. SMALL PLASMA PROBE.

3,357,024. METHOD OF RECORDING A GAS FLOW PATTERN.

3,357,093. SOLDERING WITH SOLDER FLUX WHICH LEAVES CORROSION-RESISTANT COATING.

3,357,237. ABLATION SENSOR.

3,357,862. COMBINED ELECTROLYSIS DEVICE AND FUEL CELL AND METHOD OF OPERATION.

3,358,145. RADIATION DETECTOR READOUT SYSTEM.

3,358,264. COAXIAL CABLE CONNECTOR.

3,359,046. BISMUTH-LEAD COATINGS FOR GAS BEARINGS USED IN ATMOSPHERIC ENVIRONMENTS AND VACUUM CHAMBERS.

3,359,132. METHOD OF COATING CIRCUIT PATHS ON PRINTED CIRCUIT BOARDS WITH SOLDER.

3,359,409. CORRELATION FUNCTION APPARATUS.

3,359,435. HOLDER FOR CRYSTAL RESONATORS.

3,359,555. POLARIZATION DIVERSITY MONOPULSE TRACKING RECEIVER.

3,359,819. BIDIRECTIONAL STEP TORQUE FILTER WITH ZERO BACKLASH CHARACTERISTIC.

3,359,855. OPTICAL PROJECTOR SYSTEM.

3,360,798.	COLLAPSIBLE REFLECTOR.
3,360,864.	INTERNAL FLARE ANGLE GAUGE.
3,360,972.	MAGNETOMOTIVE METAL WORKING DEVICE.
3,360,980.	VAPOR PRESSURE MEASURING SYSTEM AND METHOD.
3,360,988.	ELECTRIC ARC APPARATUS.
3,361,045.	FAST-OPENING DIAPHRAGM.
3,361,067.	PEIZOELECTRIC PUMP.
3,361,400.	CLAMPING ASSEMBLY FOR COMPONENTS INERTIAL.
3,361,666.	INORGANIC SOLID FILM LUBRICANTS.
3,361,985.	SIGNAL DETECTION AND TRACKING APPARATUS.
3,364,311.	ELIMINATION OF FREQUENCY SHIFT IN A MULTIPLEX COMMUNICATION SYSTEM.
3,364,366.	MULTIPLE SLOPE SWEEP GENERATOR.
3,364,578.	ELLIPSOGRAPH FOR PANTOGRAPH.
3,364,631.	INFLATABLE SUPPORT STRUCTURE.
3,364,777.	NULL DEVICE FOR HAND CONTROLLER.
3,364,813.	SELF-CALIBRATING DISPLACEMENT TRANSDUCER.
3,365,580.	FILM READER WITH TRANSPARENT CAPSTAN AND U-SHAPED LIGHT CONDUCTING ROD.
3,365,657.	POWER SUPPLY.
3,365,665.	HALL CURRENT MEASURING APPARATUS HAVING A SERIES RESISTOR FOR TEMPERATURE COMPENSATION
3,365,897.	CRYOGENIC THERMAL INSULATION.
3,365,930.	THERMAL SHOCK APPARATUS.
3,365,941.	PRECISION THRUST GAGE.
3,366,886.	LINEAR ACCELERATOR FREQUENCY CONTROL SYSTEM.
3,366,894.	VARIABLE DURATION PULSE INTEGRATOR.
3,367,114.	CONSTRUCTION AND METHOD OF ARRANGING A PLURALITY OF ION ENGINES.
3,367,121.	REFRIGERATION DEVICE.
3,367,182.	HEAT FLUX SYSTEM.
3,367,224.	ALIGNING AND POSITIONING DEVICE.
3,367,271.	AUTOMATIC PUMP.
3,367,308.	EXPOSURE SYSTEM FOR ANIMALS.
3,367,445.	FLUID LUBRICANT SYSTEM.
3,368,486.	SINGLE ACTION SEPARATION MECHANISM.
3,369,222.	DATA COMPRESSOR.
3,369,223.	INCREMENTAL TAPE RECORDER AND DATA RATE CONVERTER.
3,369,564.	TRANSFER VALVE.
3,370,039.	PROCESS FOR PREPARATION OF HIGH-MOLECULAR-WEIGHT POLYARYLOXYSILANES.
3,372,588.	CONSTANT TEMPERATURE HEAT SINK FOR CALORIMETERS.
3,373,069.	METHOD OF MAKING AN INFLATABLE PANEL.
3,373,404.	ERROR-CORRECTING METHOD AND APPARATUS.
3,373,430.	OMNIDIRECTIONAL MICROWAVE SPACECRAFT ANTENNA.
3,373,431.	LOW NOISE SINGLE APERTURE MULTIMODE MONOPULSE ANTENNA FEED SYSTEM.
3,373,640.	APPARATUS FOR MACHINING GEOMETRIC CONES.
3,373,914.	AUTOMATIC WELDING SPEED CONTROLLER.
3,374,339.	COUNTER AND SHIFT-REGISTER.
3,374,366.	COMPLEMENTARY REGENERATIVE SWITCH.
3,374,830.	THERMAL CONTROL PANEL.
3,374,966.	CONTROL SYSTEM.
3,375,451.	ADAPTIVE TRACKING NOTCH FILTER SYSTEM.
3,375,479.	CONTINUOUS TURNING SLIP RING ASSEMBLY.
3,376,730.	FRICTION MEASURING APPARATUS.
3,377,208.	THERMOCOUPLE ASSEMBLY.
3,377,845.	MOMENT OF INERTIA TEST FIXTURE.
3,378,315.	HYBRID LUBRICATION SYSTEM AND BEARING.
3,378,851.	SOFT FRAME ADJUSTABLE EYEGLASSES.
3,378,892.	QUICK ATTACH MECHANISM.
3,379,064.	AUTOMATIC RECORDING McLEOD GAUGE.
3,379,330.	CRYOGENIC INSULATION SYSTEM.
3,379,885.	SIGHT SWITCH USING AN INFRARED SOURCE AND SENSOR.
3,379,974.	PARTICLE DETECTION APPARATUS INCLUDING A BALLISTIC PENDULUM.
3,380,042.	DIGITAL TELEMETRY SYSTEM.
3,380,049.	METHOD OF RESOLVING CLOCK SYNCHRONIZATION ERROR AND MEANS THEREFOR.
3,381,339.	HYDRAULIC CASTING OF LIQUID POLYMERS.
3,381,517.	ROTARY BEAD DROPPER AND SELECTOR FOR TESTING MICROMETEORITE DETECTORS.
3,381,527.	TENSION MEASUREMENT DEVICE.
3,381,569.	ATTITUDE SENSOR FOR SPACE VEHICLES.
3,381,778.	ENERGY ABSORBING DEVICE.
3,382,082.	FOAMED-IN-PLACE CERAMIC REFRACTORY INSULATING MATERIAL.
3,382,105.	ION-EXCHANGE MEMBRANE AND ELECTRODE ASSEMBLY.
3,382,107.	SEALING DEVICE FOR AN ELECTROCHEMICAL CELL.
3,382,714.	HEAT SENSING INSTRUMENT.
3,383,461.	REDUCED BANDWIDTH VIDEO COMMUNICATION SYSTEM UTILIZING SAMPLING TECHNIQUE.
3,383,524.	SOLID STATE PULSE GENERATOR WITH CONSTANT OUTPUT WIDTH, FOR VARIABLE INPUT WIDTH, IN NANOSECOND RANGE.
3,383,903.	PRESSURE TRANSDUCER CALIBRATOR.
3,383,922.	LINEAR DIFFERENTIAL PRESSURE SENSOR.
3,384,016.	LATERAL DISPLACEMENT SYSTEM FOR SEPARATED ROCKET STAGES.
3,384,075.	THERMAL CONTROL WALL PANEL.
3,384,111.	POSITIVE LOCKING CHECK VALVE.
3,384,324.	THERMAL CONTROL WALL PANEL.
3,384,820.	VIBRATING ELEMENT ELECTROMETER WITH OUTPUT SIGNAL MAGNIFIED OVER INPUT SIGNAL BY A FUNCTION OF THE MECHANICAL Q OF THE VIBRATING ELEMENT.
3,384,895.	PORTABLE SUPERCLEAN AIR COLUMN DEVICE.
3,385,036.	PORTABLE SUPERCLEAN AIR COLUMN DEVICE.
3,386,337.	PORTABLE MILLING TOOL.
3,386,685.	SPACECRAFT AIRLOCK.
3,386,686.	STATION KEEPING OF A GRAVITY-GRADIENT STABILIZED SATELLITE.
3,387,149.	PHONOCARDIOGRAPH TRANSDUCER.
3,388,258.	FLUID FLOW METER WITH COMPARATOR REFERENCE MEANS.
3,388,387.	DRIVE CIRCUIT UTILIZING TWO CORES.
3,388,590.	CONNECTOR INTERNAL FORCE GAUGE.
3,389,017.	SEALING MEMBER AND COMBINATION THEREOF AND METHOD OF PRODUCING SAID SEALING MEMBER.
3,389,260.	SOLAR SENSOR HAVING COARSE AND FINE SENSING WITH MATCHED PREIRRADIATED CELLS AND METHOD OF SELECTING CELLS.
3,389,346.	COMPENSATING BANDWIDTH SWITCHING TRANSIENTS IN AN AMPLIFIER CIRCUIT.
3,389,877.	INFLATABLE TETHER.
3,390,017.	SEALED ELECTROCHEMICAL CELL PROVIDED WITH A FLEXIBLE CASING.
3,390,020.	SEMICONDUCTOR MATERIAL AND METHOD OF MAKING SAME.
3,390,282.	PASSIVE SYNCHRONIZED SPIKE GENERATOR WITH HIGH INPUT IMPEDANCE AND LOW OUTPUT IMPEDANCE AND CAPACITOR POWER SUPPLY.

3,390,378.	COMPARATOR FOR THE COMPARISON OF TWO BINARY NUMBERS.
D187,350.	AIRCRAFT.
D187,351.	AIRCRAFT.
D187,352.	AIRCRAFT.
D187,353.	AIRCRAFT.
D193,454.	AIRCRAFT.
D198,249.	SWEPT WING AIRCRAFT.
D199,104.	SUPERSONIC AIRCRAFT.
D199,105.	AIRCRAFT.
D201,773.	RECOVERABLE SINGLE STAGE SPACECRAFT BOOSTER.
D202,456.	TRAINER AIRCRAFT FOR SIMULATING VARIOUS GRAVITY CONDITIONS.
D202,539.	HELMET.
D202,839.	AIRCRAFT.
D204,331.	AIRCRAFT.
D208,768.	TRAILER.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF AUGUST 9, 1968

PATENT EXAMINING OPERATIONS AND GROUPS * Denotes date of oldest application for each Operation.	Actual Filing Date of Oldest Case Awaiting Action: New	Actual Filing Date of Oldest Case Awaiting Action: Amended
CHEMICAL EXAMINING OPERATION		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	5- 2-66	1-16-64
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	5- 2-66	5-24-63
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	6- 6-66	1-27-64
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*10-12-65	5-27-63
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	3-23-66	2-[illegible]
ELECTRICAL EXAMINING OPERATION		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	3- 9-66	3- 4-64
SECURITY, GROUP 220—S. BOYD, Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	4-10-67	2- 5-65
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*8- 9-65	*10-10-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	10- 1-65	*10-10-62
PHYSICS, GROUP 280—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	7-14-66	4- 1-65
DESIGNS, GROUP 290—S. BOYD, Director Industrial Arts; Household, Personal and Fine Arts.	11-30-67	11-28-66
MECHANICAL EXAMINING OPERATION		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	3- 2-67	9- 2-65
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	10- 3-66	1- 6-65
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	8-16-66	5-25-64
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	7-17-67	7-20-66
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	2-10-67	12- 8-64
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	*5-31-66	*5-29-63

Total number of pending applications (excluding Designs) 189.909
Total number of Design applications pending 2,959

Expiration of patents: The patents within the range of numbers indicated below expire during August 1968, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions of 35 U.S.C. 253.

Patents Numbers 2,562,875 to 2,566,294, inclusive
Plant Patents Numbers 1,024 to 1,034, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

In the United States Patent Office
Before the Board of Patent Interferences

ADLER *v.* KLUVER

Patent Interference No. 93,665. Decided May 6, 1966

Traveling Wave Tube

1. INTERFERENCE—QUESTIONS ANCILLARY TO PRIORITY—MOTION TO SUBSTITUTE COUNT AND QUESTION OF PATENTABILITY.

"Kluver opposes our consideration of Adler's proposed count citing *Smith* v. *Heyward*, 37 CCPA 718; 176 F.2d 914; 83 USPQ 123; and *Josserand* v. *Taylor*, 31 CCPA 709; 138 F.2d 58; 59 USPQ 140; as holding that a motion to amend denied by the Primary Examiner is not ancillary to priority and that the Board of Patent Interferences has no authority to review such a decision. In our opinion this is correct. As further basis for our conclusion that we have no authority to consider the proposed count we note that Kluver also contends that patentability of the proposed count over prior art is doubtful and it is well settled that we have no authority to consider that question. *Glass* v. *De Roo et al.*, 44 CCPA 723; 239 F.2d 402; 112 USPQ 62."

2. SAME—PATENT AND APPLICATION—PROPOSED COUNT NOT INVENTION OF PATENTEE—RULE 131.

In an interference between a patentee and applicant, where the junior party (applicant Adler) concedes that his best priority evidence does not support the present count but does support a proposed count which the Examiner denied on a motion to substitute because the proposed count was for an invention not claimed by the patentee, *Held* that "It appears to us that Adler has a remedy"; in that he "may proceed ex parte under Rule 131 so far as the Kluver patent is concerned."

3. SAME—OPERATIVENESS—PRESUMPTION OF OPERATIVENESS.

"The disclosure of an application placed in interference is presumed to be an operative disclosure unless it is established by a preponderance of the evidence that it can not be made to operate for any useful purpose by changes, short of invention, which one skilled in the art would be capable of applying with the disclosure of the specification and drawings of the application as his guide."

4. SAME—SAME.

On the issue of operativeness of the disclosure in an application placed in interference, *Held* that "It is unnecessary to establish commercial utility, and capacity to function in the manner intended, although only in a crude way, is sufficient."

5. SAME—SAME—BURDEN ON OPPOSING PARTY.

"The burden of proof may be carried by evidence of inter partes tests performed with devices built according to the application but such tests may be insufficient if testers fail to utilize skill of the art to rectify difficulties which caused the inoperativeness. Failure to build his opponent's device and conduct inter partes tests thereon may be fatal to a contention of inoperativeness."

6. SAME—SAME—SAME.

"In the present case the stipulated testimony submitted by both parties is in the form of theoretical analysis and opinion by experts in the art. No attempt was made on behalf of Adler to construct a device and conduct inter partes tests. In view of this and considering also the matters brought out above, namely, that travelling wave tubes of the type in question are normally built by cut and try methods, and that the admitted error in coefficient relates to a limiting condition rather than to a formula defining an essential relationship, we are of the opinion that Adler the junior party has failed to sustain his burden of proof as to his contention of inoperativeness. Because of the highly specialized nature of the particular art involved, we believe that the need for actual attempts at construction of the Kluver device and inter partes tests thereon is greater than in a more widely used type of device."

Mr. Francis W. Crotty, Mr. H. H. Drake, and *Mr. Homer R. Montague* for Adler.

Mr. R. J. Guenther, Mr. George C. Lord, Mr. A. J. Torsiglieri, and *Mr. Roderick B. Anderson* for Kluver.

Before BOYS, CREWS and WILLIAMS, *Examiners of Interferences*

BOYS, *Examiner of Interferences*

Pursuant to a stipulation, both parties submitted statements by witnesses in lieu of testimony and their answers to interrogatories as cross-examination. Both parties filed briefs and were represented at final hearing. As junior party, Adler has the burden of proving priority by a preponderance of the evidence.

During the motion period, Adler filed two motions. His motion to substitute a count was set for hearing and denied by the Primary Examiner. His other motion sought to dissolve the interference on the ground that Kluver has no right to make the count because his disclosure is inoperative. Consideration of the latter motion was deferred to final hearing on authority of *Summers* v. *Esau*, 1937 C.D. 8.

Before us the party Adler concedes that his priority evidence does not support the count in issue. However, he contends that the Primary Examiner should have substituted his proposed count A and that as to that count his evidence establishes prior invention by him. He also contends, as urged in his motion to dissolve, that the Kluver patent disclosure is inoperative and that Kluver therefore has no right to make the count in issue.

The single count in issue reads as follows:

> ***Count 1.***—A transverse-field device comprising a cathode for forming and projecting a beam of electrons, said beam being characterized by a spurious cyclotron wave noise content, means for minimizing said cyclotron wave noise content comprising means for producing a high magnetic flux density throughout said cathode, a source of electromagnetic signal waves, input means coupled to said source, means including said input means for producing signal cyclotron waves on said beam, means for causing said signal cyclotron waves to interact with said electromagnetic signal waves, and means for causing said flux density to decrease with distance from said cathode to said input means.

Adler's proposed count A differs from the count in omitting the following limitation:

> * * * and means for causing said flux density to decrease with distance from said cathode to said input means.

[1] Kluver opposes our consideration of Adler's proposed count citing *Smith* v. *Heyward*, 37 CCPA 718; 176 F.2d 914; 83 USPQ 123; and *Josserand* v. *Taylor*, 31 CCPA 709; 138 F.2d 58; 59 USPQ 140; as holding that a motion to amend denied by the Primary Examiner is not ancillary to priority and that the Board of Patent Interferences has no authority to review such a decision. In our opinion this is correct. As further basis for our conclusion that we have no authority to consider the proposed count we note that Kluver also contends that patentability of the proposed count over prior art is doubtful and it is well settled that we have no authority to consider that question. *Glass* v. *De Roo et al.*, 44 CCPA 723; 239 F.2d 402; 112 USPQ 62.

[2] Adler complains that his best priority evidence does not support the present count but does support the proposed count and therefore his motion should have been granted pursuant to the Commissioner's notice of April 5, 1954, 681 O.G. 64. It appears to us that Adler has a remedy. In denying the motion the Primary Examiner stated:

> Since *both* the high magnetic field at the cathode *and* the decreasing field from cathode to input means *together* comprise the invention in the involved Kluver claim 2 * * * it is held that said deleted limitation is material for Kluver and therefore may not be deleted. [Emphasis quoted.]

This is, in effect, a holding that the proposed count A is for an invention not claimed by Kluver so that apparently Adler may proceed ex parte under Rule 131 so far as the Kluver patent is concerned. The case of *In re Hidy*, 49 CCPA 1152, 133 USPQ 650, 1962 C.D. 380, cited by Adler, is inapposite since there the Examiner took the position that the invention claimed was in fact the same as that claimed in the patent.

In view of the concession by Adler concerning priority as to the count in issue, and our ruling as to proposed count A, we find it unnecessary to consider the evidence relating to conception, reduction to practice and diligence by Adler. We will confine ourselves to a consideration of that part of the record which relates to Adler's contention that the Kluver patent disclosure is inoperative.

The invention in issue relates to transverse-field electron-beam devices in which an electron beam is projected from a cathode to a collector through a magnetic field having flux lines substantially parallel to the beam path. Electromagnetic signals may be transferred to or from the electron beam by a coupler which develops an electric field transversely to the beam. Both parties had the objective of reducing the level of electron beam noise and accomplished it by increasing the magnetic field strength in the vicinity of the cathode. Both parties also disclose a gradual decrease in magnetic field strength in the coupling area.

Adler bases his case substantially on two contended erroneous teachings in the Kluver specification. First, it is contended that the coefficient of n in Kluver's equation (1) is in error. Second, Adler urges that the import of the Kluver specification is that the change from high flux density to low flux density should be a linear one, and that actually a linear variation would produce a substantial amount of noise whereas the object is to reduce noise.

As to the first of these contentions, Kluver concedes that the coefficient of n in his equation (1) is in error and should be .24 rather than 2.4 as given. However, he contends, validly we believe, that that equation is given merely as determinative of "the minimum longitudinal distance between a point of high flux density B_1 and low flux density B_2" and thus is indicative of merely a limiting condition rather than an expression of an essential relationship.

In considering Adler's second contention we deem it appropriate to quote from the stipulated testimony of Kluver's expert witness, Dr. Eugene I. Gordon, the following:

> Even if one familiar with traveling waves tubes and cyclotron wave devices were not familiar with the various publications concerning adiabatic invariance, it is my opinion that he would have no unusual difficulties in building a tube to take advantage of Kluver's described noise reduction technique. First, it is to be recognized that the worker in this art has a high degree of skill. Traveling wave tubes by their nature are complex devices. Moreover, each tube is usually designed for a specific systems application. Significant design parameters include operating frequency, bandwidth, gain, power level, noise figure, size and cost. The cost typically is at least hundreds of dollars apiece and more often thousands. When a worker in the art decides to build a new traveling wave tube for a particular systems application, he does not prepare a complete design on a theoretical basis, build a finished tube to that design, and then insert it into the particular system and expect it to work in complete accordance with the computations.

> Rather, testing and development is virtually always to be expected before a new tube is used commercially.
>
> It is standard practice first to build experimental tubes having relevant parameters approaching ideal conditions initially without much regard to the practicability of the design, and then to controllably degrade these parameters in an effort to achieve a more practical construction of the tube. With the Kluver device, it would be expected that one would initially use an extremely gradual transition and then controllably reduce the length of the transition region to a more practical value. The actual design that would eventually be used would depend on specific tube requirements such as frequency, tolerable noise figure, available power, cost, and total available physical length of the device.
>
> I know of no reason why, using conventional design techniques, one having skill in tube technology could not build a device which successfully employs Dr. Kluver's noise reduction technique. I have read Dr. Adler's analysis and Mr. Hrbeck's testimony with respect thereto, and nothing contained in these documents would lead me to depart from this opinion. I believe it unlikely that any sensible designer would design initially as a finished product a tube with an abrupt magnetic field change from an extremely high field at the cathode to a relatively low field at the interaction region. In view of the emphasis in the patent that the magnetic field transition should be gradual, this would merely be inviting trouble and would not represent good conventional engineering design. (Kluver record pp. 38–40.)

We have found nothing in the Adler record which would contradict the above statement.

In the case of *Field* v. *Knowles*, 37 CCPA 1211; 1950 C.D. 521; 183 F.2d 593; 86 USPQ 373, the Court of Customs and Patent Appeals summarized the authorities regarding contended inoperativeness of a disclosure, bringing out the following points to be considered:

[3] 1. The disclosure of an application placed in interference is presumed to be an operative disclosure unless it is established by a preponderance of the evidence that it can not be made to operate for any useful purpose by changes, short of invention, which one skilled in the art would be capable of applying with the disclosure of the specification and drawings of the application as his guide.

[4] 2. It is unnecessary to establish commercial utility, and capacity to function in the manner intended, although only in a crude way, is sufficient.

[5] 3. The burden of proof may be carried by evidence of inter partes tests performed with devices built according to the application but such tests may be insufficient if testers fail to utilize skill of the art to rectify difficulties which caused the inoperativeness. Failure to build his opponent's device and conduct inter partes tests thereon may be fatal to a contention of inoperativeness.

[6] In the present case the stipulated testimony submitted by both parties is in the form of theoretical analysis and opinion by experts in the art. No attempt was made on behalf of Adler to construct a device and conduct inter partes tests. In view of this and considering also the matters brought out above, namely, that travelling wave tubes of the type in question are normally built by cut and try methods, and that the admitted error in coefficient relates to a limiting condition rather than to a formula defining an essential relationship, we are of the opinion that Adler the junior party has failed to sustain his burden of proof as to his contention of inoperativeness. Because of the highly specialized nature of the particular art involved, we believe that the need for actual attempts at construction of the Kluver device and inter partes tests thereon is greater than in a more widely used type of device.

For the above reasons, priorty of invention of the subject matter involved is hereby awarded to John W. Kluver, the senior party.

U.S. Court of Customs and Patent Appeals

In re John M. Saari and William C. Wiley

No. 7809. Decided November 24, 1967

[— CCPA—; 386 F.2d 909; 155 USPQ 691]

1. Patentability—Obviousness—Crowded Art—35 U.S.C. 103.

"Appellants assert that Benson and Schroeder show that the involved art is a crowded one and urge that 'smaller steps forward are deemed patentable' in such circumstances. However, the criterion on which patentability must be resolved here is obviousness under 35 U.S.C. 103 and, on that basis, we are convinced from the record and arguments that claims 9 and 10 are not patentable."

2. Appeal to U.S. Court of Customs and Patent Appeals—Remand—Reference Cited First Time in Examiner's Answer.

"It is noted that appellants have not discussed the merits of the Van Nostrand reference in their brief. Instead, they refer to a reference, cited for the first time in the Examiner's answer, that 'allegedly shows a magnetic field for the focusing of ions.' They assert that they 'have not had sufficient time to examine the reference' and contend that prosecution should be reopened if the reference is used. We find no merit in this complaint since the reference was cited and referred to by the Examiner and this is not the appropriate time or place to seek reopening of the case."

3. Patentability—Particular Subject Matter—"Mass Spectrometer Beam Definition Device."

The refusal of certain claims in an application entitled "Mass Spectrometer Beam Definition Device," as unpatentable over the prior art, is affirmed.

Appeal from the Patent Office. Serial No. 229,519.

AFFIRMED.

Richard T. Seeger, *Emory C. Naylor*, *James L. O'Brien* for appellants.

Joseph Schimmel (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before Worley, *Chief Judge*, Rich, Smith, and Almond, *Asssociate Judges*, and William H. Kirkpatrick [1]

Almond, *J.*,

This appeal is from the decision of the Board of Appeals affirming the rejection on prior art of claims 9 and 10 of appellants' application [2] entitled "Mass Spectrometer Beam Definition Device." No claim is allowed.

The invention relates to "time of flight" mass spectrometers of the right angle entry type wherein gaseous molecules, which are either received in ionized state or ionized in the spectrometer, are accelerated electrically in a direction perpendicular to their original direction and the accelerated ions are received and measured by means which distinguish them according to their masses. More specifically, the ions are exposed to a pulsed accelerating field so as to be directed toward a collector forming part of a detecting means. The time of arrival of the ions accelerated by each pulse is determined by their respective masses since the lighter ions are accelerated more than those of greater mass. The detecting means operates in synchronism with the accelerating pulses to provide an indication of the relative number of ions of each mass in the beam.

As noted by appellants, the right angle entry feature minimizes the background or stray ions in the output of the spectrometer so that the measurement is a more true representation of the quantity of source particles which it is desired to analyze. Thus stray or background ions are accelerated substantially in the direction of the accelerating field while the source particles are accelerated in a direction which is the resultant of the initial entry velocity and the velocity imposed by the accelerating field and the collector is located in the latter direction.

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Serial No. 229,519, filed October 5, 1962.

Appellants point out that the right angle direction of the accelerating field causes less bending from the original direction of the heavier ions than the lighter ones so that the ions of different masses in the beam directed toward the collector tend to diverge. They state that electric or magnetic fields may be provided to act on the accelerated beam in a direction transverse to the beam to provide a converging force which tends to overcome the divergence and results in a greater proportion of the source particles falling on the collector. In a first embodiment, appellants employ a constant electric field for converging purposes, stating that the heavier particles are deflected more than the lighter particles because such heavier particles are slower and thus are under the influence of the field for a longer time.

In a second embodiment, appellants describe analysis of ionized particles collected from the atmosphere by a satellite. The ionized particles thus have the same speed in their original direction irrespective of their masses. The field for applying a converging force to the ions transverse to their accelerated direction is provided by an electric voltage applied to a pair of deflecting plates. The voltage signal is varied in synchronism with the pulses accelerating the particles so that it increases with time as the ions travel toward the collector during each acceleration period to overcome the divergence which would otherwise occur.

Another embodiment differs from that just described in that the structure for producing the varying electric deflecting field is replaced by means producing a constant strength magnetic field in a direction transverse to the accelerated direction of the ions to produce a similar converging effect thereon.

Claims 9 and 10, respectively, are directed to the aforementioned latter two embodiments and read:

9. An acceleration system for charged particles comprising,
particle accelerating means,
means for conducting charged particles traveling in a first direction towards said particle accelerating means,
substantially all of said charged particles traveling in said first direction having the same speed,
said particle accelerating means having an accelerating field direction other than said first direction for accelerating said charged particles in a resultant direction,
particle receiving means positioned in a path of said resultant direction a predetermined distance from said accelerating means for receiving charged particles traveling only in said resultant direction,
control means situated along the resultant direction for imparting a force to the particles as they pass a distance through said control means to reduce particle divergency and influence said particles to travel a uniform common direction thereby establishing better beam definition,
said control means comprising means for applying an increasing electric field in a direction having components transverse to said resultant direction to apply a correction force to said particles to minimize the divergency of said particles.

10. An acceleration system for charged particles comprising,
particle accelerating means,
means for conducting charged particles traveling in a first direction towards said particle accelerating means,
said particle accelerating means having an accelerating field direction other than said first direction for accelerating said charged particles in a resultant direction,
particle receiving means positioned in a path of said resultant direction a predetermined distance from said accelerating means for receiving charged particles traveling only in said resultant direction,
control means situated along the resultant direction for imparting a force to the particles as they pass a distance through said control means to reduce particle divergency and influence said particles to travel a uniform common direction thereby establishing better beam definition,
said control means comprises means for exerting a constant magnetic field which is in a direction to change the course of the charged particles to cause said charged particles to converge.

The references relied on below are:

Benson et al., 2,938,116, May 24, 1960.
Schroeder, 2,696,561, December 7, 1954.
Van Nostrand's Scientific Encyclopedia, published by D. Van Nostrand Co., Inc., 3rd ed., 1958, pages 1030–1033.

Benson discloses a time of flight mass spectrometer utilizing a right angle entry system. The spectrometer utilizes a deflecting means shown in FIGURE 7 of the patent for applying a converging force on the ions traveling toward the collector. The system comprises two focusing plates across which a constant electrical voltage is applied.

Schroeder discloses certain mass spectrometers wherein time of flight is utilized to distinguish ions of different mass and others which distinguish between different ions by the action of deflection means which focus them at different locations or at the same locations at different times. It discloses the use of electric deflecting fields provided by either a steady uniform voltage or by voltage pulses, magnetic fields which are either constant or variable, and combinations of electric and magnetic fields, including a variable electric field used with a constant magnetic field.

Van Nostrand describes mass spectrometers generally and includes a description of an instrument known as the Aston mass spectometer. In that device, a magnetic field is used to focus an ion beam to produce charge lines on a photographic plate which receives the ion beam.

The issue here is obviousness under 35 U.S.C. 103. Aside from that issue, there is no significant legal question in dispute.

Claim 9 stands rejected on Benson taken in view of Schroeder on the ground that the latter reference would make it obvious to employ a variable electric deflection field in place of the constant field employed in Benson. Claim 10 was rejected as unpatentable over Benson on the ground that it would be obvious to substitute a constant magnetic field for the constant electric field as the ion stream converging means in Benson. The Examiner and the Board both regarded magnetic and electric fields as known equivalents for deflecting charged particles, referring, respectively, to Van Nostrand and Schroeder as supporting that position.

Appellants urge that the Board erred in the rejection of claim 9 because the deflecting plates of Benson et al. are for focusing an ion beam while the deflecting plates in Schroeder are for separating an ion beam and it is not believed that one skilled in the art would be led to two patents of opposing objects to solve a problem. They also urge that Schroeder's disclosure of a great many embodiments would make it difficult for one skilled in the art to select a particular portion of a particular embodiment to combine with Benson. They further contend that "[p]revious systems have used *constant* voltage fields for *constant energy* source particles while this invention uses a *variable* voltage field for convergence of *constant velocity* source particles."

We do not find any significant distinction in this last contenton of appellants. While claim 9 is limited to an arrangement in which substantially all the charged particles are traveling at the same speed when received in the system, the subsequent action of the accelerating field on the particles causes those of different masses to travel at different velocities and it is those very differences in velocity that are utilized for segregating the particles by mass according to their time of arrival at the collector. The issue with respect to claim 9 is simply whether the teachings of Schroeder would make it obvious to a person of ordinary skill in the art to substitute for the means for applying a constant strength electric field in Benson a means for applying an increasing electric field.

In support of the rejection, the Examiner pointed out that Schroeder shows that electrostatic fields impressed on ions in a mass spectrometer to control their deflection may be constant or variable and regarded it obvious that the same is true for control means of the type disclosed by Benson. Nothing is seen in appellants' arguments to controvert that position successfully. It seems apparent that a person of ordinary skill in the art with Schroeder before him would be aware of what differences in deflection effects would be produced by a constant electric field on the one hand and a variable or increasing field on the other and would be qualified to choose between such fields in accordance with the effect desired.

Moreover, the Examiner further specifically suggested that it would be obvious "to employ the variable electrostatic field control means shown in FIGS. 19 and 21 of Schroeder in place of the constant electrostatic field control means 135 (FIG. 7) of Benson et al." The forms of the Schroeder device shown in those two figures apply short voltage pulses to the deflecting plates in synchronism with pulses accelerating the ions initially. Obviously referring to that feature of Schroeder, the Solicitor urges:

> Further, appellants' claims do not specify any particular manner of applying increasing voltage to the deflection means, and no reason has been advanced why a pulsating voltage synchronized with the acceleration pulses as taught by Schroeder would not be suitable.

Observing that appellents have not responded to that argument of the Solicitor and that the terminology of claim 9 is indeed as broad as urged, we conclude that the rejection of the claim on the basis of the substitution of a pulsating deflecting voltage for energizing the deflecting plates of Benson is free of reversible error. Therefore, the decision as to claim 9 is *affirmed*.

Claim 10, being drawn to a different aspect of the invention, raises a somewhat different question. The Examiner stated that "it is well known that magnetic or electrostatic fields are fully equivalent for the purpose of particle deflection," and referred to the Aston mass spectrometer described in Van Nostrand as involving the use of a magnetic field to focus an ion beam. The Board referred to Schroeder as evidence that electric and magnetic fields can be used interchangeably to deflect a beam of charged particles.

We think that each of Van Nostrand and Schroeder would suggest to a person skilled in the art that a constant magnetic field be provided in place of the constant electric field disclosed by Benson for focusing the ions in the beam. Van Nostrand clearly discloses that a magnetic field may be used to focus a beam of ions. While the electric and magnetic fields of Schroeder are used in different systems than that of Benson, the former patent does reveal that the two types of fields can be used to produce similar effects on charged particles.

[1] Appellants assert that Benson and Schroeder show that the involved art is a crowded one and urge that "smaller steps forward are deemed patentable" in such circumstances. However, the criterion on which patentability must be resolved here is obviousness under 35 U.S.C. 103 and, on that basis, we are convinced from the record and arguments that claims 9 and 10 are not patentable.

[2] It is noted that appellants have not discussed the merits of the Van Nostrand reference in their brief. Instead, they refer to a reference, cited for the first time in the Examiner's answer, that "allegedly shows a magnetic field for the focusing of ions." They assert that they "have not had sufficient time to examine the reference" and contend that prosecution should be reopened if the refernce is used. We find no merit in this complaint since the reference was cited and referred to by the Examiner and this is not the appropriate time or place to seek reopening of the case.

[3] The decision of the Board is affirmed.

AFFIRMED.

SMITH, *J.*, concurring in part and dissenting in part.

While I argee with the majority that claim 10, on the record before us, would have been obvious at the time the invention was made under 35 U.S.C. 103, I would reverse the decision of the Patent Office rejecting claim 9 on the same statutory basis. Initially, I believe that additional background material relative to appellants' invention should be set forth, including a discussion of the problem faced by appellants in making this invention, to provide a broader understanding of the basis for my disagreement with the majority.

As appellants state, the invention relates to a mass spectrometer beam definition device which may be used in a constant velocity, "right angle entry" mass spectrometer system. A right angle entry system, which appellants admit is known to the art, is one in which the source particles are introduced into the spectrometer in a direction which is generally normal to the accelerating direction. A purpose of such systems is to minimize the presence of background ions in the detected output of the spectrometer. As appellants' specification states:

> * * * The background ions are accelerated substantially in the direction of the accelerating field while the source particles are accelerated along a direction which is a combination or resultant of the initial entry velocity and the accelerating field and in this manner the two groups may be distinguished by placing a collector only in the resultant direction.

A problem in this art and appellants' solution to the problem is described in the specification in the following terms:

> One difficulty arising in this method of depressing background ions is that the resultant direction of the heavy source particles is slightly different than that for the lighter source particles so that the resultant beam of source particles is divergent. This is undesirable since it makes it more difficult to distinguish from the background ions and also some of the source particles may be lost due to the divergency.
>
> This invention alleviates this problem by applying energy to a deflecting device through which the resultant beam passes in such a manner so as to maintain the beam definition by substantially eliminating the aforementioned divergency.

The appellants have arguably distinguished their device in two respects: (*a*) the nature of the field provided by the deflecting device, and (*b*) the characteristics of the source particles.

As to these distinctions, appellants explain that the deflecting device may provide either an electric or an electromagnetic field through which the beam of source particles passes. To establish a deflecting electric field, a voltage is provided between a pair of parallel plates between which the particles pass on their path to the detector. The characteristics of the applied voltage depend on the characteristics of the entering source particles. Appellants urge that if the energy of the source particles is constant, such as would be the case when particles are obtained from a solid source by heating and sublimation, a constant voltage would maintain the beam definition if the voltage were related to the constant energy. Since the energy of different particles is the same, heavier particles are slower, and lighter particles are faster.

On the other hand, if the source particles have a constant velocity, appellants state, such as would occur if they were obtained by a satellite measuring the atmosphere, a variable voltage across the parallel deflecting plates would maintain beam definition. In this instance, beam definition is provided by higher voltage applied to the deflecting plates as the heavier, slower ions pass between the plates to deflect these ions more than the lighter ions. Both the heavier and lighter ions have, of course, entered the system at the same velocity, but the result of the accelerating field, in a direction normal to the direction of entry, on the speed of the particles differs.

As to the first embodiment, appellants' brief urges that previous systems have used constant voltage fields for *constant* energy source particles while the invention uses a *variable* voltage field for convergency of *constant velocity* source particles. The appellants' choice of this terminology may be somewhat unfortunate since claim 9 asserts in part that:

> * * * said control means comprising means for applying an *increasing electric field* in a direction having components transverse to said resultant direction to apply a correction force to said particles to minimize the divergency of said particles. [Emphasis added.]

In order to grasp more significantly the meaning of this language as used in the claim, it is necessary to consider certain portions of apppellants' specification, as we must under *United States* v. *Adams*. 383 U.S. 39 (1966) where the Supreme Court specifically pointed out. Id. at 48–49, that:

> * * * While the claims of a patent limit the invention, and specifications cannot be utilized to expand the patent monopoly * * * it is fundamental that claims are to be construed in the light of the specification and both are to be read with a view to ascertaining the invention * * *. [Citations omitted.]

Thus, on the characteristics of the voltage applied to the deflecting plates for deflecting the accelerated particles, appellants state:

> * * * The higher energy particles would have a different accelerated direction than the lower energy particles and this can be compensated for by voltage source 42*a* putting a varying voltage on the deflecting plates 41*a*. The voltage is synchronized with the pulses applied to grids 28*a* and 30*a* and *increases with time* as the ions were traveling by *during a single acceleration period*, and the lighter, lesser energy ions do not get as much deflecting voltage as the later heavier, larger energy ions. [Emphasis added.]

* * * * * * *

Thus, reading that portion of the claim pertinent to this discussion in light of the specification, it is clear that the voltage applied to the parallel plates must (1) be synchronized with the pulses applied to the accelerating means to provide the accelerating field and (2) increase with time as the ions pass between the plates during a single acceleration period.

The Examiner, in both his final rejection and his answer on appeal, and the Board itself, seem to have considered claim 9 as defining a *variable* voltage, contrary to the expressed wording of the claim and the explanations of the specification. In his answer the Examiner states:

> * * * claim 9 sets forth the embodiment of FIG. 4 of appellants' drawings which employs a control means comprising a variable voltage applied to the plates to provide a variable electrostatic field. The secondary patent to Schroeder shows that electrostatic fields may be constant (FIGS. 14 to 16) or variable (FIGS. 19 and 21) and may be used alternately to produce the separation of ions. It is obvious that such relationship exists for the control means of the type disclosed by appellants and Benson et al. Therefore, it would be obvious to one of ordinary skill in the art to employ the variable electrostatic field control means shown in FIGS. 19 and 21 of Schroeder in place of the constant electrostatic field control means 135 (FIG. 7) of Benson et al. * * *

The Solicitor's brief describes the Schroeder reference in detail, but as to its teaching of the nature of the voltage to be applied to the deflecting plates, states:

> * * * Also, a pulsating voltage may be applied to electrostatic deflection electrodes to deflect the ions. * * *

The Schroeder patent describes the embodiments on which the Solicitor relies as including a relatively short duration, accelerating pulse applied to the accelerating electrode. A similar deflecting pulse of short time duration and synchronized with the accelerating pulses is described as being utilized to provide selective deflection of ions of a predetermined atomic weight in order that the abundance of such ions may be measured by a target electrode. FIGS. 19 and 21 of the Schroeder patent disclose conventional "square wave" pulse waveforms applied to the deflecting plates. Nowhere in the reference does there appear a teaching that the pulse is an "increasing" pulse to provide an "increasing electric field" as claimed, and as described in the specification as *increasing with time* during a single acceleration period.

It is arguable that the leading edge of any one pulse, as illustrated in Schroeder, as applied to the deflecting plates, may be considered an increasing voltage to provide the claimed "increasing electric field." This position, however, it seems to me, does not meet a reasonable construction of the claim, in the light of the specification which requires that the pulse increase with time during a single acceleration period. It would seem that appellants' contribution to the art, not shown by the references of record before us, is that of providing an *increasing*, rather than an *increased* electric field between the deflecting plates to achieve particle convergence. Such a concept is not taught by the application of a constant magnitude pulse during any one acceleration period, as taught by the Schroeder reference. On this basis, I do not think that claim 9 thus considered as a whole would have been obvious within the meaning of section 103.

The Board stated:

> * * * In our opinion it would be within the skill of the art to feed the plates of the [Benson] reference through a rheostat to obtain any desired voltage between the plates particularly in view of column 8 of Schroeder. Benson et al., modified in this obvious manner, meets the structural limitations of claim 9. (Brackets added.)

I do not think that, within the clear expression of the appellants' terms and disclosure, merely providing a device to meet "structural limitations" of claim 9 meets the statutory requirements for probative inquiry into an issue of obviousness. We deal here with the invention defined by claims construed in the light of the specification. The invention thus ascertained is not, in my view, made obvious by the selection of apparatus in the light of appellants' teachings which may be said to "meet" such "structural limitations."

The critical portion of appellants' combination claim 9 is expressed as a means for performing a specified function, statutorily permitted under 35 U.S.C. 112. It seems that the Board is criticizing the language of the claim, perhaps intimating that the language used is so "broad" that it differs from the references only by the provision of a rheostat. Initially, I observe no teaching in the references that a rheostat would provide the claimed function, nor any teaching that, if provided, a rheostat would be likely to apply an electric field increasing in time during a single acceleration period. Nor does it seem to me that the provision of a rheostat would necessarily minimize the divergency of the particles. Thus, I do not think that appellants' claimed invention as a whole, as claimed in claim 9, would have been obvious to one of ordinary skill in the art at the time it was made. Accordingly, I would reverse the decision of the Board affirming claim 9.

On the other hand, I concur in the majority's affirmance of the decision of the Board as to claim 10 for the reasons stated in the majority opinion.

U.S. Court of Customs and Patent Appeals

IN RE JACK E. CAVENEY

No. 7780. Decided Nov. 24, 1967

[55 CCPA—; 386 F.2d 917; 155 USPQ 681]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—RULE 131 AFFIDAVITS WHICH ARE NOT PART OF THE RECORD.

"We, of course, decline to consider Rule 131 affidavits which are not a part of the record. 35 U.S.C. 144; see *In re Pantzer*, 52 CCPA 1135, 341 F.2d 121, 144 USPQ 415 (1965); *In re Phillips*, 50 CCPA 1223, 315 F.2d 943, 137 USPQ 369 (1963).

2. PATENTABILITY—LOSS OF INTERFERENCE—*In re Risse* CONSTRUED.

"In *Risse*, we decided that only the interference count was properly prior art against the losing party.

3. SAME—REFERENCE—COPENDING PATENT—*Hazeltine Research, Inc.* v. *Brenner* CONSTRUED—35 U.S.C. 102(e) AND 103.

Held, with respect to the decision of the Supreme Court in *Hazeltine Research, Inc.* v. *Brenner*, "The Court there examined the interplay between sections 102(e) and 103 of the patent statute and determined that, for the purposes of section 103, a patent is effective as a prior art reference as of its filing date."

4. SAME—EVIDENCE—COMMERCIAL SUCCESS.

"Utilization of any of these aids [the secondary considerations referred to in *Graham* v. *John Deere Co.*], however, must inevitably await the initial establishment of a nexus between the subtest and nonobviousness. In the Graham case, the Supreme Court found that unsuccessful attempts to solve the problem with which one of the patents in issue dealt were 'wholly irrelevant' when these attempts were made before Livingston, an important reference, became available to the art. In this case, we find an analogous situation. The main issue is whether the Walch reference would have made appellants invention obvious to one of ordinary skill in the art. But appellant's invention was a commercial success before the Walch disclosure was actually available to the trade. Therefore, the failure of those in the trade to make appellant's invention in no way bears on its nonobviousness in view of Walch."

5. SAME—SAME—SAME.

"In short, the Walch duct has all but one of the four or five listed advantages of appellant's invention. The duct which has enjoyed such commercial success embodies the Walch invention as well as appellant's. It seems to us that appellant's commercial success may well be due to those features of his ducts which are covered by the Walch patent and for which priority was awarded Walch. Commercial success, in such circumstances, is no indication of patentability *over* the Walch device."

6. SAME—PARTICULAR SUBJECT MATTER—"WIRING DUCT."

The refusal of certain claims in an application entitled "Wiring Duct" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 325,203.

AFFIRMED.

Petherbridge, O'Neill & Aubel (*Roy E. Petherbridge*, of counsel) for appellant.

Joseph Schimmel (*S. Wm. Cochran*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, and ALMOND, *Associate Judges*, and WILLIAM H. KIRKPATRICK [1]

RICH, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals,[2] adhered to on reconsideration, affirming the Examiner's final rejection of claims 1, 5, 6, 8, and 10–14 of application Serial No. 325,203, filed November 13, 1963, entitled "Wiring Duct." No claim has been allowed.

The wiring duct of the invention is depicted in FIG. 1.

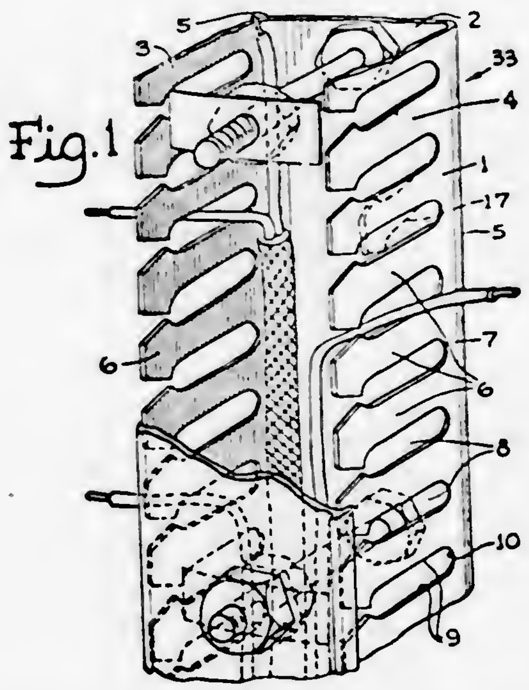

Fig.1

It is chiefly characterized by the flat fingers 6 which are solid pieces the width of which is several times greater than the thickness. The construction makes the fingers quite flexible in the lateral direction, permitting easy and convenient insertion of the wires into the slots 8. It also ensures rigidity in the longitudinal direction, allegedly preventing accidental removal of the wires, once inserted. Each finger is enlarged at its free end so that the open ends of the slots 8 are too constricted for passage of the wires. Wires can be inserted only by lateral deflection of the fingers as shown at 17 in dotted lines.

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Consisting of McCann and Kreek, Examiners-in-Chief, and Angel, Acting Examiner-in-Chief. Examiner-in-Chief McCann wrote the opinions.

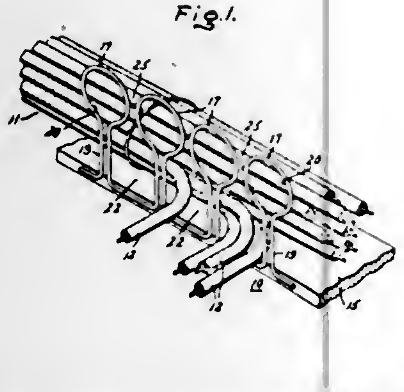
Claim 1 is illustrative.

> 1. A channel-shaped wiring duct, formed of a base and two upstanding sidewalls separated into ribbon-like deflectable fingers, for conveying electrical wire conductors along a predetermined path and allowing distribution of the conductors to a plurality of locations along such path by the lateral deflection of selected ones of said fingers out of the planes of the sidewalls, each of said sidewalls being made of flat thin-walled nonconductive material and having a plurality of parallel slits for receiving the wire conductors, the slits extending from the free edge of the sidewalls toward said base to divide the sidewalls into a plurality of solid ribbon-shaped fingers, side edges on each of said fingers which are substantially parallel throughout the major portion of the finger length, the width of each ribbon-shaped finger in the plane of its sidewall being less than the finger length but several times greater than the finger thickness as measured in a plane transverse to the plane of its sidewall, each of said fingers being substantially rigid to displacement in the plane of its sidewall but exhibiting a leaf-spring action so as to be readily deflectable laterally out of the plane of its sidewall to accommodate the insertion of the conductors into said slits and their removal therefrom, a projection in the plane of the sidewall extending from at least one of the parallel edges of each finger near its free end, a succession of restricted throats formed by said projections each located at the entrance of one of the slits, said projections serving to tend to block the passage of wire conductors having a diameter larger than the throat width until an adjacent finger is deflected laterally out of the plane of its sidewall.

The Examiner cited the following patents:[3]

Cruser, 2,082,099, June 1, 1937.
Walch, 3,024,301, Mar. 6, 1962 (filed 10-5-55).

Walch describes the wiring support shown below. Slots 22 are formed between flexible wire loops 17.

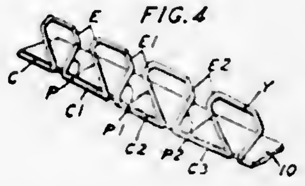


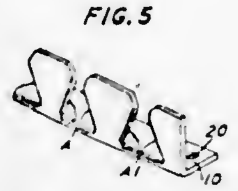
Walch discloses that his loops prevent accidental displacement:

> In accordance with my invention, the arms 17 are so located that the distance between adjacent loop portions 20 is less than the diameter of the circuit wires in the bundle. As a result, the circuit wires are effectively retained in the space 22 and prevented from being accidentally displaced therefrom during the wiring operation. The segments 19 have a moderate degree of resilience so that wires leading off from the bundle can be slipped between the loop portions 20 and into the space 22 if sufficient force is applied to the wire to displace the loops, or if the loops are otherwise displaced. Permitting the wires to enter the space 22 in this manner is especially advantageous in that it obviates the need for threading wires through the opening, which, as previously stated, is a tedious, time-consuming process. Threading is also disadvantageous because it tends to abrade the insulation of the circuit wires.

The Walch patent and a parent of the application on appeal were in an interference. Walch was awarded priority.

Cruser shows wire supports in his FIGS. 4 and 5, reproduced below, the throats (E, E1, E2) of which do not inhibit removal or insertion of wiring as do those of Walch or appellant.





The Examiner rejected appellant's claims as obvious within the meaning of 35 U.S.C. 103 in view of Walch and Cruser:

> To form the fingers * * * of Walch * * * of solid cross section as suggested by Cruser in FIGURE 5 would be obvious. Cruser teaches that the sidewalls through which the wire emerge[s] may be formed of wire loops (FIG. 4) or solid cross section (FIG. 5). In view of this teaching of Cruser, it is submitted that it would be obvious to form the fingers of Walch of solid cross section. Walch clearly discloses * * * that his loops 20 prevent accidental displacement of the wires during the wiring operation. Thus, if there is any difference in the hold power of the fingers defined in the appealed claims, it is a difference in degree rather than kind.

Appellant submitted his own affidavit and that of one of his customers attesting to the unobviousness and commercial success of his invention. The affidavits describe the methods of wiring control panels before appellant's invention. These included the "flat wiring" method in which the electrical wire conductors were routed to have a minimum of crossovers and to lie flat beside each other on a supporting surface, the "bundling" method in which the wires were gathered together in a bundle and laced with twine, and the method of running wires along troughs or raceways and threading the wires through holes in the troughs. The disadvantages of each of these are outlined. Appellant's affidavit, for instance, stated:

> * * * in the "flat wiring" method a large amount of space was needed to position the wires and the initial position of the wires had to be carefully planned to assure a minimum number of crossovers, and if one or more wires were incorrectly routed a total rearrangement of the wire routing was often necessary. In the "bundling" method the lacing could not be done until the entire wiring operation was completed, and bundles of loose wires were difficult to work with. When using the troughs, the wires had to be threaded through the holes in the troughs and the insertion and removal of the wires was time consuming.

Commercial acceptance was described as almost immediate. Appellant listed sales data for the first three years in which his invention was marketed: 1956 (9 months), $14,800; 1957 (full year), $99,000; and 1958 (full year), $170,000.

Both customer and appellant gave as their opinion that the references of record did not make the invention obvious.

Appellant also introduced the affidavit of Walch,[4] the inventor of the principal reference. Walch recounts that his thoughts, during the development of his wiring support, did indeed touch lightly on the use of solid fingers, but, being cognizant of a number of disadvantages associated with solid fingers, he refused to be distracted from his open-work grill. He further avered:

> THAT, prior to the time of filing my application I was aware of Cruser Patent No. 2,082,099, and that I could see no reason to alter or modify the structure of my application in view of Cruser * * *.

The Examiner seemed to feel that the opinions on unobviousness in each of the affidavits could safely be ignored. He dismissed the evidence of commercial success with the shibboleth that such evidence may be used only to resolve a doubt about patentability and not to create one.

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[3] The Examiner also cited in his final rejection the periodical Electrical Manufacturing for March ~~1953, p. 150.~~ A subsequent amendment, however, makes discussion of that reference unnecessary.

[4] The Walch patent which had been assigned to the General Electric Company was subsequently purchased by appellant.

The Board generally agreed with the Examiner, adding only the comments that the Walch affidavit did not allege any knowledge of the Cruser *disclosure* and that all of the affidavits had been considered as evidence of unobviousness but were surely not conclusive on the point.[5]

Appellant's argument is twofold. He argues first that Walch is not a proper prior art reference. He must, of course, recognize that the Walch filing date is earlier than his own. But he bases his argument on the fact that he is *able* to prove a date of invention earlier than the Walch filing date. However, he did not do so.[6] Appellant feels he should be excused from making his proof since, in this case, it would have been futile. The Patent Office, appellant argues, would merely have cited the line of cases holding the disclosure of the prevailing patent[7] to be prior art against the losing party and would have ignored whatever affidavits he submitted. In appellant's opinion, the Patent Office would have been correct in so doing until the Supreme Court, in *Hazeltine Research, Inc.* v. *Brenner*, 382 U.S. 252, 147 USPQ 429 (1965), forbade the use of any patent as prior art *until* its filing date.

This case must be decided on the record appellant chose to make. He has, in effect, asked us to reverse the Board of Appeals for an error he assures us it would have made had he only given it the opportunity. Our jurisdiction does not extend so far. The Walch reference is good prior art even under appellant's view of *Hazeltine*.

[3] We do not mean to imply that we see any merit in appellant's analysis of *Hazeltine*. The Court there examined the interplay between section 102(e) and 103 of the patent statute and determined that, for the purposes of section 103, a patent is effective as a prior art reference as of its filing date. There was no issue before the Court on the effect of an interference on the subsequent prosecution of the losing party's application. We reject the notion that the law in this area was in any way affected.[8]

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[5] Appellant criticizes the consideration of his affidavits. The Board's evaluation of them was sound. We need not, therefore, disturb the rejection on that account.

[6] Appellant does point to certain allegations in the affidavits referred to above which purportedly show appellant's earlier date of invention. There is no argument that these even colorably comply with Rule 131 of the Patent Office Rules of Practice. Appellant has also submitted other affidavits with an application which is a continuation of the one on appeal. For our convenience he has included copies of these in his brief in this appeal. **[1]** We, of course, decline to consider Rule 131 affidavits which are not a part of the record. 35 U.S.C 144; see *In re Pantzer*, 52 CCPA 1135, 341 F.2d 121, 144 USPQ 415 (1965); *In re Phillips*, 50 CCPA 1223, 315 F.2d 943, 13 USPQ 369 (1963).

[7] Under our cases this may have been quite proper until *In re Risse*, 54 CCPA —, 378 F.2d 948, 154 USPQ 1 (1966). **[2]** In *Risse*, we decided that only the interference count was properly prior art against the losing party. Appellant also relies on *Risse* to show the unavailability of the Walch reference. We note that the Examiner's answer contained this statement:

> The appellant's copending application Serial No. 569,159, of which this instant application is a continuation, was in an interference with the application of Walch, the prevailing party, from which matured the Walch Patent No. 3,024,301. The count of such interference is now claim 5 of the Walch patent and such claim 5 of Walch is not limited to sidewalls having any particular construction. From this point of view, appellant's claims 1, 5, 6, 8 and 10–14 are not patentable over Walch's claim 5 taken with Cruser under 35 U.S.C. 103. It would be obvious to make the sidewalls of Walch's claim 5 of solid cross section as suggested by Cruser (Fig. 5) as explained above.

Appellant's reply observed:

> The Examiner has now apparently stated a new ground of rejection of claims 1, 5, 6, 8 and 10–14; that is, that the foregoing claims are unpatentable over Walch's claim 5 taken with Cruser under 35 U.S.C. 103.

We think it clear that there is no *Risse* issue in this case. The reference is available under § 102(e). Even if it were not, *Risse* would not help appellant since a rejection on the interference count is in the record.

[8] Appellant does not appear to argue that *Risse* and *Hazeltine* are inconsistent. We would assume, then, that he accepts the propriety of the rejection on the interference count. See note 7, supra.

Appellant's secondary line of argument concedes the applicability of the Walch reference but finds the invention patentable nonetheless. We cannot agree.

The only operative difference between the Walch structure and appellant's invention is in the latter's solid fingers. The Cruser showing of the interchangeability of solid and loop finger construction, in what is at least a closely related art, provides strong support for the obviousness rejection. While we agree with appellant that there are distinctions between Cruser's device and his invention, we do not see that they make the rejection less tenable.

Appellant, however, insists that his affidavits attesting to the unobviousness and commercial success of his invention have not been given their proper weight. Our earlier allusion to the efficacy of opinion affidavits on unobviousness is, we believe, sufficient for that point. We do think that appellant's commercial success should not have been brushed aside without a careful analysis of its relevancy.

The role of commercial success in the general plan of the 1952 Act has recently been commented upon by the Supreme Court:

> Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquires may have relevancy.

Graham v. *John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966).

In short, commercial success may be looked to in those circumstances in which it may fairly be an indication of the obviousness or nonobviousness of the invention. In such cases, the Court observed, the subtests of nonobviousness, commercial success and long felt need,

> * * * do focus attention on economic and motivational rather than technical issues and are, therefore, more susceptible of judicial treatment than are the highly technical facts often present in patent litigation. * * * Such inquiries may lend a helping hand to the judiciary which, as Mr. Justice Frankfurter observed, is most illfitted to discharge the technological duties cast upon it by patent legislation. * * * They may also serve to "guard against slipping into use of hindsight," * * * and to resist the temptation to read into the prior art the teachings of the invention in issue.

Id. at 35–36, 148 USPQ at 474.

[4] Utilization of any of these aids, however, must inevitably await the initial establishment of a nexus between the subtest and nonobviousness. In the *Graham* case, the Supreme Court found that unsuccessful attempts to solve the problem with which one of the patents in issue dealt were "wholly irrelevant" when these attempts were made before Livingston, an important reference, became available to the art. In this case, we find an analogous situation. The main issue is whether the Walch reference would have made appellant's invention obvious to one of ordinary skill in the art. But appellant's invention was a commercial success before the Walch disclosure was actually available to the trade. Therefore, the failure of those in the trade to make appellant's invention in no way bears on its nonobviousness in view of Walch.

It is also worth noting that the affidavits of Luc and appellant list advantages in the use of the invention as quicker and cheaper installation, easier insertion and location of the wires in the duct, easier removal of the wires whenever necessary and better holding against accidental removal. Luc summarizes:

> THAT, the Caveney duct with solid fingers possessed many of the advantages of the Walch open finger grille and, in addition, affords easy insertion of the wiring while preventing such accidental removal of the wiring * * *.

Appellant's affidavit also states:

> THAT, since the Walch patent was a valuable contribution to the art and covered the Caveney duct that I was selling, I purchased this Walch patent from the assignee, the General Electric Company, and now own the Walch patent under which General Electric Company reserved a nonexclusive license.

[5] In short, the Walch duct has all but one of the four or five listed advantages of appellant's invention. The duct which has enjoyed such commercial success embodies the Walch invention as well as appellant's. It seems to us that appellant's commercial success may well be due to those features of his ducts which are covered by the Walch patent and for which priority was awarded Walch. Commercial success, in such circumstances, is no indication of patentability *over* the Walch device.

The decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

RICHARD F. DYER *v.* FREDERICK C. FIELD, JR.

No. 7815. Decided December 14, 1967

[55 CCPA —; 386 F.2d 466; 156 USPQ 85]

1. INTERFERENCE—BENEFIT OF FILING DATE OF PARENT APPLICATION—LIMITATION IN COUNT NEED NOT BE DISCLOSED IN HAEC VERBA.

"The Examiner properly recognized that the count limitations 'interwoven' and 'extending through' need not be set forth *in haec verba* in the disclosure relied upon. In *Binstead* v. *Littmann*, 44 CCPA 839, 242 F.2d 766, 113 USPQ 279, we stated: * * * 'It is sufficient if, as in this case, the specification is so worded that the *necessary and only reasonable* construction to be given the disclosure by one skilled in the art is one which will lend clear support to each positive limitation in the interference count.' "

2. SAME—SAME—CONSTRUCTION OF DISCLOSURE.

"We do not think, merely because the core filaments are broadly disclosed by Field's 1954 [parent] specification to be distributed 'throughout' the product, the excess yarn is necessarily *interwoven* with the core yarn or extends *through* it at a number of random locations as required by the count. While the quoted language of the 1954 specification could be construed as synonymous with the count limitation, it seems to us that, as Dyer points out, it is also consistent with a product in which the loops of the excess yarn are *wrapped around* the core yarn, rather than extending *through* it, at random points along its length."

APPEAL from the Patent Office. Interference No. 91467.

REVERSED.

Andrew E. Taylor, William R. Hinds (*Roberts B. Larson, Larson and Taylor*, of counsel) for appellant.

William B. Gridlin, Jr., A. Newton Huff, James T. Corle for appellee.

Before WORLEY, *Chief Judge*, RICH, SMITH, and ALMOND, *Associate Judges*, and WILLIAM H. KIRKPATRICK [1]

WORLEY, *Chief Judge*, delivered the opinion of the court.

The sole issue raised by Dyer [2] in his appeal from the decision of the Board of Patent Interferences awarding priority of invention to Field [3] is whether, as the Board held Field is entitled under 35 U.S.C. 120 to rely upon the 1954 filing date of his parent application to establish priority with respect to the subject matter of the single count:

> 1. A bulky yarn comprising a separate core yarn and separate excess yarn *interwoven* back and forth in said core yarn, said excess yarn at a number of random points *extending through* said core yarn and forming a multitude of elongated loops on the outside of said core yarn, said finished yarn having an increase of denier of greater than 50% over the combined denier of the untreated core and excess yarn. [Emphasis supplied.]

The product is illustrated diagrammatically in FIGS. 1 and 2 of Dyer's application.

Fig. 1

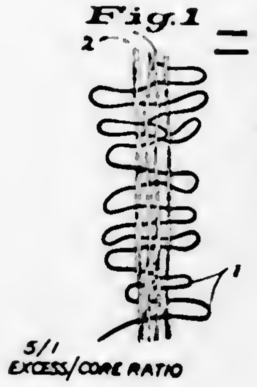
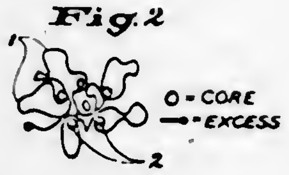


Fig. 2



The record shows that the bulky yarn product defined by the count is made by feeding the "core" yarn into an air jet at a rate slightly faster than it is removed, while feeding the "excess" yarn into the same jet at a rate substantially faster than it is removed. The slight "overfeed" of the "core" yarn, coupled with the turbulence of the air stream in the jet, causes the core filament bundle to open up or "bloom" without forming convolutions, thus permitting the "excess" yarn to penetrate in and out of the "core" yarn as the "excess" yarn filaments form loops as a result of their excessive overfeed. The "core" yarn serves as a stress-bearing member in the final product, whereas the "excess" yarn provides the bulk.

The controversy finds its genesis in whether the 1954 Field specification contains a "written description" [4] of a bulky yarn having the structure defined by the count limitations to which we have added emphasis above, viz, whether that application discloses that the product consists of separate "excess" yarn *interwoven* back and forth in the "core" yarn, *extending through* it at a number of random points, as well as whether it adequately describes the "manner and process of making" that product.

Some background as to the disclosures of the 1959 and 1954 Field applications, with reference to the drawings common to each, will facilitate understanding of the issue involved.

Both Field applications disclose a number of different bulky yarn embodiments and techniques for obtaining them. In a first embodiment common to both applications, "excess" yarn 1 alone is supplied from package 6 to air jet 9 (FIG. 1) at a feed rate substantially greater than that at which it leaves the jet. According to the specification, turbulence in the air jet forms a multitude of elongated loops extending from the central region of the yarn, as illustrated in FIG. 4. The bulked yarn is subsequently twisted and wound on bobbin 17. No separate stress-bearing core yarn is incorporated with the bulked excess yarn.

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Dyer is involved on application Serial No. 752,067, filed July 30, 1958, as a continuation-in-part of Serial No. 544,886, filed November 4, 1955.

[3] Field is involved on application Serial No. 790,789, filed January 30, 1959 as a continuation-in-part of Serial No. 450,075, filed August 16, 1954.

[4] In *Swain* v. *Crittendon*, 51 CCPA 1459, 332 F.2d 820, 141 USPQ 811, we pointed out that, where an applicant contends that he is entitled to rely upon one or more previously filed applications under §120, the previously filed application(s) must comply with the first paragraph of 35 U.S.C. 112, which reads:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

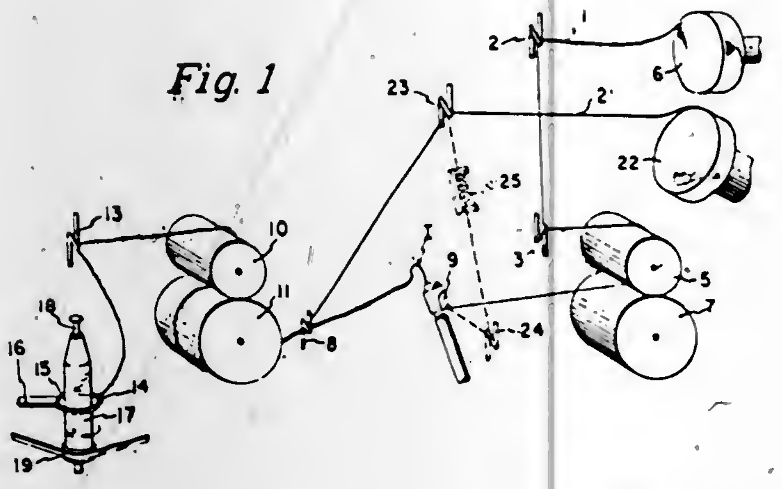

Fig. 1

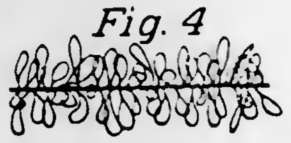

Fig. 4

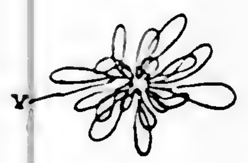

Fig. 5

In a second embodiment common to both applications, a stress-bearing "core" yarn 21 is supplied from package 22 and combined or plied at pigtail 8 with the bulked "excess" yarn *after* the latter emerges from the jet. The combined yarns are wound on bobbin 17 at the same rate at which the "core" yarn is supplied. The resultant product, illustrated in FIG. 5, is described as having loops "completely about" the body of the "core" yarn.

Field does not assert that either of the above two embodiments of his applications provides a product satisfying the limitations of the count in controversy. Rather, he relies here, as below, on the "broken line" modification depicted in FIG. 1. As the description of that modification appearing in the 1959 application is greatly expanded when compared with that appearing in the 1954 application, it will be helpful to discuss the two disclosures separately.

The 1959 application describes a "particularly desirable" third product, characterized by high bulk and stability under tensile strength, in which the "core" yarn and "excess" yarn are held together by an "entanglement" between the filament elements of the two yarns. To make that product, Field discloses that the "core" yarn and "excess" yarn are both fed to the air jet in a particular manner, the tension of the "core" yarn being controlled in a manner to prevent formation of convolutions or loops therein yet permit the "core" yarn to open up to receive the looping "excess" yarn. In referring to the "broken line" modifications of FIG. 1, Field states:

> If desired, the operator may feed the core yarn into the jet along with the yarn to be convoluted into the described configuration. This path for the core yarn (shown as a dashed line in FIGURE 1) requires sufficient tensioning, conveniently provided by gate tensioner 25 interposed between pigtails 23 and 24, to prevent convolution of this component by action of the jet, *but low enough to permit opening of the core bundle to entangle with the effect system*. Early combination of the two components not only minimizes separate accumulation of like static charges otherwise sufficient to hinder introduction of the filamentary core but also facilitates distribution of the core filaments throughout the product, making for desirable uniformity. [Emphasis supplied.]

Some 17 examples relating to the procedure required to make that product are provided by Field in his 1959 application. In all but one the speeds at which the "excess" and "core" yarns are fed to the jet are substantially greater and slightly greater, respectively, than the windup speed. The yarn made in accordance with that procedure does not appear to be illustrated in the 1959 application.

The sole disclosure in the 1954 application relating to the "broken line" modification of FIG. 1 is a somewhat truncated version of the paragraph reproduced above from the 1959 application:

> If desired, the operator may feed the core yarn into the jet along with the yarn to be convoluted into the described configuration. This path for the core yarn (shown as a dashed line in FIGURE 1) requires sufficient tensioning, conveniently provided by gate tensioner 25 interposed between pigtails 23 and 24, to prevent convolution of this component by action of the jet. Early combination of the two components not only minimizes separate accumulation of like static charges otherwise sufficient to hinder introduction of the filamentary core but also facilitates distribution of the core filaments throughout the product, making for desirable uniformity. Upon emergence from the jet the composite yarn is wound up in the usual manner.

Unlike the 1959 application, the 1954 application makes no explicit reference to any "entanglement" between the "core" yarn and "excess" yarn. Nor does that specification include mention of the fact that tensioning of the "core" yarn must be "low enough to permit opening of the core bundle to entangle with the effect system." Nor does the 1954 application include the 17 examples appearing in the later application.

Dyer does not contend here that the description of the bulky yarn in Field's 1959 application is insufficient to satisfy the limitations of the count, nor does he question whether that application adequately describes how to make that product. Dyer asserts, however, that, in view of the differences between the two Field applications, as summarized above, it is "indeed remarkable" that the Board stated that, with one exception not pertinent here, it "noted no essential difference between the field 1954 and 1959 applications."

The Board appears to have adopted the Examiner's findings on the present issue in toto, adding but little explanatory comment of its own. The Examiner, in turn, agreed with Field that the disclosure of his 1954 application satisfied the limitations of the count in controversy here, stating:

> * * * It is contended by the party Field that although the word "interwoven" or the words "extending through" are not used in describing the structure of the excess yarn, both the parent and continuation-in-part applications of Field support each of the limitations recited in the count. * * * An examination of the disclosure of the applications of Field reveals the statements "Early combination of the two components * * * facilitates distribution of the core filaments throughout the product, making for desirable uniformity" * * * and "the loops are not spaced at regular intervals along the lengths of filament but appear instead to occur at random, frequently overlapping one another" * * *. The sig-

nificance of these statements is made even clearer by reference to FIGURES 4 and 5 of the drawings. Interpreting the meaning of the word "interwoven" [5] and the phrase "extending through said core yarn" in light of the dictionary definition, the specifications and drawings of the Field applications, it must be concluded that these limitations of the count find proper support in each of the applications. * * *

The Examiner was of the view that Field's process "would permit the core structure to readily open in the turbulent zone to receive the filaments of the excess component as illustrated in FIGS. 4 and 5 of Field."

[1] The Examiner properly recognized that the count limitations "interwoven" and "extending through" need not be set forth *in haec verba* in the disclosure relied upon. In *Binstead* v. *Littmann*, 44 CCPA 839, 242 F.2d 766, 113 USPQ 279, we stated:

> * * * It is sufficient if, as in this case, the specification is so worded that the *necessary and only reasonable* construction to be given the disclosure by one skilled in the art is one which will lend clear support to each positive limitation in the interference count.
>
> * * * Early combination of the two components * * * facilitates distribution of the core filaments throughout the product, making for desirable uniformity. * * *

The question remains what "necessary and only reasonable" construction is to be given the 1954 Field specification language so heavily relied upon by the Examiner and Board below and Field here.

[2] We do not think that, merely because the core filaments are broadly disclosed by Field's 1954 specification to be distributed "throughout" the product, the excess yarn is necessarily *interwoven* with the core yarn or extends *through* it at a number of random locations as required by the count. While the quoted language of the 1954 specification could be construed as synonymous with the count limitations, it seems to us that, as Dyer points out, it is also consistent with a product in which the loops of the excess yarn are *wrapped around* the core yarn, rather than extending *through* it, at random points along its length. To be sure, the Examiner relied upon the drawings of Field to support his construction of the count and specification language. But those drawings provide no support whatsoever for the Examiner's interpretation of the Field disclosure, for they do not purport to illustrate a product in which excess yarn is interwoven with a core yarn, extending *through* it at random locations. Indeed, as observed earlier, FIG. 5 illustrates a product in which the excess yarn *is* wrapped around the core yarn, with no apparent opportunity for the core yarn to open to allow excess yarn filaments to pass through it, while FIG. 4 illustrates a product containing no separate core yarn at all.

A consideration which reinforces our conclusion is the fact that Field's 1954 specification nowhere mentions the need for, or the result of, control of tension of the core yarn to "permit opening of the core bundle" that results in the type of entangling with the excess yarn described in his 1959 application. Absent such a disclosure, or a disclosure of the rate of core yarn feed being sufficiently greater than the wind-up rate whereby the core yarn may open to permit the looping excess yarn to extend through it,[6] we cannot say, with the degree of certainty required in cases of this kind,[7] that the necessary and only reasonable interpretation of Field's 1954 specification, considered in its entirety, is that it provides a "written description" of the invention and of the "manner and process" of making it. With due respect for the Board's position, on the record before us we conclude that the Examiner and Board clearly erred in finding support for the count limitation therein. Accordingly, we are obliged to reverse its decision.

REVERSED.

RICH, *J.*, concurs in the result.

KIRKPATRICK, *J.*, dissents.

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[5] Earlier, the Examiner had noted: * * * the word "interweave" is defined in Webster's New International Dictionary, second edition, as follows: "1. to weave together; to intermix or unite in texture or construction; to intertwine; 2. to intermingle."

[6] It is of more than passing interest to observe that the Examiner denied the motion of a third party to dissolve the interference as unpatentable over the following disclosure of Breen Patent No. 2,852,906, directed to forming a bulky yarn by passing two separate groups of filaments into an air jet:

> * * * Stress-bearing filaments can also be used to provide stability, e.g., unbulked filaments can be plied with bulked yarn, or some of the filaments passing through the air jet can be kept under such tension that little or no bulking of these stress-bearing filaments occurs. That is, a group or bundle of filaments can be fed to the air jet at a lower rate, e.g., at substantially the speed of the wind-up device, than the rest of the filaments, thereby keeping such group of filaments under tension and preventing the formation of loops therein.

The Examiner stated:

> * * * the quoted passage of the Breen patent fails to indicate that the tension of the slower fed filaments is such as to permit them to open and separate for penetration by the excess yarn filaments. Therefore, the disclosure of the limitations of the count "interwoven" and "extending through said core yarn" in the Breen patent is not to be found and is at best conjectural. * * *
>
> * * * * * * *
>
> The argument of the * * * [third party] is based entirely on the premise that the statement that a "little" bulking of the stress-bearing filaments may occur inherently permits sufficient opening and separation of these filaments for penetration by the filaments of the excess yarn. The conclusion does not necessarily follow as the intensity of the air turbulence and the yarn tension required to permit a little bulking of these filaments is much different than that required to open and separate them sufficiently to permit penetration by the filaments of the excess yarn.

It seems to us that the Examiner's pertinent comments as to the adequacy of the Breen disclosure are of equal applicability to the disclosure of the 1954 Field application which, as phrased, does not expressly permit a "little bulking" of the core yarn.

[7] As stated in *Brand* v. *Thomas*, 25 CCPA 1053, 96 F.2d 301, 37 USPQ 505:

> * * * Lack of clear disclosure is not supplied by a speculation as to what one skilled in the art might do or might not do if he followed the teaching of the inventor. The disclosure should be clearer than to suggest that one skilled in the art *might* construct the device in a particular manner. * * *

U.S. Court of Customs and Patent Appeals

IN RE ERNST BARTHOLOMÉ, ERWIN LEHRER AND FRIEDRICH WILHELM SCHIERWATER

No. 7812. Decided December 7, 1967

[55 CCPA —; 386 F.2d 1019; 156 USPQ 20]

1. APPLICATION—DISCLOSURE—SUFFICIENCY OF DISCLOSURE—RULE 71(b)—35 U.S.C. 112.

"The only issue, then, is whether the earlier applications comply with section 112, the parent U.S. and German applications having the same disclosure. We do not understand any distinction to be urged in this case between the requirements of Rule 71(b) and the provisions of the statute on which it is based. See *In re Gay*, 50 CCPA 725, 309 F.2d 769, 135 USPQ 311 (1962). It is clear that the Examiner and the Board both thought the examples ought to be more complete. It is somewhat less clear what criteria of completeness they would apply. There is more than a hint that beyond a recital of the manipulative steps necessary to practice the invention, Rule 71(b) requires, in the examples, some data on which to base an evaluation of its usefulness. We think that this would involve a misapplication of the rule. See *Patterson* v. *Hauck*, 52 CCPA 987, 341 F.2d 131, 144 USPQ 481 (1965); *In re Gay*, supra; *Kollsman* v. *Ladd*, 226 F.Supp. 186, 140 USPQ 309 (D.D.C. 1964). The specification is sufficient in this regard when it enables a person skilled in the art to which it pertains to practice the invention. 35 U.S.C. 112.

2. PATENTABILITY—UTILITY—PROOF MAY BE REQUIRED.

"*Held* that the Examiner may "call for *Proof* of utility in appropriate cases," citing *In re Pottier*, 54 CCPA 1293, 376 F.2d 328, 153 USPQ 407 (1967).

3. APPLICATION—DISCLOSURE—SUFFICIENCY OF DISCLOSURE—SOME EXPERIMENTATION TO PRACTICE INVENTION PERMISSIBLE.

In connection with a contention that "extended experimentation" would be necessary to practice the disclosed invention, *Held* that "Some, of course, is entirely permissible," citing *Minerals Separation, Ltd.* v. *Hyde*, 242 U.S. 261 (1916).

4. SAME—SAME—SAME.

"* * * we do not find it inconsistent with the algebraic expression [to urge that the desired value for *a* is *inherently* produced by given values for (P_W), (P_D), and (*d*)]. We understand the invention to require the selection of the three independent process variables, P_W, P_D, and *d* so that the value of the algebraic expression $(P_W : P_D) \cdot (d : a)$ is a number between one and fifteen. The expression purports only to define a special relationship necessary to effect the purposes of the invention. It could not affect the basic limitations of the dependent variable, *a*.

APPEAL from the Patent Office. Serial No. 95,678.

REVERSED.

Marzall, Johnston, Cook & Root, Richard L. Johnston, Herbert B. Keil, Matthew C. Thompson for appellees.

Joseph Schimmel (*S. Wm. Cochran, Leroy B. Randall*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, and ALMOND, *Associate Judges*, and WILLIAM H. KIRKPATRICK [1]

RICH, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals,[2] adhered to on reconsideration, affirming the Examiner's rejection of claims 3 and 4 in application Serial No. 95,678, filed March 14, 1961, entitled "Production of Acetylene by Thermal Cracking of Hydrocarbons." No claim has been allowed.

The invention is an improvement in the method of cooling the acetylene product of a thermal cracking process. In such a process, the rapid cooling of the reaction gases is an important step. Rapid cooling is essential to prevent the loss of acetylene and to limit the production of carbon black. It may be advantageously effected by injecting into those gases, which are in a rapidly moving stream, a spray of water, dispersed as finely as possible, to provide a large surface area for the rather substantial heat transfer necessary in a commercial process. However, it is difficult to impart sufficient speed to the fine water particles of a spray to permit them to penetrate a swiftly moving stream of gases. The result is that the middle of the stream of gas is quenched later than its outer portions. In the improvement proposed by appellants this difficulty is obviated by the use of fine sprays to cool the edges of the gas stream and solid jets of water to cool the central part of it. The jets of water, if injected in accordance with the invention, are broken into fine particles *after penetration* of the gas stream by the force of that stream. Thus, without a sacrifice of surface area, the difficulties of the earlier cooling methods are avoided.

The effectiveness of appellants' process depends on the maintenance of a relationship among process variables, which are set forth in the claims, such that the numerical value of the following expression is between 1 and 15: $(P_W : P_D) \cdot (d : a)$ wherein

P_W=water pressure prior to the outlet openings of the water nozzles
P_D=dynamic pressure of the gas
a=depth of penetration of the water jets
d=diameter of the water jets.

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Consisting of Examiner-in-Chief Lidoff and Acting Examiners-in-Chief Gaston and Behrens The latter wrote both opoinions.

The following are the only claims in the case:

3. An improvement in a process for the production of acetylene by the thermal cracking of hydrocarbons wherein said acetylene is rapidly cooled in a quench zone which comprises: passing a current of said acetylene from a cracking zone into said quench zone, and thereafter cooling said acetylene by injecting a plurality of compact jets of liquid into said current, said jets of liquid being supplied laterally to said current of acetylene under varying pressure heads to insure that substantially an entire cross-section of the current is contacted by said liquid, whereby said jets of liquid are split up into fine droplets by the current and the acetylene is thereby rapidly cooled the dynamic pressure (P_D) of the gas stream, the depth of penetration (*a*) of the water into the gas stream, the diameter (*d*) of the jets, and the water pressure (P_W) prior to the outlet openings being selected so that the numerical values of $(P_W : P_D) \cdot (d : a)$ lie between 1 and 15.

4. An improved process as in claim 3 wherein atomized water is also passed into the quench zone so that the current of acetylene is surrounded by droplets of water.

Appellants' application is a continuation-in-part of U.S. application Serial No. 748,809, filed July 16, 1958, for which they claimed the benefit of the filing date of a corresponding Germany application, August 3, 1957, under 35 U.S.C. 119. Serial No. 748,809 was rejected by the Examiner for an inadequate disclosure. The examples set forth in the specification did not show the depth of penetration of the liquid into the product stream, (*a*), nor did they indicate which value between 1 and 15 was equivalent to the algebraic expression of the claims. An attempt was made to supplement the examples by an amendment but it was rejected as new matter. Appellants then filed this continuation-in-part, adding the missing data to the examples. They continued to claim the benefit of the German filing date.

Certain prior art was cited by the Examiner, and although subsequent to the German filing date, was made the basis of his final rejection "on the ground that when a parent application is fatally defective and abandoned, applicants are not entitled to rely on the date of this application in a second application filed to supply this deficiency." The Examiner elaborated:

> 35 U.S.C. 120 clearly requires that the invention must be "disclosed in the manner provided by the first paragraph of section 112 of this title." In like manner 35 U.S.C. 119 permits the benefit of an earlier filing date in a foreign country and has the "same effect as the same application would have if filed in this country."
>
> Accordingly, the only issue in this regard is whether or not the disclosure in applicants' foreign application, which corresponds to that in applicants' parent application, complies with 35 U.S.C. 112. In other words, was the Examiner's rejection in applicants' parent application proper.[3]

And he thought it was proper. He said:

> Applicants are relying on a particular algebraic relationship, which is alleged to be *critical*. This relationship contains five variables, i.e. P_D, P_W, *d*, *a* and a value between 1 and 15. Yet, not a *single* example was disclosed showing that a single value for each of these variables yielded the desired result. Thus, it was

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[3] The pertinent statutes, in relevant part, read as follows:

§ 112. Specification

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

* * * * * * *

§ 120. Benefit of earlier filing date in the United States

An application for patent for an invention disclosed in the manner provided by the first paragraph of section 112 of this title in an application previously filed in the United States by the same inventor shall have the same effect, as to such invention, as though filed on the date of the prior application, if filed before the patenting or abandonment of or termination of proceedings on the first application or on an application similarly entitled to the benefit of the filing date of the first application and if it contains or is amended to contain a specific reference to the earlier filed application.

> not even shown that the conditions in the examples produced the required value of the algebraic expression.
>
> * * * Since it is not known what values were used in the examples, it is not apparent that the result obtained was due to the algebraic relationship. It would appear that such a disclosure is not within the meaning of 35 U.S.C. 112.

The Board noted the acknowledgement in the application of two other patents of the appellants, the British and Austrian, each concededly a statutory bar to the application on appeal if the benefit of the German filing date were disallowed. Accordingly the Board entered a new rejection under Rule 196(b) based on those patents. On the crucial issue of the adequacy of the earlier applications, the Board agreed with the Examiner:

> * * * the disclosure of appellants' prior application was not adequate under 35 U.S.C. 112 and Rule 71(b). Although appellants' applications made an algebraic expression an important or critical feature of the asserted invention in application Serial No. 748,809, appellants' descriptions of specific embodiments gave neither the value for "*a*," a depth of penetration of the spray, or the particular number between 1 and 15 which was said to be the numerical equivalent of the expression. * * *
>
> The room that a fifteen-fold variation in the numerical value of the equation allows and the opportunities for experimental variation within this range are just as evident as the fact that the conditions and results will vary substantially as different values are adopted. Under 35 U.S.C. 112 and Rule 71(b), we would expect, a greater certainty and a more explicit description and illustration of the mode of operation of the claimed invention would be required.

The Board, in its opinion on a Request for Reconsideration, observed further:

> This disclosure for the first time allowed at least a minimal *evaluation of the significance* of the parameters which appellants include in their claims. [Emphasis ours.]

[1] The only issue, then, is whether the earlier applications comply with section 112, the parent U.S. and German applications having the same disclosure. We do not understand any distinction to be urged in this case between the requirements of Rule 71(b) and the provisions of the statute on which it is based. See *In re Gay*, 50 CCPA 725, 309 F.2d 769, 135 USPQ 311 (1962). It is clear that the Examiner and the Board both thought the examples ought to be more complete. It is somewhat less clear what criteria of completeness they would apply. There is more than a hint that beyond a recital of the manipulative steps necessary to practice the invention, Rule 71(b) requires, in the examples, some data on which to base an evaluation of its usefulness.[4] We think that this would involve a misapplication of the rule. See *Patterson* v. *Hauck*, 52 CCPA 987, 341 F.2d 131, 144 USPQ 481 (1965); *In re Gay*, supra; *Kollsman* v. *Ladd*, 226 F. Supp. 186, 140 USPQ 309 (D.D.C. 1964). The specification is sufficient in this regard when it enables a person skilled in the art to which it pertains to practice the invention.[5] 35 U.S.C. 12.

The Solicitor interprets the Board's opinion as requiring only as much. Appellants, in the Solicitor's opinion, omit a recital of steps necessary in the use of the process:

> One skilled in the art, working with appellants' parent case examples, could determine an appropriate depth for the jets * * * only by trying all of the

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[4] The criterion employed by the Board, in *In re Gay*, was fairly explicit:

> This type of data, we believe, should have been included in the original specification *in order to constitute compliance with Rule 71(b)* and to give proper guidance to one skilled in the art *so that such persons could produce the article with a minimum amount of experimentation*. [Emphasis ours.]

[2] [5] This, of course, does not restrict the Examiner's authority to call for *proof* of utility in appropriate cases. See *In re Pottier*, 54 CCPA—, 376 F.2d 328, 153 USPQ 407 (1967).

> values between 1 and 15 for the numeric equivalent number to determine which depths gave an improved result. * * * It is believed clear that an appropriate depth could be determined only by extended experimentation.

Appellants' main argument is that no such experimentation is necessary:[6]

> The examples set out in the parent application and in the corresponding foreign application *do disclose* complete and specific embodiments of the process. In Example 1 of these applications, the diameter of the stream of reaction gases is said to equal 400 millimeters. The dynamic pressure (P_G) equals 2.2×10^3 atmospheres. The pressure of the water jets is equal to 2 atmospheres gauge. The diameter of the jets is equal to 2.8 millimeters. The depth of penetration (*a*) of the gas stream, of course, depends *only* upon the dynamic pressure (P_G) of the gas stream: the water pressure (P_W) and the diameter of the jet stream (*d*). A value for each of these variables is given in all of the examples. Following the teaching of the examples, therefore, one will *inherently* produce the desired value for *a*. Thus, a complete embodiment of the process is disclosed. No experimentation is required. Even if the person carrying out the process did not observe the depth of penetration *a*, he would still process [produce?] the desired results.

The Solicitor replies:

> In contending * * * that "The depth of penetration (*a*) of the gas stream, of course, depends *only* upon the dynamic pressure P_G of the gas stream; the water pressure P_W and the diameter of the jet stream (*d*)" appellants necessarily would seem to be saying that determining P_G (P_D in the application), P_W, and (*d*) fixes the value of the numeric equivalent number as well as (*a*). That view is inconsistent with the algebraic expression in the claims which permits the selection of any value between 1 and 15 for the numeric equivalent.[7]

[4] There is little to say except that we do not find it inconsistent with the algebraic expression. We understand the invention to require the selection of the three independent process variables, P_W, P_D, and *d* so that the value of the algebraic expression $(P_W : P_D) \cdot (d : a)$ is a number between one and fifteen. The expression purports only to define a special relationship necessary to effect the purposes of the invention. It could not affect the basic limitations of the dependent variable, *a*.

Since we cannot find the inconsistency on which the Solicitor's case for affirmance is built and since we otherwise agree with his rejection of other bases for the decision below, the decision of the Board is reversed.

REVERSED.

SMITH, *J.*, concurring.

The record shows that the Board of Appeals here consisted of an examiner-in-chief and two acting examiners-in-chief. Appellants do not challenge the legality of that Board. For the reasons expressed in my dissenting opinion in *In re Wiechert*, 54 CCPA 957, 370 F.2d, 927, 152 USPQ 247 (1967), the decision of such a Board in my view is a legal nullity. However, I must accept the majority's view on this issue in the *Wiechert* case, i.e., the legality of the Board is not an issue here. I therefore participate in the merits of this appeal and in so doing, fully agree with the opinion of the majority.

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[3] [6] Some, of course, is entirely permissible. *Minerals Separation, Ltd.* v. *Hyde*, 242 U.S. 261 (1916).

[7] The Solicitor suggested at oral argument that the depth of penetration may depend on variables other than those of appellants' equation Specifically, he suggested the temperatures of the water and of the product stream. Counsel for appellants denied it. Such dependency is not apparent to us. There is nothing in the record on the point. We, therefore, resolve this issue against the Solicitor.

The Solicitor, on the other hand, may have meant that the *optimum* depth of penetration depends on the temperatures involved and that the examples are worthless without some indication of temperature. This argument apparently would apply whether the depth of penetration (*a*) were specified or not. It is essentially a new rejection and as such we will not consider it. *In re Sutherland*, 52 CCPA 1683, 347 F.2d 1009, 146 USPQ 485 (1965).

United States Court of Appeals District of Columbia Circuit

COMPAGNIE DE SAINT-GOBAIN
v.
EDWARD J. BRENNER, COMMISSIONER OF PATENTS

No. 20,255. Decided October 23, 1967

[— U.S.App.D.C. —; 386 F.2d 985; 155 USPQ 417]

1. APPEAL TO U.S. COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT—FINDINGS BELOW NOT SET ASIDE UNLESS CLEARLY ERRONEOUS.

"The Patent Office Examiner found that Jeffree's patent teaches 'a continuously variable multifocal lens surface of revolution to which has been added or composited a second surface having constant astigmatism (cylinder lens) and the resulting composite surface is considered to satisfy the constant astimatic lens surface as defined in these claims.' The District Court found, 'Jeffree anticipates one major element of plaintiff's claims, i.e., that both surfaces are surfaces of revolution as shown by the following excerpt: "The simplest lenses according to this invention are those wherein both surfaces are surfaces of revolution . . ."' This, the most critical finding in the case, conforming with that of the Examiner is not clearly erroneous, and therefore should be accepted by this court. *Zenith Radio Corp.* v. *Ladd*, 114 U.S.App.D.C. 54, 310 F.2d 859; *Standard Oil Development Co.* v. *Marzall*, 86 U.S.App.D.C. 210, 214, 181 F.2d 280, 284; *Hays* v. *Brenner*, 123 U.S.App.D.C. 96, 357 F.2d 287."

2. PATENTABILITY—OBVIOUSNESS—LENS.

"As to whether Jeffree anticipated Bach's use of constant astigmatism, we observe that the addition of constant astigmatism to the front surface of a lens is merely the change of the degree of its horizontal curvature. As to the addition of constant astigmatism to the rear surface, this is merely the change of degree of horizontal curvature in an amount opposite to the change on the front surface. Such a process seems more primitive than Jeffree's. He could grind a lens so that the horizontal curvature matched the vertical curvature. He was not obliged to bring about this match by positing a desired horizontal curvature and then grinding two offsetting curvatures. The Patent Office Examiner reasonably concluded on this point: '[N]o significant or patentable improvement is seen to reside in selecting a constant difference in curve values, as compared to matching the curved values.' It seems also reasonable for him to have concluded that on the basis of Jeffree's invention Bach's method of achieving the same result as did Jeffree was obvious to one skilled in the art."

3. CIVIL ACTION UNDER 35 U.S.C. 145—EXAMINER PERFORMS AN ADMINISTRATIVE-ADJUDICATORY FUNCTION.

"Appellant urges that the conclusion against Bach on the basis of obviousness was not based on testimony by anyone qualified to give such an opinion. His brief states this contention as follows: 'The defendant did not produce a person skilled in the art to testify as to obviousness,' proceeding to the effect that the Examiner did not qualify as an expert or as one skilled in the art and was not subject to cross-examination as to qualifications or as to substance. But the Examiner is not in the position of a witness. He performs an administrative-adjudicatory function on the basis of the record before him. And since in this case his conclusions are supported by the record, as are those of the District Court on the record there, we find no basis for reversal."

APPEAL from the United States District Court for the District of Columbia.

AFFIRMED.

Mr. John L. Seymour and *Mr. Earl L. Tyner* for appellant.

Mr. Joseph Schimmel, Solicitor (*Mr. S. Wm. Cochran*, of counsel) for appellee.

Before BAZELON, *Chief Judge*, and FAHY [1] and DANAHER, *Circuit Judges*

FAHY, *Circuit Judge*.

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[1] Circuit Judge Fahy became Senior Circuit Judge April 13, 1967

Appellant, as assignee of Guy Bach's invention,[2] applied for a patent which was rejected by the Patent Office on grounds of (1) indefiniteness of the claims, 35 U.S.C. §112; (2) insufficiency of specification disclosures, 35 U.S.C. § 112; and (3) obviousness, 35 U.S.C. § 103. A trial *de novo* in the District Court resulted in rejection of appellant's application on the basis of obviousness. We affirm.

During oral argument in this court appellant conceded that we need pass only upon claims one and twelve of the application. Claim one states that the invention is,

> A *panfocal* lens made of transparent refringent material having an index of refraction of *n*, the lens having a first and second main face, both such faces being *surfaces of revolution*, the first face having a meridian whose curvature varies in a continuous manner, said first face having *constant astigmatism* in at least one region of substantial area of its surface. [Italics supplied except as to *n*.]

Claim twelve restates claim one and adds the following:

> said second face having a constant astigmatism in at least one region of substantial area of its surface which confronts and is aligned with said one region of the first face.

The underscored elements in combination are said to constitute invention.

A panfocal lens has a focusing power which progressively increases from the top of the lens to its bottom. One looking through such a lens can let his eye scan from the top to the bottom and somewhere within this range pick out a focusing power which clearly delineates the object to be observed. By itself this concept is not new. But Bach asserts that previously such a lens could not be mass-produced by methods presently employed in the industry, which require that a lens surface be a surface of revolution, that is, "a surface generated by revolving a plane curve about a line lying in its plane." For our purpose a surface of revolution may be thought of as a curvature which may be ground by rotary lens grinders.

A critical aspect of Bach's invention is the use of "constant astigmatism," claimed to permit production of a panfocal lens by rotary lens grinders. Astigmatism is a defect on the surface of the eye or of a lens in consequence of which rays of light from an external point are not brought to a single focal point, thus causing imperfect vision or image. Astigmatism of the eye can be corrected by altering the curvature of a spectacle lens. Such lens is then astigmatic to a normal eye, but for the user the astigmatism of the spectacle is equal and opposite to the astigmatism of his eye, with the result that his vision is stigmatic, that is, free of astigmatism. Hence, one normally would avoid the addition of astigmatism to glasses unless for the purpose of correcting astigmatism of the eye, but Bach added astigmatism to the front surface of his panfocal lens so as to make it a surface of revolution, and then cancelled out the effect of this astigmatism by astigmatism added to the back surface of the lens. The astigmatism added to the front surface necessarily had to be "constant" in order that the offsetting amount on the rear surface could be ascertained and added as a surface of revolution.[3]

The Patent Office Examiner, in rejecting, under 35 U.S.C. § 103, the claim of invention as obvious in view of the prior art, relied *inter*

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[2] We use the term "invention" as a convenient way of referring to the subject matter of the Bach application

[3] As stated elsewhere than in claims one and twelve astigmatism is added in the second surface to correct an eye defect.

alia upon the French patent to Jeffree, No. 1,112,429, which corresponds to the British patent to Jeffree, No. 775,007. The Board of Appeals affirmed the Examiner, including his decision on obviousness by reason of the prior art. In the action under 35 U.S.C. § 145 which followed and was tried there, the District Court, while disagreeing with the Patent Office in other respects, agreed on the issue of obviousness. On this issue the court stated that it considered the Jeffree patent the most pertinent of the cited references. After describing this reference the court found that the differences between Bach's invention and the prior art, particularly the Jeffree French patent, "would have been obvious at the time the Bach invention was made . . . to a person having ordinary skill in the art of making optical lenses. Therefore, the court holds that the claimed subject matter of the application in suit is unpatentable under 35 U.S.C. § 103."

Jeffree's lens, like Bach's, is panfocal. Appellant's contention that Jeffree's lens is made by casting and cannot be manufactured by rotary lens-grinding because its surfaces are not surfaces of revolution is contrary to the findings of both the Patent Office and the District Court. Jeffree's claim states, "The simplest lenses according to this invention are those wherein both surfaces are surfaces of revolution." There was testimony on behalf of appellant that Jeffree contemplated manufacturing by molding, but the full statement of Jeffree in this regard (British patent) reads: "Lenses according to this invention are conveniently made by moulding in transparent plastic material, and may also be made by grinding and machining processes of known type, in glass, plastics or other material."

[1] The Patent Office Examiner found that Jeffree's patent teaches "a continuously variable multifocal lens surface of revolution to which has been added or composited a second surface having constant astigmatism (cylinder lens) and the resulting composite surface is considered to satisfy the constant astigmatic lens surface as defined in these claims." The District Court found, "Jeffree anticipates one major element of plaintiff's claims, i.e., that *both* surfaces are surfaces of revolution as shown by the following excerpt: 'The simplest lenses according to this invention are those wherein both surfaces are surfaces of revolution . . .'" This, the most critical finding in the case, conforming with that of the examiner, is not clearly erroneous, and therefore should be accepted by this court. *Zenith Radio Corp.* v. *Ladd*, 114 U.S.App.D.C. 54, 310 F.2d 859; *Standard Oil Development Co.* v. *Marzall*, 86 U.S.App.D.C. 210, 214, 181 F.2d 280, 284; *Hays* v. *Brenner*, 123 U.S.App.D.C. 96, 357 F.2d 287.

[2] As to whether Jeffree anticipated Bach's use of constant astigmatism, we observe that the addition of constant astigmatism to the front surface of a lens is merely the change of the degree of its horizontal curvature. As to the addition of constant astigmatism to the rear surface, this is merely the change of degree of horizontal curvature in an amount opposite to the change on the front surface. Such a process seems more primitive than Jeffree's. He could grind a lense so that the horizontal curvature matched the vertical curvature. He was not obliged to bring about this match by positing a desired horizontal curvature and then grinding two offsetting curvatures. The Patent Office Examiner reasonably concluded on this point: "[N]o significant or patentable improvement is seen to reside in selecting a constant difference in curve values, as compared to matching the curved values." It seems also reasonable for him to have concluded that on the basis of Jeffree's invention Bach's method of achieving the same result as did Jeffree was obvious to one skilled in the art.

Appellant contends, however, that the trial judge (1) failed to make specific findings of fact and conclusions of law, and (2) misunderstood the nature of appellant's invention. As to the latter, it is understandable that in the course of the proceedings the trial judge might not at all stages have fully understood the nature of appellant's invention. But we are satisfied that in the end the judge did understand. This is shown by his statement in his opinion that a panfocal lens could be employed, as in Bach, for purposes other than the correction of astigmatism of the eye, and that Bach and Jeffree had each designed panfocal lenses which were stigmatic. The judge had previously said that he thought the point considered was that the astigmatism was for correction of errors in the human eyes, whereas, as appellant points out, Bach had added astigmatism to his front lens so as to make it a surface of revolution, and had cancelled out this astigmatism on the back surface, making the lens stigmatic. The statement of the court in his opinion, to which we have referred, we think shows he understood this.

One other matter is mentioned. **[3]** Appellant urges that the conclusion against Bach on the basis of obviousness was not based on testimony by anyone qualified to give such an opinion. His brief states this contention as follows: "The defendant did not produce a person skilled in the art to testify as to obviousness," proceeding to the effect that the Examiner did not qualify as an expert or as one skilled in the art and was not subject to cross-examination as to qualifications or as to substance. But the Examiner is not in the position of a witness. He performs an administrative-adjudicatory function on the basis of the record before him. And since in this case his conclusions are supported by the record, as are those of the District Court on the record there, we find no basis for reversal.[4]

[4] AFFIRMED.

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[4] See *Commonwealth Engineering Co.* v. *Watson*, 110 U.S.App.D.C. 318, 319, 293 F.2d 157, 158

U.S. Court of Customs and Patent Appeals

IN RE AUGUST H. RAUCH

No. 7811. Decided February 15, 1968

[55 CCPA—; 390 F.2d 1015; 157 USPQ 55]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT.

In connection with appellant's request for review of a Commissioner's decision relating to a new ground of rejection in the Examiner's answer according to Rule 193(b), *Held* that "* * * aside from the fact the issue is not alluded to in any reason of appeal, we are without authority to review decisions of the Commissioner in matters of this nature. 35 U.S.C. 141; *In re Jewett*, 45 CCPA 714, 247 F.2d 953, 115 USPQ 134."

2. PATENTABLY—CRITICALITY—PROPORTIONS OR DIMENSIONS DISCLOSED AS "PREFERRED."

"Nor do appellant's arguments convince us of error in the Board's conclusion that the limitations in the claims relating to amounts or sizes of sawdust and asbestos particles lack patentable significance because well within the skill of the art. Merely because appellant's specification denotes those limitations as 'preferred' does not, without more, establish them as critical."

3. SAME—PARTICULAR SUBJECT MATTER—"VENEER FILLING COMPOUND."

The refusal of certain claims in an application entitled "Veneer Filling Compound," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 102,145.

AFFIRMED.

James H. Heilman, Heilman & Heilman for appellant.

Joseph Schimmel (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, SMITH and ALMOND, *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals affirming the Examiner's rejection of claims 5–7, 9–15 and 17 in appellant's application[1] for "Veneer Filling Compound" as "unpatentable over Brown et al.[2] or Avedikian,[3] each alone or in view of Meiler et al." [4]

The invention relates to a composition for filling knotholes or other surface defects in inner plies of plywood to provide a smooth, check-free surface to which thin surface veneers or decorative overlay papers may be applied. According to the specification the "essence" of the composition comprises asbestos in conjunction with sawdust and binding agents. Claim 5 is representative of the composition:

> 5. Improved veneer filling compound which comprises in combination a composition containing asbestos fiber, sawdust and a binder wherein the amount by weight of asbestos fiber present is in the range from about 1 to 15%, the amount of binder present is in the range from about 1 to 15%, and the amount of sawdust present is in the range from about 70 to 98%.

Claims 9 and 10 are directed to plywood in which one of the plies has a cavity filled with the composition. Claims 11–15 are directed to a process of preparing the composition. The claims have been treated below as standing or falling together. We so treat them here.

Before directing our attention to the merits of the rejection, appellant raises a preliminary issue in his brief, urging that the Commissioner of Patents, through the director, Chemical Examining Operations, erred in refusing to return his application to the Examiner for further prosecution after he cited two new references in his answer.[5] Appellant contends that the alleged "summary," "kangaroo" practice accorded him by the Patent Office deprived him of an opportunity to amend his claims, thus denying him due process of law.

We are of the opinion that appellant's request for review by this court of the action of the Commissioner is, under the present circumstances, both frivolous and futile. We would not otherwise comment upon it were not a fair portion of the brief and some discussion at oral argument devoted to the issue. The record speaks for itself as to the merits of appellant's claim. **[1]** In any event, and aside from the fact the issue is not alluded to in any reason of appeal,[6] we are without authority to review decisions of the Commissioner in matters of this nature. 35 U.S.C. 141; *In re Jewett*, 45 CCPA 714, 247 F.2d 953, 115 USPQ 134.

Turning to the merits of the rejection, the Examiner noted that Brown discloses a composition containing sawdust, asbestos fiber and 7.5–10% thermosetting resin binder which is useful in the manufacture of artificial wood board. Describing a procedure to make a three-ply board, Brown states:

> * * * we take 38 parts of sawdust and thoroughly mix with 5 parts of synthetic resin, preferably of the thermo-setting type * * * [yielding approximately an 88/12 ratio by weight]. When thoroughly mixed, 25% of the impregnated sawdust is reserved for veneering the top and bottom face of the board. The remaining 75% impregnated sawdust is then thoroughly mixed with 57 parts (by weight) of wood chips. * * *

It further appears from the disclosure and claims of Brown that asbestos fibers are added to both the core and veneering compositions to render them fire-resisting.

Avedikian discloses a moldable composition useful as a building material comprising phenolic resin binder and sawdust filler or "other fibrous and/or comminuted material which is capable of being compacted or molded," such as "iron filings and asbestos." Small amounts of paraffin wax are added to reduce water absorption of the final product.

Meiler discloses a composition of 1–40% synthetic rubber-phenol aldehyde binder and "mineral or vegetable" filler, such as "sawdust or wood flour," which, when applied as overlayers on pieces of plywood, "conceals any blemishes and defects which may be present on the surface of the material" and "fills in knot holes."

The Examiner and Board were of the view that the selection of the particle sizes and proportions of sawdust and asbestos fiber recited in one or more of the claims was "within the ordinary ability of one skilled in the art," and that there "is nothing of record to indicate the criticality of the limitations." Reliance was placed upon Avedikian to establish obviousness of the addition of wax to the composition as recited in some of the claims and upon Meiler to show that similar compositions including rubber binders had been used to fill defects in plywood sheets.

Appellant's argument is premised principally on the contention that Brown does not disclose adding asbestos to a composition containing only resin and sawdust, but includes wood waste other than sawdust—wood chips, for example—in the composition as well. Apart from the fact that appellant's claims do not preclude the presence of such wood waste as wood chips in his composition, we think that Brown does clearly disclose to those in the art adding asbestos to the wood waste-free resin and sawdust composition he reserved for veneering the core of his board. **[2]** Nor do appellant's arguments convince us of error in the Board's conclusion that the limitations in the claims relating to amounts or sizes of sawdust and asbestos particles lack patentable significance because well within the skill of the art. Merely because appellant's specification denotes those limitations as "preferred" does not, without more, establish them as critical.

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[1] Serial No. 102,145, filed April 11, 1961.

[2] British Patent 598,553, accepted February 20, 1948.

[3] U.S. Patent 2,652,373, issued September 15, 1953.

[4] U.S. Patent 2,635,976, issued April 21, 1953.

[5] The record shows that the Examiner first cited Brown and Meiler in his answer, stated that he was entering a new ground of rejection, and gave appellant 60 days in which to file a reply. Said the Examiner:

> *Such reply may include any amendment* or material appropriate to the new ground of rejection and may request remand to the Examiner to consider such *amendment* or material. * * * [Emphasis supplied.]

Without filing further amendment or material, appellant petitioned the Commissioner to return the case to the Examiner, apparently only for further argument. The Director, acting for the Commissioner, pointed out that the Examiner's action was in accord with Patent Office Rule 193(b), and gave appellant 30 more days to file any appropriate reply and to proceed in the manner indicated in the above-quoted portion of the Examiner's answer. It appears appellant then simply filed a reply brief, which is not a part of the present record.

[6] See *In re Wiechert*, 54 CCPA 957, 370 F.2d 927, 152 USPQ 247.

[3] The decision is affirmed.

AFFIRMED.

SMITH, *J.*, concurring.

I agree with the result reached by the majority. The record shows that the Board of Appeals here consisted of more than one acting examiner-in-chief. For my view on such boards, see my dissenting opinion in *In re Wiechert*, 54 CCPA 957, 370 F.2d 927, 152 USPQ 247 (1967).

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,662,814, J. R. Swihart, METHOD AND COMPOSITION FOR CHEMICALLY POLISHING METALS, **filed** Apr. 15, 1968, D.C.N.J. (Newark), Doc. 350–68, *The Diversey Corporation* v. *Fidelity Chemical Products Corporation.*

2,733,226, B. A. Hunter, TRIARYL PHOSPHITE STABILIZERS FOR SYNTHETIC RUBBERS, **filed** Dec. 21, 1967, D.C., N.D. Ohio (Cleveland), Doc. C67–933, *Uniroyal Incorporated* v. *Firestone Tire & Rubber Co.*

2,742,462, Gabriel Gever, NEW N-(5-NITRO-2-FURFURYLIDENE)-3-AMINO-2-OXAZOLIDONES, **filed** Jan. 26, 1968, D.C., N.D. Ind. (South Bend), Doc. 4144, *The Norwich Pharmacal Company* v. *Veterinary and Poultry Supply, Inc.* Judgment defendant has infringed and is restrained from manufacturing, using, or selling compound under above patent, Feb. 28, 1968.

2,919,042, J. V. Kierulff, TRAVELLING SHIP-LOADING CRANE, **filed** Jan. 17, 1968, D.C. Conn. (New Haven), Doc. 12362, *Jorgen V. Kierulff* v. *Michael Schiavone & Sons, Inc.*

2,982,322, J. K. Seltz, CARD-CARRYING CASE OR POCKET SECRETARY, **filed** Feb. 5, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–182–AAH, *Bri-Son Company, Inc.* v. *Rodeo Leather Goods Company, Inc.*

3,002,248, C. D. Willson, THERMO-MOLDING APPARATUS; **3,114,936**, same, THERMO-MOLDING APPARATUS AND A PROCESS OF UNITING MASSED HOLLOW BODIES, **filed** Apr. 16, 1968, D.C., E.D. Mich. (Bay City), Doc. 2911, *Lou T. Willson as executrix for the estate of Corwin D. Willson, deceased* v. *Robinson Industries.*

3,050,768, S. N. Rosenthal, FELT PACK COUSTRUCTION OF PENS, **filed** Feb. 9, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c250, *Magic Maker Corporation* v. *Dri Mark Products et al.*

3,057,467, R. R. Williams, PACKAGE FOR TREATING AGENTS AND DISPOSABLE APPLICATOR FORMING A PART THEREOF, **filed** Feb. 6, 1968, D.C. Conn. (New Haven), Doc. 12397, *Nice-Pak Products, Inc.; Avon Products, Inc.* v. *Canaan Products, Inc.; Colgate-Palmolive Co.*

3,104,828, E. P. Aghnides, FLUID MIXING DEVICE, **filed** Jan. 22, 1968, D.C., District of Columbia (Washington), Doc. 170–68, *Radio Position Finding Corporation* v. *Harrison Brothers, Inc.*

3,114,936. (See 3,002,248.)

3,154,166, Underwood and Cupolo, SAFETY DEVICE FOR AIRPLANE LOADING TRUCKS, **filed** Sept. 23, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66–C–911, *John Cupolo et ano* v. *Sky Chefs, Inc.* Order on stipulation dismissing action with prejudice, Mar. 28, 1968.

3,191,921, P. R. Johnson, STEEL-MAKING CONVERTER WITH EXPANSION-ACCOMMODATING VESSEL MOUNTING, **filed** Jan. 17, 1968, D.C., N.D. W. Va. (Wheeling), Doc. C–68–3–W, *Chicago Bridge & Iron Company* v. *National Steel Corporation and Vereinigte Osterreichische Eisen- und Stahlwerke, A.G.*

3,219,752, L. A. Harris, HIGH FREQUENCY ELECTRICAL LEAD-IN CABLE, **filed** Apr. 19, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c636, *Columbia Wire Products Company* v. *Markal Sales Corp. and Superior Insulated Wire Corp.* Complaint and counterclaim dismissed, Apr. 10, 1968.

3,298,190, C. B. Harker, FREEZING CONDITION CONTROL, **filed** Dec. 26, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c2208, *Taylor Freezer Division of Beatrice Foods* v. *Cornelius Co.; Coca Cola Bottling Co.*

3,313,545, J. R. Bartsch, UNITARY MOLDED GOLF BALL, **filed** Dec. 13, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67C–1166, *PCR Patent Development Corp.* v. *Dynaflite Mfg. Corp. et al.*

3,347,590, D. B. Bowen, CAMPER BODY STABILIZER, **filed** Feb. 6, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–185–S, *Donald B. Bowen* v. *L. V. Knudson, doing business as Knudson Mfg. Co.*

D. 210,385, R. G. Barr, FURNITURE CHEST, **filed** Apr. 16, 1968, D.C.S.C. (Columbia), Doc. 68–331, *Thomasville Furniture Industries, Inc.* v. *Schoolfield Industries, Inc.*

REISSUES

SEPTEMBER 3, 1968

Matter enclosed in heavy brackets **[ ]** appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,448

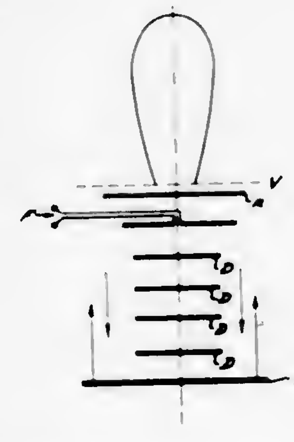
REFLECTION ANTENNA EMPLOYING MULTIPLE DIRECTOR ELEMENTS AND MULTIPLE REFLECTION OF ENERGY TO EFFECT INCREASED GAIN

Hermann W. Ehrenspeck, 94 Farnham St.,
Belmont, Mass. 02178

Original No. 3,122,745, dated Feb. 25, 1964, Ser. No. 812,565, May 11, 1959. Application for reissue Feb. 8, 1965, Ser. No. 448,903

4 Claims. (Cl. 343—819)

(Granted under Title 35, U.S. Code (1952), sec. 266)



2. A backfire antenna comprising a slow wave director structure, a feed located with respect to said structure to transmit energy therealong, reflecting means for reflecting all of the energy at one end of said structure back along and bound to said structure with a 180° phase shift at said reflecting means, and reflector means at the other end of said structure for reflecting part of the energy transmitted directly from said feed back along said structure and part of the energy reflected from said reflecting means, the energy at said reflector means being in an inphase relationship for maximum gain, the part of the energy not reflected by said reflector means being radiated into free space.

26,449

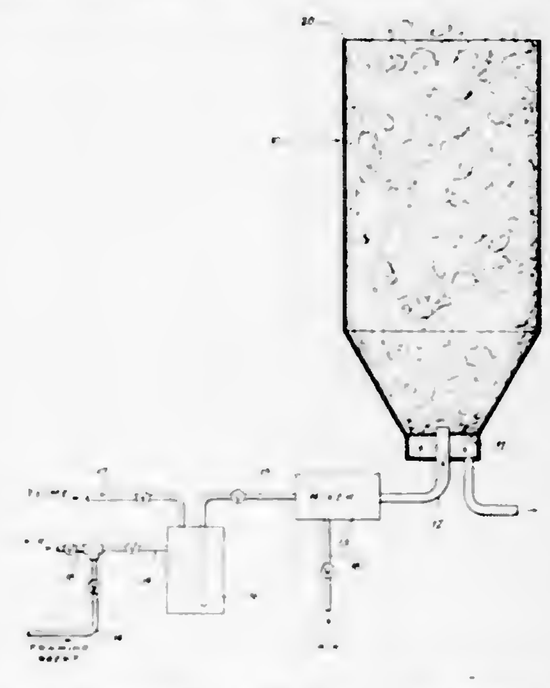
PROCESS FOR SEPARATION OF LIQUID FROM LIQUID-SOLID MIXTURES OF FINE SOLID PARTICLE SIZE

Horace A. Bradt, St. Louis, Mo., assignor to St. Louis Shipbuilding-Federal Barge, Inc., St. Louis, Mo., a corporation of Missouri

Original No. 3,053,761, dated Sept. 11, 1962, Ser. No. 660,872, May 22, 1957. Application for reissue Aug. 27, 1964, Ser. No. 405,314

8 Claims. (Cl. 210—44)

1. A process for separating dimensionally stable solid discrete matter and liquid matter out of a liquid slurry suspension of the solid matter and wherein said liquid slurry suspension is an aqueous slurry containing solid inorganic particles, comprising: adding a foaming agent to the liquid suspension, agitating the mass thus produced until a single self-supporting stable non-flowing foamy mass of small bubble size sufficient to maintain the stability of the foam is formed from all of the liquid and the solid matter and in which the foamy mass comprises a film containing the solid particles in discrete form, *placing the foam on a supporting surface* and thereafter draining the major portion of the liquid in substantially solid free form from the solids of the foamy mass *and from said supporting surface* to provide a foamy mass containing discrete solid particles *and passing the drained liquid from said surface to a clarified liquid receiving means.*



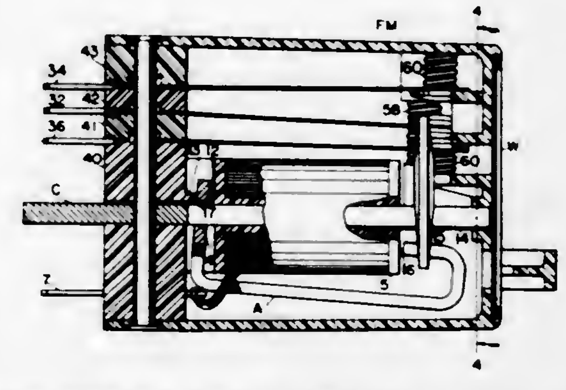
26,450

ELECTROMAGNETIC RELAY WITH SIMPLIFIED STRUCTURE

Wheeler D. Maynard, Mendon, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York

Original No. 3,278,872, dated Oct. 11, 1966, Ser. No. 419,082, Dec. 17, 1964. Application for reissue Oct. 10, 1967, Ser. No. 682,692

16 Claims. (Cl. 335—185)



A relay structure having moveable contacts carried by moveable card and an end support having window openings for insertion of coil springs for biasing fixed contacts and the card.

26,451

ANALOG-DIGITAL CONVERTER

Robert Z. Geller, Wantagh, N.Y., assignor to Inductosyn Corporation, Carson City, Nev., a corporation of Nevada

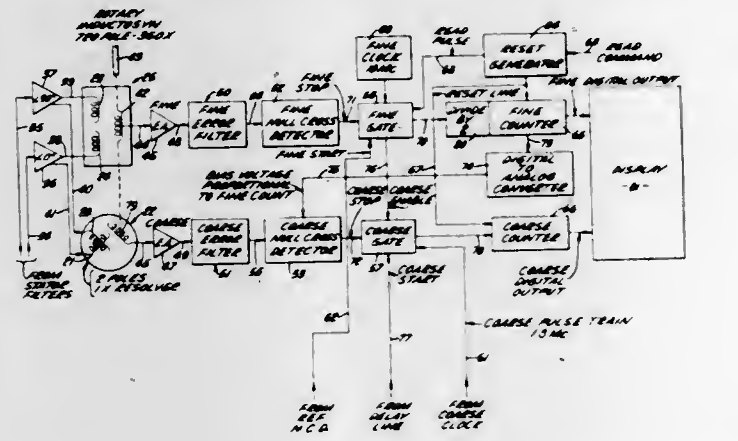
Original No. 3,315,253, dated Apr. 18, 1967, Ser. No. 377,872, June 25, 1964. Application for reissue Sept. 28, 1967, Ser. No. 675,258

5 Claims. (Cl. 340—347)

1. An analog-digital converter comprising fine and coarse position measuring transformers **[**each having**]**

(a) relatively stationary and movable transformer members *for each of said fine and course position measuring transformers,*

(b) a mechanical analog input for said movable members,



(c) [fine and coarse null crossing detectors] *a fine null crossing detector connected to said fine position measuring transformer, and a coarse null crossing detector connected to said coarse position measuring transformer;* and

(d) fine and coarse gates controlled [thereby,] *respectively by said fine and coarse null crossing detectors,*

(e) said fine and coarse gates respectively controlling inputs to fine and coarse counters,

(f) said fine and coarse detectors having inputs respectively from

(g) the signal outputs of said fine and coarse movable members,

(h) said signal outputs acting as stop signals for said gates respectively,

(i) first means providing

(1) a polyphase input for said relatively stationary transformer members, said polyphase input having time phase different in polyphase windings of said last mentioned transformer members,

(2) a reference start signal for said gates,

(3) fine and coarse pulses controlled by said fine and coarse gates respectively,

(j) said gates having an output of a number of pulses representing the position of said mechanical analog input, and

(k) second means providing a bias voltage to said coarse null crossing detector proportional to the count of said fine counter.

PLANT PATENTS

GRANTED SEPTEMBER 3, 1968.

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing

2,830
MAGNOLIA GRANDIFLORA TREE

Armin Thurnher, El Monte, Calif., assignor to Saratoga Horticultural Foundation, Saratoga, Calif., a non-profit corporation of California
Filed Feb. 27, 1967, Ser. No. 619,078
1 Claim. (Cl. Plt.—51)

A new and distinct variety of *Magnolia grandiflora* tree which is well adapted—because of its distinctive characteristics—for commercial reproduction, and planting as a shade and ornamental tree.

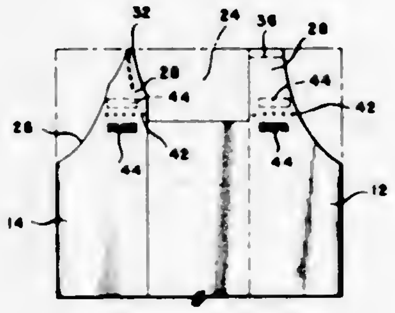
PATENTS

GRANTED SEPTEMBER 3, 1968

GENERAL AND MECHANICAL

3,399,406
DISPOSABLE OFFICE GOWN

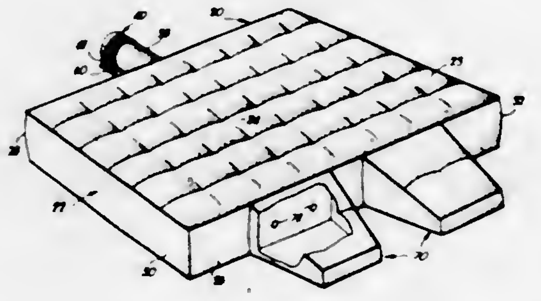
Theodore Bradley, 147 El Dorado St., Monterey, Calif. 93940
Continuation-in-part of application Ser. No. 534,903, Mar. 16, 1966. This application Sept. 27, 1966, Ser. No. 584,322
3 Claims. (Cl. 2—114)



1. A disposable office gown, comprising: sheet disposable material having front and back panels overlapping to define front and back areas of double thickness and predetermined size, said panels also containing cutout portions defining neck and arm areas, said gown including near the tops of said panels means for attaching said panels together within said areas of overlapping, said gown further including means for separating selected portions of said neck and arm areas and reattaching same, said means for separating being located intermediate said neck and arm cutout areas, said means for separating and reattaching including perforations together with sealing means adjacent thereto.

3,399,407
CUSHION FOR DECELERATING FALLING BODIES

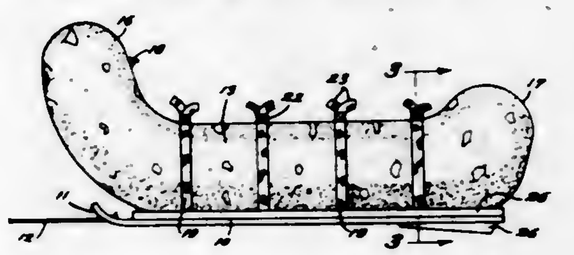
Thomas O. Olsen, 910 S. Santa Fe, Salina, Kans. 67401
Filed May 3, 1966, Ser. No. 547,298
9 Claims. (Cl. 5—348)



A closed flexible bag having a conduit communicating with the bag and a continuously operating fan unit in the conduit for creating artificial currents of air to maintain the pressure in the bag at a predetermined level. Air expelled from the bag upon impact of a falling object on the bag flows in a reverse direction through the fan unit to avoid pressure build up sufficient to damage the object.

3,399,408
TOWABLE WATER SLED

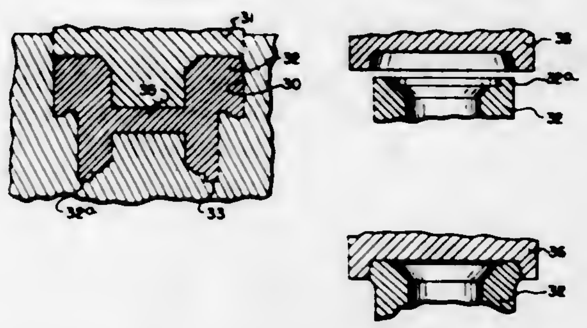
Robert L. Bailey, Cincinnati, Ohio, and Harold Bates, Covington, Ky., assignors of one-tenth to Kelley Wright, Fort Wright, Ky.
Filed July 22, 1966, Ser. No. 567,119
5 Claims. (Cl. 9—310)



1. A towable water sled comprising a flat, rectangular water planing board having a longitudinal dimension at least twice that of its width dimension; a narrow, elongated and resilient seat body positioned on top of the longitudinal center portion of the board and being uniformly flexible and resilient throughout its longitudinal extent and substantially coextensive with the board; said body dividing the board longitudinally to provide laterally opposed side board portions; and means mounting the body upon the board.

3,399,409
METHOD OF MAKING A SELF-STAKING INSERT

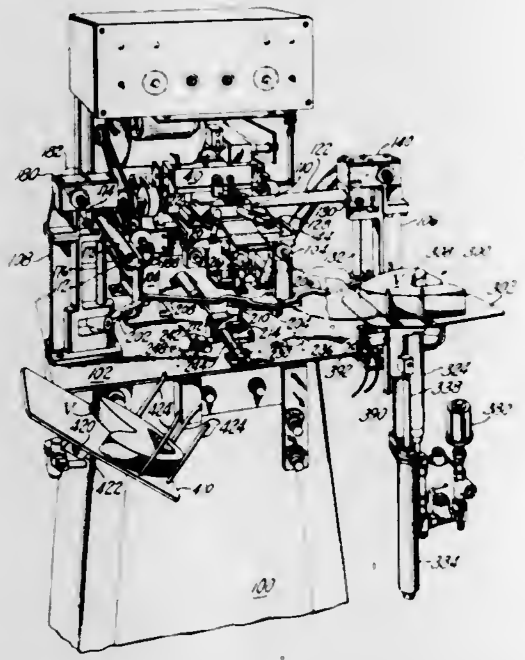
Arthur R. Breed, Euclid, Ohio, assignor to The Lamson & Sessions Co., Cleveland, Ohio, a corporation of Ohio
Filed Feb. 10, 1966, Ser. No. 526,506
8 Claims. (Cl. 10—86)



1. The method of cold forming a product having an axially extending opening therethrough and portions projecting laterally from axially extending surfaces at opposite ends of the product and providing surfaces which face each other comprising the steps of cold forming a blank in a die cavity to form one of the laterally projecting portions of the product and an axially extending skirt of substantially smaller cross-sectional area than that of the blank and which extends axially from the blank at the opposite end from said one laterally projecting portion with the skirt generally forming a continuation of the axially extending surface from which the other of the portions is to project, removing the blank from the cavity by moving the blank axially with said one end leading, engaging the blank with a second die, and applying pressure to said skirt with said second die to cold flow the skirt laterally and toward said one portion to form the other portion.

3,399,410
MACHINES FOR OPERATING ON SHOE PARTS

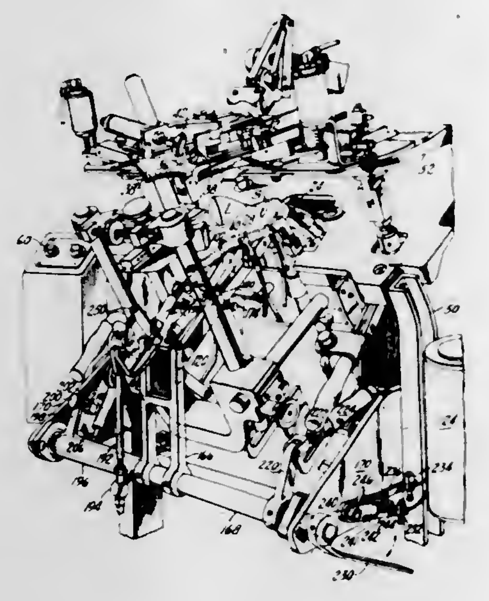
Fred T. MacKenzie and Harold J. Tabbut, Beverly, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed Feb. 1, 1967, Ser. No. 613,343
21 Claims. (Cl. 12—1)



A machine for operating on shoe parts having a work supporting table and instrumentalities for operating on a shoe part thereon, is provided with a shoe part handling mechanism having a pick-up device for automatically placing shoe parts, picked up from a stacking device, one-by-one on the work table, for initiating an automatic operating cycle of the machine, and for removing each part from the table after it has been operated on by the machine, and depositing it on a shoe part receiving device.

3,399,411
LASTING MACHINES WITH ADHESIVE APPLYING MEANS

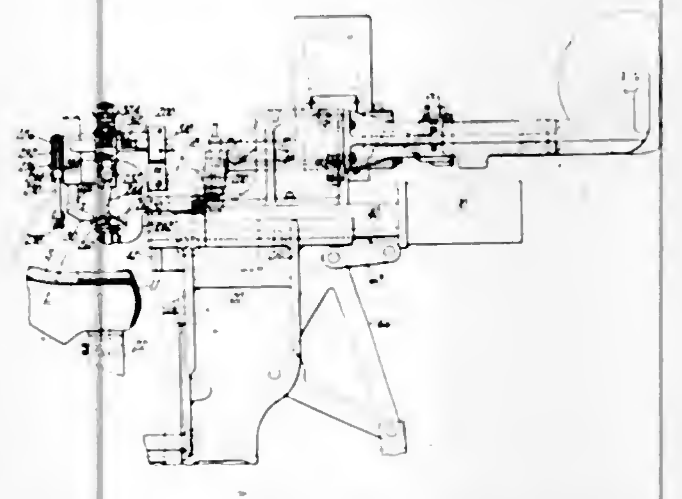
Wilbur Fisk, Beverly, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of Massachusetts
Filed Mar. 1, 1967, Ser. No. 619,754
11 Claims. (Cl. 12—10.1)



A machine for lasting shoes having grippers for tensioning an upper over a last and wipers for wiping the lasting margin of the upper inwardly over and for pressing it against marginal portions of the bottom of the insole of the shoe, from the toe end back to the breast line, is also provided with a pair of nozzles movable lengthwise of the shoe for applying molten thermoplastic adhesive to the said marginal portions of the insole after the upper has been tensioned by the grippers and before the wipers are operated.

3,399,412
MACHINE FOR OPERATING ON SHOES

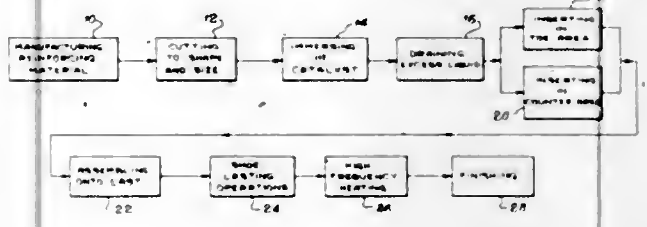
Jules N. Allard, Tyngsboro, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed May 24, 1967, Ser. No. 640,969
10 Claims. (Cl. 12—12.5)



A machine for shaping the upper materials of a shoe to the heel end of a last having a shoe supporting jack, a shoe rest, a heel band, an adhesive applying nozzle and wipers, in which a plurality of holddown members are provided for yieldingly holding the marginal portion of the heel end of the insole of the shoe against the bottom of the last when the heel end of a shoe on the jack is clamped against the shoe rest, together with means for moving the holddown members away from the insole after the heel band has shaped the upper materials to the heel end of the last and before the nozzle member is moved into contact with the insole to apply adhesive to marginal portions thereon and the lasting margin is wiped inwardly over the insole by the wipers.

3,399,413
METHOD OF MANUFACTURING A SHOE UPPER

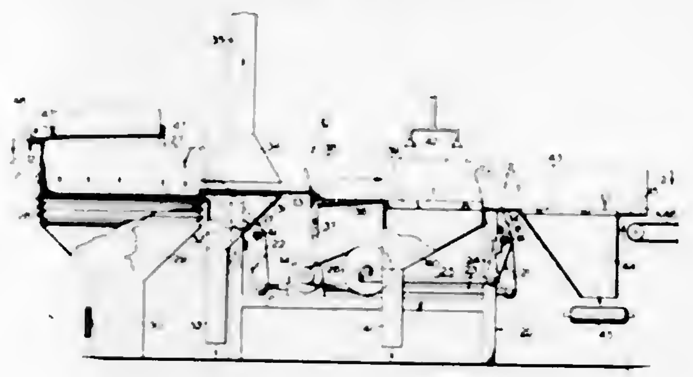
Stanley M. Berkson, Clifton, N.J., assignor to Stanbee Company, Inc., Hasbrouck Heights, N.J., a corporation of New Jersey
Filed Aug. 8, 1966, Ser. No. 570,870
9 Claims. (Cl. 12—146)



A method of making a shoe upper by assembling a thermosetting-impregnated stiffener with an upper on a last and subjecting the assembled unit to high frequency heat above 70 megacycles, preferably at 78 megacycles. Prior to assembly, the stiffener is dipped into an activating catalyst solution of ammonium chloride and the excess catalyst removed.

3,399,414
BERRY CLEANER AND WASHER

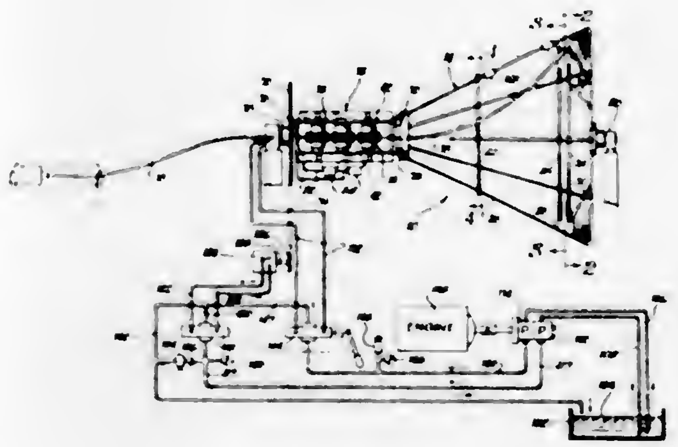
Robert D. McLauchlan, Salem, Oreg., assignor to A. B. McLauchlan Co., Inc., Salem, Oreg., a corporation of Oregon
Filed Sept. 9, 1966, Ser. No. 578,353
3 Claims. (Cl. 15—3.11)



An apparatus for cleaning and washing ripe raspberries and the like in which the dry berries are first dumped downwardly into the receiving end of an agitated trough assembly in which there is a perforated bottom through which air is forced upwardly, the upwardly directed jets of air acting to cushion the impact of the berries against the trough bottom; the berries being moved onto a second section of the assembly where they pass over an agitated grate while upward air suction aids further in carrying away foreign particles from the dry berries, and the berries then being subjected to washing and screening.

3,399,415
CONTROL SYSTEMS FOR POWER RODDER CONSTRUCTIONS

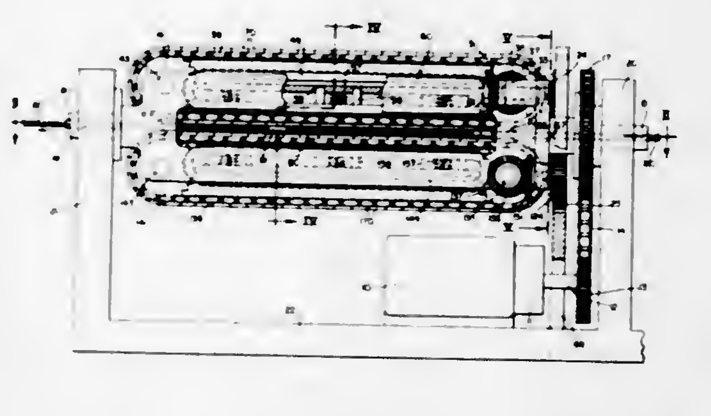
Clifton E. Hammond, Highland, and Henry R. Cline, Griffith, Ind., assignors to Champion Corporation, Hammond, Ind., a corporation of Indiana
Continuation-in-part of application Ser. No. 427,287, Jan. 22, 1965. This application May 12, 1966, Ser. No. 554,273
13 Claims. (Cl. 15—104.3)



12. In an apparatus adapted to impart simultaneous axial and rotary movement to an element passing therethrough, said apparatus including a first drive means for engaging said element to drive the element axially and a second drive means for imparting rotary movement to means holding the element, and including hydraulic motors for each of said drive means, the improvement comprising a single control lever for said motors, a valve means for each of said motors interposed between said control lever and said motors, means connecting said lever to each of said valve means, said connecting means including a flexible link movable axially of one of said valve means for operating the valve means as said lever is pivoted toward and away from said one valve means, and a rotary rod member connected to the other valve means, and connected to said lever, said rod means rotating in said other valve means for operating the valve means as said lever is pivoted about the axis of said rod means.

3,399,416
SEWER RODDING EQUIPMENT

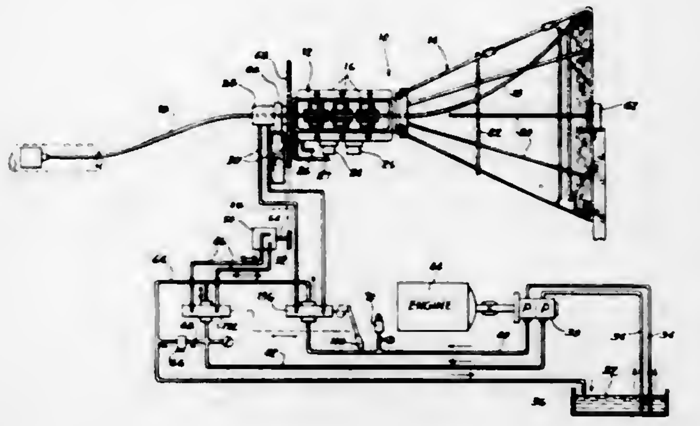
Charles B. Caperton, Montgomery Court Apartments, Narberth, Pa. 19072
Filed July 14, 1966, Ser. No. 565,281
14 Claims. (Cl. 15—104.3)



In a sewer rodding machine, pressure means squeeze the rod couplers from top and bottom to prevent axial rotation thereof relative to the squeeze means, to prevent twist from running back into the storage cage. To turn the tool into the obstruction, the squeeze means are rotated. The squeeze means are also driven in the lengthwise direction of the rod to drive the rod forwardly, or rearwardly.

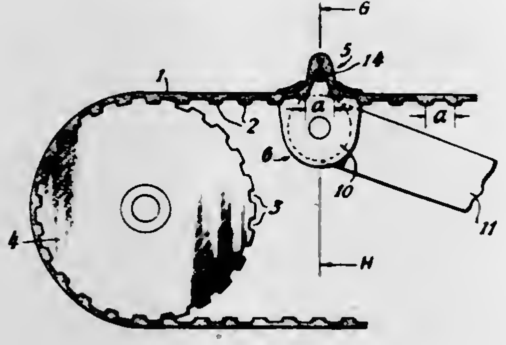
3,399,417
VALVE CONTROL MEANS

Clifton E. Hammond, Highland, and Henry R. Cline, Griffith, Ind., assignors to Champion Corporation, Hammond, Ind., a corporation of Indiana
Continuation-in-part of application Ser. No. 524,734, Feb. 3, 1966. This application Jan. 16, 1967, Ser. No. 609,387
11 Claims. (Cl. 15—104.3)



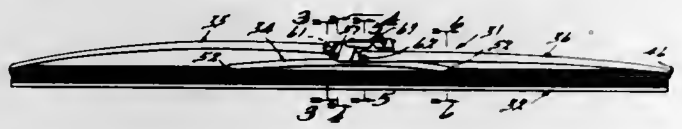
A rodder construction having separate hydraulic motors for respectively imparting axial and rotary movement to the rod. A single control lever is connected to valve means for the respective motors to provide for the operation of the motors. The linkage for the control lever is such that the natural hand movements of the operator imparts corresponding movement to the rod.

3,399,418
WINDOW OR WINDSCREEN WIPER MECHANISMS
Edward Donald Wynn, Cheltenham, and Charles Geoffrey Longford, Quedgeley, near Gloucester, England, assignors to Wynn Development Limited, Cheltenham, England
Filed June 13, 1966, Ser. No. 557,143
Claims priority, application Great Britain, Aug. 6, 1965, 33,785/65
7 Claims. (Cl. 15—250.24)



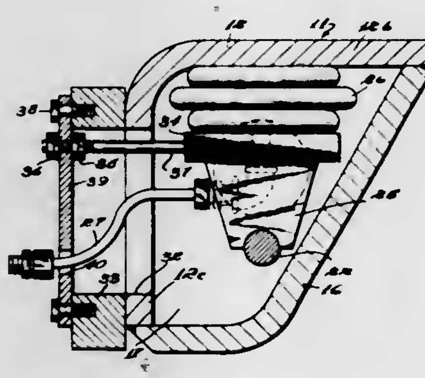
A wiper assembly in which a carriage for a wiper blade is reciprocated by means of a link member hinged to said carriage and to a bracket member connected to an endless belt passing around two sprockets. The connection between the bracket member and belt is achieved by providing projecting means extending outward from the bracket member and gripping the belt.

3,399,419
WINDSHIELD WIPER
Ralph H. Wise, 20301 Oakwood, Dearborn, Mich. 48124
Filed July 13, 1966, Ser. No. 564,773
20 Claims. (Cl. 15—250.42)



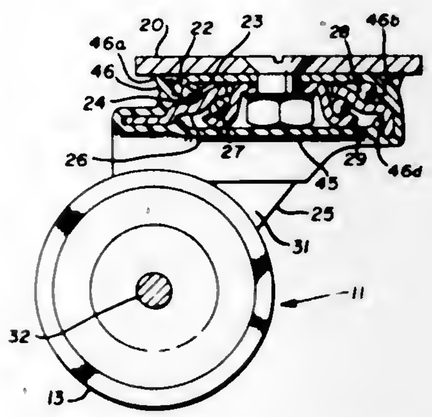
A windshield wiper having a pair of bow levers pivoted at spaced points to a connecting link, the latter having a pivotal connection to a central carrier load member and a connection to the oscillating arm spaced from said load member connection.

3,399,420
DOCTOR SHAPE CONTROL DEVICE
Elmer E. Crist, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Mar. 6, 1964, Ser. No. 349,963
1 Claim. (Cl. 15—256.51)



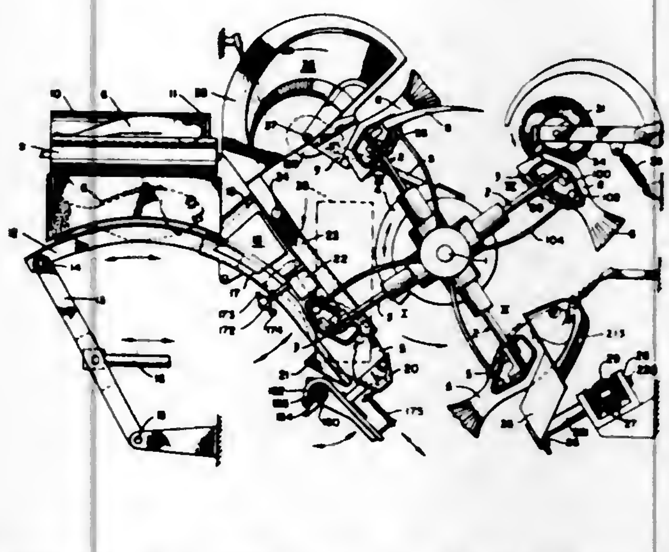
A roll with a doctor blade in close running relation supported on a doctor back having an elongate force member connected to each end of the doctor back with expansible bellows at the center of the force member applying a shape controlling force to the center of the doctor back.

3,399,421
SANITARY SEAL FOR CASTERS
Thomas A. Crawford, 606 Nome Ave., Akron, Ohio 44320
Filed Mar. 22, 1965, Ser. No. 441,701
4 Claims. (Cl. 16—26)



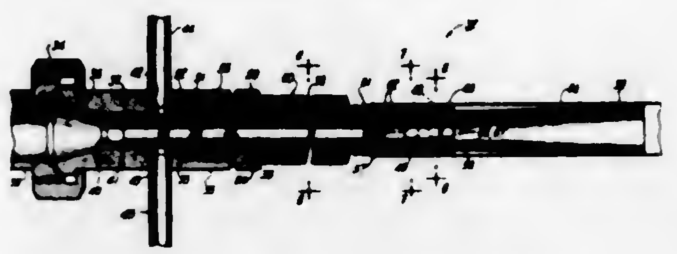
A flexible slip-on cover for sealing the raceways of a double ball bearing caster including a cup shaped body portion adapted to fit over the peripheries of said raceways and be retained thereon. The body also including integral projecting sleeves which fit over the legs of the base of the caster.

3,399,422
FISH TREATING PROCESS AND APPARATUS
Ernst Eduard Hartl, Alfred Albert Dudszus, Reinhold Heinrich Franz, Christoph Fredrich Wilhelm Rethfeldt, Gunther Hubert Reiner Wienert, Rudolf Muke, Franz Andreas Hauptmann, and Gunther Bolze, Rostock, Germany, assignors to Institut fur Schiffbau, Rostock, Germany
Original application Jan. 18, 1965, Ser. No. 426,055. Divided and this application Feb. 16, 1966, Ser. No. 565,661
8 Claims. (Cl. 17—3)



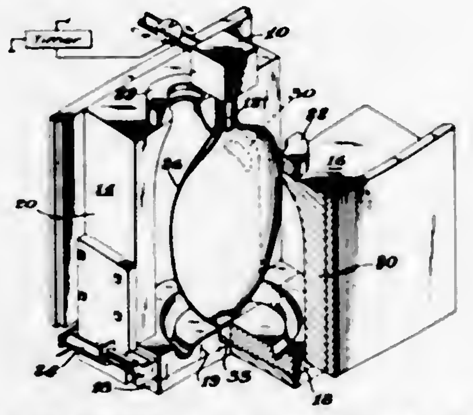
Structure for cutting away the head and stomach of the fish as well as for filleting the fish while removing the spine and ribs thereof, comprising: means for supporting a fish for movement in a predetermined path; first cutting means adjacent this path for removing the head and stomach, a second means for filleting the fish comprising a pair of sector blades which rotate simultaneously to engage the fish as the latter approaches this second means and are adapted to remove the spine and rib bones from the fish.

3,399,423
APPARATUS FOR FORMING COLLAGEN FIBER COATED PRODUCTS
Elwood W. Kielsmeier and William D. Paynter, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Application Oct. 5, 1965, Ser. No. 497,592, now Patent No. 3,306,754, dated Feb. 28, 1967, which is a continuation-in-part of application Ser. No. 198,040, May 28, 1965. Divided and this application Oct. 14, 1966, Ser. No. 620,564
7 Claims. (Cl. 17—35)



An apparatus for forming a coated sausage product which apparatus includes a stuffing horn having a main passage through which product emulsion is delivered to one end thereof and at least one separate coating delivery passage through which coating material is delivered for deposit of such coating material onto the surface of the product emulsion simultaneously while the product emulsion is being extruded into a casing.

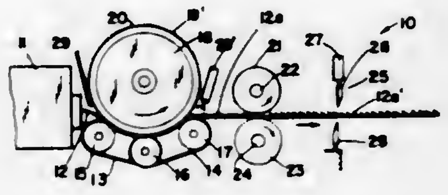
3,399,424
APPARATUS FOR BLOW MOLDING PLASTIC BOTTLE WITH A HANDLE
Nicholas Sheptak and Carlton E. Beyer, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 18, 1965, Ser. No. 465,082
7 Claims. (Cl. 18—5)



Blow molding apparatus for extruding a relatively narrow parison between die mold halves, pinching it at the bottom to form the desired narrow bottom pinch width, increasing the parison diameter by using a blow pressure until the parison body reaches the properly enlarged size for engagement of a handle section of the die mold halves, closing the mold halves and then blowing the parison in a conventional manner.

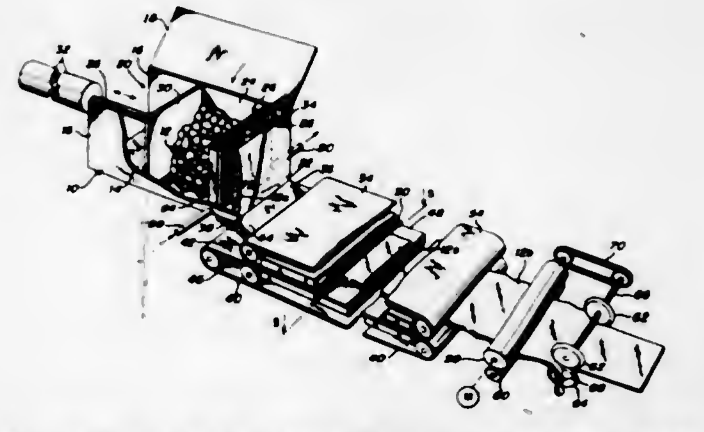
3,399,425
APPARATUS FOR SURFACE FORMING MATERIALS
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Continuation-in-part of application Ser. No. 249,921, Jan. 7, 1963. This application Aug. 23, 1966, Ser. No. 574,416
6 Claims. (Cl. 18—10)

1. Apparatus for producing a tufted sheet material or the like comprising:
   - (a) means for supplying a sheet of formable material,
   - (b) sheet deforming means for continuously operating on said sheet material to provide a plurality of spine or filament-like formations of the material of said sheet with said formations protruding outwardly from a surface of said sheet,
   - (c) means for continuously feeding said sheet to said forming means,



   - (d) means for providing at least a portion of said sheet in a molten condition whereby said sheet deforming means may shape said molten portion with said filament-like formations, and
   - (e) means for operating on said filament-like formations after they have been formed by said sheet deforming means to permanently deform said formations to a shape other than that to which they are first formed by said sheet deforming means.

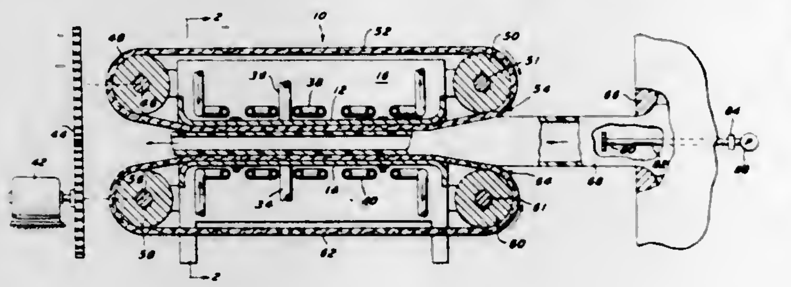
3,399,426
METHOD OF AND APPARATUS FOR EXTRUDING THERMOPLASTIC MATERIAL
George Weasel, Jr., McClure, Ohio, assignor to Advance Industries, Inc., London, Ohio, a corporation of Ohio
Filed Oct. 5, 1964, Ser. No. 401,380
7 Claims. (Cl. 18—12)



A relatively large mass of dry thermoplastic scrap is reclaimed by advancing it horizontally through a heated upright grid at a very low and variable input pressure. The grid is characterized by convergent heating surfaces of extensive area arranged to progressively compact the scrap fed thereto, fluidize the scrap, and direct the fluidized material by gravity to a distributor nozzle which initially sheets the fluid material and delivers it to a gauging and solidifying device from which device the sheeted material is pulled by means of gripper rolls driven by an ordinary electric motor of low power rating.

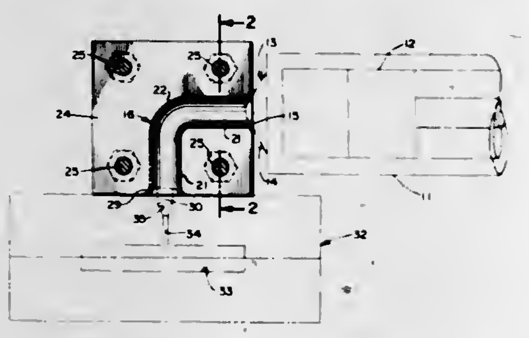
3,399,427
APPARATUS FOR MAKING A HOLLOW ELONGATED PLASTIC ARTICLE
Harry J. Harp, Jr., Jenkintown, Pa., assignor to Union Carbide Corporation, a corporation of New York
Application July 23, 1964, Ser. No. 387,265, now Patent No. 3,274,313, dated Sept. 20, 1966, which is a continuation-in-part of application Ser. No. 191,811, May 2, 1962. Divided and this application July 22, 1966, Ser. No. 567,267
2 Claims. (Cl. 18—14)

Apparatus for producing a biaxial orientated, thin wall, hollow elongated article of plastic material comprising an extruder for forming a hollow tubular member and a die forming housing having disposed therein a pair of endless belts for pulling the hollow tubular member through a passage formed thereby and vacuum means for applying a vacuum to the hollow tubular member and for reshaping it to cross-sectional shape of the finished product. Cooling means are also provided within the die forming housing for cooling the tubular member as it is being reformed. The pair of endless belts are operated at a greater linear rate of speed than that at which the hollow tubular member is extruded in order to stretch the hollow tubular member in the longitudinal direction prior to entering the die forming housing.



3,399,428
APPARATUS FOR MOLDING PLASTIC MATERIAL

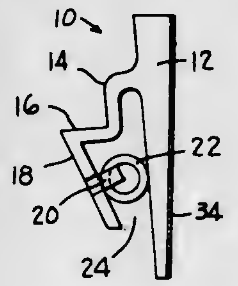
Emery I. Valyi, 5200 Sycamore Ave.,
Bronx, N.Y. 10471
Filed June 10, 1966, Ser. No. 556,642
4 Claims. (Cl. 18—30)



1. In a plastic molding apparatus a seamless tube having a smooth inner surface for the unimpeded flow of plastic, a split block composed of parts having mating channels formed therein and conforming to the shape of said tube, means clamping said parts together with the tube removably clamped in said channels, means introducing plastic material into one end of said tube, and a member positioned to receive said plastic from the other end of said tube.

3,399,429
CLAMPING DEVICE

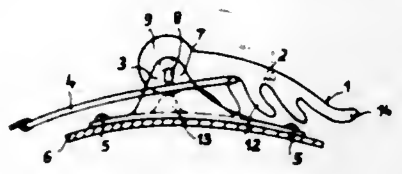
Robert Goodman, 5325 Westminster Ave.,
Philadelphia, Pa. 19131
Filed July 6, 1967, Ser. No. 651,607
6 Claims. (Cl. 24—66)



A clamping device for sheets such as papers, films, charts, and the like, comprising a support member which has a gravity-biased roller that is moved by gravity into a clamping position in an inclined guideway. A slot underlies the roller and is adapted to receive the edge of the sheet which is passed through the slot to a position between the roller and one wall of the guideway where it is clamping held by the gravity-biased roller. The support is provided with a wedge-shaped surface that permits it to be mounted either vertically or horizontally while still permitting gravity to operate on the roller. A recess is provided to permit insertion of a finger or the like to push the roller up from its gravity-biased clamping position.

3,399,430
BUCKLE, PARTICULARLY FOR A SKIING BOOT

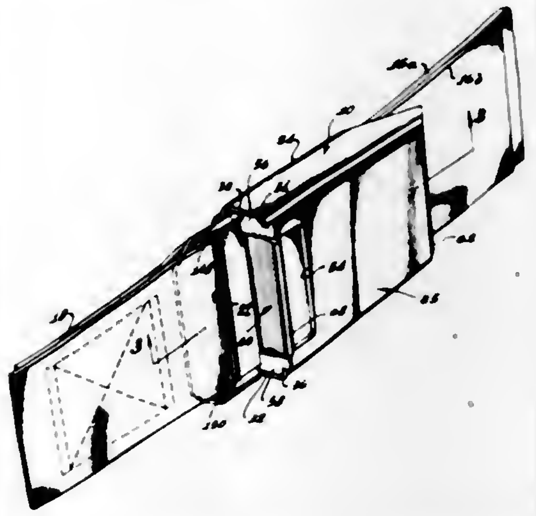
Franz March, Am Graben 9, Munich 8, Germany
Filed Mar. 15, 1967, Ser. No. 623,431
Claims priority, application Germany, Mar. 18, 1966,
Sch 38,690
11 Claims. (Cl. 24—70)



A boot buckle having a base in which a rectangular bolt is securely mounted. A buckle part or lever is lockably and pivotally mounted on said bolt. The buckle lever has a circular bore with a slot extending laterally from one side of said bore. A resilient means urges the rectangular bolt into the slot when the buckle is in the locked position. The buckle may be released by depressing the buckle lever thereby moving the bolt into the circular bore. When the bolt is located in the circular bore the buckle lever may be pivoted.

3,399,431
SAFETY SEAT BELT BUCKLE

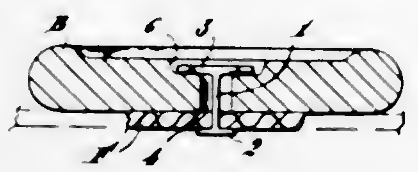
Donald J. Shanklin and Arthur Eizenberg, Tarzana, Calif., assignors to Superior Industries, Inc., Van Nuys, Calif., a corporation of California
Filed Apr. 17, 1967, Ser. No. 631,508
10 Claims. (Cl. 24—77)



A two-part quickly attachable and releasable safety seat belt apparatus for vehicles, such apparatus comprising a buckle body, and a buckle hasp insertable into the buckle body and automatically, lockingly coupled together and manually releasable by overlapping locking control components which slide principally within the buckle body transverse to the normal direction of impact acceleration and deceleration forces applicable thereto in use. The device includes a catch member in the buckle and a hasp which is inserted into the buckle and locked in coupling engagement with the catch member when the buckle and hasp are forcefully joined together, and manually operated means slidable longitudinally of the buckle is included for unlocking the hasp and moving the hasp from coupling engagement with the catch member.

3,399,432
BUTTON ATTACHMENT

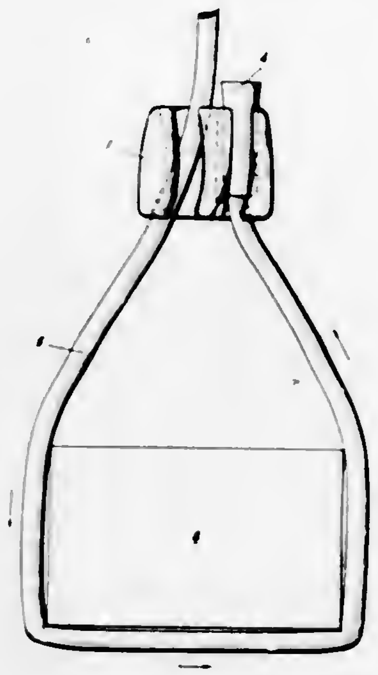
Francis G. Merser, Framingham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Continuation-in-part of application Ser. No. 512,350, Dec. 8, 1965. This application Apr. 24, 1967, Ser. No. 633,256
4 Claims. (Cl. 24—90)



The combination of a sheet of fabric or other material, a button and a fastener for attaching the button to the sheet, the fastener comprising a strand having a bar on one end and a head on the other end, the strand and bar being integral and the strand being flexible and resilient to facilitate insertion of the bar through the sheet and button.

3,399,433
CABLE CLIP

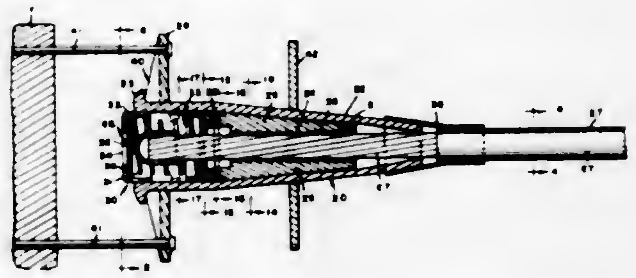
Reginald D. Faulkner, Mosman, New South Wales, Australia, assignor, by mesne assignments, to Trisal Clips Pty. Limited, Adamstown, New South Wales, Australia, a corporation of Australia
Filed Mar. 13, 1967, Ser. No. 622,695
3 Claims. (Cl. 24—123)



A cable clip for forming a noose in a cable which has a stopper on one end. The clip is a rigid block with two parallel grooves, one with an undercut design to hold the stopper on the end of the cable and the other groove is undercut and adapted to bind a re-entrant part of the cable when looped therein.

3,399,434
ANCHORS FOR STRESSED CABLES

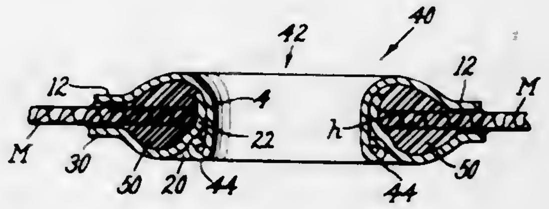
William F. Kelly, 100 Bellaire Drive,
New Orleans, La. 70124
Filed Sept. 27, 1965, Ser. No. 490,421
11 Claims. (Cl. 24—126)



A process and apparatus for post-tensioning prestressed concrete including placing opposed forms in the area to be concreted, securing a dead end anchor to one form and a live end anchor to the opposite form, securing a terminal of a tensioning member in the dead end anchor, passing the other end of the member through the live end anchor and through the form, exerting a pulling pressure on the member to lightly pretension the latter for holding the same in proper position when concrete is poured, and pouring concrete into the area between the forms to embed the anchors and members therein, the anchors including a tapered case, a complemental gripping jaw assembly slidably mounted in the case, the inner wall of the jaw assembly being toothed for surface engagement with a tensioning member passing therebetween, and spaced reaction plates secured to the outer periphery of the tapered case, the dead end anchor further including a closure cap frictionally engaged in the tapered case and having a window therein for viewing the position of the tensioning member inserted into the case, and a helical spring positioned between the jaw assembly and closure cap, the live end anchor additionally including a compressible seal engaged with the outer end of the tapered case to prevent concrete from coming in contact with the jaw segments, the seal being readily removed to permit the tensioning member to be jacked through the cavity thus formed by the seal.

3,399,435
GROMMET ASSEMBLY

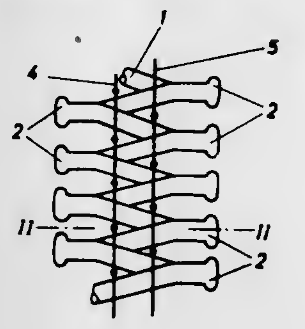
Joseph I. Ackerman, Jr., Arlington, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Dec. 28, 1966, Ser. No. 605,432
11 Claims. (Cl. 24—141)



A grommet assembly having a male grommet member and a female grommet member. Each member includes a barrel portion and a collar portion. A heat activatable or pressure activatable adhesive is disposed on the collar and/or barrel portions of at least one of the members so that when the adhesive is activated and the grommet is set in fabric or other sheet material, the adhesive acts to bond the grommet to the sheet material and to seal against the entrance of moisture into the grommet assembly.

3,399,436
SLIDE FASTENER WITH PLASTIC COUPLING ELEMENTS

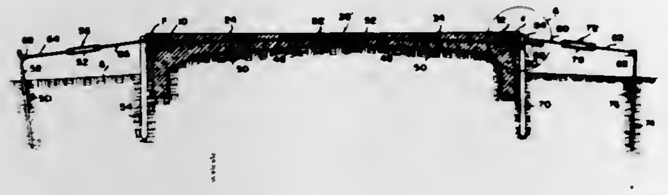
Hans Porepp, Am Rebberg, Wangen (Bodensee), Germany
Filed Nov. 14, 1966, Ser. No. 594,156
Claims priority, application Germany, Nov. 30, 1965, P 38,233
4 Claims. (Cl. 24—205.13)



A slide fastener stringer whose halves each comprise a support or carrier tape or ribbon along the approaching longitudinal edges of which are provided coupling elements consisting of continuous meanders of flattened figure-eight profile with a longitudinal axis between the two sets of bends or bights forming each meander, the meanders being stitched to the respective tapes by two rows of stitches on opposite sides of this axis and passing through the vertices of the acute angles formed between the pairs of legs of the meanders, thereby preventing shifting of the coupling elements in their planes transversely to the longitudinal direction.

3,399,437
APPARATUS FOR POST-TENSIONING PRESTRESSED CONCRETE

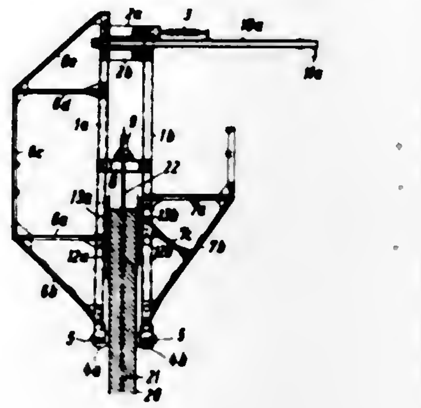
William F. Kelly, 245 S. Jamie Blvd., Avondale, La. 70094
Continuation-in-part of application Ser. No. 490,421, Sept. 27, 1965. This application Apr. 11, 1967, Ser. No. 630,087
6 Claims. (Cl. 25—118)



The post-tensioning of prestressed concrete by means of forms between which concrete is to be poured, a dead end anchor secured to one form and a live end anchor secured to an opposite form, each anchor including a tapered case, a jaw assembly within the case for engagement with a tensioning member extending therebetween, a helix circumjacent the outer periphery of the tapered case to effect stress distribution, the cases adjacent forms being provided with fastening members to facilitate securement to the forms, means engaged with the tensioning member adjacent the outer face of the live anchor form for prestressing the tensioning member, and spring means interposed between the prestressing means and form for permitting a limited movement of the tensioning member between the forms when a predetermined force is exerted thereon.

3,399,438
GUIDING MEANS FOR SLIDING SHUTTERING FOR BUILDING STRUCTURES WITH SLIGHTLY INCLINED AND VERTICAL CONCRETE WALLS

Günter Rohlf, Goebenstrasse 18, Dusseldorf, Germany
Filed July 14, 1965, Ser. No. 471,818
5 Claims. (Cl. 25—131)

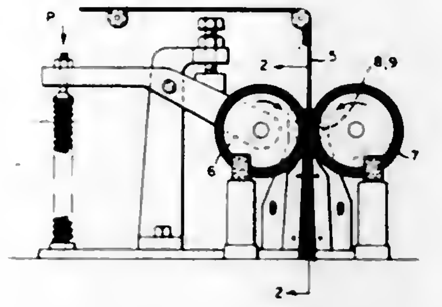


Sliding framework for building concrete structures wherein a plurality of horizontally adjustable shuttering plate guides are mounted from a support with a plurality of shuttering plates being suspended from the guides, and means for lifting the plates.

Each guide has two parallel limbs to the inner side of which facing one another the plates are secured with the limbs being interconnected via a girder to which the lifting means is affixed. The limbs have downward extensions of sufficient length to reach a hardened concrete wall portion and with which movably mounted members on the extensions would be engageable to guide the plate guides.

3,399,439
PROCESS FOR CRIMPING ABRASIVE FIBERS

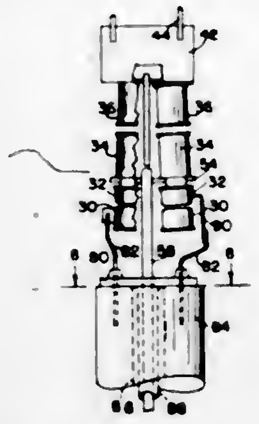
Robert C. Knowlton, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 24, 1967, Ser. No. 611,385
4 Claims. (Cl. 28—72)



The improvement in the process of crimping synthetic filamentary tows which are abrasive to metals while in high pressure rubbing contact therewith in a stuffer-box type crimper. The improvement comprising blending from 5% to 55% of a non-abrasive fiber with the abrasive fiber prior to crimping and guiding the blend components through the stuffer-box crimper in such a manner as will provide a shield of the relatively non-abrasive fiber between the abrasive fiber and the stationary portions of the crimping apparatus that contact the moving tow thereby reducing wear and the attendant fiber damage.

3,399,440
MANUFACTURE OF CATHODE RAY TUBES

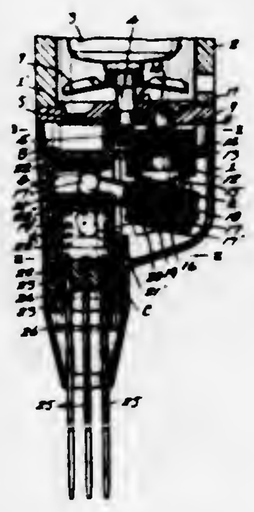
Horst H. Blumenberg, Schiller Park, and Edward J. Wolkoff, Chicago, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Continuation of application Ser. No. 415,716, Dec. 3, 1964. This application Aug. 19, 1966, Ser. No. 573,729
10 Claims. (Cl. 29—25.16)



6. A process for assembling a tri-beam electron gun structure for a cathode ray tube, including the steps of, providing a first assembly of beam control electrodes, supporting said first assembly on a mandrel, securing a locator member on said first assembly having a first index aperture, providing a second assembly of convergence electrode means, supporting said electrode means on a mandrel, said electrode means having index projections and a second index aperture, securing said first and second assemblies together with said first assembly positioned by said index projections and said first and second assemblies referenced to said first and second index apertures, providing a third assembly comprising a base stem and connector leads, securing said third assembly to said first assembly with said first assembly being supported by said connector leads and being referenced to said first index aperture, and sealing said first, second and third assemblies in the bulb of the cathode ray tube with said assemblies referenced to said connector leads.

3,399,441
HIGH SPEED RECOILLESS CHISEL DEVICE

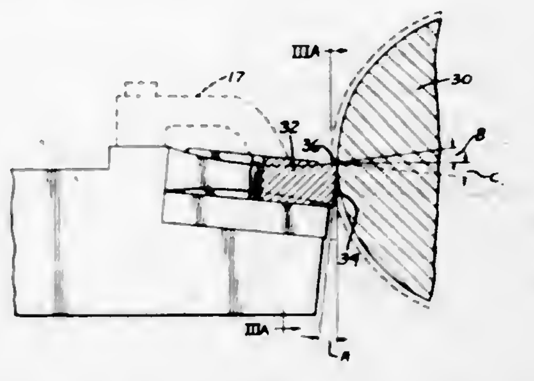
Yukio Imamura, 1156–1, Renjaku, Fujinomiya, Shizuoka Prefecture, Japan
Filed Dec. 13, 1965, Ser. No. 513,358
1 Claim. (Cl. 29—81)



An electrically driven chisel device wherein rotary motion is converted to linear motion to reciprocate a tool carrying member. The tools mounted in the tool carrying member are axially slidable thereto wherein inertia forces are employed to produce the tool impact and a substantially recoilless operation is produced.

3,399,442
CUTTING INSERT

Dennis G. Jones, Greensburg, and George E. Greubel, Latrobe, Pa., assignors to Kennametal Inc., Latrobe, Pa.
Filed Sept. 8, 1966, Ser. No. 577,901
14 Claims. (Cl. 29—95)



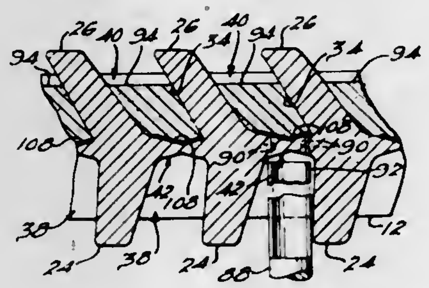
1. A positive rake throw away cutting insert adapted for being mounted in a negative rake holder; said insert comprising a body of hard material having opposed top and bottom faces in parallel planes and a peripheral surface perpendicular to said planes at least one of said faces having recess means formed therein along the entire outer edge thereof extending from the juncture of said peripheral surface and said one face inwardly toward the center of said one face, said recess comprising of an outer region adjacent said peripheral surface forming an angle less than 90° with said peripheral surface, said recess means also comprising an inner region in the form of an abrupt rise leading from the lowermost part of said outer region upwardly to the plane of said one face, the line of intersection of said inner region with the plane of said one face defining an island area in the center of said one face, said outer region being concave toward said one face in cross section whereby when said insert is mounted in a negative rake holder and presented to a workpiece to be cut thereby and tilted downwardly relative thereto in two angularly related directions, the insert will present a positive rake to the workpiece in each of said directions.

3,399,443
TURBINE WHEEL

Amedee Roy, Birmingham, and John Martin Corwin, Royal Oak, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Original application May 27, 1964, Ser. No. 370,476, now Patent No. 3,262,674. Divided and this application Apr. 5, 1966, Ser. No. 540,327
7 Claims. (Cl. 29—156.8)

1. A method of constructing a turbine wheel which is highly responsive to changes in the rate of flow of motive driving fluid through the blades thereof and which effectively prevents the formation of undesirable random cracks developed by repeated cyclic exposure of the turbine wheel blades to hot motive gases, comprising the steps of forming a turbine wheel to have a disc-like body with an annular pedestal portion radiating therefrom and circumferentially thereabout, forming a plurality of circumferentially spaced turbine wheel blades about said pedestal portion so as to be directed radially outwardly therefrom, forming a plurality of generally axially directed radially extending circumferentially spaced recesses in said pedestal portion thereby defining a plurality of generally axially directed radially extending struts therebetween, forming each of said recesses so as to have the radially innermost surface thereof of generally arcuate configuration joining the radially innermost ends of pairs of successive struts, forming an annular axially directed rim so as to join the radially outermost end of each of said struts, forming a tapered portion on each side of

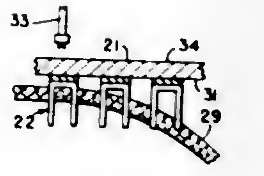
each of said struts near the radially outermost end thereof in a manner causing said tapered portions of succeeding struts to form a juncture at a point which is substantially on the radially innermost surface of said rim thereby providing first portions for localizing stresses, forming a web in each of said recesses so as to join succeeding struts thereby dividing said recesses into upstream recesses and downstream recesses and effectively preventing the passage of motive fluid between said struts, forming second portions for localizing stresses formed on said webs, placing a layer of electrically conductive material within at least one of said upstream recesses and against said web therein, at least partially filling said one of said upstream recesses with a dielectric material, placing an electrode of generally arcuate cross-section partially into one of said downstream recesses which is in general juxtaposition to said one of said upstream recesses, applying an electrical potential to said electrode and said web between said one upstream and said one downstream recess thereby causing electrical discharges as between said electrode and said web in order to remove material from said web, advancing said electrode toward said web as said material is being removed, continuing to advance said electrode until said electrode abuts against said dielectric material thereby forming an aperture through said web, and withdrawing said electrode from said downstream recess.



3. A method of forming an aperture through a wall portion of a metallic article, comprising the steps of placing a thin layer of electrically conductive material on one side of said wall portion, placing a layer of dielectric material against said layer of electrically conductive material so as to generally contain said electrically conductive material between said one side of said wall portion and said dielectric material, placing electrical discharge machining electrode in close proximity to the other side of said wall portion opposite to said one side, applying an electrical potential to said wall portion and to said electrode thereby causing electrical discharges as between said wall portion and said electrode in order to remove material from said wall, advancing said electrode toward said wall at a rate related to the rate at which said material is being removed, continuing to advance said electrode until said electrode passes through said wall portion and at least in part passes through said layer of electrically conductive material to abut against said dielectric material, said dielectric material serving to prevent the occurrence of electrical discharges as between said electrode and a portion of said metallic article other than said wall portion.

3,399,444
METHOD FOR MAKING A HEAT DISSIPATOR
John H. Jacoby, 53 Bartlett St.,
Chelmsford, Mass. 01824
Original application May 8, 1963, Ser. No. 278,859.
Divided and this application Oct. 18, 1965, Ser. No. 510,423
2 Claims. (Cl. 29—157.3)

A method for making a heat dissipating device or radiator which conducts heat away from a heat source through protuberances such as parallel, spaced-apart wire pins. The manufacturing method consists of driving staple-like wire elements into a temporary support or retainer sheet, applying bonding agent to the element bases, positioning a metal sheet against the element bases, applying heat to achieve a metallurgical bond and removing the support sheet.



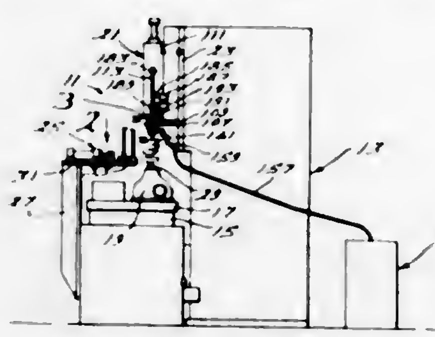
3,399,445
FULL AUTOMATIC FRAMING MACHINE
Ellsworth W. Carroll, deceased, late of Petaluma, Calif., by Hazel D. Carroll, executrix, Petaluma, Calif., assignor to John R. Carroll, Portland, Oreg.
Filed Oct. 20, 1965, Ser. No. 498,779
21 Claims. (Cl. 29—200)

Apparatus for prefabricating building components such as wall sections. The apparatus includes conveyor structure having a plurality of stations therealong at which various operations are performed in the fabrication of such building components, and which operations in the case of a wall section include construction of the frame therefor comprising the necessary studs, headers, bracing and fire stops; applying a vapor barrier over the frame along one side thereof; locating windows where necessary; securing siding to the frame in covering relation with the vapor barrier; caulking recesses in the siding; and finally painting or otherwise applying a preservative to the exterior surface of the siding. The apparatus includes a plurality of magazines respectively located at certain of the stations along the conveyor structure and in which timbers and other building elements are stored until discharge therefrom at the time of their use, segregating mechanisms respectively located at such magazines for segregating the building elements one-by-one therefrom, assembly mechanisms at such respective stations for assembling the building elements separated from the magazines by such segregating mechanisms, mechanism for applying a vapor barrier to the assembled frame of a wall section, mechanism for applying siding over the vapor barrier and for securing the siding in position on the frame, apparatus for caulking or otherwise filling any recesses in the siding resulting from securing the same to the frame, and spray apparatus applying a coating of material to the exterior surface of the siding.

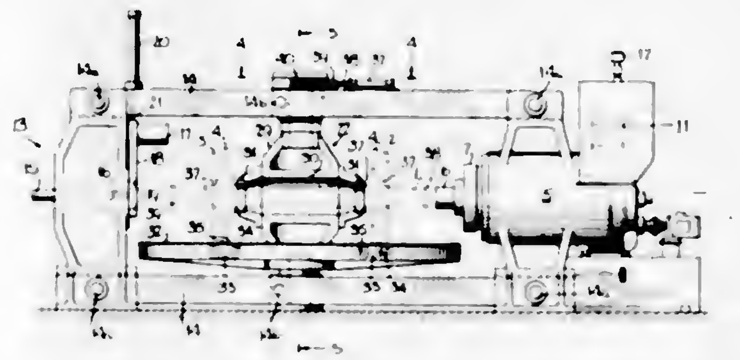
3,399,446
OIL SEAL ASSEMBLING DEVICE
Dano J. Agresta, Roseville, and Bruno H. Boelstler, Fraser, Mich., assignors to The Cross Company, Fraser, Mich., a corporation of Michigan
Filed Feb. 17, 1966, Ser. No. 528,248
14 Claims. (Cl. 29—200)

An apparatus for assembling oil seals comprising means for delivering successive seals to a work station; means for receiving the seals at the work station and for operatively engaging the seals with a workpiece, and means cooperable with for receiving and delivering the seals for supplying lubricant to the seal and workpiece upon assembly thereof.

The purpose of this abstract is to provide a nonlegal technical statement of the disclosure of the contents of the instant patent application and thus serve as a searching-scanning tool for scientists, engineers and researchers. Accordingly, this abstract is not intended to be used in understanding or otherwise comprehending the principles of the present invention, herein described in detail, nor is it intended to be used in interpreting or in any way limiting the scope or fair meaning of the claims appended hereto.

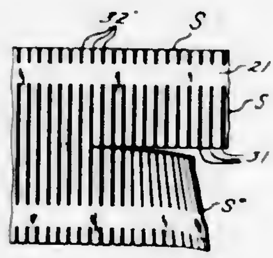


3,399,447
APPARATUS FOR REMOVING RAILROAD WHEELS
Walter J. Hegedus, Pittsford, and Charles A. Leyerle, Jr., Rochester, N.Y., assignors to Farrel Corporation, Ansonia, Conn., a corporation of Connecticut
Filed Apr. 7, 1966, Ser. No. 541,003
11 Claims. (Cl. 29—208)



1. A wheel press for removing the wheels from an axle of a railroad wheel set having a single ram assembly, which press is characterized by including an axle support and wheel abutment rotatable about an axis transverse to the press axis for indexing the wheel on each end of the axle into operative relationship with said ram assembly.

3,399,448
METHOD OF MANUFACTURING STRIP STRUCTURES
Norman C. Jackson, Sheffield Lake, Ohio, assignor to The Standard Products Company, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 2, 1964, Ser. No. 408,097
6 Claims. (Cl. 29—415)



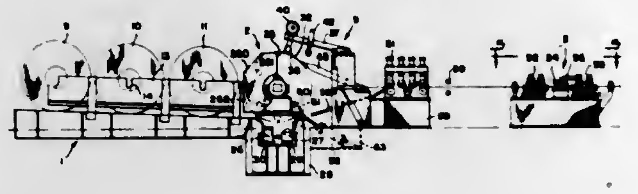
The method of making a core for a strip structure comprising the step of providing a flat sheet metal strip with a series of transverse, closely spaced slits extending inwardly from the side edges of the strip and terminating at their inner ends adjacent to a continuous, unslitted portion extending lengthwise of the strip, the step of elongating the strip by reducing the thickness of the continuous portion with the result that the slits are changed into slots defining a plurality of narrow elements extending laterally from the continuous portion, the step of forming said strip into a generally channel shape with said continuous portion comprising the web of the channel and said elements projecting away from the web, the step of applying a common connecting means to the distal ends of the elements on one side of the web, the step of providing the strip with a flexible covering material, and the step of securing the common connecting means to said distal ends to maintain said distal ends in a fixed, spaced relationship.

3,399,449
METHOD OF MAKING COAXIAL CABLE
Thomas J. McGean, East Orange, and Daniel Nathanson, Elizabeth, N.J., assignors to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York
Filed June 9, 1966, Ser. No. 556,486
6 Claims. (Cl. 29—477.7)

1. The method of forming the outer conductor of a cable coaxial, which comprises longitudinally moving an elongated conductor sheet, bending said sheet transversely into a round cross section as it moves longitudinally so as to form a longitudinal seam, imparting different cross-sectional radii to the two portions of the longitudinally moving sheet at the seam, closely overlapping the opposing edges of the moving sheet so as to form an overlap portion and underlap portion, while bending and imparting different radii to said sheet orienting the sheet so that the edge of the overlapping portion of said sheet forms with the sheet adjacent the underlap a V-shaped well and so that the cross section of the overlap seam extends angularly downward, heating the vicinity of the seam of the curved moving sheet by moving the sheet under stationary heating means that extend only partly around the curved sheet periphery, feeding a flux-cored solder wire to the heated sheet at a locus of peripheral points above the V-shaped well and on the underlap side of said well so that the solder can flow down into the well and be drawn into the overlap.

3,399,450
METHOD AND APPARATUS FOR JOINING STRIP ENDS
William E. Mize, Parma Heights, Ohio, assignor to The Yoder Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 11, 1964, Ser. No. 395,847
28 Claims. (Cl. 29—482)

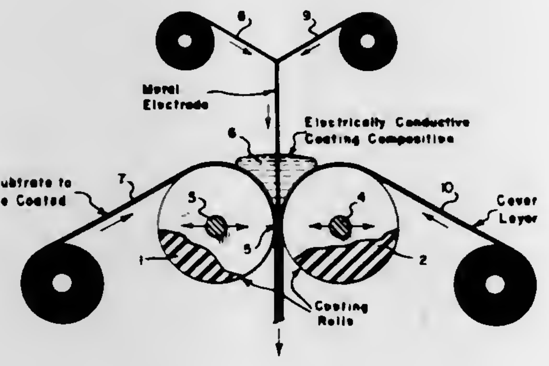
Strip joining apparatus utilizing a stand-by line laterally adjacent the processing line with a peeler in the stand-by line and an open throated flattener for both lines; and a strip joining apparatus severing the strip in both lines



and indexing the severed ends to be joined, the latter including means to shift the strip in the stand-by line including the coil to the processing line.

3,399,451
METHODS OF COATING ELECTRICALLY CONDUCTIVE COMPOSITIONS

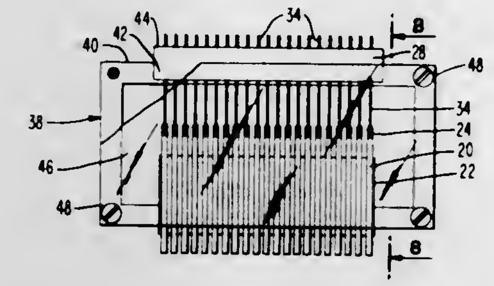
Robert Smith-Johannsen, Glens Falls, N.Y., assignor to Chemelex, Inc., Mineola, N.Y., a corporation of New York
Filed Mar. 29, 1965, Ser. No. 443,515
5 Claims. (Cl. 29—620)



Electrically conductive materials are produced in a wide range of resistances from a single electrically conductive coating composition by passing a substrate to be coated through the nip of a pair of horizontally mounted rolls forming a bank holding the conductive coating composition and adjusting the height of the coating composition in the bank, the pressure of the rolls of the nip and the speed of rotation of the rolls to obtain the desired resistance.

3,399,452
METHOD OF FABRICATING ELECTRICAL CONNECTORS

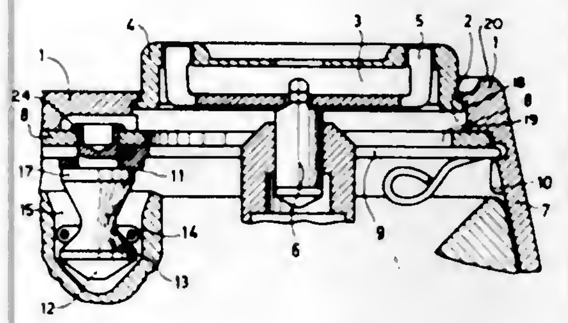
Gilbert R. Reid, Norristown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 7, 1966, Ser. No. 532,453
4 Claims. (Cl. 29—629)



This invention comprises the method steps of forming by etching techniques a plurality of flexible, self-supporting high quality contact elements bonded to a thin flexible substrate of electrically insulating material with the opposite ends of the contacts freely extending beyond the substrate for individual flexibility and available for connection to associated apparatus. In particular, the contacts connect to plated wire memory elements having a diameter on the order of 5 mils (the size of a human hair). The ends of the contact elements are provided with grooves which are formed simultaneously with the etching of the contact elements by leaving a four sided slot. The ends are then shaped in a bowed configuration so as to form a pressure contact for the said wire memory elements.

3,399,453
DRY-SHAVING APPARATUS HAVING SHAVING LOCKING MEANS

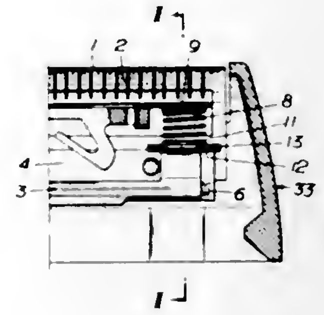
Louw Arjen Biesma, Drachten, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 13, 1966, Ser. No. 564,849
Claims priority, application Netherlands, July 15, 1965, 6509138
5 Claims. (Cl. 30—43.6)



A separate plate-shaped locking member which retains the shaving head in the holder. The plate-shaped locking member is provided with well known springs, the free ends of which engage lugs of the holder to secure the locking member to the holder. The locking member at the side remote from the holder is provided with a pin to secure the locking member with the holder and the shaving head to the housing of the dry-shaver.

3,399,454
MOUNTING MEANS FOR THE LOWER RECIPROCABLE BOLT BLADE OF A CUTTER HEAD FOR A DRY SHAVER

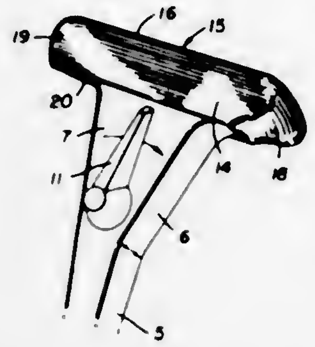
Erich Liska, Hitzendorf, Styria, Austria, assignor to Payer-Lux Eduard Payer, Graz, Styria, Austria, a company
Filed Dec. 6, 1965, Ser. No. 511,814
Claims priority, application Austria, Dec. 9, 1964, A 10,400/64
2 Claims. (Cl. 30—43.92)



A cutter head for dry shavers in which a lower blade reciprocable in a predetermined direction in contact with a perforated stationary blade has secured thereto the first end of a resilient element with the second end of the resilient element bearing on a blade support detachably connected to the cutter head body for providing an abutment for the second head. The resilient element is arranged for urging the lower blade against the stationary blade with the abutment being provided with a slide face and the second end of the resilient element being provided with a slide member bearing on said slide face and displaceable in a predetermined direction relative to the abutment along the blade support.

3,399,455
SEAMLESS PLASTIC RAZOR HEAD COVER

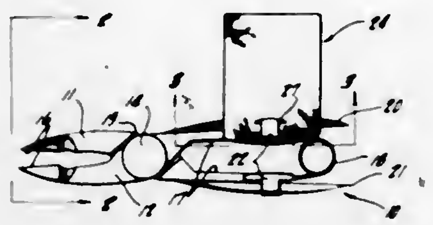
Frank W. Steere, Jr., Akron, Ohio, assignor to Steere Enterprises, Inc., Tallmadge, Ohio, a corporation of Ohio
Filed July 13, 1967, Ser. No. 653,127
1 Claim. (Cl. 30—90)



The T-shaped head of a razor equipped with a band blade is protected by a removable, flexible plastic cover. The cover is generally rectangular, the bottom side being provided with a rectangular opening which is as wide as the cover, but not quite as long, one end of the bottom side being covered over to form a pocket. When the cover is placed on to a razor, one end of the head of the razor is slipped into the pocket at this end of the opening, and then the rest of the end of the razor is snapped into the opening. The cover fits snugly on the head of the razor. The covered end of the head tends to prevent unwanted dislodgement of the cover from the end of the razor.

3,399,456
FINGER-HELD TOOLS

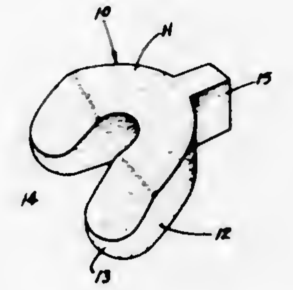
Gary L. Johnson and Robert M. Shryock, Monrovia, Calif., assignors to E.T.M. Corporation, Monrovia, Calif., a corporation of California
Filed May 24, 1967, Ser. No. 640,908
4 Claims. (Cl. 30—232)



A miniature hand tool having a handle adapted for finger mounting so the tool can be gripped between the user's finger and thumb for convenient and immediate manipulation. A concavely dished plate is secured to the handle to fit smoothly against the finger, and an adjustable-length strap extends from the plate continuously around the finger to secure the tool to the finger. On tools which are inherently "one-sided" such as side-cutting pliers, both handles or arms of the tool are equipped with concavely dished plates, and hooks are provided on each plate so the strap is interchangeably mountable on either plate, making the tool usable on either the right or left hand of the user.

3,399,457
DENTAL BITE RIM OR IMPRESSION TRAY

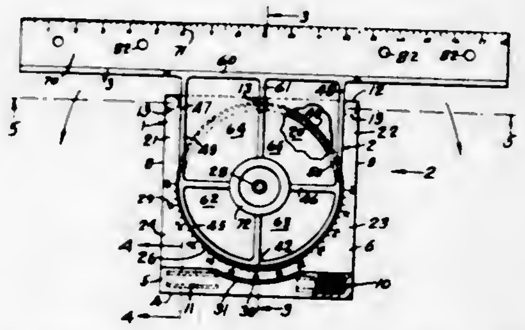
Harry C. Hagman, 1111 Nicollet Ave., Minneapolis, Minn. 55403
Filed Feb. 19, 1964, Ser. No. 345,982
11 Claims. (Cl. 32—19)



1. A one piece composite upper and lower dental bite rim comprising a single block of fine grain foamed synthetic resinous material of a size and shape adapted to fit in the mouth of a human between the jaws, said foamed synthetic resinous material being rigid, thermally stable, non-toxic, lightweight with a myriad of minute cells and easily deformable by jaw pressure alone at ambient temperatures with memory-retentive properties to stably maintain the dimensions of deformations produced therein.

3,399,458
MAGNETIC PROTRACTOR SQUARE

John H. Holder, 6515 E. Compton Blvd., Paramount, Calif. 90723
Filed May 9, 1966, Ser. No. 548,501
2 Claims. (Cl. 33—93)

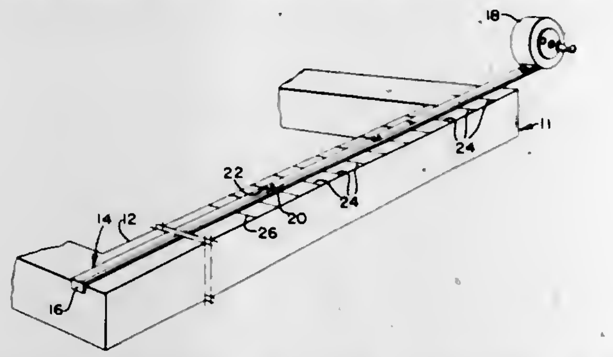


A square base, having a protractor scale marked on it, carries an index plate which is swingable relative to the scale and which supports at one side an elongated straight edge used for guiding a cutting torch. The torch is always so spaced from the main body of the device that no damage can be caused by its flame. Magnets on the square base hold the device on magnetic work. The index plate is lockable in various angular positions thus locking the straight edge.

3,399,459
MEASURING INSTRUMENT

Jerald R. Martin, 2805 W. 20th St., Plainview, Tex. 79072
Filed Oct. 15, 1965, Ser. No. 496,523
9 Claims. (Cl. 33—111)

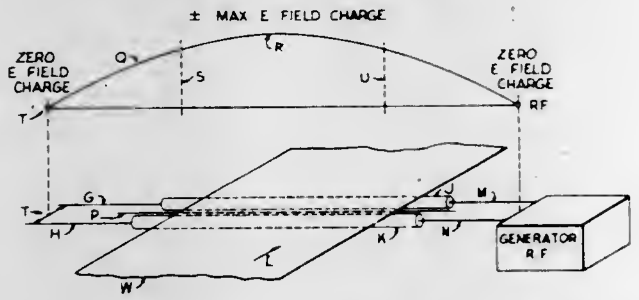
A masonry measuring tape used in conjunction with a table to enable bricks of random lengths to be laid in a lineal course on a foundation of a given length, so the brick laid will occupy the same lineal space on the foundation in whole brick and brick widths, with the vertical mortar joints being substantially uniform width throughout the entire length of the course, and to determine the number of bricks of random lengths necessary



to complete the laying of a course, including the mortar joints, so that each course, as laid in predetermined, controlled unit lengths so brick may be laid without having to cut bricks within the length of the foundation. Further provision is made, on the same tape, to lay masonry units of different lengths in the course.

3,399,460
PROCESS AND APPARATUS FOR MOISTURE CONTENT DE-PEAKING AND EQUALIZATION

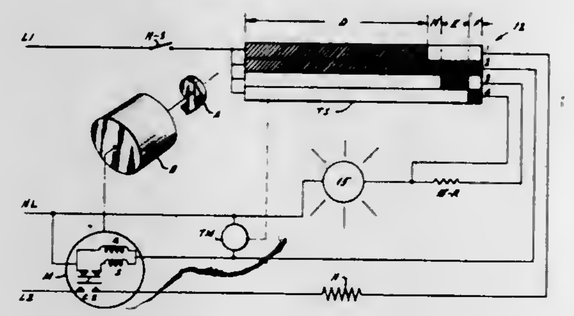
George F. Russell, 711 St. Helens Ave., Tacoma, Wash. 98402
Filed Aug. 15, 1966, Ser. No. 572,518
5 Claims. (Cl. 34—1)



Equalizing an unevenly distributed moisture content in a moving web of paper or fibre containing moisture during its primary drying process by applying thereto the selective heating effect of a high frequency alternating current field of force for de-peaking areas of moisture content above the average of the web.

3,399,461
HOUSEHOLD DRYER SYSTEM

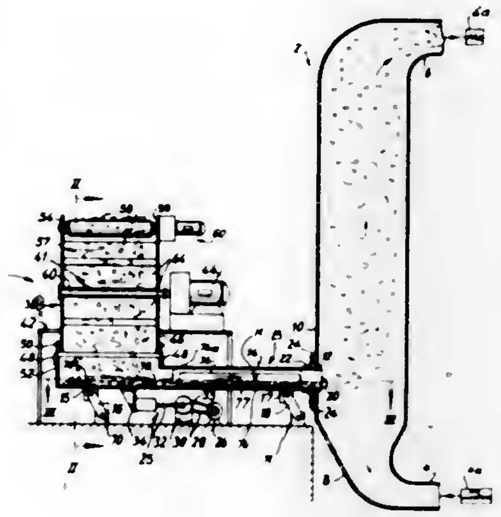
Roger F. Doty, Connersville, Ind., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Mar. 6, 1967, Ser. No. 620,693
8 Claims. (Cl. 34—45)



A combination of programing and signalling means for a household dryer. The programing system is arranged to effect, after drying and normal cool-down, a sequence of signalling operations and a predetermined extension of the cool-down, to minimize wrinkling of fabrics in the dryer while avoiding excessive continuation of the cool-down.

3,399,462
APPARATUS FOR TREATING TOBACCO AND THE LIKE

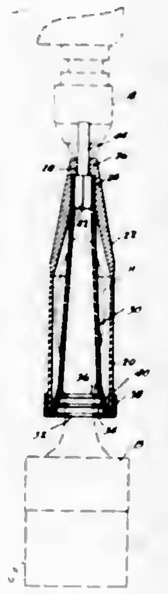
Hans Koch, Hamburg-Rahlstedt, Waldemar Wochnowski, Hamburg, Willi Thiele, Geesthacht-Tesperhude, and Gustav Hancke, Hamburg, Germany, assignors to Hauni-Werke Koerber & Co., KG., Hamburg-Bergedorf, Germany
Filed July 29, 1966, Ser. No. 568,782
Claims priority, application Germany, Aug. 4, 1965, H 56,761
10 Claims. (Cl. 34—57)



Apparatus for feeding tobacco to a drier comprises a first conveyor which converts a continuous tobacco stream into a series of batches and dumps such batches into a vibrating trough wherein the batches are converted into an equalized mat. The leading end of the mat is fed into the drier.

3,399,463
PAINT BRUSH CLEANING APPARATUS

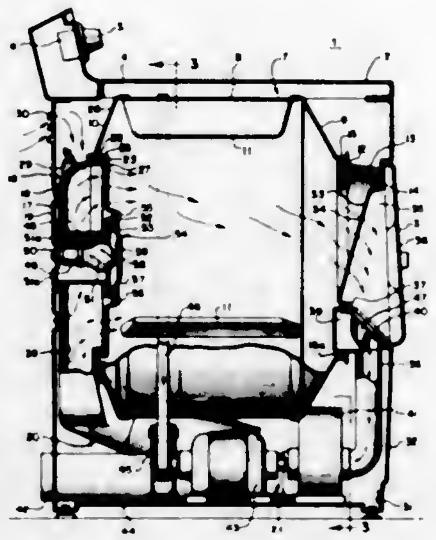
Everett W. Stott, 6903 94B Ave., Edmonton, Alberta, Canada
Filed May 26, 1967, Ser. No. 641,561
5 Claims. (Cl. 34—58)



An assembly for holding a paint brush while it is rotated and cleaned by centrifugal force. The assembly consists of a relatively rigid outer casing housing a flexible inner casing provided with gripping ridges for engagement with the handle of a paint brush. A shaft is secured to the assembly for attachment to a power tool for rotating it.

3,399,464
CLOTHES DRYER

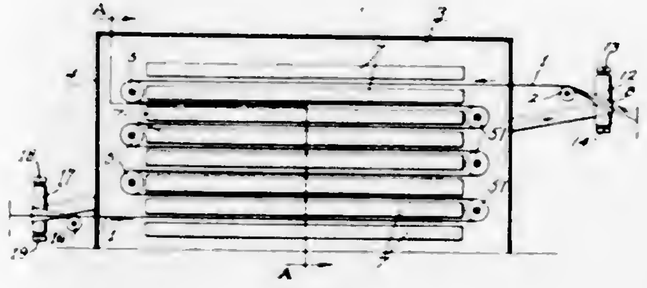
Clifford E. Erickson, Chicago, and Daniel E. Stelli, Lombard, Ill., assignors to General Electric Company, a corporation of New York
Filed Sept. 16, 1966, Ser. No. 580,020
7 Claims. (Cl. 34—133)



A clothes dryer in which the rear wall of the drum is rotatably supported on a conduit which guides heated air into the drum. A lamp may be mounted in the conduit, centrally of the drum, to indirectly light the drum, the lamp being shielded from the heated air.

3,399,465
APPARATUS FOR THREADING A WEB MATERIAL

Bengt Lanne, Jonkoping, and Sven Wallin, Taby, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed Jan. 16, 1967, Ser. No. 609,696
2 Claims. (Cl. 34—158)

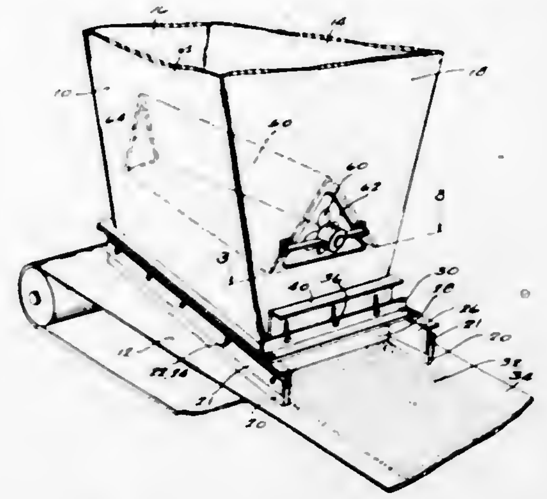


A threading device for a multi-deck treatment plant for web material comprising a conveyor running alongside the entire length of the conveying path of the material and consisting of a band of flexible material folded upon itself to grip the leading end of the web material therebetween, the folds being closed on the web material adjacent the entrance end of the plant and separated from the web material at the discharge end of the plant.

3,399,466
SAND HOPPER

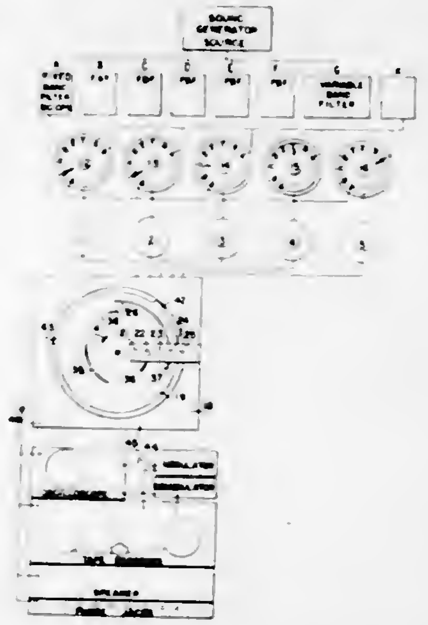
Nelson Hartley, Towson, Md., assignor to Hartley Controls Corporation, Neenah, Wis., a corporation of Wisconsin
Filed June 21, 1967, Ser. No. 647,794
7 Claims. (Cl. 34—167)

Disclosed herein is a sand hopper having an inverted V-type flow baffle in the bottom of the hopper to define two diverging discharge slots located above a continuously movable conveyor with ventilating means to remove heat from the space beneath the baffle.



3,399,467
HEART SOUND SIMULATOR

Abe Ravin, 45 S. Dahlia St., Denver, Colo. 80222
Filed Jan. 27, 1966, Ser. No. 523,351
15 Claims. (Cl. 35—17)

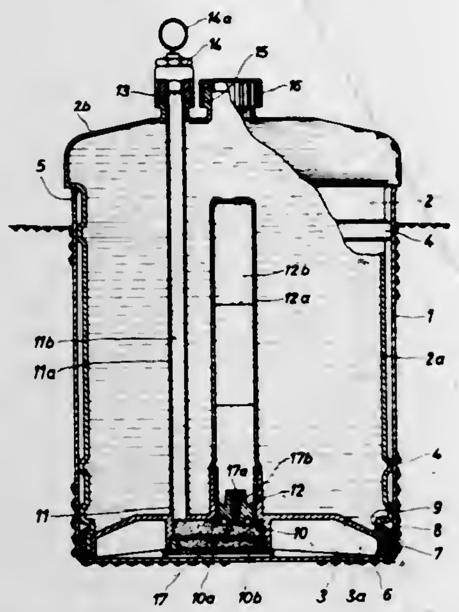


A heart sounds simulator for the teaching of cardiac auscultation which utilizes signal gating apparatus for controlling the emission and recombination of separate sound bands of selective frequency to assemble or build up a multiband combined sound and to release the separate or combined signals in cyclic and timed sequence to simulate a heart pulse. The separate bands of sound are prerecorded or are band filtered from a sound generator source. Photosensitive signal gating and sound generating components are utilized in various embodiments of the invention. A simulated electrocardiogram signal may be produced simultaneously with the released heart sounds and may be recorded with the sounds for later presentation through use of modulator-demodulator circuits.

3,399,468
SPRAYING CANISTER

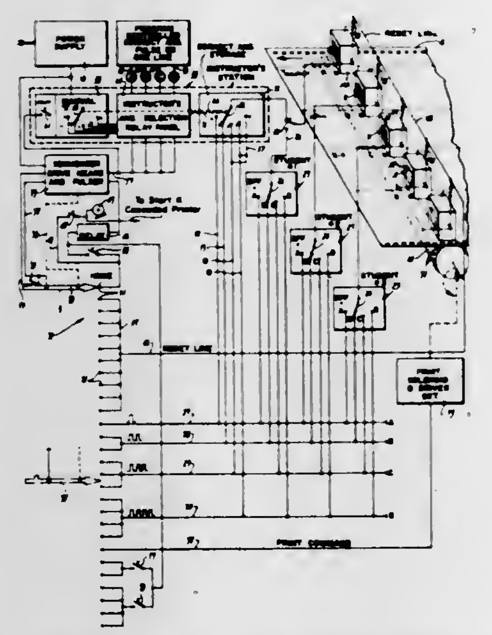
Walter Gähle, Unterluss-Hohenrieth, Germany, assignor to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany
Filed May 5, 1966, Ser. No. 547,862
Claims priority, application Germany, May 8, 1965, R 40,581
6 Claims. (Cl. 35—25)

A spraying canister for simulating the discharge of poison gases over terrain having a container to hold a mock gas with a detonator and a time-delay mechanism



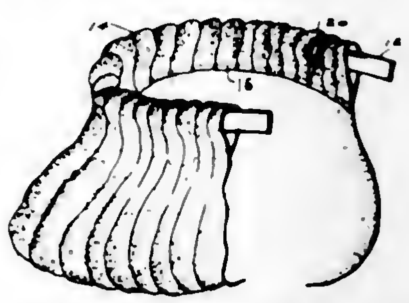
and a propellent and explosive charge to burst the container and spray out the contents thereof.

3,399,469
ANSWER ENTRY AND RECORDING SYSTEM
Thomas R. Nisbet, Palo Alto, Calif., assignor, by mesne assignments, to Edex Corporation, Mountain View, Calif., a corporation of Delaware
Filed Apr. 12, 1965, Ser. No. 447,167
8 Claims. (Cl. 35—48)



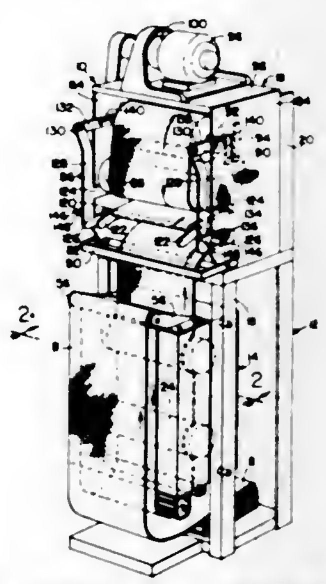
1. An answer entry and recording system comprising a plurality of printing units, each unit including a printing element bearing a predetermined ordered sequence of different characters to be printed, and having means for stepping the printing element through said ordered sequence in response to receipt of a related ordered sequence of pulses to dispose said element in condition for printing one of said characters, a pulse transmission channel for each of a predetermined number of possible answers to be made by students, a student station associated with each of said printing units, means at each student station to selectively couple any one of said channels to transmit pulses to the associated printing unit for said station so as to manifest a response of the student, means for applying different numbers of pulses correspondng to the selectable student answers to each of said channels to cause those printing elements coupled thereto to be conditioned to print a related character, the last named means thereafter providing a print signal, and means cooperating with said print elements and operatively responsive to said print signal from the last named means to record the selected answers of the students.

3,399,470
INDOOR OVERSHOE
Elenore H. Schofield, 2871 Orchard Home Drive, Medford, Oreg. 97501
Filed Apr. 26, 1967, Ser. No. 633,749
4 Claims. (Cl. 36—7.1)



An indoor overshoe is provided wherein the entire overshoe, both sole and upper, consists merely of a single piece of woven fabric, which is durable, freely flexible, water absorbent, porous, washable, and which has substantial body, and a high ratio of surface area to mass, such as terry cloth; and a length of retaining elastic confined in an upper marginal hem. There is no defined line of division between sole and upper.

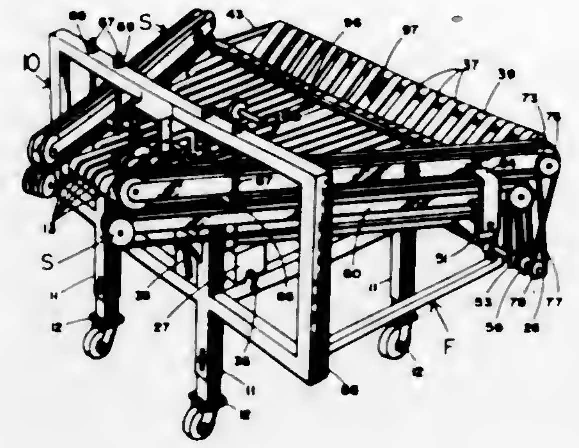
3,399,471
CONTINUOUS TOWEL IRONING STRUCTURE
Alec Kessler, 29489 Everett Ave., and Theodore Rosen, 29610 Everett Ave., both of Southfield, Mich. 48075
Filed Mar. 23, 1966, Ser. No. 536,769
12 Claims. (Cl. 38—2)



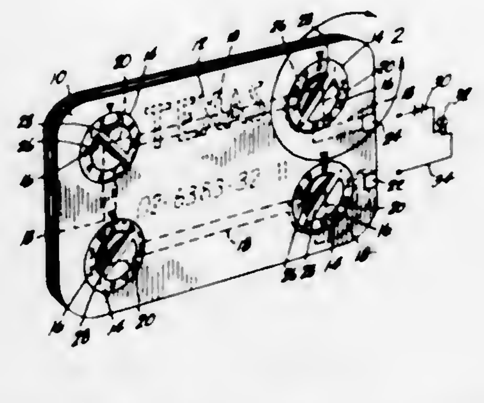
The invention pertains to an ironing device for elongated toweling embodying a structure having electrically-heated ironing plates, a towel advancing roller intermediate the plates and in direct bearing contact with the towel and a towel wind-up structure, for automatically ironing and rolling a fabric towel of extended length into a finished roll of toweling ready for immediate re-use.

3,399,472
SPREADING APPARATUS FOR FLAT WORK IRONERS
Ralph S. Evans, 4711 NW. 170th St., Miami, Fla. 33169
Filed Apr. 24, 1967, Ser. No. 633,264
6 Claims. (Cl. 38—143)

A spreading apparatus for spreading flat work for conventional flat work ironers having a plurality of horizontally disposed conveyor belts formed in a trapezoidal shape, a system of pulleys and endless belts mounted on each side of the conveyor belts with the rear portions extending in a direction away from each other, each system consisting of two groups of endless belts with pulleys engaging same at each end, one group mounted above the other with portions of the endless belts overlapping each other whereby flat work conveyed rearwardly by the conveyor belts will be engaged by and between the overlapping portions of the endless belts and be conveyed rearwardly and outwardly to remove the wrinkles from the flat work and weighted idler rollers mounted above the conveyor belts to prevent sidewise movement of the flat work.



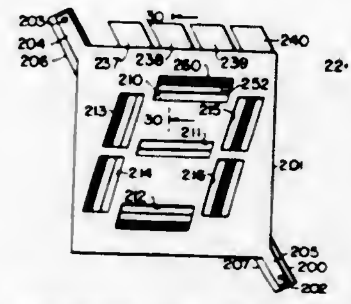
3,399,473
COMBINATION CREDIT CARD
Nissen Asher Jaffe, 5336 Anaheim Road, Long Beach, Calif. 90815
Filed June 13, 1966, Ser. No. 557,166
8 Claims. (Cl. 40—2.2)



In combination with a card-like object usable by a consumer to secure credit from a merchant, one or more movable members supported within the card-like object which must be positioned in a particular location to operate a separate testing apparatus.

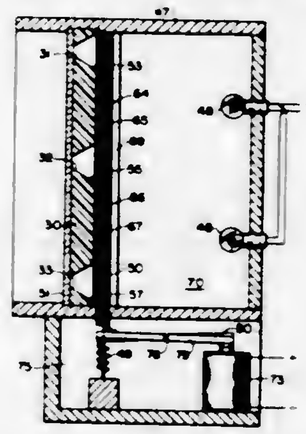
3,399,474
DIGITAL DISPLAY DEVICE USING REFLECTED LIGHT
Robert M. Rinder, 425 E. 12th St., New York, N.Y. 10009
Continuation-in-part of application Ser. No. 589,413, Oct. 25, 1966. This application Jan. 18, 1968, Ser. No. 703,216
9 Claims. (Cl. 40—28)

Four slides containing apertures and having light reflecting areas thereon are mounted on a base having light reflecting areas thereon so that a small movement of one or more of the slides will align apertures and light reflecting areas to indicate digits from 0 to 9. The digits are indicated in a conventional manner in seven windows which, in this invention, are formed in a cover. The light



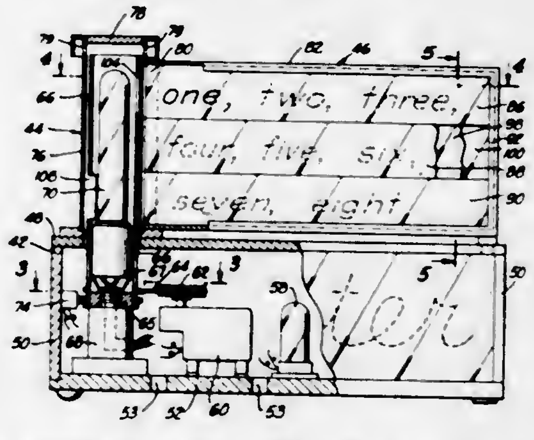
reflecting areas appearing in a window to indicate a portion of a digit are at least one third the width of the window.

3,399,475
DIGITAL INDICATOR
Robert M. Rinder, 425 E. 12th St., New York, N.Y. 10009
Continuation-in-part of application Ser. No. 589,413, Oct. 25, 1966. This application Jan. 19, 1968, Ser. No. 699,210
10 Claims. (Cl. 40—28)



A fixed cover plate and four movable slides contain apertures so that a small movement of one or more of the slides will align apertures to allow light to pass therethrough and indicate digits from 0 to 9. The digits are indicated in a conventional manner in seven areas which form parts of the digits. The apertures in the cover and the slides are of equal width and aligned in the direction of movement of the slides. To pass a maximum amount of light, the apertures may extend completely across the areas in which parts of digits are indicated.

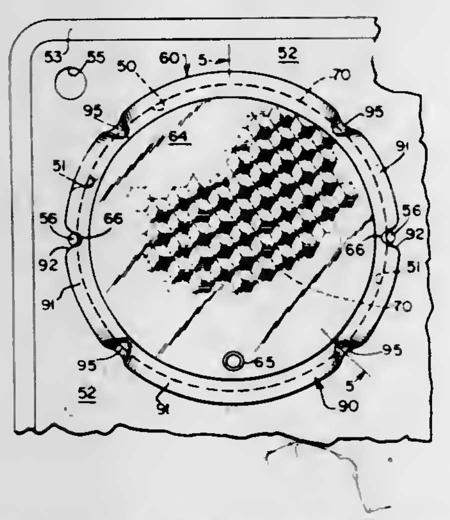
3,399,476
ANIMATED SIGN
James F. Davis, 17154 Nordhoff St., Northridge, Calif. 91324
Filed Feb. 1, 1965, Ser. No. 429,337
4 Claims. (Cl. 40—130)



The sign comprises a sign panel which has a plurality of sign elements. These sign elements are arranged in rows wherein they are in front to back orientation and the rows are positioned edge to edge. Each of the sign elements has an illuminable end, and these ends lie substantially in a plane. They are positioned to be illuminated by a lamp and a shutter is positioned between the lamp and the sign elements. The sign elements are made of transparent material capable of ducting light and indicia are formed on the sign elements. The shutter is arranged so that different sign elements in front to back and edge to edge relationship are illuminated so that the indicia are progressively illuminated in any desired pattern along the length of one row by progressive front to back illumination and then the remaining rows are progressively and sequentially illuminated.

3,399,477
REFLECTORIZED INDICIA

Glenn W. Johnson, Jr., Summit, N.J., Sidney A. Heenan, Park Ridge, Ill., and Joseph A. Ciccolella, Summit, and Carman R. Hintz, Englewood, N.J., assignors to Elastic Stop Nut Corporation of America, Union, N.J., a corporation of New Jersey
Filed Dec. 30, 1964, Ser. No. 422,334
16 Claims. (Cl. 40—130)

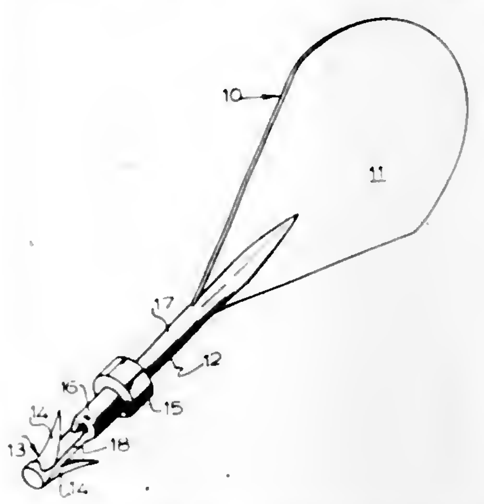


There is disclosed a reflectorized indicium comprising a metallic body having a plurality of reflector receiving openings therein arranged in the general shape of the indicium and having a corresponding plurality of reflex reflectors mounted in each of the openings in the body, each of the reflectors being formed of a synthetic organic resin. Each reflector includes an annular side wall having an outer periphery complementary to the associated body opening, a front wall integral with the side wall and closing the same, and a plurality of cube corner reflector elements on the rear surface of the front wall. Each reflector is mounted on the body by the cooperation of an outwardly directed rear retaining flange integral with the reflector and an outwardly directed front flange swedged, by ultrasonic heating, from the forward portion of the side wall. Orientation structure, in the form of a pair of projections extending inwardly from the periphery of the opening and extending into grooves in the side wall of the reflector, is provided so as to prevent rotation of the mounted reflector.

3,399,478
ANIMAL IDENTIFICATION TAGS

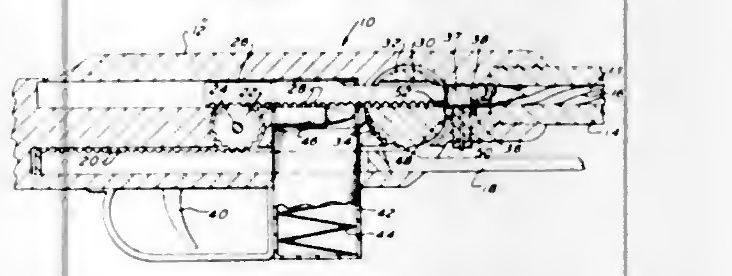
William John Tarver, Preston, England, assignor to National Research Development Corporation, London, England
Filed Oct. 21, 1966, Ser. No. 590,169
12 Claims. (Cl. 40—300)

1. An identification tag for an animal having a sinus cavity comprising a flag portion adapted to receive an identifying inscription thereon; a shank extending from said flag portion and adapted to be inserted in the animal's head until an end portion of said shank enters said sinus cavity of said animal; and retaining means on said end portion of said shank for retaining said shank in position.



3,399,479
ACTION FOR FIREARM USING A CASELESS ROUND

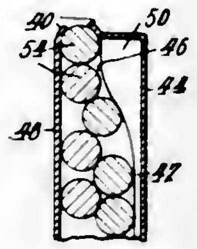
Bernard Goldstein, Landing, N.J., assignor of five percent each to Max Greenberg, West Orange, Paula H. Goldstein, Union, and Herbert Greenberg, Elizabeth, N.J.
Filed May 11, 1967, Ser. No. 637,753
7 Claims. (Cl. 42—9)



An action for the caseless round which utilizes a mechanical rack and pinion structural arrangement. The rack rotates a tapered plug which is moved from a position wherein it blocks the breech or chamber of a firearm to a position wherein a round may be inserted into the breech by a rammer which moves around through a hole in the tapered plug. After a round has been inserted into the chamber, the tapered plug is rotated to seal the chamber. The tapered plug is moved automatically in response to firing of the firearm.

3,399,480
PLASTIC MAGAZINE FOR CARTRIDGES FOR FIREARMS

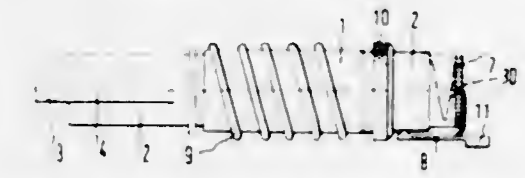
Charles Edward Rowe, Jr., Templeton, Mass. (% Harrington & Richardson, Inc., Park Ave., Worcester, Mass. 01608)
Filed Aug. 24, 1966, Ser. No. 574,741
1 Claim. (Cl. 42—50)



A plastic magazine for cartridges for firearms including a cartridge follower and a cartridge follower spring, wherein there is provided a throat for the passage of cartridges from a staggered relationship in the lower portion of the magazine to a single-line relationship adjacent to the magazine exit lips for the easier and smoother flow seriatim of cartridges from staggered relationship into the breech of the firearm, wherein the ribs are low in the staggered areas to provide enough room for staggered cartridges and are high in the throat area, said ribs between the high and the low areas being formed on a convexo-concave curve providing for an improved easy and smooth flow for the cartridges.

3,399,481
DETACHABLE CHARGER FOR AUTOMATIC SHOTGUNS

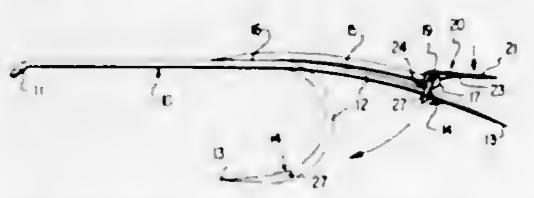
Pietro Giorgini, Via Roma 24, Montignoso, Massa Carrara, Italy
Filed May 1, 1967, Ser. No. 635,042
Claims priority, application Italy, June 3, 1966, 12,971/66
4 Claims. (Cl. 42—87)



A detachable charger for automatic shotguns, adapted to be inserted in a fixed charger tube disposed rigidly along the barrel of the gun in front of a cartridge feeding mechanism to permit easy and rapid replacement of the charger and to facilitate the use of various types of ammunition with the gun.

3,399,482
FISHHOOKS

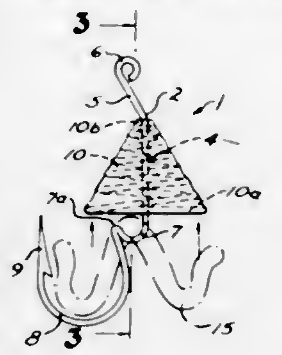
Ernest P. Cox, P.O. Box 451, Osburn, Idaho 83849
Filed Apr. 25, 1966, Ser. No. 544,943
5 Claims. (Cl. 43—15)



A resilient fishhook which has a normally curved piercing or bait end. The curved end is held in a substantially straight position under spring tension by a latch until a predetermined force is exerted on the trigger arm of the latch. This causes the latch to release the piercing end so that it quickly develops into a curve thereby automatically hooking a fish.

3,399,483
FISHING LURE

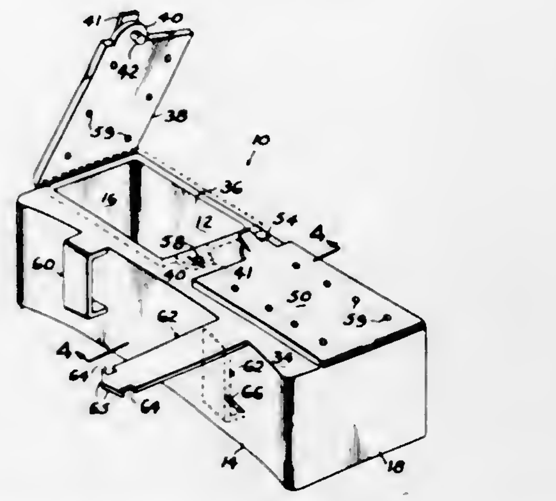
Arthur J. Naffziger, R.R. 2, Delavan, Ill. 61734
Filed Mar. 2, 1967, Ser. No. 620,140
9 Claims. (Cl. 43—44.4)



A fishhook having two hook portions one of which is adapted for mounting live bait thereupon in an unimpaled manner. The fishhook is provided with a hood having a portion for resiliently maintaining the bait on said one hook portion.

3,399,484
BAIT BOX

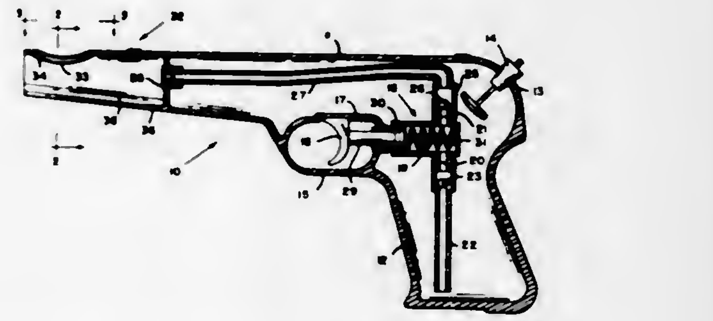
Raymond Marks, 1471 Browning Ave., Salt Lake City, Utah 84105
Filed July 18, 1966, Ser. No. 565,940
2 Claims. (Cl. 43—55)



A rectangular housing, having releasably connected belt engaging loops at one side, is transversely and longitudinally divided by a plurality of partitions to form a pair of upwardly open compartments, an intermediate downwardly open compartment and a pair of downwardly open compartments at one longitudinal side edge. The upwardly open compartments are opened and closed by a pair of lids.

3,399,485
COMBINED WATER GUN AND BUBBLE FORMING TOY

Christy Cashavelly, Fairfield, Conn. (290 Eastfield Drive, Bridgeport, Conn. 06604), and Leroy James Sullivan, 24 Woodward Ave., New Haven, Conn. 06512
Filed Aug. 16, 1965, Ser. No. 479,798
4 Claims. (Cl. 46—8)



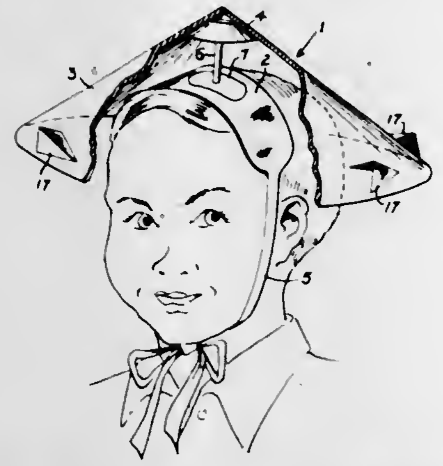
A combination water gun and bubble forming device having the muzzle thereof formed with an apertured tubular extension for dipping into a bubble forming solution. Arcuate movement of the gun releases bubbles from the apertured extension which may be burst by a stream of fluid ejected therefrom when the gun is aimed thereat.

3,399,486
ROTARY TOY HAT

Peter Bogaart, 1521 16th St. NW., Canton, Ohio 44703
Filed June 15, 1966, Ser. No. 557,820
7 Claims. (Cl. 46—53)

1. A rotary toy hat comprising:
(A) A stationary head engaging base member;
(B) Pivot means extending upwardly therefrom;

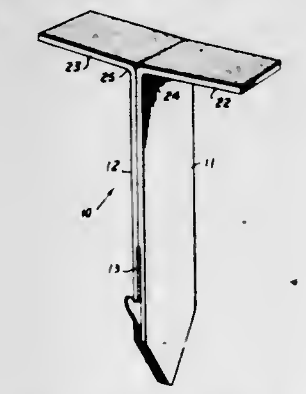
(C) A rotary head covering member journalled to the base member and spaced therefrom by the pivot means; and



(D) A plurality of wind receiving vanes located in spaced relationship around the circumference of the head covering member to cause rotation thereof when wind pressure reacts against the vanes.

3,399,487
TOYS

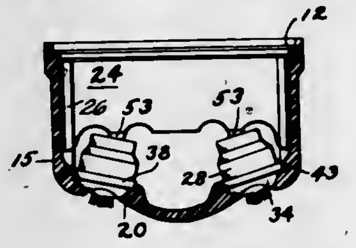
Lawrence D. Siegler, 2965 Randy, Farmers Branch, Tex. 75234
Filed Aug. 11, 1965, Ser. No. 478,839
6 Claims. (Cl. 46—75)



A toy projectile having a hook at its forward end engageable by an elastic band by which the projectile may be catapulted into the air and a pair of rear end flaps which are releasably held in retracted positions in longitudinal alignment with the body of a projectile by a resilient strip folded between the end flaps, the strip moving the end flaps to extended positions at an angle to the body of the projectile a short period of time after the projectile has been catapulted into the air.

3,399,488
PLURAL EYE UNIT HOLDING MEANS FOR DOLL HEADS

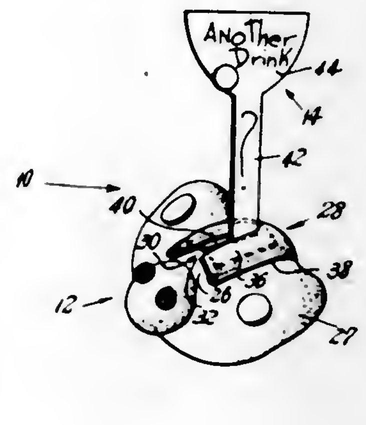
Harry Brudney, Brooklyn, and Richard S. Turshen, Elmont, N.Y., assignors to Dollac Company, Division of Jacoby-Bender, Inc., Woodside, N.Y.
Filed Apr. 20, 1964, Ser. No. 360,826
8 Claims. (Cl. 46—169)



1. In a doll head, a face portion having a pair of eye apertures therethrough, a doll eye unit having a stationary housing frictionally engaging in each of said apertures, said housings having generally rounded frontal areas engaging complementary shaped areas within said apertures, means whereby said units are mounted in angularly oriented position with respect to said doll face, wherein each said unit has a rear portion provided with a socket, and a locking member is provided within said head having prongs insertable in respective sockets for securing said units in said oriented positions.

3,399,489
TOY VEHICLE HAVING SUPPORTED INDICIA THEREON

Barbara S. Rogers, Whisconier Hill, Brookfield Center, Conn. 06805
Filed Mar. 21, 1966, Ser. No. 535,985
4 Claims. (Cl. 46—202)



1. An amusement device including in combination a carrier comprising a hollow-shaped body member having a generally upwardly facing support portion, wheels supporting said body member, propulsion means mounted within said body member for propelling the carrier along a surface, retaining means mounted on said upwardly facing support portion and defining a socket between said retaining means and said support portion, and defining an entrance opening into said socket, and a member having an indicia bearing portion formed on one end thereof and supporting means formed on the other end thereof, said supporting means being shaped complementary to the shape of said socket so as to fit and be removably received therein through said entrance opening whereby said carrier supports and conveys said member while the former is being propelled by said propulsion means.

3,399,490
TILT-OUT SASH WINDOW

Donald M. Hettinger, Kansas City, Mo., assignor to The Weatherproof Products Corporation, Kansas City, Mo., a corporation of Missouri
Filed Aug. 4, 1966, Ser. No. 570,285
15 Claims. (Cl. 49—414)

1. A tilt-out sash window, including

a frame having side jambs providing longitudinally inset pockets,

weather-seal guide strips in the pockets and having fronts carrying spaced apart guide rails projecting outwardly from said fronts and over sides of longitudinal ways between the guide rails,

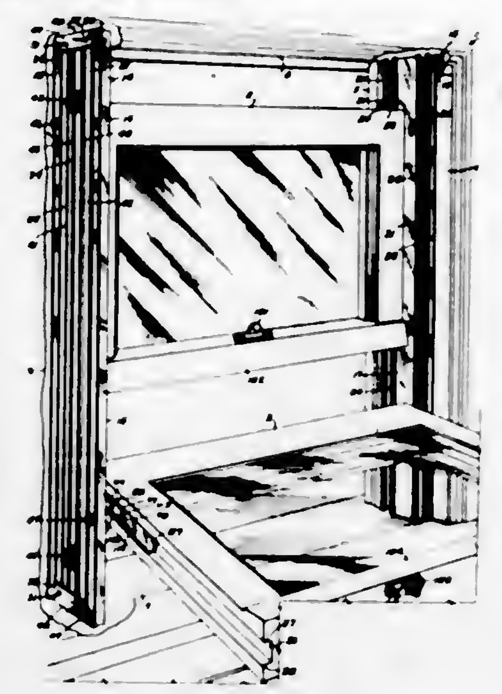
sash having grooves in side edges thereof slidably containing the guide rails therein to retain the sash for sliding movement in the frame.

means between the weather-seal guide strips and jambs to resiliently bias the weather-seal guide strips into sealing contact with sides of the sash and yieldable upon tilting of the cash by camming pressure of side edges of the sash on the guide rails,

balancing springs having upper ends anchored relatively to the weather-seal guide strips,

slides having connections at lower ends of the springs and having faces slidable along inner faces of the guide rails,

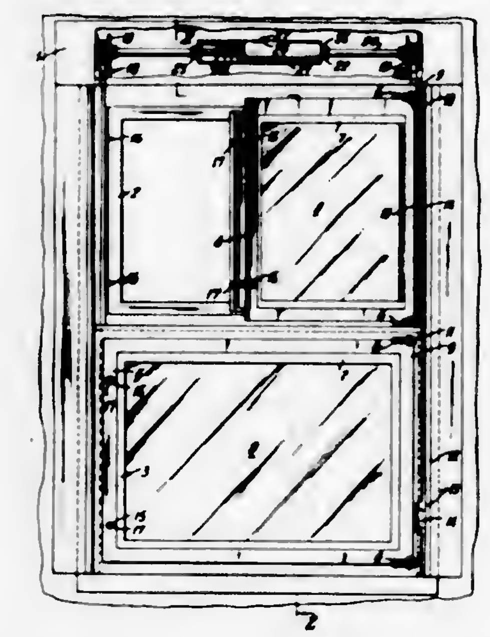
trunnions journaled in the slides for restricted axial movement in the slides,



and means on said trunnions and having connection with the sash to pull the slides into gripping engagement with the inner faces of the guide rails for locking the slides to the guide rails for holding the slides upon tilting of the sash.

3,399,491
WINDOW AND WINDOW FRAME CONFIGURATION

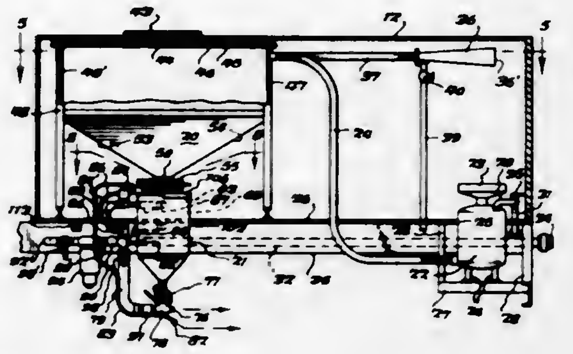
Abe Dawidowicz, 1810 Loring Place, Bronx, N.Y. 10453
Filed Aug. 17, 1966, Ser. No. 573,058
1 Claim. (Cl. 49—445)



The present invention relates to a window and window frame construction providing a double hung window having integral casement sections on each window section with the casements adapted to open inwardly. The main window sections are suspended from roller rods and are spring counterbalanced by use of two parallel aligned roller rods, each having thereon a housing along part of its length with a spring on each rod anchored to the rod and the housing respectively within the confines of the housing, the two housings interconnected so as to prevent rotation of each housing against the tension of the springs.

3,399,492
SANDBLAST TRUCK ASSEMBLY

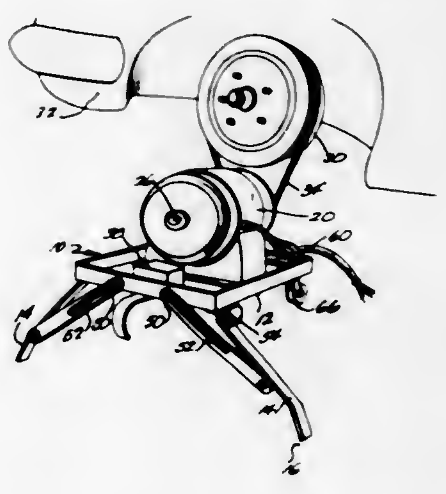
Andrew R. Crowe, Williamsville, and Willard F. Foster, Alden, N.Y., assignors to C. H. Heist Ohio Corporation, Buffalo, N.Y., a corporation of New York
Filed July 21, 1966, Ser. No. 566,783
15 Claims. (Cl. 51—8)



1. A sandblast truck assembly comprising a truck including a body portion mounted thereon, a sand storage bin on said body portion, hopper means located at the bottom of said sand storage bin, a sandblast unit including a sand receiving portion located below said hopper means for receiving sand therefrom, a compressed air conduit, first conduit means including first valve means for selectively effecting communication between said compressed air conduit and the inside of said sandblast unit, means on said sandblast unit for receiving a sandblast nozzle and hose assembly, second conduit means including second valve means for selectively effecting communication between said compressed air conduit and said means for receiving said sandblast nozzle and hose assembly, pneumatic sand mover means, third conduit means for effecting communication between said pneumatic sand mover means and said sand storage bin for conveying sand from said pneumatic sand mover means to said sand storage bin, and fourth conduit means for effecting communication between said pneumatic sand mover means and said compressed air conduit to provide compressed air for moving sand from said pneumatic sand mover means to said storage bin through said third conduit means.

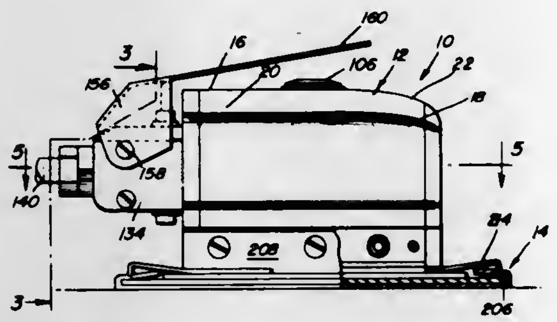
3,399,493
BRAKE CONTOUR SPINNER

Ruez M. Dodge, 515 Washington St. W., Charleston, W. Va. 25302
Filed Oct. 8, 1965, Ser. No. 494,170
1 Claim. (Cl. 51—26)



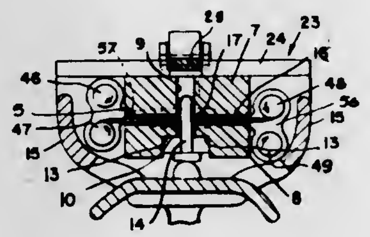
A brake contour spinning mechanism which is leveled up with the brake drum by a pair of adjustable arms and otherwise suspended by a belt from the brake drum for allowing the weight of the machine to maintain the belt in taut relation as the motor spins the brake drum.

3,399,494
AIR OPERATED SANDING MACHINE
Otto Hendrickson, Riverside, Calif., assignor of one-third to Al Lohbeck, Arcadia, Calif.
Filed June 14, 1965, Ser. No. 463,511
9 Claims. (Cl. 51—62)



A pneumatically driven rubbing machine including a piston reciprocated by means of an alternately directed flow of compressed air which is effectuated by inserting a flow directing valve in series with an air intake. Expansion of air against one end of the piston causes a stroke in one direction. The valve is coupled to the piston so that motion of the piston causes rotation of the valve which in turn re-directs the air intake to the opposite end of the piston resulting in an oppositely directed stroke. The piston is gear-linked to a reciprocating rubbing member which operates upon a work surface.

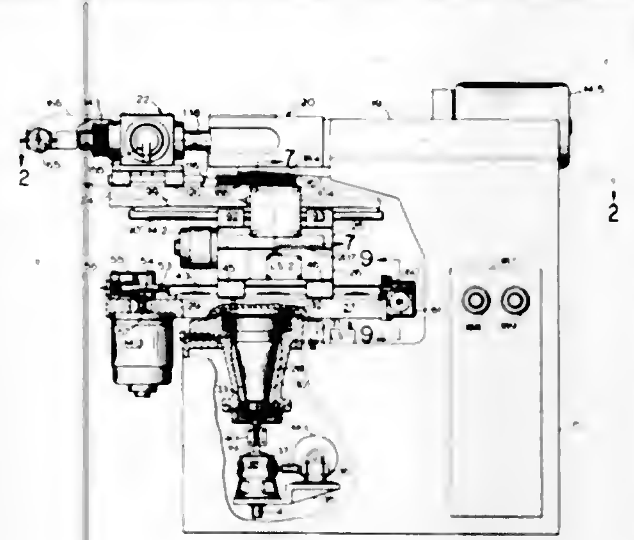
3,399,495
SHARPENER FOR SAFETY RAZOR BLADES, AND METHOD
Walter S. Woodward, Oakland, Calif.
(37747-A Argyle Road, Fremont, Calif. 94536)
Filed May 27, 1965, Ser. No. 459,283
7 Claims. (Cl. 51—85)



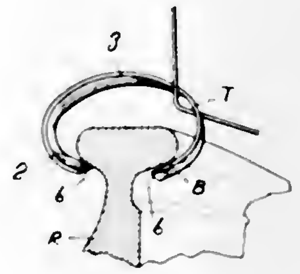
A razor blade sharpener provided with means for admitting a wafer-type razor blade endwise into said sharpener, while said blade is on the head of a razor, and a pair of sharpening means on said sharpener actuatable by reciprocable movement of said head for alternately engaging the blade along its cutting edges to sharpen said edges, and which head with the blade in engagement therewith is removable from said sharpener.

3,399,496
MACHINE FOR GENERATING TORIC SURFACES
Cary M. Hodson, New Vienna, Ohio, assignor, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed May 12, 1965, Ser. No. 455,232
20 Claims. (Cl. 51—124)

In this generator, the work is swung about an axis perpendicular to the tool axis. The work holder is mounted on an upper slide that is adjustable angularly by a trunnion about an axis perpendicular to the tool axis. This trunnion is mounted on an intermediate slide carried by a lower trunnion adjustable about an axis parallel to the axis of the first trunnion. Separate motors drive the two trunnions and the two slides. Manually adjustable controls determine the positioning of lower trunnion and intermediate slide. Signals from feedback resolvers connected to these two parts determine their precise positioning. A member secured to the base holds the upper slide fixed relative to the base while intermediate slide is being adjusted.



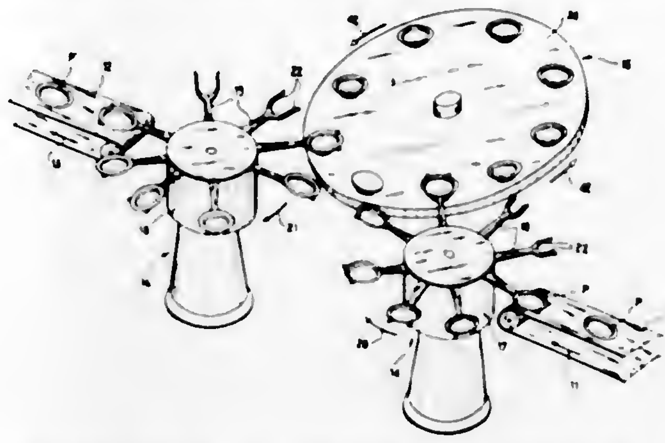
3,399,497
TRAVELLER FOR RING SPINNING AND TWISTING MACHINES
Takeshi Kimoto, 238 Roku-no-tsubo Higashi-Oshima, Amagasaki, Hyogo Prefecture, Japan
Filed June 9, 1966, Ser. No. 556,444
Claims priority, application Japan, June 24, 1965, 40/51,876
6 Claims. (Cl. 57—125)



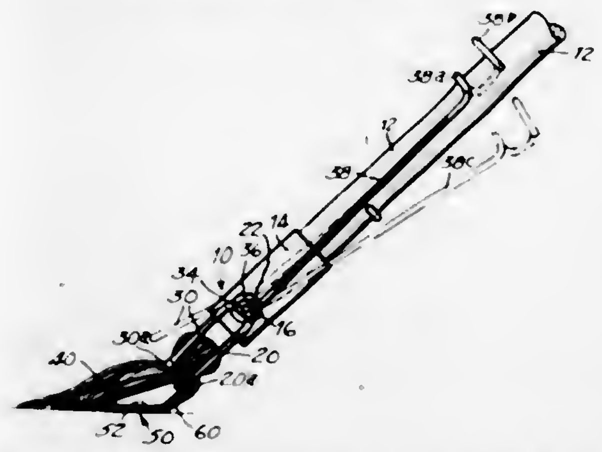
A traveller for use with ring spinning and twisting machines in which a wire of substantially uniform cross-section having a width and thickness of a ratio of more than four to one is so constructed that the portion from the contacting point between the traveller and ring to the point of its leg portion is provided with a flat section and the remaining arcuate portion is defined by an inner convex surface and a concave outer surface with a yarn being arranged to run in contact with said convex surface.

3,399,498
ABRADING APPARATUS FOR FINISHING PLATES
Antonio Lampani, Mario Colombo, and Gianni B. Margola, Milan, Italy, assignors to Società Ceramica Italiana Richard-Ginori S.p.A., Milan, Italy
Filed Feb. 8, 1966, Ser. No. 525,990
Claims priority, application Italy, Sept. 15, 1965, 9,040/65
14 Claims. (Cl. 51—145)

An apparatus for finishing the edges of ceramic plates comprising a finishing unit and units for feeding and removing successive plates to and from the finishing unit. The finishing unit includes a rotatable member for transporting plates from the feeding unit to the removing unit and a plurality of rotatable supports for individually supporting the plates to be finished. The finishing unit also includes means for centering and holding each plate on its support and abrading means for finishing the edges of the plate as it is held and centered on its support.

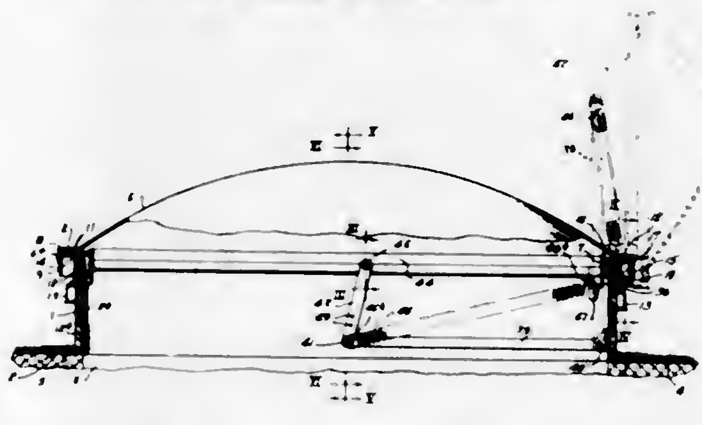


3,399,499
CLEANING IMPLEMENT
William Stetz, Watervliet, and Ralph J. Colangione, Troy, N.Y., assignors to Norton Company, Troy, N.Y., a corporation of Massachusetts
Filed July 19, 1967, Ser. No. 654,441
4 Claims. (Cl. 51—393)



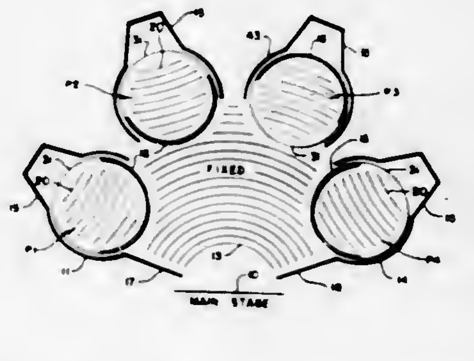
A mop with abrasive scouring means mounted adjacent a mopping element and adapted to be attached to and by the clamping means secured to an elongated handle by manipulation of which the scouring means and the mopping element can be utilized to thoroughly clean a surface of undesirable substances.

3,399,500
AUTOMATIC ROOF VENT
Eli Shapiro, Garland, Tex., assignor to Plastic Products of Texas, Inc., Garland, Tex., a corporation of Texas
Filed July 25, 1966, Ser. No. 567,667
4 Claims. (Cl. 52—1)



A roof vent construction comprising a lid pivotly attached at one ege to an upturned curb on the roof of a building, a raising means consisting of a long link, a short link, and a spring, one end of which is connected to the said short link and the other end of said spring is attached to the lid, with locking means including a fusible link which comes apart by exposure to a predetermined high temperature in such a manner as to open the said lid automatically to expel smoke from the building in case of fire. The spring in the opening linkage is positioned so that the center line of the spring always passes substantially through the pivot point of the lid to reduce a secondary torque acting on the lid opposed to the torque tending to open the lid as a result of the forces exerted on the links and the lid respectively.

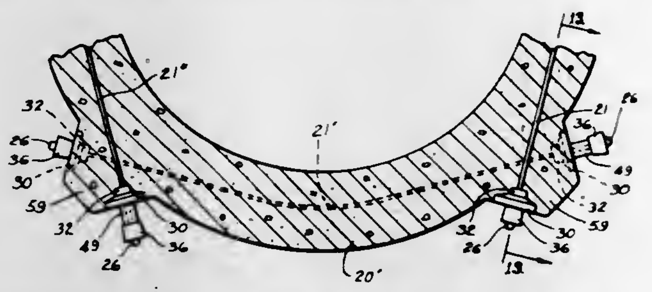
3,399,501
AUDITORIUM INSTALLATIONS
Wendell E. Rossman, 3137 N. 53rd St., Phoenix, Ariz. 85018
Continuation-in-part of application Ser. No. 477,518, Aug. 5, 1965. This application Nov. 7, 1967, Ser. No. 681,177
16 Claims. (Cl. 52—10)



An auditorium installation wherein one auditorium may optionally be used either simultaneously with or separately from the seats of a second auditorium. This auditorium installation has an inner stage which is at least partly surrounded by a circumferentially extending fixed seating means which has an inner area adjacent to the inner stage and an outer area distant therefrom, and this inner stage may be considered as a main stage of the installation. Situated outwardly beyond the outer area of the fixed seating means is an outer platform or stage, and between this outer stage and the fixed seating means there is located, at the outer area of the latter, a rotary seating means which can be rotated either to an inwardly directed position facing the inner stage or an outwardly directed position facing the outer stage. A partition means coacts with the rotary seating means to close the latter and outer stage off from the fixed seating means when the rotary seating means is outwardly directed toward the outer stage, while this partition means provides full viewing of the inner stage when the rotary seating means is inwardly directed toward the latter, and in this latter position of the rotary seating means it forms an extension of the fixed seating means.

3,399,502
FLAT BAR STRESSING TENDON
Eugene E. Dabney, Corpus Christi, Tex., assignor to The Prescon Corporation, a corporation of Texas
Filed Apr. 29, 1966, Ser. No. 546,291
4 Claims. (Cl. 52—224)

A flat bar prestressing tendon has a major portion of uniform cross section that extends slidably through a slot in a bearing member and a slot in an anchor. A head on each end of the tendon is the width of the bar. The portion of each head that increases gradually in thickness from the thickness of the major portion of the bar to the maximum thickness of the head has concave faces and the head has a convexly curved outer end. The anchor is flat faced on the side toward the bearing member and has a recess leading into the slot on its opposite side with convexly curved flaring wall portions conforming to the concave portion of the head so that the head seats firmly in the recess. The bearing member has a flat face directed toward the flat face of the anchor and has a boss surrounding the slot on the side opposite the flat face. A U-shaped shim is mounted between the anchor and bearing member, when the tendon is stressed. It has parallel flat faced legs embracing the bar and extending adjacent the opposite sides of the slots and bearing against the other side of the bearing member opposite the boss. The width of the bar extends vertically in a tank wall or similar structure.



3,399,503

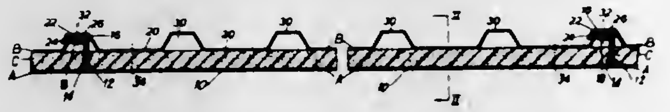
BUILDING SHEATHING ELEMENTS

Harold James William Payne, Raby Mere, England, and Clifford Edward Dyer, Waterloo, Belgium, assignors to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 17, 1967, Ser. No. 631,215

Claims priority, application Great Britain, Apr. 16, 1966, 16,790/66

8 Claims. (Cl. 52—406)



A prefabricated, insulated building panel formed from an inner liner sheet and a fluted outer facing sheet with side edges of both sheets engaged to allow overlapping connection of the assembled panels in side-by-side relation on a building outer surface. The panels contain foamed-in-situ insulation which serves as thermal and sound insulation and serve to rigidify the panel. The foamed-in-situ insulation may fill less than all of the volume of the fluted outer facing sheet.

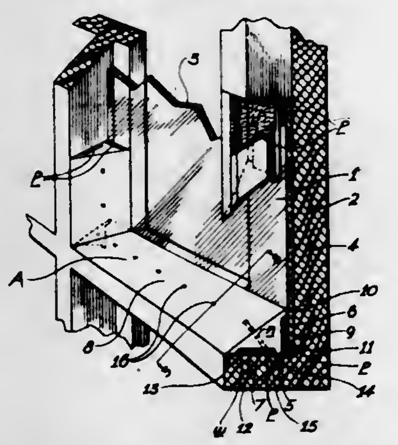
3,399,504

GLAZING STRIP

George L. V. Smith, 1116 Washington Ave., Alton, Ill. 62002

Filed Mar. 4, 1966, Ser. No. 531,817

1 Claim. (Cl. 52—499)



A glazing strip for retaining panes of glass within the sash of a window being generally triangular in cross-section having a recess presented in its pane confronting face for receiving putty; said recess opening through the bottom face of said strip; there being a groove provided in the bottom face of said strip spacedly from said recess. The bases of said groove and recess being corrugated.

3,399,505

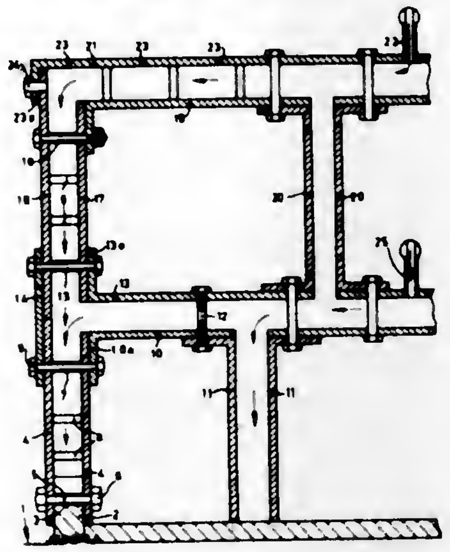
PROCESS OF CONSTRUCTING A BUILDING

Paul Comment, Courgenay, Switzerland

Filed Mar. 22, 1966, Ser. No. 536,393

Claims priority, application Switzerland, Mar. 24, 1965, 4,105/65

2 Claims. (Cl. 52—743)



A method of building a construction at least one story high by pouring a foundation wall, embedding therein hollow cylindrical sleeves disposed horizontally and square with the vertical faces of the wall, removably securing a number of inner and outer vertical channels on the foundation so as to leave a channel between them; securing these panels together through these hollow sleeves and through a number of braces placed horizontally between the panels; then removably fastening a number of upper and lower horizontal panels to the inner vertical panels while leaving a longitudinal space between communicating with the channels for forming the floors of the construction; providing openings in the uppermost of the horizontal panels and pouring concrete through one of the openings and causing the concrete to pass through the channels and the spaces; allowing the concrete to set and removing the removably secured panels so as to leave behind the shell of a building having the desired number of stories.

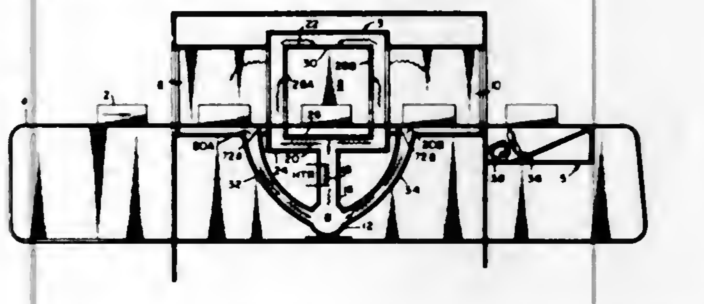
3,399,506

PROCESS AND APPARATUS FOR SIMULTANEOUSLY HEAT SEALING AND HEAT SHRINKING FILM

Milton A. Howe, Jr., Bedford, Mass., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut

Filed Apr. 1, 1965, Ser. No. 444,695

8 Claims. (Cl. 53—39)



A process and apparatus for simultaneously heat sealing and heat shrinking film overwrapped about an object. The heated air discharged into a heating zone of the apparatus is permitted to overflow into adjacent preheating and post-heating zones from which the air is salvaged prior to reheating and being reintroduced into the heating zone.

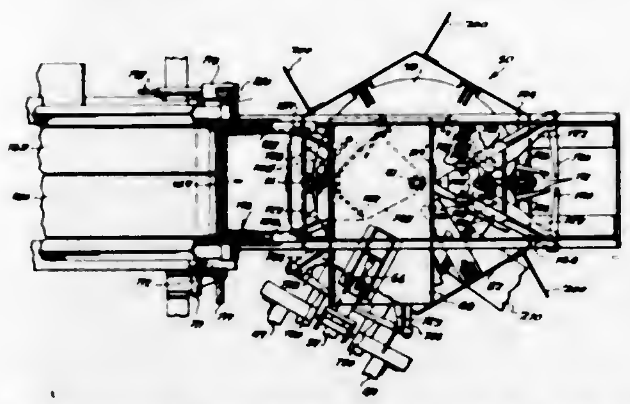
3,399,507

AUTOMATIC PACKAGING MACHINE

Alexander Litchard, 322 N. Main St., Wellsville, N.Y. 14895

Filed Jan. 5, 1966, Ser. No. 518,855

18 Claims. (Cl. 53—59)



12. An automatic packaging machine for packaging articles in bags having front and rear panels connected by flexible sides and having their bottoms folded upwardly when empty,

(a) a magazine in which the bags are advanced in the machine while resting on their bottoms,
(b) a turret rotatable about an axis and having a plurality of sections,
(c) feed means for advancing said bags one at a time from said magazine to a section of said turret,
(d) means cooperating with said panels for opening the upper ends of the bags,
(e) mechanism for inserting a number of fingers situated closely to each other into each bag after it has been partially opened,
(f) means for spreading said fingers outwardly while in the bag to more completely open the same,
(g) a scale, means for transferring the bags when more completely opened to said scale,
(h) means for filling material into the bags when more completely opened,
(i) and means controlled by said scale for interrupting the filling of said bags.

3,399,508

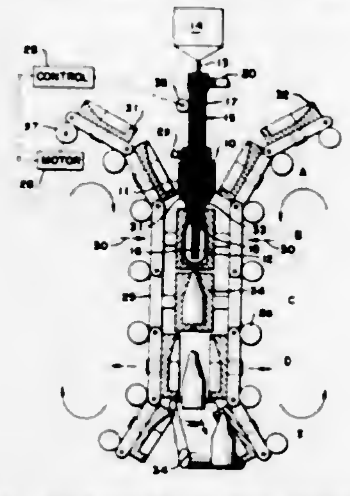
APPARATUS FOR FORMING BOTTLES OR SIMILAR CONTAINERS FROM THERMOPLASTIC MATERIAL, FILLING THEM WITH LIQUID AND SUBSEQUENTLY SEALING THEM IN ONE OPERATION

Hans Frielingsdorf and Maurits Boonstoppel, Delft, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed July 8, 1965, Ser. No. 470,357

Claims priority, application Netherlands, July 10, 1964, 6407852

1 Claim. (Cl. 53—140)



An extrusion apparatus for continuously extruding and filling plastic containers. The apparatus utilizes a pair of endless chains that carry a plurality of mold sets positioned so that the mold sets close about a plastic tube that extends from a die head. The die head includes concentric tubes that supply compressed air for forming the container and material for filling the container.

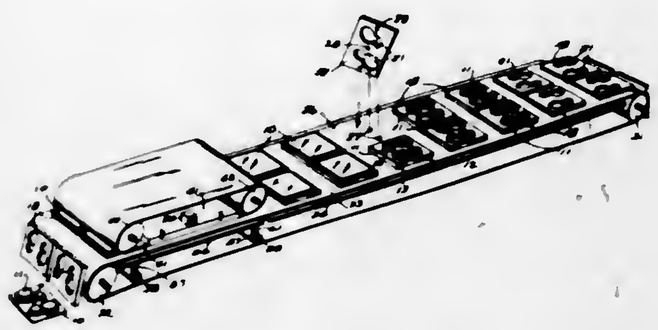
3,399,509

BLISTER PACKAGE SEALER

Lawrence S. Greco, Mequon, and Richard G. Wells, Milwaukee, Wis., assignors to Wells Badger Industries, Inc., a corporation of Wisconsin

Filed Oct. 15, 1965, Ser. No. 496,539

9 Claims. (Cl. 53—388)



This disclosure relates to a blister package sealer having continously moving belt conveyor carrying a series of die fixtures attached to the belt conveyor by gripper fastener elements aligned on the transverse medial axes of the fixtures. The belt conveyor moves beneath a continuously moving presser belt which is heated to seal blisters and cartons contained in the die fixtures.

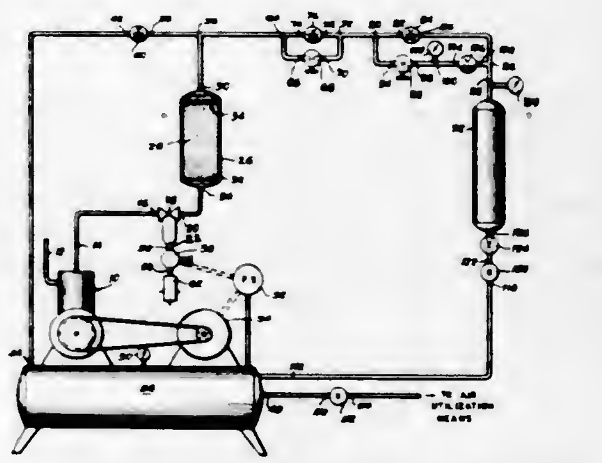
3,399,510

PROCESS AND APPARATUS FOR DEHYDRATING COMPRESSED GAS

George C. Kauer, Jr., Plainview, and Louis E. Brooks, Great Neck, N.Y., assignors to Air Techniques, Inc., New Hyde Park, N.Y., a corporation of New York

Filed May 25, 1966, Ser. No. 552,846

11 Claims. (Cl. 55—33)

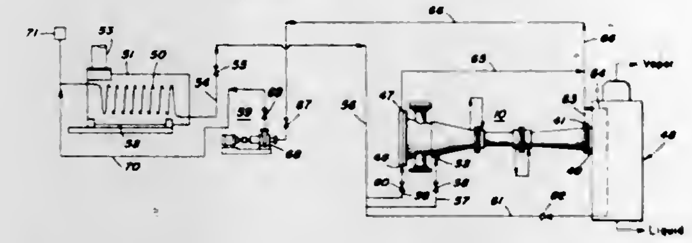


A system for compressing and dehydrating gas includes a compressor feeding at a given velocity a dehydrating chamber whose output is divided into two streams. One stream at full pressure is passed to a primary accumulator. The other stream, though a constriction, is passed to a secondary accumulator, and thus charges up to a pressure which is proportional to the duration of the interval that the compressor has run. In between intervals of operation of the compressor, the contents of the secondary accumulator may be expanded and passed at the given velocity back through the dehydrating chamber to dehydrate this chamber. Dry gas may be withdrawn from the primary accumulator while the compressor is operating.

3,399,511

JET COMPRESSOR

Paul L. Geiringer, Eastchester, N.Y., assignor to American Hydrotherm Corporation, New York, N.Y.
Filed Feb. 15, 1966, Ser. No. 527,561
7 Claims. (Cl. 55—36)



1. A process for compressing a vapor with a liquid which comprises:

(a) expanding a high temperature liquid stream through a first diverging zone into a mixing zone;

(b) introducing the vapor into said mixing zone to form a liquid-vapor mixture;

(c) expanding the mixture of step (b) in a second diverging zone;

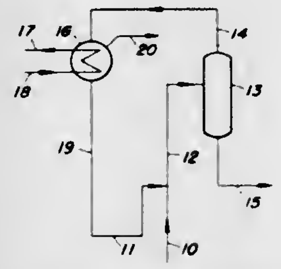
(d) recovering a vapor-liquid mixture from said second diverging zone at a pressure higher than the pressure of the admixed vapor; and

(e) heating said first diverging zone by circulating a heat transfer fluid thereabout to maintain said first diverging zone at a temperature above the temperature of the liquid expanding in the first diverging zone.

3,399,512

PURIFICATION PROCESS

Utah Tsao, Jersey City, N.J. (% The Lummus Co., 385 Madison Ave., New York, N.Y. 10017)
Filed Apr. 13, 1966, Ser. No. 542,317
5 Claims. (Cl. 55—50)



A process for reducing the content of volatile components in a liquefied gas product wherein the liquefied product is contacted with the gaseous feed to the liquefaction zone, containing a higher concentration of the more volatile component, followed by separating the liquefied product, now containing a reduced content of the more volatile component, from the gaseous feed. The process is particularly adapted to removing a volatile component, such as carbon dioxide, from liquefied chlorine.

3,399,513

COATED CUPROUS HALIDE SORBENTS AND A METHOD FOR SORBING LIGANDS

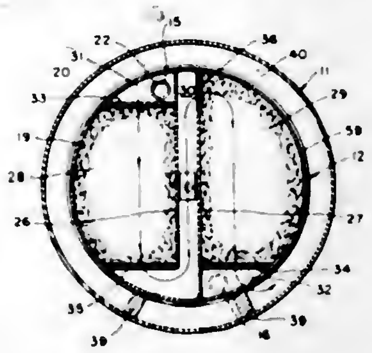
William Thomas House, Marnell Albin Segura, and William Lambert Senn, Jr., Baton Rouge, and Gerald Albert Byars, Denham Springs, La., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Dec. 24, 1964, Ser. No. 421,074
10 Claims. (Cl. 55—74)

1. An active sorbent comprising readily fluidizable filmed particles of activated, porous, solid cuprous halide sorbent having an average particle size ranging from about 30 to 200 microns having thereon from about 0.5 to about 30 wt. percent based on cuprous halide of a solid, porous, cured polymeric film comprised of a polymer curable below approximately 200° F. wherein the pores of said film communicate with the pores of said active cuprous halide along common axes of porosity, said cured polymeric film having an average thickness ranging from about 10 to 600 A. and the resistance to attrition of said filmed particles being greater than that of active, solid, porous cuprous halide particles, per se.

3,399,514

ADSORBER

Laurance S. Reid, 601 Broad Lane, Norman, Okla. 73070
Filed May 16, 1966, Ser. No. 550,408
9 Claims. (Cl. 55—179)

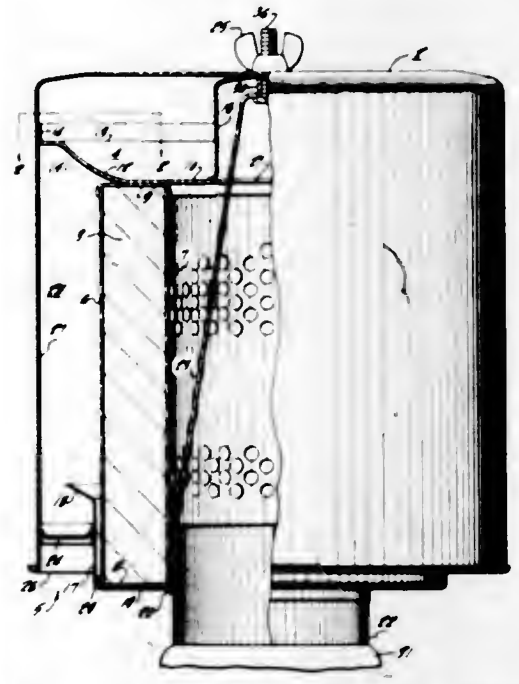


An apparatus for sorbing vapor components from a gas stream while under flow includes a substantially horizontally disposed cylindrical container with vertical partition means dividing the container into a plurality of longitudinal compartments. Gas conduits are provided within the container so that gas flows through each of the compartments in the same direction. Preferably gas passageways communicate between the lower end of one compartment with the upper end of the other compartment so that the gas flow through each sorbing area is downwardly.

3,399,515

AIR CLEANER

Charles W. Hahl, Pomona, Calif., assignor to Vortox Mfg. Company, Claremont, Calif., a corporation of California
Filed Apr. 22, 1966, Ser. No. 544,481
1 Claim. (Cl. 55—337)

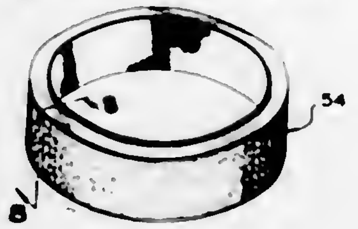


A dry air filter enclosed in a housing in spaced relationship from its inner wall to define an annular passage. A concave, saucer-shaped imperforate dust receptacle is seated in sealed abutment with the flat surface on the end of the filter. The sloping sides of the peripheral portion of the dust receptacle extend across the annular passage to define the end thereof. The concave side of the receptacle faces away from the filter. An opening in the receptacle near the outer edge of the peripheral portion forms a single point of exit from the annular passage to the receptacle. The air intake is located near the end of the housing opposite the dust receptacle. Specifically, the end of the housing opposite the dust receptacle is open and the air intake is formed by the annular space between the housing and the filter. The outlet for removal of air extends from the end of the housing opposite the dust receptacle at the center of the annular space to the manifold below.

3,399,516

IMPREGNATED FIBER AIR FILTER AND METHOD OF MAKING SAME

Lewis M. Hough, Jr., Kingsley E. Humbert, Jr., and John R. Huffstetler, Gastonia, N.C., assignors to Wix Corporation, Gastonia, N.C., a corporation of North Carolina
Filed June 2, 1965, Ser. No. 460,656
3 Claims. (Cl. 55—487)

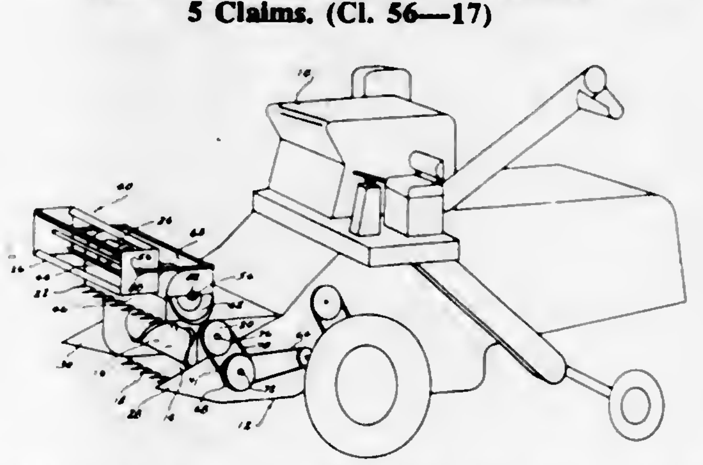


1. An air filter cartridge comprising an annular band of two concentrically disposed rings having mating surfaces, said rings being axially compressible, each ring being composed of randomly disposed synthetic filaments and being of the same height and radial thickness, the inner ring having more filaments therein and being closely compacted and of a more dense character than the outer ring, the rings being impregnated with a liquid resin throughout and on all surfaces thereof bonding the filaments and the mating surfaces together thus making a rigid structure and providing closed end flat faces, a foraminous rigid tube engaging and being bonded to the inner surface of the inner ring and being of less height than the band, each band having end portions, the end portions being complementarily skived so that when joined the end portions will be of the same thickness as the remainder of the ring, the entire band being impregnated with a fireproofing compound and the closed end faces comprising a gasket to engage a housing structure and with the rigid inner tube allowing compression of the band, seals the band in the housing.

3,399,517

HARVESTER HEADER

Kenneth L. Magee, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Aug. 20, 1965, Ser. No. 481,163
5 Claims. (Cl. 56—17)

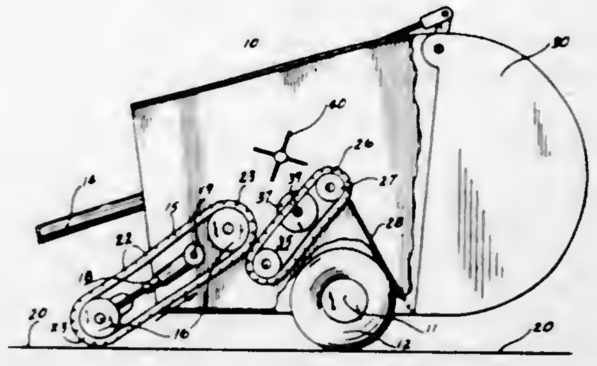


A harvester header including one crop cutter and one conveyor operatively mounted forwardly on the harvester. Another crop cutter and another conveyor are also mounted forwardly on the harvester, and they are mounted forwardly and above the first-mentioned crop cutter and crop conveyor. The last mentioned crop conveyor has means for discharging the cut crop away from the forward path of movement of the harvester.

3,399,518

TRASH-REMOVAL SYSTEM

James H. Gray, 3411 E. Gold Dust, Phoenix, Ariz. 85028
Filed Mar. 24, 1965, Ser. No. 442,308
9 Claims. (Cl. 56—28)

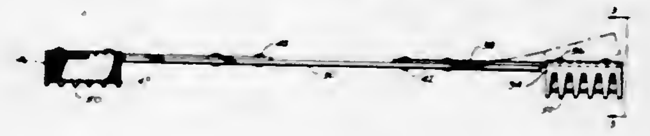


A trash-removal system utilizing a plurality of rotatable substantially circular trash-removal members extending between cotton grasping belts for engaging trash carried by belts and lifting the trash from the grip of the belts.

3,399,519

DEFLECTABLE ROTARY MOWER BLADE

John D. Buchanan, 2123 Eastridge Road, Timonium, Md. 21093
Filed Feb. 8, 1965, Ser. No. 430,828
10 Claims. (Cl. 56—295)

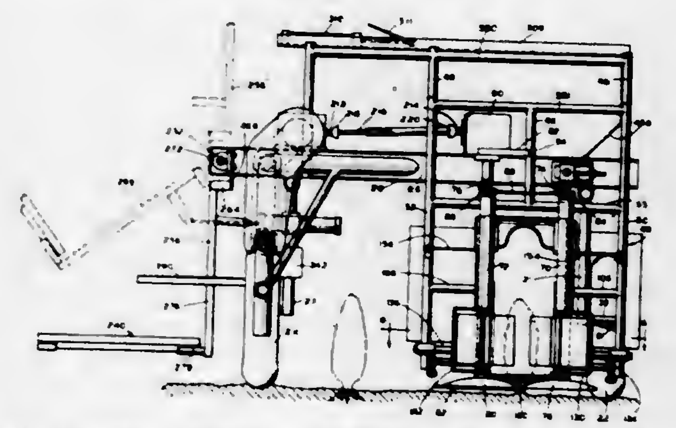


A rotary mower blade including a number of arrangements for yieldably mounting the blade to its supporting structure. A plurality of guard fingers are positioned to precede the cutting blade, and these fingers, upon coming into contact with a heavy object, are deflected and cause the blade to be deflected upwardly out of its normal plane of rotation.

3,399,520

HARVESTER

Wellington W. Porter, R.D. 2, Waterloo, N.Y. 13165
Filed Dec. 2, 1963, Ser. No. 327,462
10 Claims. (Cl. 56—327)



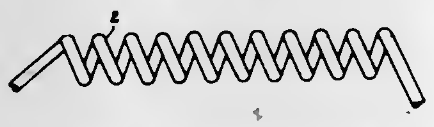
1. A Brussels sprouts harvester comprising a frame having laterally spaced ground wheels, an inverted U frame disposed in a plane forward of the axes of said wheels, and supported from said frame, a pair of spaced vertical shafts journalled on said U frame in laterally

spaced relation and terminating at their lower ends close to the ground, a circular saw of a diameter greater than the spacing between said shafts affixed to the lower end of one of said shafts, a disk having a diameter slightly less than the spacing between said shafts, and having a convex upper face and affixed to the lower end of the other shaft and having a peripheral portion closely overlying an arcuate portion of said saw, a second like convex disk overlying and coaxial with said saw said last named convex disk having a peripheral portion spaced from the peripheral portion of the first named convex disk so as to engage sprout stems, means for driving said shafts in opposite directions with the adjacent portion of said disks moving rearwardly of the harvester, and means for gathering sprout stems cut by the saw.

3,399,521

PROCESS AND APPARATUS FOR THE TEXTURING OF YARNS AND THE LIKE

Georg Thoma, Leitershofen, and Gerhard Wurst and Hermann Geist, Goggingen, Germany, assignors to Firma Zwirnerei und Nahfadenfabrik Goggingen, Werk der Ackermann-Goggingen AG, a corporation of Germany
Filed July 7, 1966, Ser. No. 563,473
Claims priority, application Germany, July 9, 1965, Z 11,646
12 Claims. (Cl. 57—35)

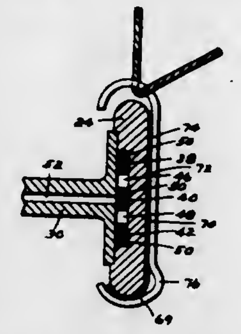


Method of and apparatus for texturing a yarn wherein a relatively indestructible thread of cotton, flax, wool or silk is twisted with a destructible thread, the twisted threads being treated with synthetic resin to fix the indestructible thread and prevent relaxation thereof upon the destruction by solvent or mechanical breakup of the destructible thread.

3,399,522

POROUS METAL SPINNING RING PARTIALLY COVERED WITH WEAR RESISTANT BANDS

Andrew J. Wayson, Needham, Mass., assignor to Merriman, Inc., Hingham, Mass., a corporation of Massachusetts
Filed Apr. 5, 1967, Ser. No. 628,766
7 Claims. (Cl. 57—120).



This invention relates to the textile machinery industry and is particularly concerned with porous metal spinning rings, both horizontal and vertical, to which have been applied circumferentially extending bands located at the principal area or areas with which the traveler makes contact during normal spinning operations. The bands may be applied to the ring surface by any process available. The material of the added bands is always harder and of longer wearing character than the porous metal of the ring and generally but not necessarily of negligible porosity.

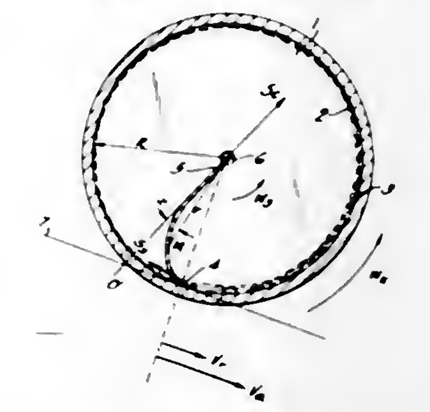
ERRATUM

For Class 57—125 see:
Patent No. 3,399,497

3,399,523

METHOD OF CONTINUOUS SPINNING OF FIBER STRANDS INTO YARNS IN A SPINNING CHAMBER

Josef Ripka, Usti nad Orlici, and Josef Hýbl, Ceska Trebova, Czechoslovakia, assignors to Vyzkumny ustav bavlnarsky, Usti nad Orlici, Czechoslovakia
Filed Sept. 6, 1966, Ser. No. 577,256
Claims priority, application Czechoslovakia, Sept. 11, 1965, 5,607/65
2 Claims. (Cl. 57—156)



A method of spinning yarn from a strand of fibers in a spinning chamber in which the fiber strand deposited on the collecting surface of the spinning chamber is twisted in a yarn which is withdrawn from the collecting surface in a plane normal to the axis of the spinning chamber and passing through the axis of the strand so that the strand is twisted symmetrically with respect to its axis, and in which the spinning chamber is rotated about the axis at a speed correlated with the withdrawing speed of the yarn in such a manner that the point of withdrawal of the yarn from the collecting surface of the spinning chamber moves relative to the collecting surface in direction of rotation of the spinning chamber.

3,399,524

PROCESS FOR THE PREPARATION OF LOW TORQUE CRIMPED TEXTILE YARN

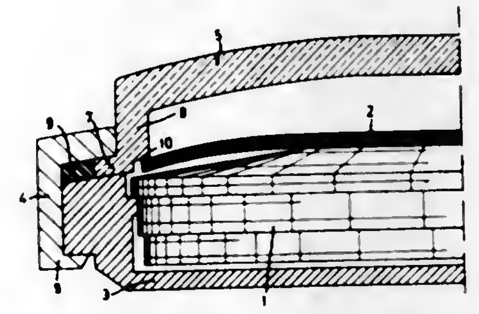
Takao Koizumi, Komatsu-shi, Japan, assignor to Teijin Limited, Osaka, Japan, a corporation of Japan
No Drawing. Filed July 23, 1964, Ser. No. 384,799
Claims priority, application Japan, Aug. 9, 1963, 38/42,287; June 23, 1964, 39/35,442
3 Claims. (Cl. 57—157)

A process for forming low torque yarn by high-twisting a yarn of thermoplastic synthetic filaments until double twisting occurs, setting the twist and then untwisting to leave a residual twist of between 50–800 turns per meter.

3,399,525

WATER RESISTANT WATCH

Pierre Caprara, 28 Rue des Alpes, Granges, Switzerland
Filed July 7, 1966, Ser. No. 563,438
Claims priority, application Switzerland, July 9, 1965, 9,644/65
4 Claims. (Cl. 58—90)

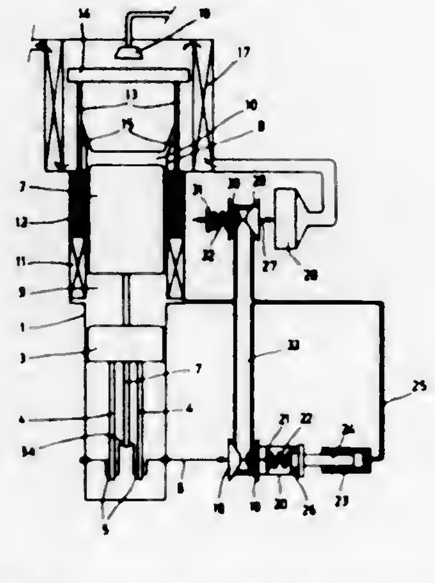


An extra-thin watch made fluid-tight by the incorporation of a fluid-tight packing in a space defined between the upper rim of the middle-bezel and the lateral side thereof, the upper side of the upper surface of the back-calotte and the extremity of the axially extending wall portion of the watch glass. In a modification the previously mentioned arrangement is provided with an adjustable securing device mounted on the back-calotte and projecting inwardly to engage a groove in the watch movement to maintain the same in place.

3,399,526

HOT-GAS RECIPROCATING ENGINE

Roelf Jan Meijer, Emmasingel, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 17, 1967, Ser. No. 661,436
Claims priority, application Netherlands, Aug. 19, 1966, 6611690
3 Claims. (Cl. 60—24)

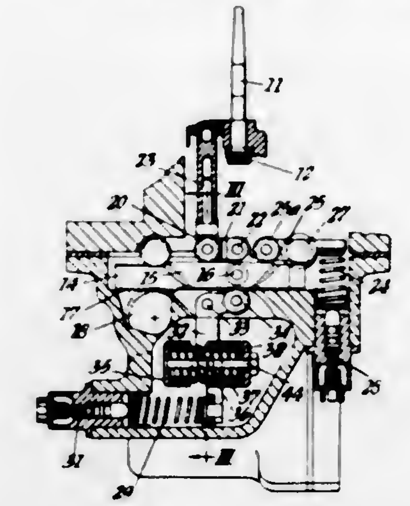


The invention comprises a hot-gas reciprocating engine having a device for controlling the quantity of air introduced into a combustion chamber of the engine. The device is a variable transmission connected to a blower. The transmission is connected with a crank shaft of the engine and is also operatively responsive to pressure within the engine.

3,399,527

MECHANISMS FOR CONTROLLING SPEED RESPONSIVE GOVERNORS

Joseph Lewis Bloom, Kings Heath, Birmingham, England, assignor to Joseph Lucas (Industries) Limited
Filed Dec. 1, 1966, Ser. No. 598,419
Claims priority, application Great Britain, Dec. 1, 1965, 50,929/65
3 Claims. (Cl. 60—39.28)

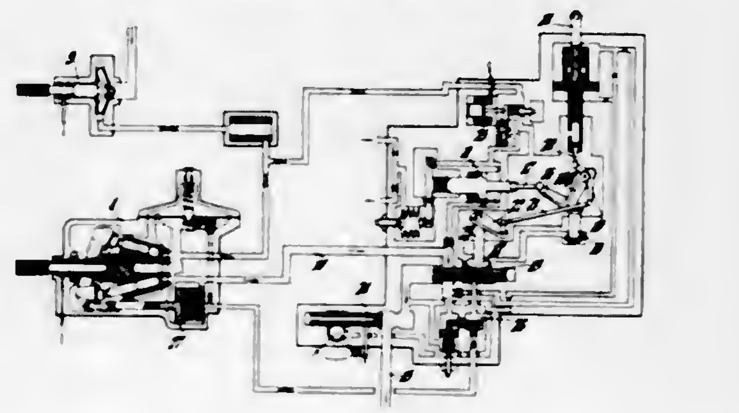


1. A mechanism for controlling the actuation of a speed responsive governor comprising a member movable linearly by an operator, a lever pivotally mounted on the member, means for transmitting movement of the lever to the governor to enable variation of the speed at which it is actuated to take place, first and second springs acting upon the lever through respective parts, the part through which the second spring acts carrying a pivotally mounted first abutment for a third spring, said third spring acting at its other end upon a second abutment, which is movable angularly about the axis of pivotal connection between the first abutment and said part, in response to changes in means responsive to a selected parameter, angular movement of the third spring and said abutments about said axis varying the force which the third spring exerts upon the parts to modify the effect of the second spring upon the lever.

3,399,528

CONTROL LINKAGES

Eugene Harold Warne, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Dec. 30, 1966, Ser. No. 606,161
2 Claims. (Cl. 60—39.28)

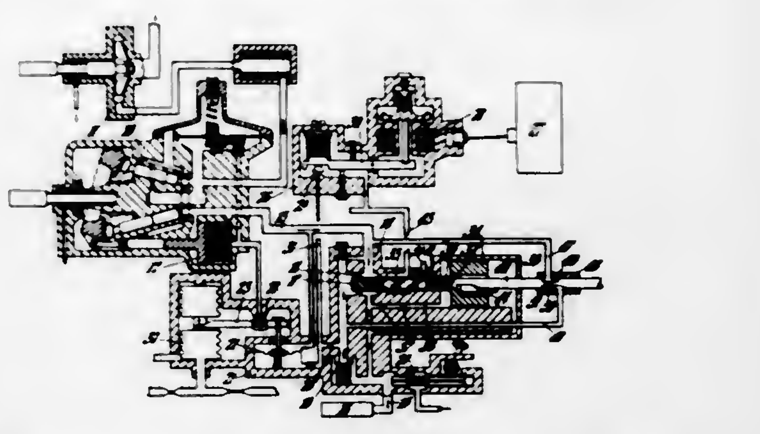


This invention relates to linkages for the control of apparatus and of the kind in which there are first and second input members arranged to be capable of actuating a single output member.

3,399,529

FUEL FLOW CONTROL APPARATUS FOR GAS TURBINE ENGINES

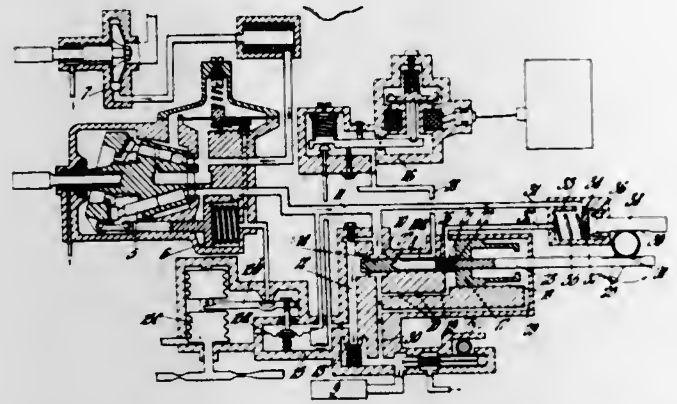
Owen Napier Lawrence, London, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Mar. 17, 1967, Ser. No. 623,997
4 Claims. (Cl. 60—39.28)



Apparatus for controlling fuel supply to a gas turbine engine and comprising a pump, a throttle controlling flow from the pump to an engine, the throttle being connected to a piston within which is slidably mounted a manually controlled plunger, the axial position of which relatively to the piston controls escape of fuel from the cylinder in which the piston is mounted, through an orifice in the piston to an escape passage, there being a variable restrictor controlling a by-pass for the throttle, when movement of the plunger beyond a predetermined limit occurs, and this by-pass varying the pressure drop across the throttle to cause a device to control the pump so that the original pressure drop is reestablished.

3,399,530
FUEL FLOW CONTROL APPARATUS FOR GAS TURBINE ENGINES

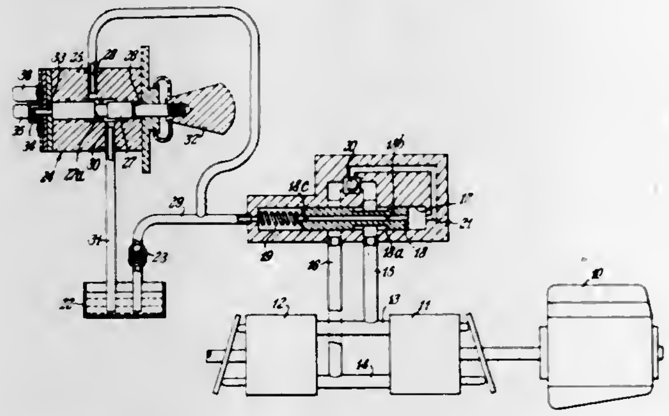
Owen Napier Lawrence, London, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Mar. 17, 1967, Ser. No. 624,015
1 Claim. (Cl. 60—39.28)



A fuel supply system for a gas turbine engine having a throttle controlled by a servopiston by means of a manually controlled plunger, the servopiston being disposed in a cylinder to one end of which fuel is supplied through a restricted passage, there being a passage for escape from end in dependence upon the position of the plunger, there being a further passage affording communication between the cylinder and a further cylinder containing a piston having a restricted by-pass and a member operable with the manually controlled plunger to cause the piston to move if the speed or extent of travel of the plunger and member exceed a value corresponding to the rate of flow capable of taking place through the restricted by-pass, thus delivering fuel to the cylinder to move the piston at a rate in excess of that possible by flow through the first mentioned passage thereto.

3,399,531
HYDRAULIC TRANSMISSION SYSTEMS

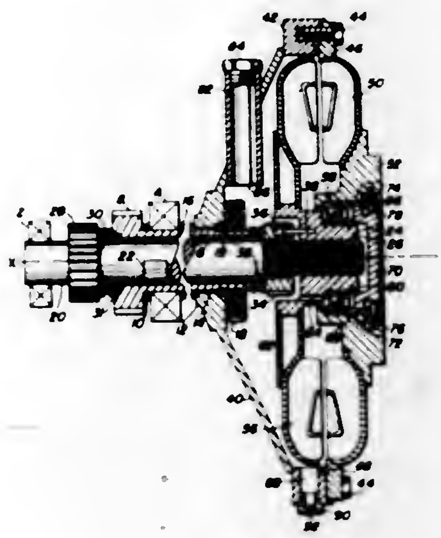
John Thomas Matthew Wright, Southport, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed July 11, 1966, Ser. No. 564,106
3 Claims. (Cl. 60—53)



An hydraulic transmission system comprising a swash plate type pump and a swash type plate motor arranged to be driven thereby, ducts extending between the pump and motor, a spring loaded control valve which can be urged against the spring by the application of fluid under pressure to a position in which the ducts between the pump and motor are in communication with one another and a manual valve which in one position permits the escape of fluid from one end of the control valve to permit it to move against the action of its spring, the manual valve also incorporating an electrical switch arranged in use in a circuit including the electric starter motor of a prime mover for the transmission system.

3,399,532
POWER TRAIN

Charles H. Fox, Washington, and John P. Mann, Morton, Ill., assignors to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 2, 1966, Ser. No. 524,529
5 Claims. (Cl. 60—54)



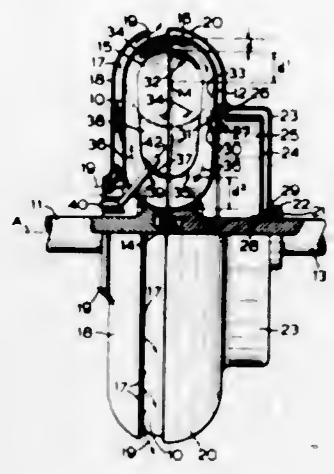
A fluid drive having a rotatably mounted housing forming an input member and rotatably supporting an output member, the housing including a filler tube to introduce a predetermined quantity of liquid. A fusible, temperature-sensitive plug is positioned adjacent the periphery of the housing remote from the filler tube, the plug being adapted to be contacted by the liquid during operation and adapted to discharge liquid from the housing when the liquid reaches a predetermined high temperature, as during a fluid drive stall condition. The housing further includes a first bore at one end thereof and a smaller bore axially inward from the first bore, the two bores forming a shoulder at their adjacent ends. A closure member having a fluid seal about its outer periphery is disposed in the smaller bore and a retainer ring is positioned in the first bore to cooperate with the shoulder to hold the closure member in place whereby the closure may be inserted in the housing without damage to the fluid seal.

3,399,533
VENTED HYDRAULIC COUPLING

John E. Becker, Bowmanville, Ontario, Canada, assignor to Eclipse Consultants Limited, Oshawa, Ontario, Canada
Continuation-in-part of application Ser. No. 515,502, Dec. 21, 1965. This application Nov. 4, 1966, Ser. No. 592,023
5 Claims. (Cl. 60—54)

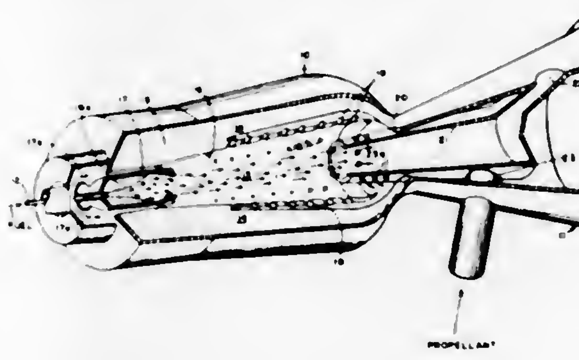
1. A hydraulic coupling comprising power input and power output means, a pump element and a turbine element connected respectively to the power input and power output means for rotation therewith about a common axis and providing respectively cooperating pump and turbine chambers, said chambers together forming a working chamber which is of generally elliptical cross-section in a plane containing said common axis and which has an interior wall of generally elliptical shape in the said plane, the minor elliptical axes of the said cross-section and of the said interior wall extending generally

parallel to the said common axis, a plurality of radially-extending vortex-producing vanes in each of the pump and turbine chambers, a quantity of working liquid in the said working chamber, the eccentricity of the said elliptical cross-section and the said elliptical shape being such that under operating conditions in which the pump and turbine elements are rotating together with normal slip between them there is established in the radially outer portion of the working chamber normal liquid vortices of generally circular cross-section in the said plane, and under overload or stall conditions in which there is greater than said normal slip between the pump and turbine elements there is established against the said interior wall attenuated liquid vortices of corresponding shape, so that there exists in the said working chamber an annular volume that is not occupied by either the said normal vortices or the said attenuated vortices, vent means carried by the said pump element providing a vent bore having an inlet opening into the said annular volume and an outlet opening to the exterior of the working chamber.



3,399,534
GAS CORE REACTOR PROPULSION SYSTEM

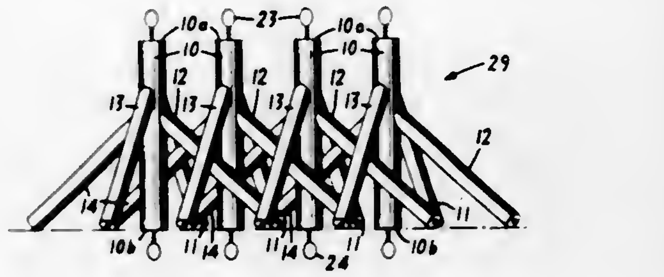
Henry M. Hunter, Palos Verdes Peninsula, and Robert W. Bussard, Palos Verdes Estates, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed July 14, 1965, Ser. No. 472,404
10 Claims. (Cl. 60—203)



An intergalactic propulsion system utilizing a gas core reactor to preheat the propellant before being expelled through a suitable nozzle. Mixing of the propellant fuel and the fissioning gas core is prevented by causing the propellant fuel to be discharged into the reactor chamber in a parallel coaxial stream about the fissioning gas fuel at substantially constant pressure and substantially constant axial velocity along the reactor length, the fissioning gas fuel being separate and recycled, whereas the heated propellant gas is expelled as thrust through the nozzle.

3,399,535
BLOCK AND MARITIME STRUCTURE FORMED THEREFROM

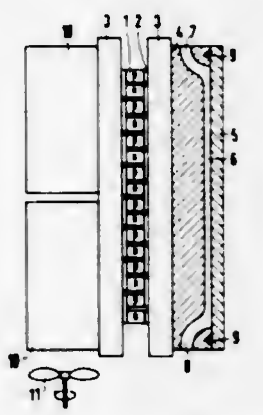
Raymond Joseph O'Neill, 11 Chippewa Road, Yonkers, N.Y. 10710
Filed May 18, 1966, Ser. No. 551,025
17 Claims. (Cl. 61—3)



Maritime structures such as jetties, breakwaters or armours for other maritime structures and artificial blocks for constructing such structures. The blocks are of substantially equal dimensions within a given structure and are interlocked forming a water-permeable assembly within which the individual blocks cannot be moved laterally or vertically without moving several adjacent blocks. The individual blocks comprise a massive, central elongated body portion having a plurality of base legs extending outwardly therefrom on opposite sides thereof and extending generally longitudinally of the body portion in a common direction in a generally conical arrangement. The roots of the legs are integral with the body portion and disposed closer to an upper end of the body portion than to the lower end thereof. The roots are disposed along an axial length of the body portion which is considerably less than one-half the axial length of the central body portion. The base legs have their free ends concentric with the longitudinal axis of the body portion. The blocks are arranged into an assembly with their legs overlapping laterally and vertically interlocking the blocks on opposite sides thereof with one another to provide a completely interlocked assembly as to lateral and upward movement. The overlapping and interlocked legs define spaces comprising voids of different volumes with sufficient volume of voids to permit flows of water therethrough without creating excessive internal pressure in the structure.

3,399,536
DEVICE FOR VARYING THE BLOOD TEMPERATURE

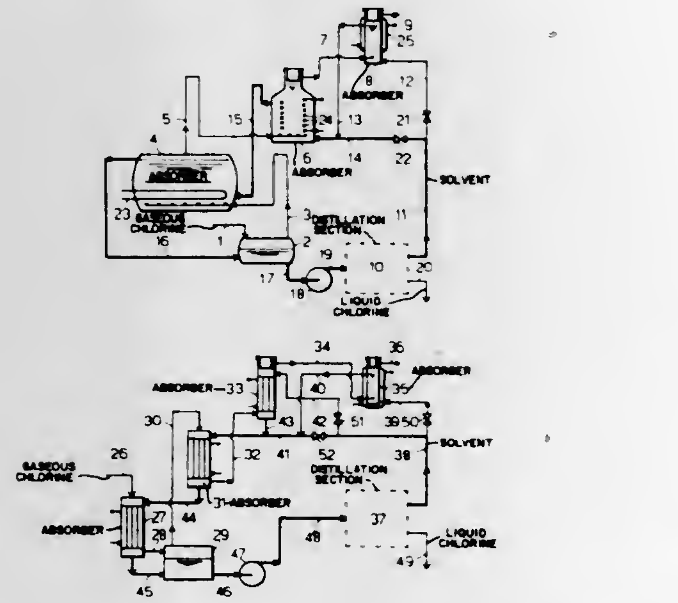
Heinz Walz, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Jan. 31, 1967, Ser. No. 612,849
Claims priority, application Germany, Feb. 2, 1966, S 101,757
6 Claims. (Cl. 62—3)



The blood temperature varying device has a band-shaped flow-through space extending across substantially the entire surface on one side of a Peltier block. The space has a width many times greater than the thickness thereof and is provided with an inlet and an outlet at the extremities thereof. The space has fan-shaped transition portions respectively outwardly flaring from and inwardly narrowing to the inlet and outlet and is curved substantially in accordance with the stream lines of blood flowing through the space. Furthermore, the space is defined by smoothly polished surfaces.

3,399,537
METHOD OF LIQUEFYING CHLORINE BY ABSORPTION IN AND DESORPTION FROM A SOLVENT

Christiaan Gerard Frederik Honigh, Delden, Netherlands, assignor to N.V. Koninklijke Nederlandsche Zoutindustrie, Hengelo, Netherlands
Filed Jan. 18, 1966, Ser. No. 521,300
6 Claims. (Cl. 62—17)



In a method of liquefying gaseous chlorine by multistep absorption in and desorption from a solvent such as carbon tetrachloride, the absorption in the first step is effected under conditions of perfect mixing or in cocurrent relationship so as to substantially attain an absorption equilibrium between the rich solution to be discharged from the first step and the remaining gas to be discharged from this step whereby a greater amount of water vapor present in the gaseous chlorine is taken up in the rich solution and is discharged therewith from the first step so that troubles caused by the water content of the remaining gas in further absorption steps are less likely to occur than in case of effecting the absorption in the first step in counter-current relationship.

3,399,538
METHOD FOR SEPARATING RELATIVELY PURE WATER FROM AQUEOUS SOLUTIONS

Cedomir M. Sliepcevich and Hadi T. Hashemi, Norman, Okla., assignors, by direct and mesne assignments, of thirty-seven and one-half percent to University Engineers, Inc., Norman, Okla., a corporation of Oklahoma, and sixty-two and one-half percent to E-C Corporation, Wilmington, Del., a corporation of Delaware
Filed Nov. 26, 1965, Ser. No. 509,958
27 Claims. (Cl. 62—58)

1. A process for removing fresh water from an aqueous solution comprising:

freezing ice crystals from the aqueous solution;

directly and intimately contacting in a contact zone at a temperature at least as low as the freezing point of the aqueous solution, the aqueous solution and the ice crystals with a liquid exchange medium having the following properties:

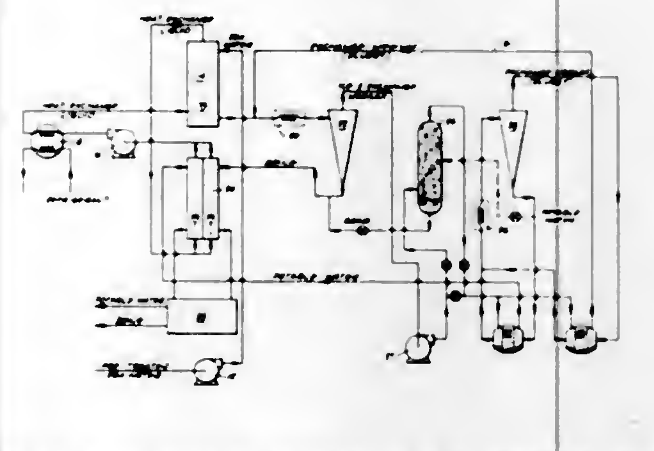
(a) substantial immiscibility in the aqueous solution and in fresh water;

(b) stable in the presence of, and unreactive with, water and the solute of the aqueous solution to the extent that no irreversible physical or chemical transformations occur during said direct, intimate contact;

(c) a density less than that of the aqueous solution and fresh water;

(d) a freezing point at least as low as the freezing point of the aqueous solution at the pressure at which said direct, intimate contact occurs; and

(e) a positive coefficient of melting temperature versus pressure, dT/dP;



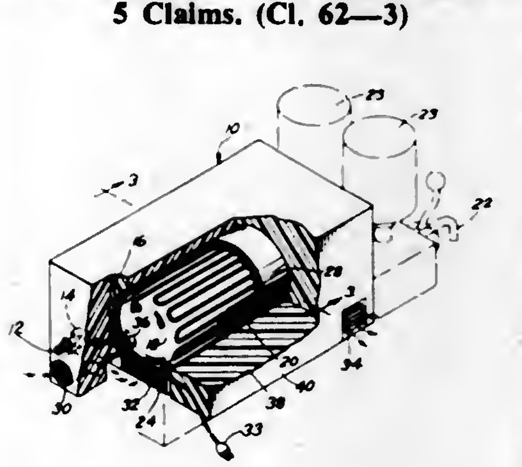
separating a substantial portion of the aqueous solution from the ice crystals and liquid exchange medium using the density difference between said exchange medium and the aqueous solution to effect said separation;

increasing the pressure on the ice crystals and liquid exchange medium to convert a substantial portion of the ice crystals to fresh water and a portion of the liquid exchange medium to solid particles; and

separating a substantial portion of the fresh water from the liquid and solid particles of exchange medium, using the density difference between said exchange medium and the fresh water to effect said separation.

3,399,539
COOLING UNIT

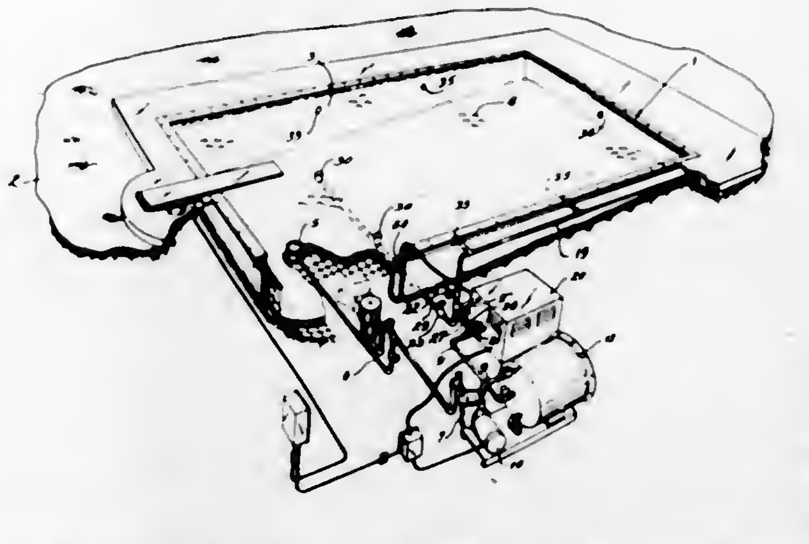
Harvey Herman, 3926 W. Greenleaf, Lincolnwood, Ill. 60645
Filed Mar. 13, 1967, Ser. No. 622,815
5 Claims. (Cl. 62—3)



A refrigeration device for converting relatively warm "tap-water" into cold, carbonated water. The "table-top" device, which utilizes a thermoelectric saddle, is suitable for use as a soda-water dispenser in soda shops, restaurants and bars. Cooling coils and a carbonation tank are placed within a container filled with fluid. The thermoelectric saddle is placed in a wall of the container and removes heat from the fluid. The fluid behaves as a "cold storage" buffer between the slow but steady heat-pumping capabilities of the thermoelectric saddle and high-level but infrequent cooling requirements created by the intermittent demands for cold soda water.

3,399,540
SWIMMING POOL SYSTEMS

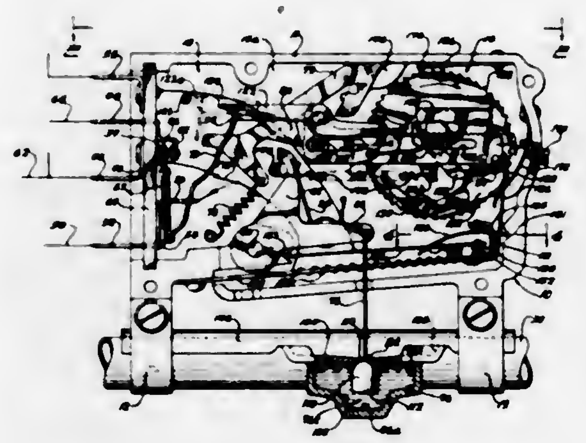
Claud E. Kahmann, Frontenac, Mo.
(11145 Conway Road, St. Louis, Mo. 63131)
Filed Jan. 9, 1967, Ser. No. 608,232
8 Claims. (Cl. 62—98)



Water withdrawn from a swimming pool is refrigerated by a selectively energizable refrigerator unit and returned to the pool in a stream below the surface of the pool in such a way as to produce a sub-surface circulation of the water in the pool while leaving a surface layer of warm water substantially undisturbed by the circulation.

3,399,541
DEFROSTER CONTROL

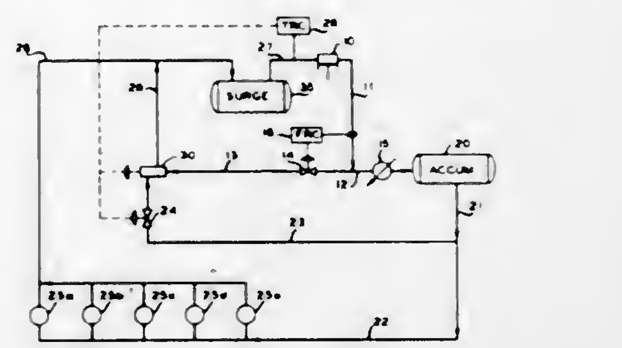
Robert H. Thorner, 8750–F W. Chicago Blvd., Detroit, Mich. 48204
Continuation-in-part of application Ser. No. 373,762, June 9, 1964, now Patent No. 3,350,894, dated Nov. 7, 1967. This application Apr. 25, 1966, Ser. No. 544,960
42 Claims. (Cl. 62—140)



The main disclosure relates to a refrigeration defrost control for regulating a heater to melt the frost formed on a refrigerator surface. In one form of the invention, initiation of the heater is effected by a bimetal-powered timer mechanism which stores energy through a spring escapement device to provide periodic defrost initiation at predetermined time intervals. The defroster control includes a duration control portion having a sensing member biased to abut some ice during the heating period and adapted to terminate the defrost action after a predetermined travel of the sensing member as the ice melts.

3,399,542
METHOD AND APPARATUS FOR COOLING COMPRESSOR RECYCLE GAS

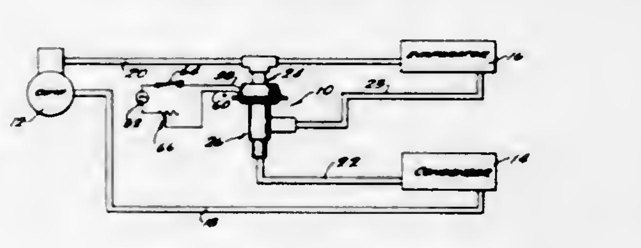
Robert C. Bracken, Eugene D. Lea, Howard J. Jobe, and De Wayne Maddox, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed May 25, 1967, Ser. No. 641,270
3 Claims. (Cl. 62—117)



In a refrigeration system having constant-capacity compressor and varying refrigerant demand, a portion of hot compressed refrigerant vapor stream is bypassed during period of light demand to the novel mixing valve wherein a liquid refrigerant is flashed into the hot vapor stream to reduce its temperature to normal compressor suction temperature so as to maintain substantially constant temperature to the compressor.

3,399,543
VALVE WITH BIMETAL OPERATOR MEANS

Alan A. Matthies, Milwaukee, Wis., assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed Dec. 21, 1966, Ser. No. 603,466
9 Claims. (Cl. 62—202)



1. A fluid flow control device comprising, in combination:

means defining a first fluid flow passage through said device,

means defining an orifice in said first passage,

valve means mounted in said device for movement toward and away from said orifice for opening and closing said orifice,

means defining a chamber in said device,

operating means disposed in said chamber and connected to said valve means to establish a base opening of said valve means and a predetermined flow rate through said orifice, said operating means further operative to modulate said valve means about said base opening in accordance with the heat transfer between said operating means and its ambient,

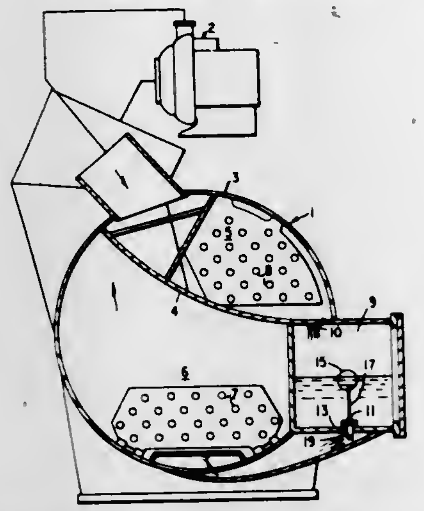
means defining a second passage opening into said chamber isolated from said first passage and adapted to be connected in a flow line to provide operative communication between said chamber interior and said flow line, and

impervious barrier means in said chamber arranged operatively between said second passage and said operating means to prevent direct impingement of fluid entering said chamber on said operating means.

3,399,544
REFRIGERATION SYSTEM WITH HIGH SIDE FLOAT

William T. Osborne, East Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Apr. 19, 1967, Ser. No. 631,998
4 Claims. (Cl. 62—218)

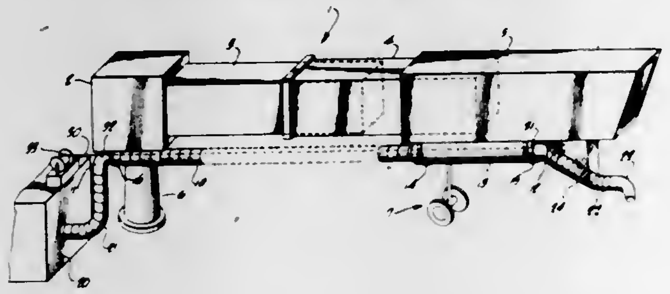


A refrigeration system employing a stabilized refrigerant valve to regulate flow of refrigerant from the high to the low side of the system. The refrigerant valve is provided with a pressure bias and a dynamic bias to prevent unstable operation thereof.

3,399,545
APPARATUS FOR CONNECTING A STATIONARY AIR CONDITIONING UNIT TO AIRCRAFT

Gordon K. Anderson, Tustin, Richard A. Evans, Newport Beach, and Ralph H. Hilmer, Corona Del Mar, Calif., assignors to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware

Filed May 23, 1967, Ser. No. 640,604
14 Claims. (Cl. 62—237)



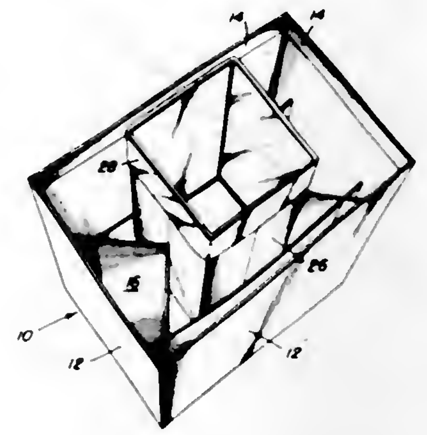
A longitudinally expandable duct is attached to the two relatively movable end sections of a telescoping, aircraft passenger-loading bridge. Thus, the conduit is integrated with the bridge structure as a single unit, changing in length with the bridge as the bridge is extended and contracted. A supporting cable under tension extends through the interior of the duct along the top surface thereof. Preferably, one end of the cable is attached to the duct at one end, and at the other, it is wrapped around a reel that maintains a constant tension on the cable. In its contracted condition, the duct is stored in a tube attached to the bridge. One end of the duct is fixed relative to the tube, and the other end of the duct emerges from the tube as the bridge is extended.

3,399,546
WET-ICE DISPLAY CONTAINER

Roger R. Kuns, Bellevue, and Nelson Orwig, Sandusky, Ohio, assignors to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

Filed Nov. 8, 1966, Ser. No. 592,881
8 Claims. (Cl. 62—371)

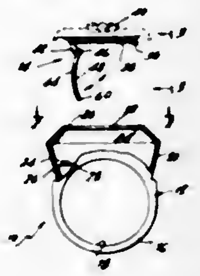
A portable refrigerating display container is presented which employs as separate and distinct elements, a combination product and refrigerant tray; a water box for catching and retaining the refrigerant effluent; a base member for surrounding the various elements; and, a partition element which gives the base integrity, supports the product and refrigerant tray, and locates the water box.



3,399,547
RING

David Spielman, 428 E. Hudson, Long Beach, N.Y. 11561, and Arnold Spielman, 184 Island Parkway W., Island Park, N.Y. 11558

Filed Apr. 25, 1966, Ser. No. 545,039
6 Claims. (Cl. 63—15)



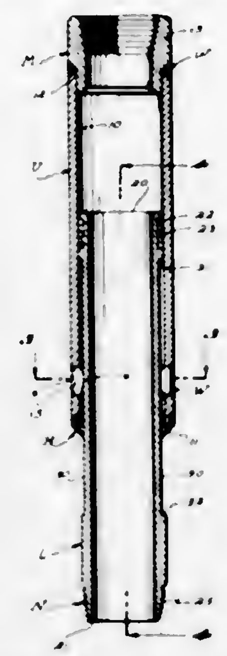
1. A ring comprising a casting including a shank having a finger-receiving hole therein and a crown integral with said shank and including a central opening therein defined by a peripheral support flange, a mounting disposed on said flange, said flange having a notch therein, a catch member depending from said mounting and being disposed in said notch and engaging the underside of said flange, a detent integral with said crown and extending from the inner surface thereof toward said finger-receiving hole, eye means integral with said mounting and depending downwardly therefrom toward said finger-receiving hole, a latch having an aperture therethrough for lockingly receiving said detent, and pintle means hingedly securing said latch to said eye means so that said latch is selectively disengageable from said detent to permit removal and replacement of said mounting.

3,399,548
AXIALLY EXTENSIBLE ROTARY DRIVE TOOL JOINT

Erwin Burns, Los Angeles, Calif. (8346 Salt Lake Ave., Bell, Calif. 90201)

Filed Dec. 29, 1966, Ser. No. 605,862
9 Claims. (Cl. 64—23)

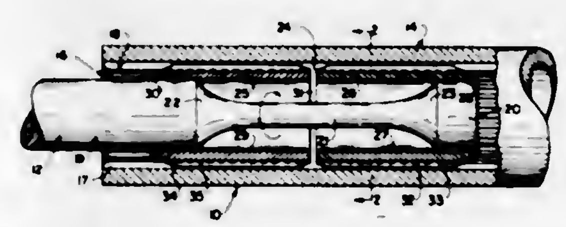
1. An extensible tool joint including, an elongate, vertically extending upper outer section with a longitudinal cylindrical bore, coupling means at its upper end to connect with a related fluid conducting upper structure and circumferentially spaced, radially inwardly projecting lugs at its lower end, and elongate, cylindrical, vertically extending lower inner section with a central flow passage slidably engaged in the outer section with its lower end portion depending therefrom, sealing means carried by the upper end of the inner section and sealing between that section and the bore, coupling means at the lower end of said inner lower section to connect with a related fluid conducting lower structure and circumferentially spaced, longitudinally extending radially outwardly disposed flats in the central portion of the inner lower section spaced from and opposing the bore in the outer section and slidably engaging the lugs.



3,399,549
BACKLASH-FREE SPLINE JOINT

Francis Clarence Nagele, Allegan, Mich., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed Jan. 3, 1967, Ser. No. 606,749
10 Claims. (Cl. 64—23)



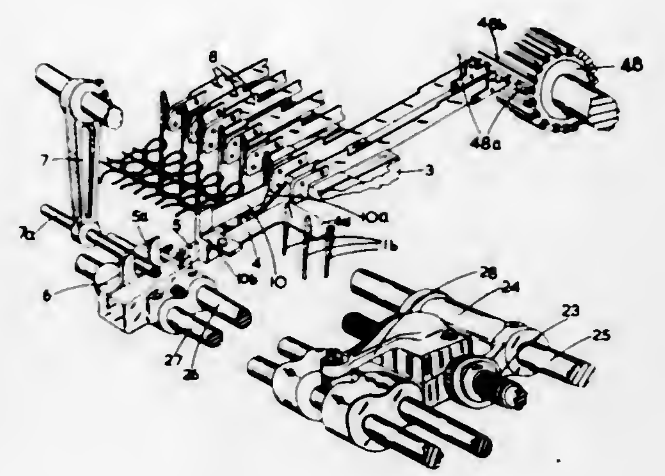
A longitudinally slidable spline joint connection between two telescoped torque transmitting shaft members wherein the outer member has a splined bore and the inner member projects within the bore and carries a pair of separately attached adjacent splined sleeve sections meshed with the bore splines, and wherein the splined sleeve sections are initially fixed in angularly displaced positions and on longitudinally spaced portions of the inner shaft member that are connected by a weakened intermediate portion and in the assembly the sleeve sections are relatively rotated into spline alignment as permitted by twisting of the intermediate shaft member portion which in the assembly acts as an energized torsion spring to oppositely urge the meshed splines into backlash-free engagement.

3,399,550
STRAIGHT BAR KNITTING MACHINES

George Sydney Woodcock, Broomland, Stirches Road; Herbert Edward Woodcock, Ravello, Wilton Hill; Francis Simpson, 8 Overhall Crescent, Wilton Dean; and William Clayton, 14 Moat Crescent, all of Hawick, Scotland

Filed Apr. 19, 1965, Ser. No. 449,001
5 Claims. (Cl. 66—5)

A straight bar knitting machine having simultaneously and individually operable needles and programme card controlled selvedge fashioning and patterning mechanism, and wherein the patterning mechanism comprises a pattern drum under programme card control and operable on sliders for patterning by needle selection, and the selvedge fashioning mechanism comprises adjustable selvedge stop means under programme card control and selvedge needles, with cam operated means for moving the blade elements into and out of operative position, and motion transmitting means adapted to maintain the connection between the blade elements and the cam operated means and to connect the blade elements to the programme card controlled adjustable selvedge stop means.



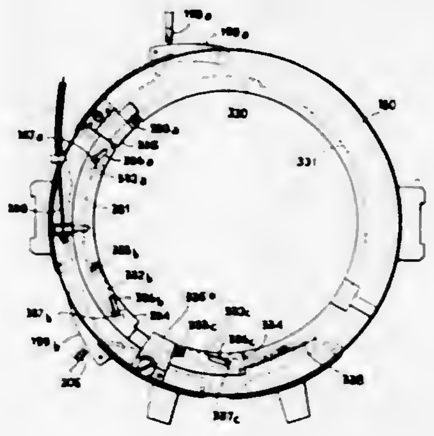
3,399,551
CIRCULAR KNITTING MACHINE FOR MANUFACTURE OF STOCKINGS

Giorgio Billi, Viale Torricelli 23, Florence, Italy

Continuation-in-part of application Ser. No. 727,079, Apr. 8, 1958. This application Jan. 6, 1966, Ser. No. 519,405

Claims priority, application Italy, Apr. 9, 1957, 572,765/57

2 Claims. (Cl. 66—108)

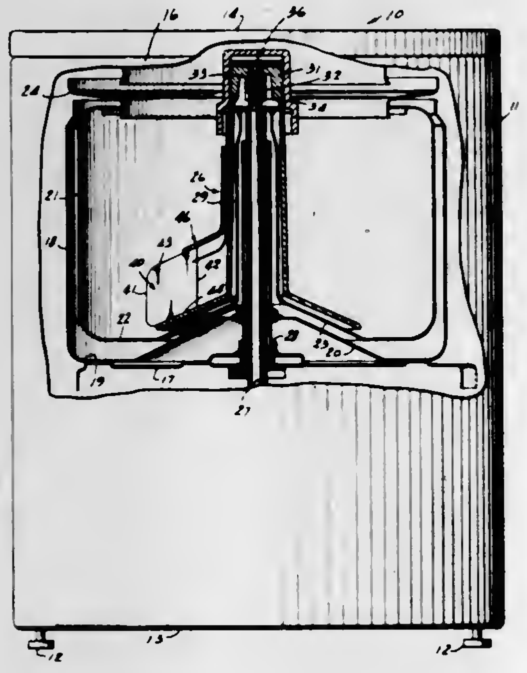


1. A circular knitting machine for the manufacture of stockings comprising: a main cam drum revolving once during the formation of each stocking, a continuously rotatable needle cylinder, needles and needle jacks slidably mounted in said cylinder, four yarn guides cooperating with four feed stations, four stationary stitch cams, one at each yarn feed station, movable clearing cam means cooperating with said stitch cams respectively, to selectively clear the needles or permit them to fail to clear for tuck stitch formation, two of said clearing cam means comprising a group of slider cams slidable radially of the needle cylinder to act on the butts of said needle jacks, said groups of slider cams being separated

from one another circumferentially of the needle cylinder by other of said movable clearing cams, a sinker cam track having a radial deviation corresponding to each feed station, means controlled by said main cam drum and controlling said clearing cam means to select needles for tuck stitch formation by said slider cams at alternate feed stations and to select all needles for plain stitch formation at the intermediate feed station whereby four courses, alternating between plain and tuck stitches, are formed during each revolution of the needle cylinder, pivoted cams in said sinker track at three of the four feed stations, said cams movable between an operative position deflecting the sinkers into the associated deviation and an inoperative position permitting said sinkers to travel without deflection at the associated feed station, means pivoting said cams to inoperative position when all of the feed guides at the associated station are withdrawn, a common operator for said three cams, said operator comprising an arcuate member having slots therein inclined relative to said track, and pins on said pivoted cams engaging said slots whereby upon arcuate movement of said operator, said three pivoted cams are actuated simultaneously.

3,399,552
WASHING MACHINE AGITATOR WITH ADJUSTABLE VANES

Keith D. Salisbury and Clifton A. Cobb, St. Joseph, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed Oct. 10, 1966, Ser. No. 585,665
13 Claims. (Cl. 68—134)

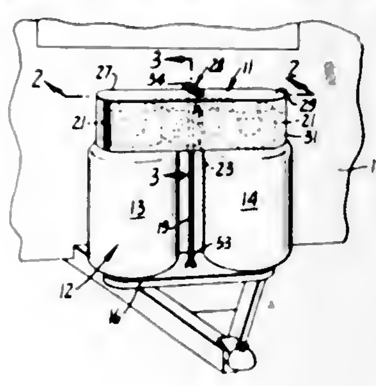


An adjustable vane agitator including an agitator shell rotatable on an axis and having one or more radially extensible vanes supported thereby. The radial extension of the vanes may be selectively adjusted by manipulation of control rods carried on the agitator shell and movable in an axial direction to vary the degree of washing action caused by oscillatory movement of the agitator.

3,399,553
PROTECTIVE COVER FOR LIQUEFIED PETROLEUM GAS SYSTEMS

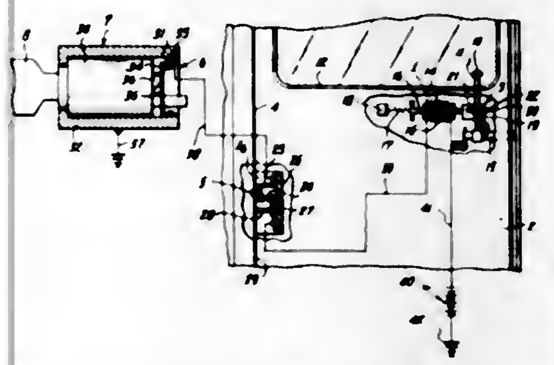
Eric Lehto, 4649 Redding St., Oakland, Calif. 94619
Filed Dec. 20, 1966, Ser. No. 603,268
5 Claims. (Cl. 70—158)

The technical disclosure in specification is directed to a removable hood for protecting portable L.P. gas systems from theft, damage or tampering. The hood fits over the upper ends of the L.P. tanks and the valves, regulator and tubing, and is removably locked in place to block off effective use of tools on the L.P. valves, etc., or on the locking mechanism.



3,399,554
LOCKOUT PREVENTER FOR AUTOMOTIVE VEHICLES

Ronald L. Hogue, Box 4, Weiner, Ark. 72479
Filed May 20, 1966, Ser. No. 551,812
7 Claims. (Cl. 70—262)

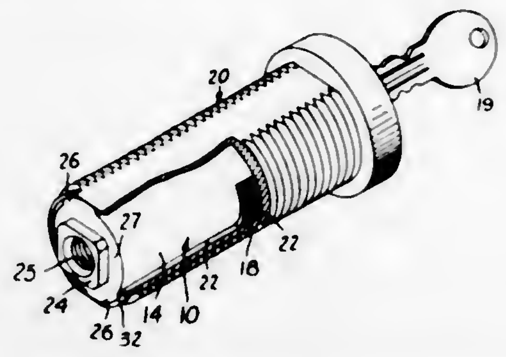


A lockout preventing system for automotive vehicles which absolutely assures that the vehicle doors cannot be unintentionally locked from outside the vehicle while the key is in the ignition. The system includes only a first switch which is closed only when a door of the vehicle is open and only a second switch which is closed only when a key is in the ignition switch, regardless of the position of the ignition switch or whether or not the motor of the vehicle is running. Thus, it is assured that the vehicle doors cannot be inadvertently locked from the outside while the doors can be locked at any time by one having an extra key even when a key is in the ignition switch. Therefore, it is possible for the owner of the vehicle to start the engine, as on a cold morning, and still lock all the doors from the outside with an extra key.

3,399,555
LOCK CONSTRUCTION

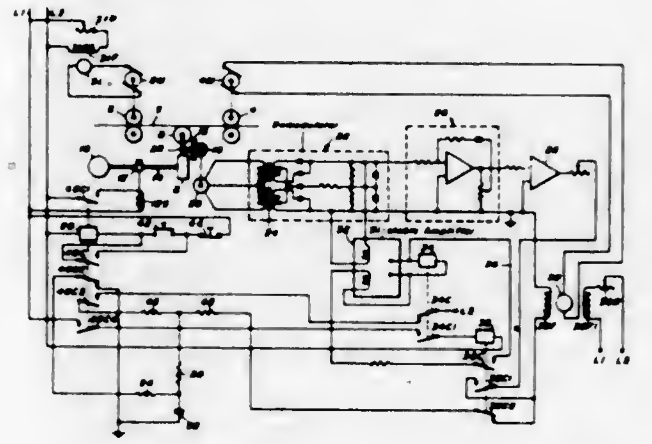
Raymond K. Gray, Skokie, and Stanley C. Wolniak, Chicago, Ill., assignors to The Illinois Lock Company, a subsidiary of The Eastern Company, a corporation of Illinois
Filed Mar. 31, 1966, Ser. No. 539,117
3 Claims. (Cl. 70—369)

A plug and cylinder assembly for a lock in which an outer cylinder has a longitudinal slot along the interior thereof and a rearwardly facing shoulder angularly and rearwardly displaced from at least a portion of the slot. A plug assembly is rotatably received in the cylinder with tumbler means extending radially into the slot and retractable into the plug assembly on insertion of a key into the plug. A lip extends radially from the plug a distance not greater than the depth of the slot, and the lip is angularly displaced from the tumbler means. The lip on the plug bears against the shoulder on the interior of the cylinder to retain the plug assembly within the cylinder, and whereby on retraction of the tumbler means into the plug and out of the slot the plug assembly may be rotated to align the lip with the slot thereby permitting removal of the plug assembly from the cylinder by sliding the lip through the slot.



3,399,556
STRIP TENSION CONTROL FOR A ROLLING MILL

Eugene E. Bensema, Chicago, and Allen R. Weber, Thornton Township, Cook County, Ill., assignors to United States Steel Corporation, a corporation of Delaware
Filed Jan. 28, 1966, Ser. No. 523,683
4 Claims. (Cl. 72—21)

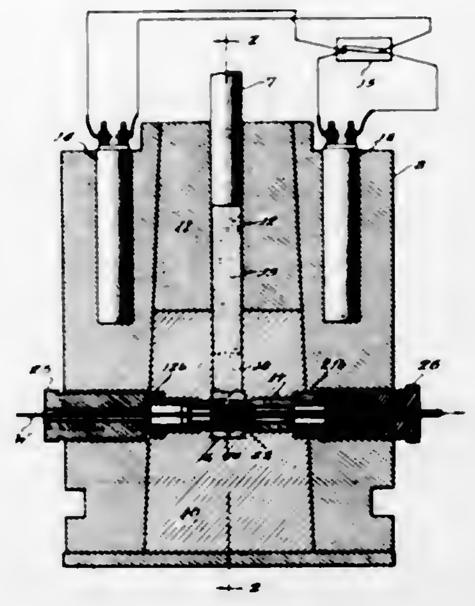


A strip tension control for a tandem rolling mill in which an electrical signal derived from the height of a tension roll positioned vertically against the strip controls the strip tension by varying the speed of the roll stand following the tension roll. In order to maintain tension against the strip during start up, the normal operating source of current for the field of the generator powering the roll motor is replaced during start up by a second source of current through a capacitance-resistance network whose characteristics result in initially moving the tension roll very rapidly to overcome inertia in the mill. When the tension roll approaches normal operating height the second power source is replaced by the normal operating source of current for the generator field.

3,399,557
APPARATUS FOR EXTRUDING A RELATIVELY SOFT METAL SHEATH ONTO A HARD METAL WIRE

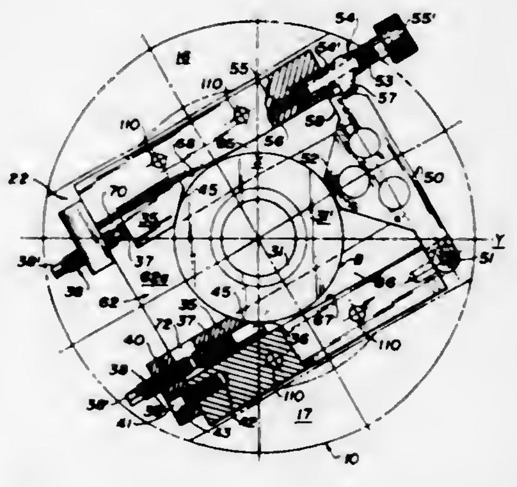
Ernest U. Lang and William F. Hope, Niles, Mich., assignors to National-Standard Company, a corporation of Delaware
Filed Nov. 1, 1965, Ser. No. 522,802
11 Claims. (Cl. 72—258)

Apparatus for cladding a ferrous metal core wire to produce a clad wire which may be drawn, by extruding and bonding to the core an aluminum sheath, in which the die head includes a male die and a female die spaced from one another and having adjacent frusto-conical surfaces that define a tapered annular soft metal flow guide which is concentric with the die axis, there being an entry guide in the male die in which a ferrous metal wire core is snugly guided concentric with the die axis as it enters the head, and a tapered compressing bore in the female die which is concentric with said axis and merges concentrically into an untapered die portion the diameter of which is equal to that of the finished wire.



3,399,558
DIE ASSEMBLY

Arthur Dean Smith, San Lorenzo, and Cornelis Langewis, Walnut Creek, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Feb. 2, 1966, Ser. No. 524,637
5 Claims. (Cl. 72—282)

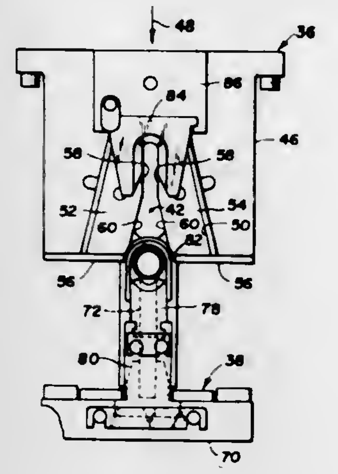


This disclosure relates to a die tool pack assembly wherein improved and conveniently arranged means are provided for adjustably locking and aligning a die element in the assembly with other elements of the assembly.

3,399,559
METHOD AND APPARATUS FOR PROCESSING TUBING

George A. Mitchell, 920–A Kendis Circle, Youngstown, Ohio 44505
Filed June 3, 1965, Ser. No. 461,002
7 Claims. (Cl. 72—330)

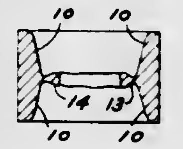
Method and apparatus for forming reduced diameter points on tubing wherein a pointed shear severs the tubing, followed by forming an end of the severed tubing on one side of the shear into a compact cylindrical point without



materially deforming the end of the tubing on the other side of the shear.

3,399,560
METHOD OF COLD FORMING A SOLID RING

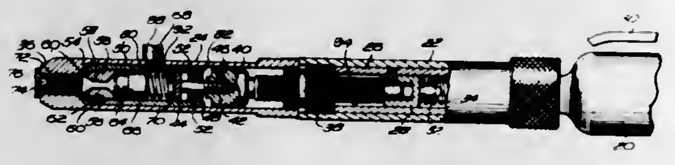
John E. Connolly, Hamburg, Mich. 48139, and Abner C. Mick, 3860 W. Outer Drive, Detroit, Mich. 48221
Continuation-in-part of application Ser. No. 36,775, June 17, 1960. This application Nov. 1, 1965, Ser. No. 513,626
10 Claims. (Cl. 72—368)



1. The method of producing cold-forged metal rings of close final dimension and high strength suitable for machine parts and as welded elements of a combination which comprises selecting a slug containing sufficient metal to form the ring with slight excess, striking said slug to form a double cup with a common web forming the bottom of each cup as a first step, as a second step, removing the center portion of the web to leave a small residual annular area on the inner walls of the cups whereby a ring having a residual web is formed, as a third step striking the residual web along its outer periphery directly adjacent the ring in a narrow annular pressure area to create an extremely brittle condition of the metal within said residual web adjacent the ring inner wall while shaping the surface of said ring to a final dimension and finish, and as a last step removing said residual web from the inner walls of the ring and coining the severed area simultaneously.

3,399,561
PORTABLE RIVET SETTING TOOL

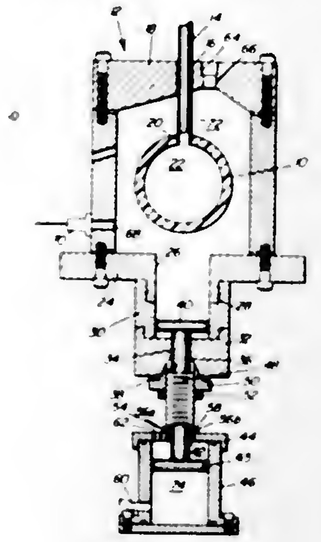
Alan Martin, Lantern Lane, Sharon, Mass. 02067
Filed Jan. 27, 1966, Ser. No. 523,325
8 Claims. (Cl. 72—391)



A mandrel rivet setting tool having an axially movable and rotatable shaft connected to a sleeve which carries jaws that open and close to grab the mandrel. The sleeve moves axially or axially and rotatably and moves the jaws with it to break the mandrel.

3,399,562
METHOD AND TEST ASSEMBLY FOR TESTING VISCOELASTIC MATERIALS

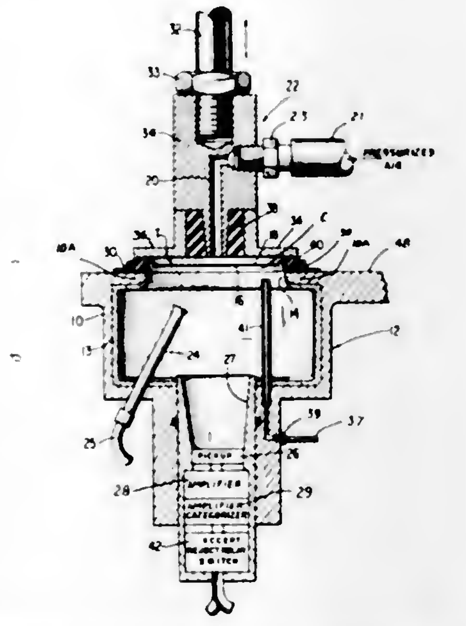
Sterling J. Bennett and Garron P. Anderson, Brigham City, Utah, assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Mar. 28, 1966, Ser. No. 537,810
5 Claims. (Cl. 73—37)



An apparatus and method for testing and determining the mechanical properties of viscoelastic materials. Included in this invention is a pressurized enclosure having means to position a hollow body specimen of the material to be tested and provision for pressurizing and therefore stressing the outside surfaces thereof. The pressurizing means is a displacement piston which is connected to a second piston in the enclosure through a control stop whereby movement of the displacement piston causes a corresponding movement of the second piston to displace fluid in the enclosure and corresponding displacement in the hollow specimen. The specimen may also be filled with fluid under pressure for stressing it in an opposite manner.

3,399,563
METHOD AND APPARATUS FOR TESTING THE PRESSURE TIGHTNESS OF CONTAINERS

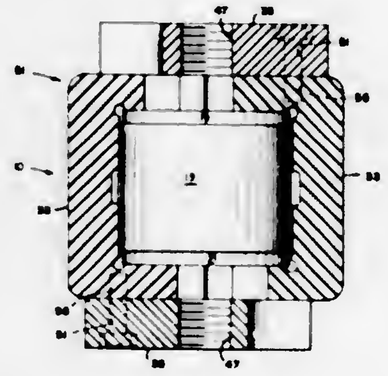
Thomas F. Helms, New Fairfield, Conn., assignor to Idex Corporation, a corporation of Connecticut
Filed Dec. 16, 1966, Ser. No. 602,282
14 Claims. (Cl. 73—45.2)



This invention relates to testing method and apparatus for determining the pressure tightness or leakproof quality of containers or parts thereof such as ends, bodies and the like. More particularly, it relates to testing method and apparatus for immediately determining whether containers, ends, bodies and the like leak by detecting the high frequency vibrations that are produced by the leakage of fluid under pressure through any minute opening, i.e., micro opening, which might exist in the article tested. Fluid under pressure is applied to a surface of the article being tested, and high frequency vibration sensitive means is arranged to be responsive to the vibrations produced by the pressurized fluid passing through any micro openings or openings in this article.

3,399,564
LOAD CELL

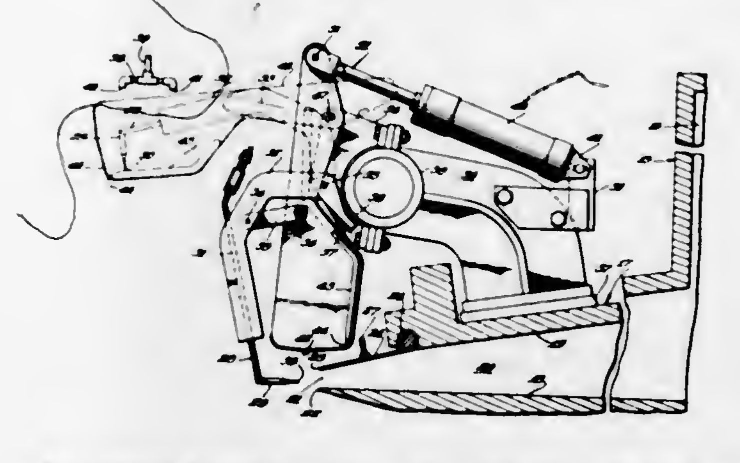
Michael C. Kaye, Portland, and Charles J. Berry, Lake Oswego, Oreg., assignors to Freightliner Corporation, Portland, Oreg., a corporation of Delaware
Original application July 26, 1965, Ser. No. 474,924, now Patent No. 3,313,151, dated Apr. 11, 1967. Divided and this application Dec. 27, 1966, Ser. No. 604,877
5 Claims. (Cl. 73—141)



A load cell in which a thin-walled ring surrounds an elastomer core in compressed relation thereto, wherein pressure may be applied to the ends of the core to expand the ring, the ring having sensing means to sense the degree of expansion, wherein there is a case around the ring and core to transmit compressive forces to the core when the case is loaded in either compression or tension, or wherein torque pressure can be applied to the load cell to alter the compressive load thereon whereby the degree of torque can be measured, or wherein hydraulic fluid can be injected into the core to effect an expansion or contraction of the ring.

3,399,565
STOCK VELOCITY MEASUREMENT DEVICE

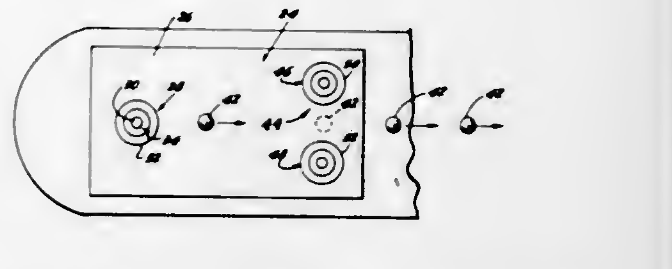
John F. Schmaeng, Rockton, Ill., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Dec. 8, 1965, Ser. No. 512,399
4 Claims. (Cl. 73—194)



Apparatus for determining the velocity of stock as it flows from the slice opening in the head box of a papermaking machine. The apparatus includes an impact tube movable into the flow of stock at the slice opening and from which issues a jet of fluid against the flow of fluid against the flow of stock. The fluid which issues from the impact tube is maintained at a constant velocity. An indicator is provided to indicate the static pressure of the fluid in the impact tube, the static pressure varying as a function of variations in the velocity of the stock flowing from the slice opening.

3,399,566
FLOW METER

Neil L. Brown, El Cajon, Calif., assignor to The Bissett-Berman Corporation, Santa Monica, Calif., a corporation of California
Filed Oct. 15, 1964, Ser. No. 404,025
6 Claims. (Cl. 73—204)

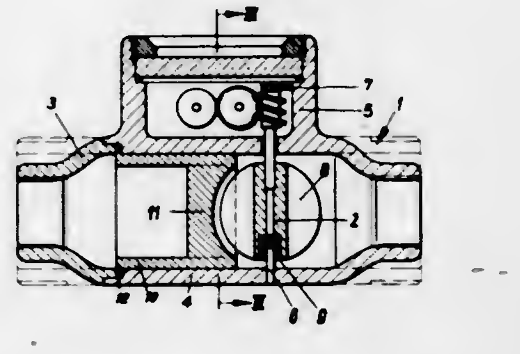


1. A flow meter for measuring the velocity of a current of sea water, said meter including:

- a support constructed to be disposed in said sea water and having first and second ends displaced from each other along a first line, the support being pivotable at the first end to become disposed in the direction of flow of the sea water,
- a heater element mounted on said support at the first end for transferring heat into the sea water,
- means interconnected with said heater element to energize said element for a particular interval of time to form a parcel of heated water adjacent the heater element,
- at least a pair of pickup probes mounted on said support at the second end in symmetrically displaced relationship from the heater element relative to the first line, said probes being electrically interconnected with each other by the electrical conductivity of the sea water therebetween, and
- a bridge circuit electrically interconnected with said probes and responsive to the electrical conductivity between said probes for providing an indication of the passage of the parcel of heated water past the probes.

3,399,567
FLOW METER

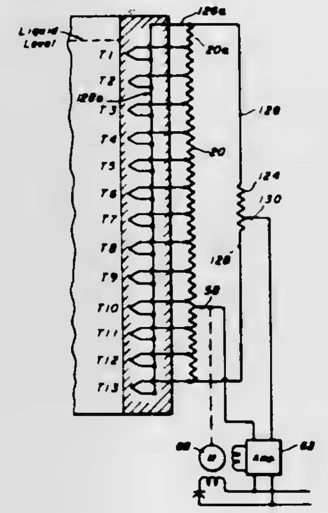
Walter Back, Mannheim-Schonau, Germany, assignor to Bopp & Reuther G.m.b.H., Mannheim-Waldhof, Germany
Filed Feb. 18, 1966, Ser. No. 528,483
Claims priority, application Germany, Mar. 5, 1965, B 80,828, Patent 1,220,626
5 Claims. (Cl. 73—230)



A flow meter having a rotor with a plurality of vanes having peripheral edge portions located on a common imaginary spherical surface and being arranged turnably about an axis in a cylindrical housing portion of uniform cross-section, and guide means in the housing portion extending upstream of the rotor transverse to the flow of fluid through the housing portion to such an extent that fluid will impinge on the rotor only to one side of its axis.

3,399,568
SYSTEM FOR INDICATING LIQUID LEVEL

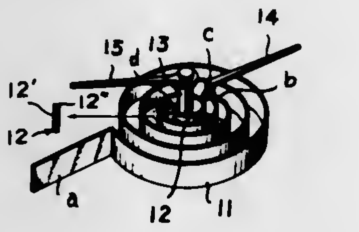
James H. Wilson, Franklin Township, Westmoreland County, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Dec. 14, 1966, Ser. No. 601,789
1 Claim. (Cl. 73—295)



A supplemental resistor section is added to the upper end of a slidewire resistor in a patented self-balancing bridge system responsive to the change of temperature at the liquid level in a mold for molten metal, as indicated by thermocouples spaced vertically in the mold wall. A shunt from the end of the supplemental section to ground or a point at a voltage lower than that of the topmost thermocouple creates a change in temperature going vertically up the mold wall, even when the liquid level is above the topmost thermocouple.

3,399,569
TEMPERATURE AND DISCOMFORT INDEX INDICATOR

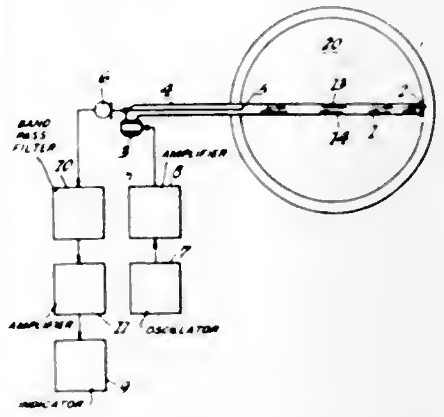
Syunsuke Nakano, 236 Imaizumi-cho, Ohta-ku, Tokyo, Japan
Filed Apr. 18, 1966, Ser. No. 543,353
Claims priority, application Japan, Sept. 20, 1965, 40/76,342
4 Claims. (Cl. 73—336)



A temperature and discomfort index device using a bimetalic coil to sense temperature and having a pointer applied to its free end. A humidity responsive element is applied to the free end of the coil and has a pointer on the other end to indicate changes in both temperature and humidity.

3,399,570
MEASURING TEMPERATURES

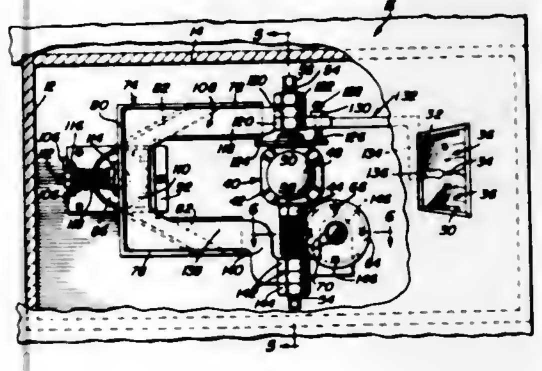
Robert Alfred J. E. Pirlet, Angleur, Belgium, assignor to Centre National de Recherches Metallurgiques, Brussels, Belgium, a corporation of Belgium
Filed Oct. 28, 1965, Ser. No. 505,496
Claims priority, application Luxembourg, Oct. 31, 1964, 47,264
2 Claims. (Cl. 73—339)



Apparatus for measuring temperature in a region comprises a sonic wave guide with one closed end adapted to be inserted into the region and means for propagating sonic waves towards the closed end for reflection to form a standing wave. A probe is inserted into the wave guide and the wave amplitude (acoustic pressure) at the probe end is adjusted to be at or near a minimum, indicating a node. The adjustment may be achieved by variation of the frequency of the propagated wave, in which case the frequency indicates the temperature. Alternatively, the probe may be located at a node for a known temperature and the acoustic pressure measured used as an indication of variation from the known temperature.

3,399,571
GOLF PRACTICE DEVICE

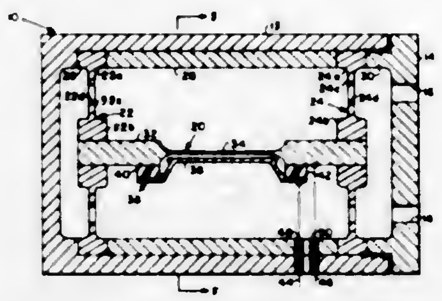
Joseph L. Parsons, Star Rte. 1, Box 58, Union, Wash. 98592
Filed June 16, 1967, Ser. No. 646,518
10 Claims. (Cl. 73—379)



The device shown enables a golfer to practice in his own backyard. All essentially needed components are confined in a box-like housing which, in turn, can be embedded flush in the lawn or, alternatively, suspended beneath a low-level leg supported platform capable of serving right-handed or left-handed golfers. A rubber or equivalent member is fixed on a freely rotatable stand-supported shaft or axle and embodies selectively usable "golf balls" capable of being forcibly struck. Each whirlable ball automatically operates a responsive yardage dial and indicating pointer. The stand is also responsively movable and has an arrow to show a "hook" and a "slice" compared to a straight-away shot.

3,399,572
VIBRATING BEAM PRESSURE TRANSDUCER

Hugh E. Riordan, Wyckoff, N.J., and Leon Weisbord, New York, N.Y., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Dec. 1, 1966, Ser. No. 598,386
7 Claims. (Cl. 73—398)

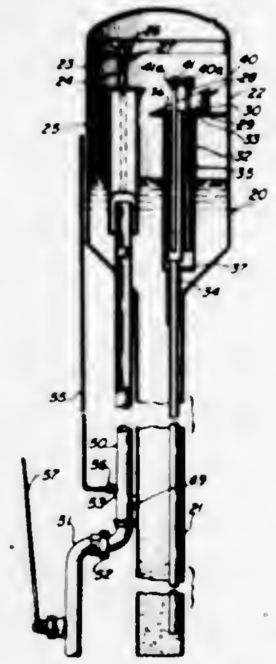


An apparatus for producing a digital output in accordance with a gas pressure is provided by a pair of closely spaced, conductive plates forming a capacitor. One of the plates is a transversely vibratory beam. The capacitor is disposed in a gaseous medium the pressure of which is to be measured. The frequency of vibration of the one plate, varies, among other factors, according to the pressure and density of the gas. To derive a digital output, the capacitor is placed in the frequency determining circuit of an oscillator whose output is frequency modulated by the plate vibrations. A discriminator circuit removes the carrier frequency producing an output potential varying at the frequency of plate vibration. To maintain vibration of the plate, a part of the output, in proper phase, is superimposed on a direct potential applied across the plates to drive the vibratory plate by electrostatic attraction.

The output thus consi ts of a sinusoidal voltage having a frequency equal to that of the vibrating beam and hence directly related to the ambient pressure.

3,399,573
METHOD AND APPARATUS FOR DETERMINING RELATIVE DENSITIES

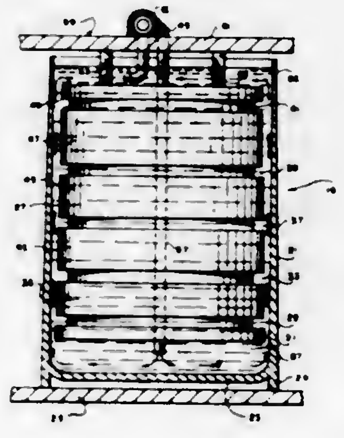
Yves M. Ponsar, 6 Ave. Marcelin Berthelot, Villemomble, Seine-St-Denis, France
Filed June 8, 1965, Ser. No. 462,373
6 Claims. (Cl. 73—438)



This invention deals with an apparatus for measuring the apparent density of a suspension of solids wherein a portion of the suspension is withdrawn from the main body of suspension through piping which introduces the suspension into a vertical positioned duct, the bottom outlet of which is submerged in the main body of suspension. As the suspension flows through the duct, it acts as the submerging medium for two vertically spaced tubular members inside of which is the solids free liquid of the suspension. Gas conduits for bubbling gas into the liquid in each of said tubular members is submerged in the liquid in said tubular members. The gas conduits have branch conduits interconnected by means responsive to back pressure on the gas in said conduits whereby a differential in pressure correlatable to apparent density is indicated.

3,399,574
METHOD FOR LEAKAGE TESTING OF TANKS

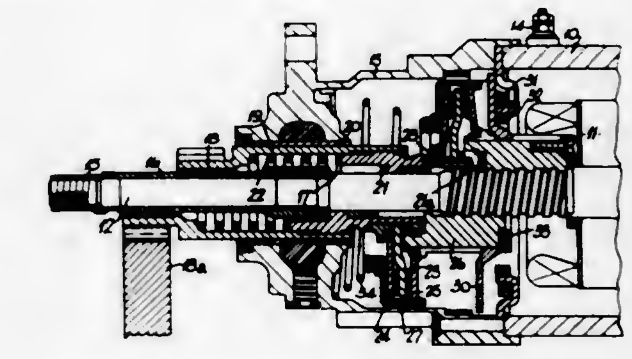
Ernst E. Seiler, Madison, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Nov. 23, 1966, Ser. No. 596,735
7 Claims. (Cl. 73—49.2)



A method of testing a large liquid containing tank for leaks by partially filling the tank with an apparatus, such as a piston, that forms alternating relatively narrow and large spaces between the sidewall of the tank and the periphery of the piston. Liquid is pumped through a conduit system against the bottom of the tank and the liquid flows upwardly through the relatively narrow and large spaces thus applying varying leak revealing pressures against the tank sidewall.

3,399,575
STARTING MECHANISMS FOR INTERNAL COMBUSTION ENGINES

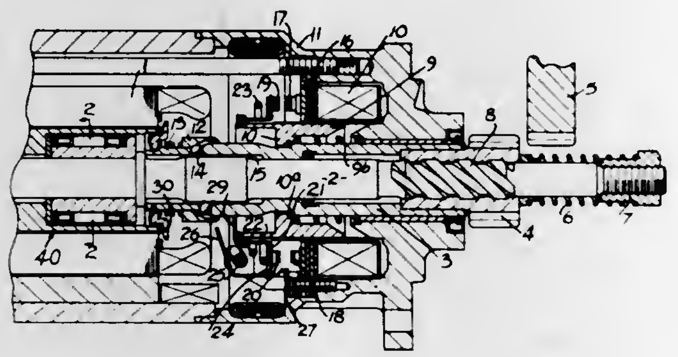
Alec Harry Seilly, North Wembley, Kenneth Frederick Gubb, Greenford, and Pierre Henri Peltret, London, England, assignors to C.A.V. Limited, London, England
Filed Oct. 10, 1966, Ser. No. 585,617
Claims priority, application Great Britain, Oct. 12, 1965, 43,167/65
7 Claims. (Cl. 74—7)



A starting mechanism for an internal combustion engine which comprises a motor, a shaft which is arranged to be driven by the motor and an axially movable pinion which is movable from a rest position to an operative position into engagement with a toothed wheel on the engine. The mechanism comprising a driven clutch plate which is connected to the pinion and a driving clutch plate in frictional engagement with the driven clutch plate and a member which is axially movable upon the shaft and which is connected to said driving clutch plate. The member is provided with a quick pitch thread connection with the shaft and means is provided for restraining the angular movement of the member until the pinion has attained its operative position; resilient means being provided which limits the torque which is applied to said pinion until it has reached its operative position.

3,399,576
STARTING MECHANISM FOR INTERNAL COMBUSTION ENGINES

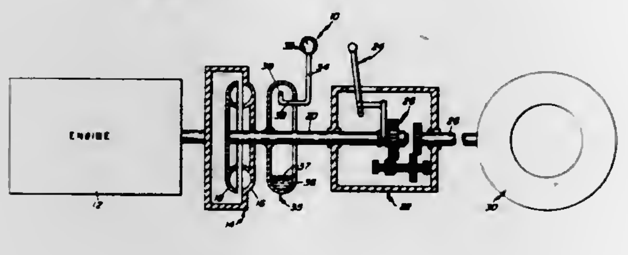
Alec Harry Seilly, North Wembley, England, assignor to C.A.V. Limited, London, England
Filed Oct. 10, 1966, Ser. No. 585,618
Claims priority, application Great Britain, Oct. 22, 1965, 44,764/65
10 Claims. (Cl. 74—7)



A starting mechanism for an internal combustion engine and the mechanism comprising an electric motor including a rotor, a shaft extending through the rotor and projecting beyond one end thereof the projecting portion of the shaft having an axially movable pinion operatively connected thereto. The mechanism also including a device for moving the pinion axially to an operative position in which it engages with a toothed wheel of the engine and there also being provided a one way clutch which is positioned within the rotor and which acts to transmit driving torque between the rotor and the shaft.

3,399,577
TRANSMISSION SHIFT INDICATOR

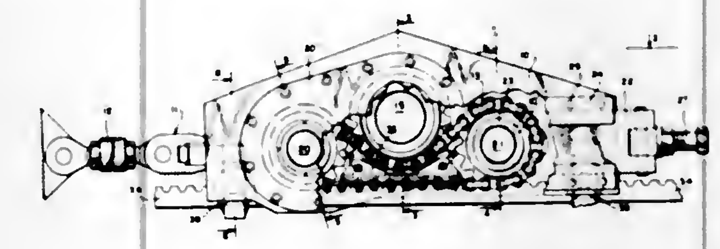
Robert T. Krumtinger, Peoria, Ill., assignor to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 12, 1967, Ser. No. 608,778
6 Claims. (Cl. 74—15.84)



A transmission shift indicator responsive to engine driven torque converter speed, the indicator being calibrated in accordance with a multiple gear ratio transmission for directly indicating the need or proper time for shifting the transmission. A fluid-containing centrifugal device is drivingly connected to the torque converter output shaft and a pressure responsive, pitot tube gage is associated with the centrifugal device. The gage is provided with first and second indicator means including movable means movable in accordance with torque converter speed for indicating the need or proper time for shifting the transmission to lower or higher gear ratios, respectively.

3,399,578
POWER TRANSMISSION MECHANISM

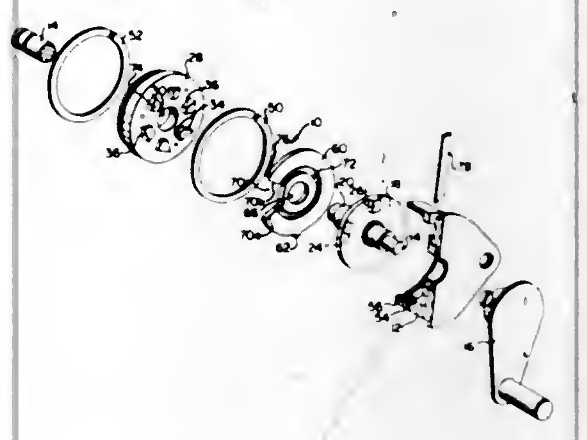
Tryon S. Lindabury, Sr., Marietta, Ga., and Buford M. Mahon, Columbus, Ohio, assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Sept. 19, 1966, Ser. No. 580,265
10 Claims. (Cl. 74—89.21)



A tractor-like actuator propels a toothed rack relative to the actuator by a multi-strand roller chain engaging the rack and driven by actuator sprockets. The rack may be straight or curved (external or internal) and has roller guides positioning the roller-supported actuator relative to the rack. Odd numbered chain strands are used, alternately engaging the rack and rolling on actuator guide shoes. For example, a triple stranded chain pin has one roller engaging the rack and two rollers rolling on guides, thus holding the rack roller into toothed engagement. Tooth load sharing derived by multiple engagement permits lightweight rack design.

3,399,579
REDUCTION DRIVE WITH INTERMITTENT ROTARY MOTION

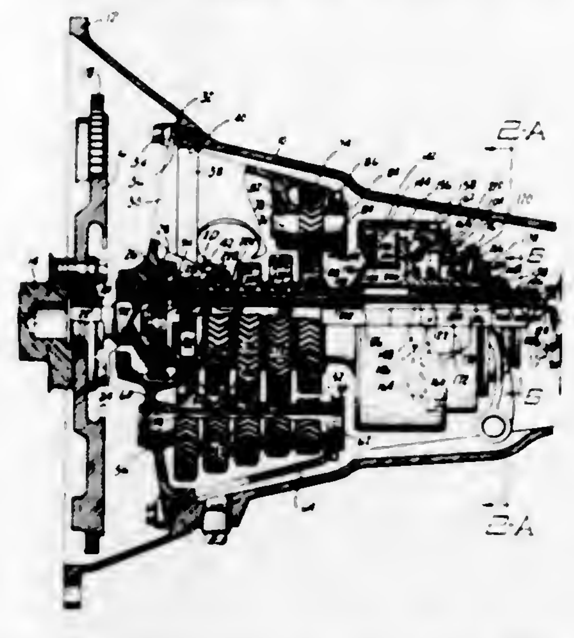
James L. Boggs, Covington, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Feb. 27, 1967, Ser. No. 618,593
9 Claims. (Cl. 74—112)



An apparatus for producing reduced, intermittent, rotary motion including a rotatable output member having plungers slidably mounted therein to be spring-urged into a notched-out area of a stationary disc, in which area the plungers are engaged by a driving dog and arcuately moved across said area. At least one plunger is moved across said notched-out area per revolution of said driving dog.

3,399,580
MANUALLY CONTROLLED MULTIPLE RATIO POWER TRANSMISSION MECHANISM FOR USE WITH AN AUTOMOTIVE VEHICLE DRIVELINE

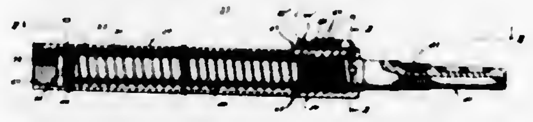
Peter G. Ivanchich, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 26, 1967, Ser. No. 611,908
15 Claims. (Cl. 74—331)



A manually controlled multiple ratio power transmission mechanism having multiple, geared, torque delivery paths and a common synchronizer clutch assembly for establishing and disestablishing each of the several torque delivery paths in response to a controlled movement of a common clutch element with respect to separate, companion clutch elements for each of several torque delivery gears.

3,399,581
BALL NUT AND SCREW ASSEMBLY

Peter Valenti, Whittier, and Paul V. Wysong, Jr., Northridge, Calif., assignors to Sargent Industries, Inc., a corporation of Delaware
Filed July 25, 1966, Ser. No. 567,503
10 Claims. (Cl. 74—424.8)

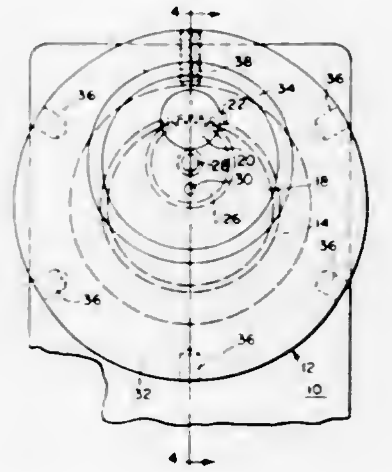


A ball nut and screw apparatus which includes an outer nut, a screw lying within the nut, and grooves on the confronting surfaces of the nut and screw which define a race for a plurality of balls. The balls circulate through the race and through a recirculating conduit. An abutment deflector member is secured to the nut and deflects the balls into the recirculating conduit and also serves as an abutment to limit relative rotation between the screw and nut.

3,399,582
SHAFT ADJUSTMENT APPARATUS AND POWER TRANSMISSION MEANS

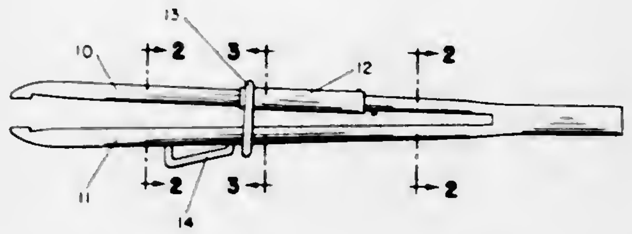
Robert Randall Henry, 100 Elm St.,
Andover, Mass. 01810
Continuation-in-part of application Ser. No. 521,922, Jan. 20, 1966. This application Dec. 26, 1967, Ser. No. 693,530
36 Claims. (Cl. 74—571)

Shaft adjustment apparatus comprising: an internal stationary gear for mounting to a frame, a housing rotatably mounted coaxially of the gear, a pinion engaging the gear and having one-half the diameter thereof, an eccentric rotatable in the housing coaxially of the pinion and secured non-rotatably to the pinion, a shaft support on the eccentric having an axis on the pitch diameter of the pinion, holding means in the shaft support for maintaining a shaft non-rotatable relative thereto; another such apparatus transversely aligned therewith; and a shaft extending therebetween and supported non-rotatably in the shaft supports; whereby on rotation of one housing, the associated pinion is driven by the drive member to rotate the eccentric thereby moving the shaft support linearly and thereby creating a torque at the shaft support axis, transmitted via the shaft, locked by said holding means, to drive the other apparatus thereby to effect simultaneous linear adjustment of both shaft ends. And power transmission means on one of said apparatuses comprising a pair of rotatable internal gears mounted independently rotatably respectively coaxially of said housing and said shaft support and a rotatable external gear mounted independently rotatably coaxially of said pinion, the radii of said rotatable internal gears extending from their respective axes beyond the axis of said rotatable external gear by an equal amount, said amount defining the radius of said rotatable external gear, and said rotatable external gear extending into driving engagement with each of the rotatable internal gears, whereby power may be transmitted between the axes of said housing, shaft support, and pinion regardless of the relative angular positions thereof.



3,399,583
LOCKING TWEEZERS

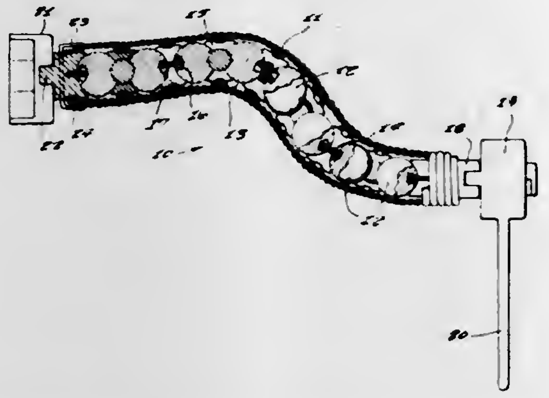
Gordon Lance Hall, Woodstock, Conn.
(Box 72, Pomfret, Conn. 06258)
Filed Dec. 9, 1966, Ser. No. 600,665
2 Claims. (Cl. 81—43)



A modification of vise-tweezers incorporating a sliding sleeve on one arm with an attached loop which encircles the opposing arm. When the sleeve is pushed toward the tips the loop engages a sloping protrusion, exerting a pressure on the points to close them and to constrain them from moving apart, thus maintaining a grip on any object held between the tips of the arms.

3,399,584
FLEXIBLE EXTENSION FOR SOCKET WRENCHES OF RATCHET TYPE

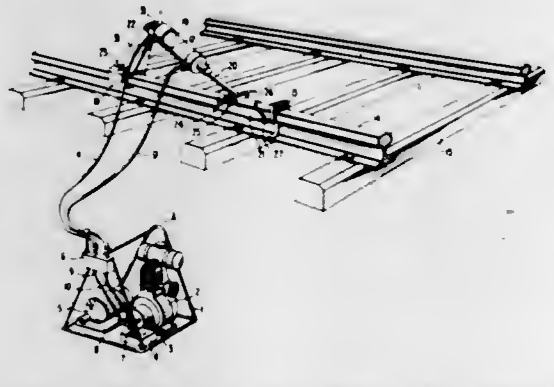
Artur Lewicki, Via Moosontee, Ontario, Canada (Cote des Neiges, Queen Mary Rds. 5199, Bank of Montreal, Montreal, Quebec, Canada)
Filed Sept. 21, 1967, Ser. No. 669,666
3 Claims. (Cl. 81—177)



An extension for a socket wrench, the extension comprising a flexible shaft comprised of a coil-spring housing enclosing a row of spherical ballbearings interconnected by joint bearings therebetween.

3,399,585
APPARATUS FOR REMOVING EXCESS WELDING MATERIAL FROM RAIL WELDS

Wilhelm Ahlert, Essen-Bredeney, Germany, assignor to Elektro-Thermit G.m.b.H., Essen, Germany, a corporation of Germany
Filed Mar. 14, 1966, Ser. No. 533,971
Claims priority, application Germany, Oct. 8, 1965, E 30,238
8 Claims. (Cl. 83—3)

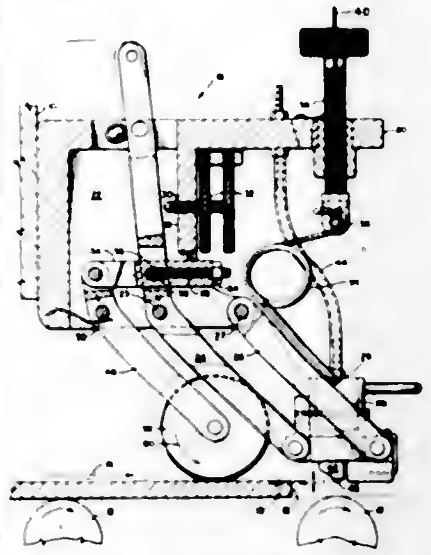


A downwardly facing channel-shaped cutting tool has sloping cutting edges formed thereon. A power operated means has the piston rod thereof interconnected with an upper portion of the cutting tool and extends upwardly at an angle therefrom. The cylinder of the power operated means is pivotally connected with the upper portion of the clamping means clamped to an associated rail. A source of fluid under pressure for operating the power operated means includes a pump and a pressure storage reservoir as well as a control element for controlling operation of the apparatus.

3,399,586
GLASS CUTTING HEAD

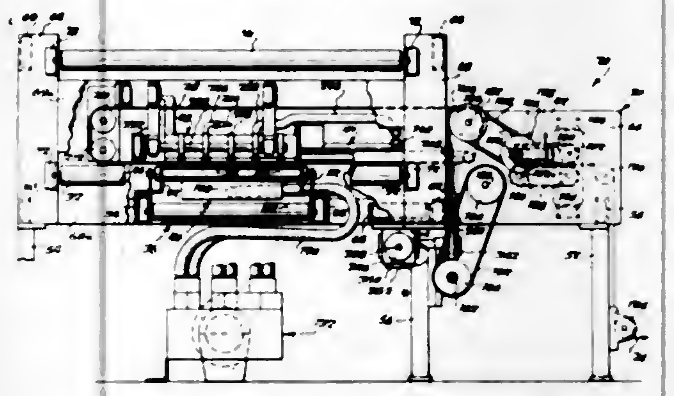
Thomas A. Insolio and Robert P. Detorre, Bristol, Conn., assignors to The Fletcher-Terry Company, Forestville, Conn., a corporation of Connecticut
Filed July 11, 1966, Ser. No. 564,299
9 Claims. (Cl. 83—8)

This invention comprises a cutting head of the type used with a glass cutting apparatus and includes a support body for a glass cutting wheel and a cutting wheel mounting block. A plurality of pairs of parallel levers are pivotally connected to the support body for rotative movement about spaced parallel axes. The mounting block is pivotally supported at the free ends of said levers which are rotatively secured thereto for movement about parallel axes spaced apart in the same relation as the first-mentioned axes so as to limit the levers to parallel movement only and the mounting block to arcuate movement. A jump-up wheel carried by the support body is operatively associated by suitable linkage with said lever to effect upward and rearward movement of the mounting block and cutting wheel upon engagement of the jump-up wheel with the leading edge of a glass sheet passing therebeneath.



3,399,587
SHEET HANDLING METHOD AND APPARATUS

Charles Allen Lee, Knoxville, Tenn., and Thomas S. Bartley, Toronto, Ontario, Canada, assignors, by direct and mesne assignments, to Canadian International Paper Company, Montreal, Quebec, Canada, a body corporate and politic
Filed Oct. 26, 1965, Ser. No. 505,259
14 Claims. (Cl. 83—99)

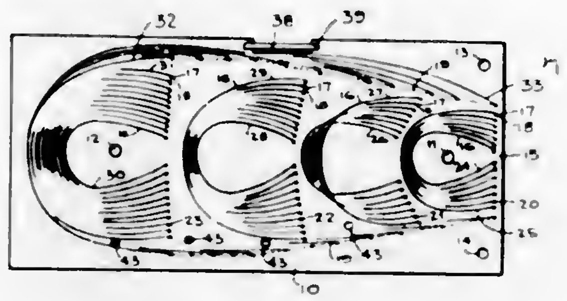


Sheets are transferred from a first moving carrier to a second moving carrier by an apparatus practicing the method of substantially simultaneously causing a positive air pressure to eject the sheet from the first carrier and a suction force at the second carrier to draw the sheet to the second carrier. The sheets may also be held on the first carrier by suction prior to ejection by the positive air pressure.

3,399,588
STORAGE PALLET FOR PREASSEMBLED PIANO STRINGS AND PINS

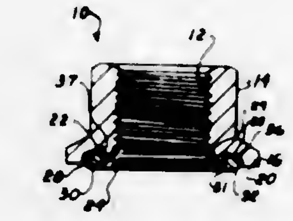
Joseph S. Gebbia, 809 Seminary St., Rockford, Ill. 61108
Filed June 13, 1966, Ser. No. 557,104
15 Claims. (Cl. 84—197)

1. A carrier and shipping pallet for precut, preassembled piano strings having tuning pins assembled on opposite ends thereof, the pallet comprising a generally rectangular flat board having a row of spaced holes provided therein transversely of one end portion of a size adapted to receive the tuning pins with a friction fit, the pins on opposite ends of each string being entered in certain of said holes to mount the string on the board bowed to U-shape, a group of related strings of graduated lengths being all bowed to generally U-shape and arranged in nearly concentric nested relation to one another, the shorter lengths innermost and the longer lengths outermost.



3,399,589
SEALING FASTENER

Arthur R. Breed, Euclid, Ohio, assignor to The Lamson & Sessions Co., Cleveland, Ohio, a corporation of Ohio
Filed Dec. 29, 1965, Ser. No. 517,257
9 Claims. (Cl. 85—1)

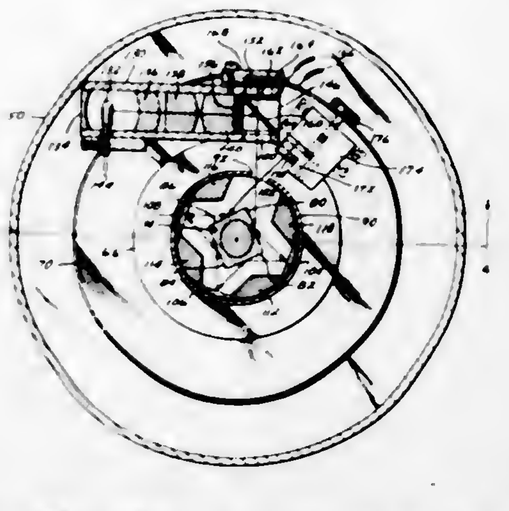


A sealing fastener comprising a fastener body and a sealing element disposed within a recess in the clamping surface of the fastener body, the sealing element projecting outwardly of the clamping surface and effecting a fluid pressure seal between the fastener body and the member against which the fastener body is clamped. The sealing element is cast directly within the recess, and the fastener body and sealing element have cooperable portions which engage one another to retain the sealing element within the recess while in its free state. A lubricating material applied to the interior surface area of the recess is provided to enable the fastener body to rotate relative to the sealing element as the latter is being drawn against the member. In an alternate embodiment, the annular sealing element is releasably bonded to the interior surface of the recess to retain the sealing element in the recess, the bond being releasable to enable the fastener body to rotate relative to the sealing element as the latter is being drawn against the member.

3,399,590
ELECTROOPTICAL SHAFT ENCODER

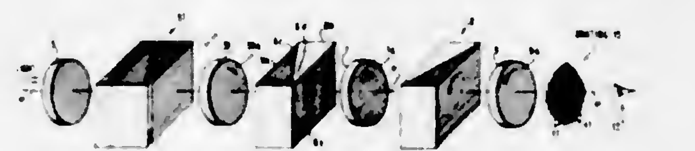
Eugene P. Johnson, Jr., Woburn, and Harry W. A. Vandermeer, Chelmsford, Mass., assignors, by direct and mesne assignments, to Dynamics Research Corporation, Stoneham, Mass., a corporation of Massachusetts
Filed Mar. 23, 1964, Ser. No. 353,911
4 Claims. (Cl. 88—14)

A shaft position indicator which employs a group of mirrors symmetrically disposed around the shaft and fixed to rotate with the shaft. These mirrors are surrounded by a group of stationary mirrors fixed to a mechanical reference point. Also fixed to this mechanical reference point are a spherical mirror, a light source, and a photosensing element. The light source and photosensing element are arranged behind a mask having a slit pattern in it. The elements are positioned so that light is shone through the slit pattern, reflects from the rotating to the stationary mirrors until it reaches the spherical mirror, is there inverted and reflected back to the slit pattern and the photosensing element.



3,399,591
INTERFEROMETER FOR PRODUCING VARIABLE SPATIAL FREQUENCY FRINGES

Renee M. Drougard, Yorktown Heights, and Janusz S. Wilczynski, Ossining, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 13, 1964, Ser. No. 389,376
5 Claims. (Cl. 88—14)



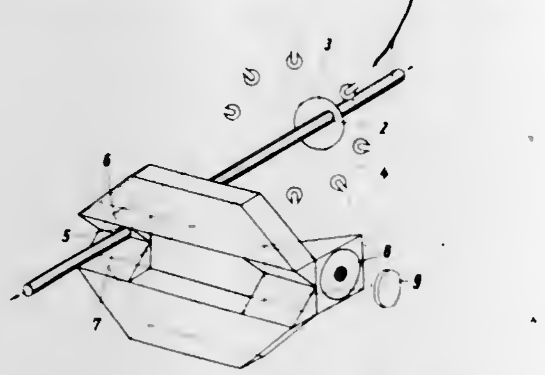
An interferometer for producing variable spatial frequency fringes wherein there are utilized two Wollaston prisms, each of the latter prisms being disposed on an opposite side of a half-wave plate. A light polarizer is disposed between a source of light to be analyzed and one of the prisms and a light analyzer is disposed between the other prism and an interferometer display area. One prism may be rotated relative to the other. The light beam to be analyzed is passed through the input polarizer and then through the Wollaston prisms whereby a deflection of the light beam takes place. Upon passing the latter beam through the output analyzer, a fringe pattern is produced whose spatial frequency is adjustable in response to rotational motion of the Wollaston prisms.

3,399,592
DEVICE FOR VIEWING THE SURFACE OF CYLINDRICAL OBJECTS

Heinz Brachvogel, Aubundt 750, Vaduz, Liechtenstein, and Gerhard Pickroth, Rossfeldstrasse 16, Schaan, Liechtenstein
Filed May 15, 1963, Ser. No. 280,692
Claims priority, application Germany, May 19, 1962, B 67,325
5 Claims. (Cl. 88—14)

1. A device for forming a panoramic image of a peripheral portion of an elongated body, comprising, in combination, reflecting means having an annular reflecting surface surrounding said body and slanted to the axis of the same to project an image of a peripheral portion of the same in axial direction of said body; a pair of light deflecting means forming an opening in which said

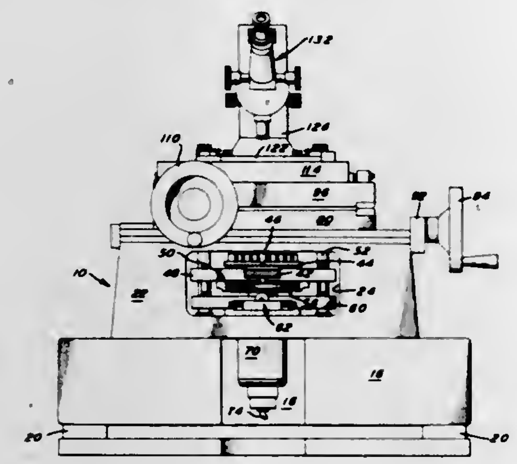
body is located, and having light deflecting surfaces respectively located opposite halves of said reflecting surface space therefrom in said axial direction and slanted to the axis of said body to deflect the corresponding halves



of said image in directions transverse to said axis; and optical means for combining said image halves in a combined image at a point transversely spaced from said body whereby the combined image can be observed without viewing along the axis of said body.

3,399,593
PRECISION ARTWORK DUPLICATING MACHINE

Winner F. Delp, Fort Washington, Pa., assignor to The Jade Corporation, Bethayres, Pa., a corporation of Pennsylvania
Filed May 14, 1965, Ser. No. 455,857
13 Claims. (Cl. 88—24)

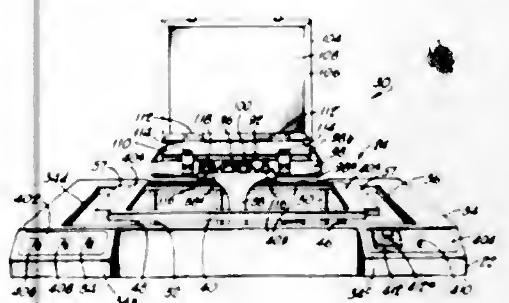


A positioning machine using a fixed optical axis to position a movable stage and a reticle in a microscope acting as a fixed reference point while a stage is shifted on coordinate axes until a line or lines on a master pattern are aligned with the reticle. Photosensitive material is positioned on the stage and selectively exposed to projected images by a reduction printer which is prealigned on the optical axis of the reticle.

3,399,594
PHOTOGRAPHIC MACHINE

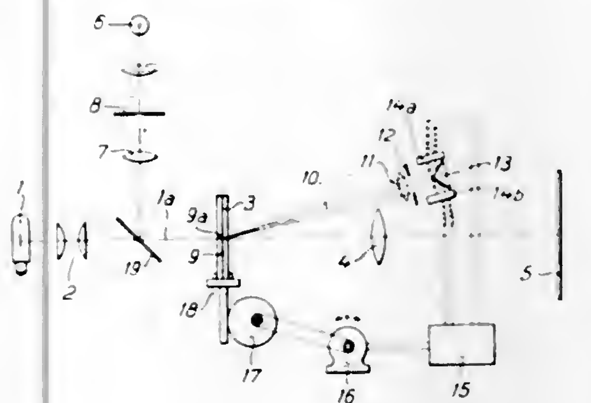
Charles J. Leonhart, Carol Stream, Ill., assignor to The Nuarc Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 16, 1965, Ser. No. 479,712
13 Claims. (Cl. 88—24)

A photographic machine has a housing with an aperture at the top. A cage supports a vacuum cover for holding film, a copyboard casing for holding copy, and a lens, and the cage is rotatable to locate either the vacuum cover or the copyboard casing at the aperture. The copyboard casing is rotatable on the cage from the copy making position to a position for loading copy. The cage includes spaced rigid frames joined by several tubular supports, and both the copyboard casing and the lens mounting frame have bearings sliding on the supports. Several spaced threaded shafts operated by knobs on a control panel move the lens and copyboard casing to adjust reproduction size and focusing. Indicators on the panel provide similar indications when focusing is correct. The lens diaphragm is adjustable by a rotatable shaft controlled from the control panel.



3,399,595
FOCUSING SYSTEM FOR PROJECTORS

Werner H. Holle, Wetzlar, and Rudolf Kreiling, Giessen, Germany, assignors to Ernst Leitz G.m.b.H., Wetzlar, Germany
Filed May 19, 1966, Ser. No. 551,338
Claims priority, application Germany, June 3, 1965, L 50,844
6 Claims. (Cl. 88—24)

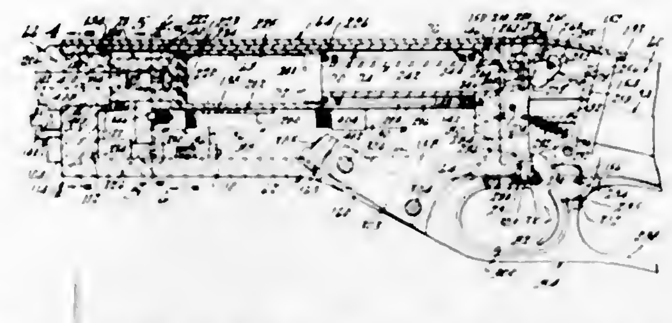


1. A projector focusing system having means for focusing connected to and operated by means for measuring light radiation, and further comprising as a source of said radiation, light impinged upon a film, the improvement comprising means for illuminating comprising light radiation outside the range of the visible spectrum in combination with means for providing an image of a slit on the surface of a film, said means for measuring light radiation located at any given angle outside the reflection angle of said image of a slit whereby measurement is performed by the dispersed radiation from said image of the slit.

3,399,596
AIR OPERATED PROJECTILE FIRING APPARATUS

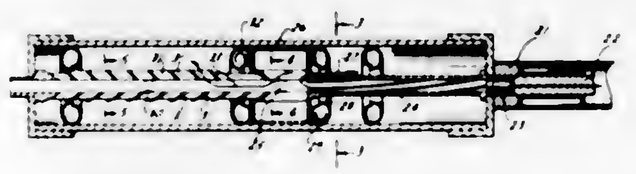
Ronald W. Joyce, Springdale, Eugene E. Billingslea, Rogers, Leopold C. Sage, Fayetteville, and Robert K. Marshall, Rogers, Ark., assignors, by mesne assignments, to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 30, 1966, Ser. No. 598,087
13 Claims. (Cl. 89—7)

There is herein disclosed a shoulder-type firearm adapted to fire caseless ammunition from an ammunition holding device movable between a firing position and a loading position with an ammunition ejection mechanism operable in the loading position to eject unfired rounds and an ammunition loading mechanism thereafter operable in the loading position to load a round of ammunition from a flexible magazine movable with the ammunition holding device.



3,399,597
SILENT FIREARM

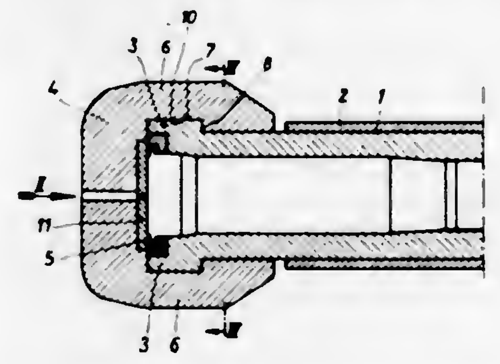
Walter E. Perrine, Phoenix, Ariz., assignor to Tonalea Enterprises, Inc., a corporation of Arizona
Filed Dec. 10, 1965, Ser. No. 513,051
2 Claims. (Cl. 89—14)



A silent firearm having a pair of chambers surrounding successive lengths of the barrel. The barrel is ported to allow gases to expand into the surrounding chambers. Each chamber is provided with a plurality of volute-shaped annular baffles which absorb kinetic and thermal energy from the gases. The baffles are positioned to impart spin to the gases in the opposite rotational direction. The chambers are proportioned to allow gas initially entering the first chamber to expand back into the barrel and into the second chamber after passage of the projectile.

3,399,598
FIREARM BARREL COMPRISING A BREECH-BLOCK DISPLACEABLE TRANSVERSELY TO THE BORE AXIS

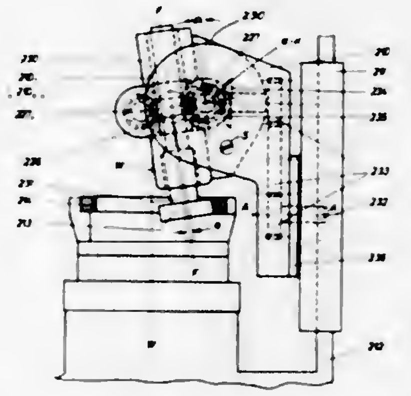
Josef Hornfeck, Dusseldorf, and Rolf Bartolles, Wuppertal-Vohwinkel, Germany, assignors to Rheinmetall G.m.b.H., Dusseldorf, Germany, a German company
Filed Oct. 25, 1966, Ser. No. 589,286
1 Claim. (Cl. 89—24)



A breech construction for facilitating quick access for breech loading of a firearm wherein a barrel has a broadened end portion adjacent the breech extremity thereof defining two guiding trackways on opposite sides of the barrel and extending laterally therebeyond on at least a third side of the barrel, and a breechblock member is mounted for movement along the trackways between a firing position wherein the breechblock member receives the breech extremity of the barrel and at least partially surrounds at least part of the chamber portion of the barrel and a loading position wherein the breechblock member is supported by the trackways while the bore is exposed at the breech extremity.

3,399,599
GEAR HOBBING MACHINE

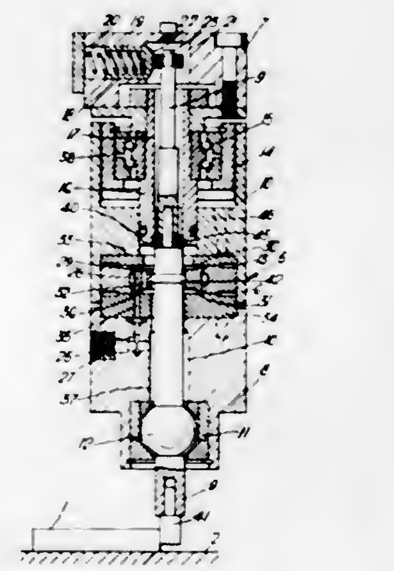
Johannes Looman and Friedrich Striepe, Friedrichshafen, Germany, assignors to Zahnradfabrik Friedrichshafen, Aktiengesellschaft, Friedrichshafen, Germany
Filed Sept. 27, 1966, Ser. No. 586,327
Claims priority, application Germany, Oct. 1, 1965, Z 11,782
1 Claim. (Cl. 90—8)



The particular feature of the invention resides in a mechanism for driving a rotary cutter which an axis that is angular with respect to a workpiece and wherein such drive is effected through a pair of worms driving a common worm gear carried in a housing having a pivotal axis which is the same as that of the cutter and is also the axis of one of the worms.

3,399,600
APPARATUS FOR TRACING THE CONTOUR OF A SHAPED MEMBER

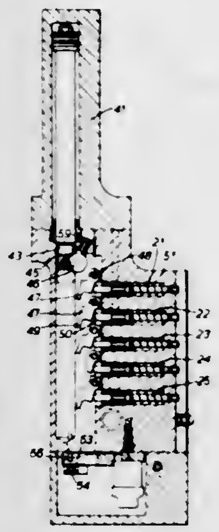
Patrick William Agnew, Carmunnock, Glasgow, Scotland, assignor to Precision Hydraulics Limited, Glasgow, Scotland, a British company
Filed Apr. 20, 1966, Ser. No. 543,847
Claims priority, application Great Britain, Apr. 24, 1965, 17,381/65; Oct. 30, 1965, 46,021/65
7 Claims. (Cl. 90—62)



The present invention is apparatus for use in following or tracing the contour of a shaped member including a platform adapted to mount a shaped member, a feeler adapted to engage said shaped member, first means for moving said feeler within a carrying head containing it to tend to maintain it in engagement with the shaped member, and second means for moving said platform in a path to trace the contour of the shaped member, the feeler being coupled to a single valve in a pressure fluid line to the two piston and cylinder devices whereby movement of the feeler causes corresponding movement of the valve to control the flow of pressure fluid to the piston and cylinder devices thus to control movement of the platform.

3,399,601
HYDRAULIC SEQUENTIAL CONTROL SYSTEMS

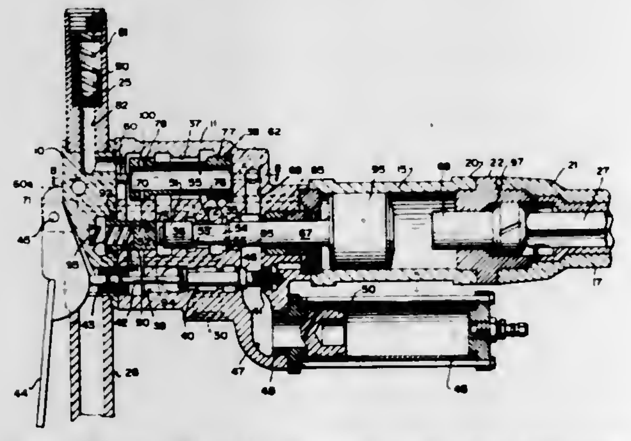
Frederick J. Fuell, Frank G. Mattos, John L. Fowler, and Bertie G. Parkins, Heston, England, assignors to Fairey Engineering Limited, Heston, England, a company of Great Britain
Filed Mar. 24, 1965, Ser. No. 442,551
16 Claims. (Cl. 91—36)



1. A hydraulic system for automatically performing a series of at least six operations, comprising first and second sequence controllers to initiate the first three operations and the second three operations in sequence, a reversing device for reversing a number of operations, and means for actuating the first sequence controller and then the second sequence controller, with the reversing device in one position, to initiate the operations in one sequence, and to actuate the second sequence controller and then the first sequence controller, with the reversing device in another position, to initiate the operations in a different sequence.

3,399,602
IMPACT TOOLS

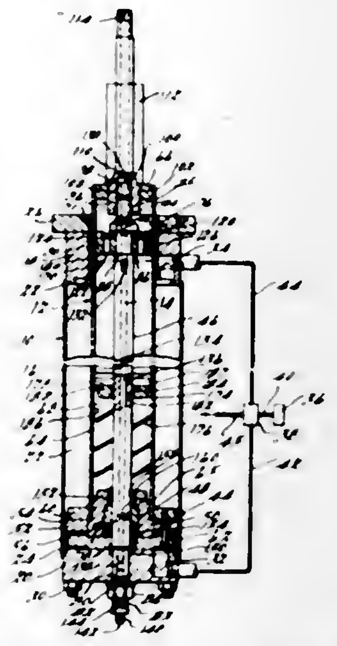
Ernst F. Klessig and Peter D. Hancock, Racine, Wis., assignors to Racine Hydraulics & Machinery, Inc., a corporation of Wisconsin
Filed Sept. 27, 1966, Ser. No. 582,299
17 Claims. (Cl. 91—235)



1. In an impact device, the combination comprising
a body,
said body having a bore,
a piston-hammer reciprocable in said bore,
said piston-hammer having opposed pressure areas defining first and second pressure areas,
said first pressure area having an effective cross sectional area less than said second pressure area,
means for continuously applying pressure fluid to said first pressure area,
valve means for alternately applying pressure fluid to said second pressure area and having opposed differential pressure areas,
means for continuously applying pressure fluid to the smaller of the pressure areas of the valve means,
and means including the piston-hammer for alternately connecting the larger of the pressure areas of the valve means to either pressure fluid or to a discharge path and for blocking pressure fluid from the second pressure area of the piston-hammer while the valve means is still positioned to supply pressure fluid thereto to terminate the application of force to the piston-hammer.

3,399,603
AIR AND OIL CYLINDER

Harlan R. Cagle, Clarkston, Mich., assignor to Sahlin Engineering Co., Inc., Troy, Mich., a corporation of Michigan
Filed Oct. 23, 1965, Ser. No. 503,655
20 Claims. (Cl. 92—10)

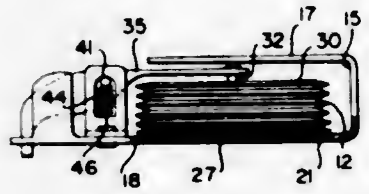


There is herein disclosed a combination oil-air cylinder in which air exhausted from the air cylinder in a manner causing cooling of the air is used to cool the oil cylinder and in which valve means in the oil cylinder control the rate of flow of oil in a new and improved manner.

3,399,604
WATER PRESSURE ACTIVATED SWITCH

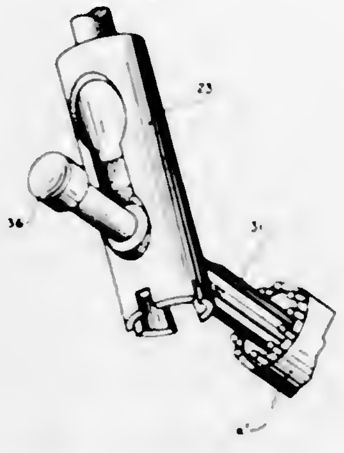
Glenn A. Shewmake, Trevilians, and Joseph L. Pentecost, Fairfax, Va., assignors to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed July 25, 1966, Ser. No. 567,754
4 Claims. (Cl. 92—41)

A water pressure activated switch includes a normally water-tight and gas-tight bellows supported by a bracket which permits relative freedom of movement of one end of the bellows, a linkage member being supported by the aforementioned end of the bellows for movement therewith in response to water pressure exerted along the axis of the bellows. The bellows contains an aperture which is covered by a membrane stretched taut thereacross and bonded along the wall of the bellows adjacent the aperture. The membrane is composed of a material pervious to gases but impermeable to water to permit gas pressure equalization internally and externally of the bellows while maintaining the sensitivity of the bellows to water pressure variations upon immersion of the entire switch into water. The switch is also provided with a mechanical linkage which is connected to the movable end of the bellows to counteract or absorb shock and vibration-inducing forces along the axis of the bellows produced by acceleration of the switch in either direction along that axis.



3,399,605
DUAL JOINT

Don B. Landers, Houston, and Murl R. Richardson, Fort Worth, Tex., assignors to Oil States Rubber Co., a corporation of Texas
Filed Feb. 9, 1966, Ser. No. 526,289
8 Claims. (Cl. 92—180)

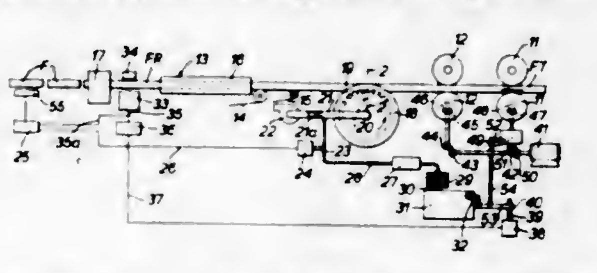


A joint for detachably joining together two rod sections so that when they are under tension the joint becomes a swivel joint, and when they are under compression they lock together for unitary rotational motion. The joint includes a cylindrical female member having two C-shaped axially spaced transverse seats opening in opposite radial directions, and a male member having two axially spaced enlargements for resting on those seats. The female member has a transverse bore between the seats through which the male member is inserted transversely and then tilted into axial alignment with the female member. The latter has a notched skirt portion adapted to engage the spline-like fluted adjacent end of the male member to lock them against mutual rotation when the joint is in compression.

3,399,606
MANUFACTURE OF FILTER PLUGS

Desmond Walter Molins, Deptford, London, England, assignor to Molins Machine Company Limited, London, England, a corporation of Great Britain
Filed Apr. 17, 1967, Ser. No. 631,421
Claims priority, application Great Britain, Apr. 18, 1966, 16,923/66
11 Claims. (Cl. 93—1)

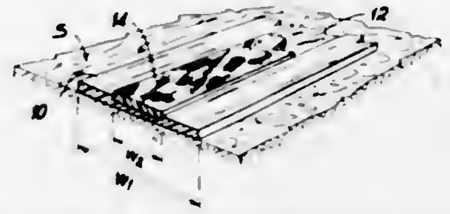
Cigarette filter plug-making equipment in which the degree of stretching imparted to the tow is controlled by an air-permeability detector acting on the unwrapped tow and a beta radiation detector acting on the wrapped filter rod.



A rejector mechanism for rejecting defective lengths of filter rod and controlled by the detectors is provided.

3,399,607
ROADWAY SURFACE MARKING, AND MARKED ROAD

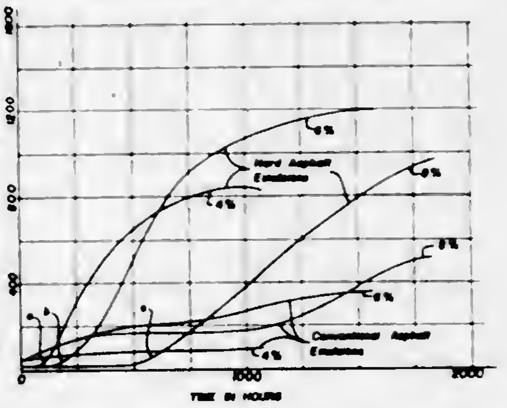
Ludwig Eigenmann, % Cicogna Franco & Co., 14/A Via Visconti di Modrone, Milan, Italy
Continuation-in-part of application Ser. No. 262,658, Mar. 4, 1963. This application Oct. 25, 1966, Ser. No. 589,288
Claims priority, application Switzerland, Apr. 13, 1962, 4,604/62
5 Claims. (Cl. 94—1.5)



1. A marked road, comprising in combination, a roadway surface for vehicles; a first strip of road marking tape having relatively low non-skid properties and high light reflectivity joined to the upper face of said roadway surface; and another strip formed of a material having non-skid properties and a lesser light reflectivity than said first strip of road marking tape and having a lesser width than first strip extending in longitudinal direction and adhered to said first strip equally spaced from the lateral edges thereof so as to provide together with said first strip a composite surface formed of two spaced edge portions of said first strip of road marking tape having relatively low non-skid properties and high light reflectivity and of said other strip forming a center portion having non-skid properties and a lesser light reflectivity interposed between said two spaced edge portions of said first strip.

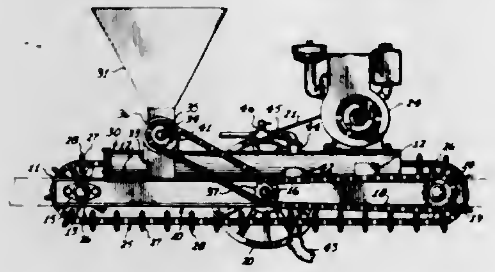
3,399,608
METHOD FOR SOIL STABILIZATION WITH IMPROVED EMULSION ASPHALT

Jewell R. Benson, 1111 S. Colorado Blvd., Denver, Colo. 80222
Filed Mar. 1, 1967, Ser. No. 619,758
6 Claims. (Cl. 94—23)



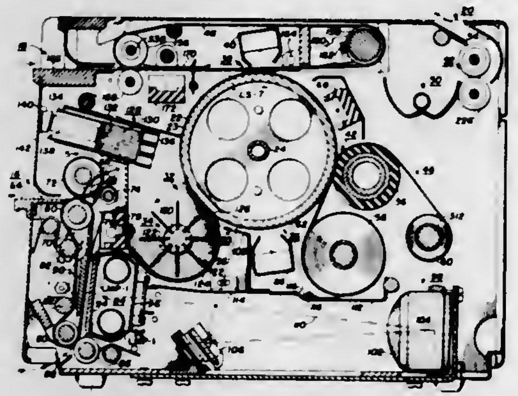
This disclosure concerns the blending of an emulsified asphalt with soil materials to provide stabilized soil structures. A very hard asphalt is used, characterized by low penetration and a comparatively low softening point temperature. This asphalt is softened with a small amount of a volatile solvent to produce a solid asphalt at normal temperatures which is comparable with standard paving grade asphalts. The emulsions of this softened hard-type asphalt when blended with soil produces a product initially similar to that produced by standard paving grade asphalts, but cures to a structure having a remarkably high ultimate stability and strength.

3,399,609
PNEUMATIC MATERIAL PLACEMENT APPARATUS
Floyd A. Moore, 1240 S. 31st Ave.,
Phoenix, Ariz. 85009
Filed Jan. 26, 1967, Ser. No. 611,890
3 Claims. (Cl. 94—39)



A machine for the pneumatic material placement of road repair asphalting cements in which a pneumatic hose is used to squirt the patching and sealing materials in the holes, cracks and the like to be filled and repaired in a road surface. The apparatus and pneumatic placement of the material by the apparatus provides a means for completely finishing the surface of the patch without additional raking, leveling or tamping being required.

3,399,610
XEROGRAPHIC APPARATUS
Roger H. Eichorn, Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 22, 1965, Ser. No. 502,003
3 Claims. (Cl. 95—1.7)

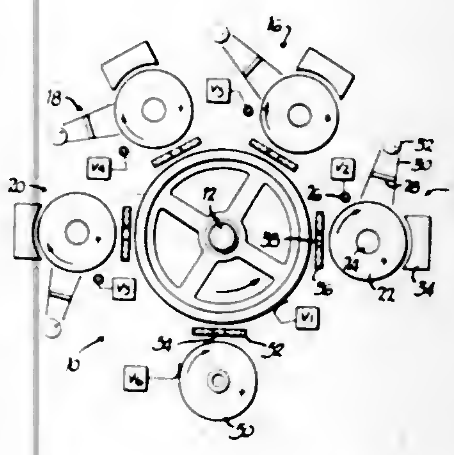


Apparatus for xerographically reproducing an original document on a cut sheet of final support material having a paddle wheel developing system and a developed xerographic image is transferred from a photoconductive drum at the 12 o'clock drum position.

3,399,611
ELECTRICAL PRINTING METHODS AND APPARATUS
Kenneth G. Lusher, Perrysburg, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Oct. 23, 1965, Ser. No. 503,280
12 Claims. (Cl. 95—1.7)

The invention relates to an electrical printing process and apparatus for printing multicolor images of a powdered ink onto an article surface. This is achieved by placing electrical charges on the surface of individual drums by use of a shield and light source corresponding to the image for each color to be applied. The individual color powder is next applied to each of these drums to form the single color image on each. The individual color images are next electrically transferred in a desired order onto the article surface to form the multicolor image. This may be achieved by various means, represented by the various embodiments in the disclosure. They are:

(1) To electrically transfer the individual color images on the drums one at a time and in sequence onto a master drum to form a negative of the final image thereon. From the master drum the composite multicolor image is electrically transferred to a positive final multicolor image on the article surface. This utilizes off-set printing technique.

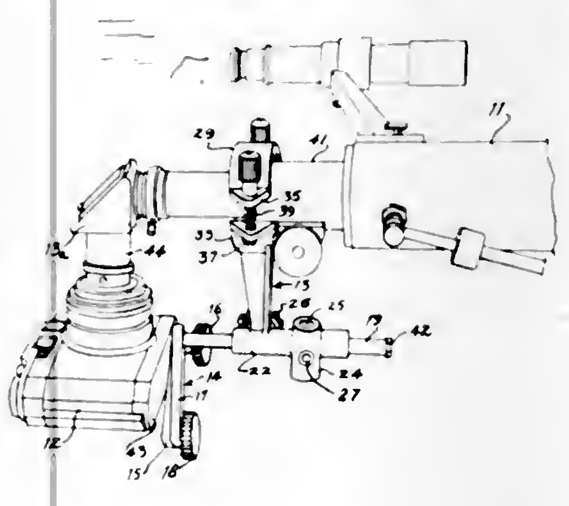


(2) To electrically transfer the individual color images on the drums one at a time and in sequence onto the cylindrical surface of an article to form the final multicolor image. This utilizes direct printing technique.

(3) To electrically transfer the individual color images on the drums one at a time and in sequence onto a traveling web surface, the drums being spaced along the direction of movement of said web. This utilizes direct printing.

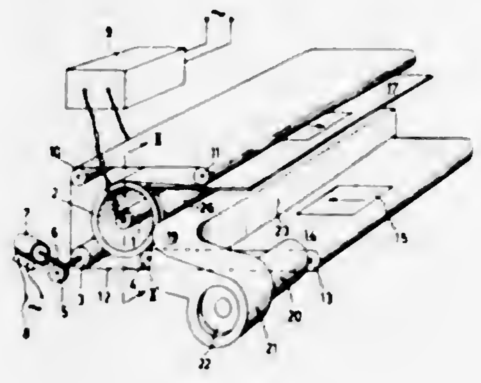
In each of the foregoing, the powder image is transferred from each of the individual color drums through a narrow slit-like aperture onto the next surface.

3,399,612
CAMERA MOUNT FOR OPTICAL INSTRUMENTS
Willard H. Korte, North Miami Beach, Fla., assignor to Tasco Sales, Inc., Miami, Fla., a corporation of Florida
Filed Dec. 6, 1965, Ser. No. 511,791
2 Claims. (Cl. 95—12)



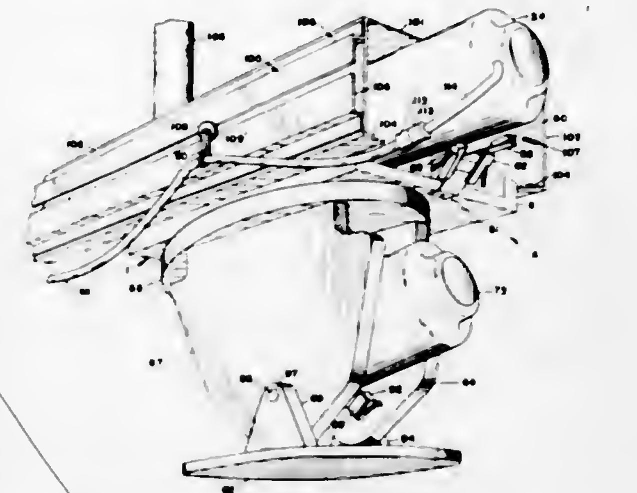
A camera mount for optical instruments is shown which includes an instrument support, a camera support and a coupler therebetween. The instrument support includes an upper member having an arcuate portion thereupon and a pair of lateral ear portions each provided with a recess therewithin; a lower member is adjacent to the upper member having an arcuate portion of reverse curvature to that of the upper member and a pair of opposite lateral ear portions each provided with a recess therewithin registerable with the first-named recesses of the upper member. A screw is disposed within each pair of mating recesses and a spring and nut are disposed upon each of the screws. The camera support includes a first member with a screw portion carried thereupon adapted to be connected to a camera. A second member is pivotally connected to the first member by a screw which may also fixedly position the members with respect to one another. The coupler includes a rod connected to the second member of the camera support. The rod has a threaded end portion to which a cap screw may be selectively applied. A T-shaped portion is connected to the lower member of the instrument support and is provided with a transverse recess and a longitudinal recess which are substantially perpendicular to one another. A laterally disposed threaded opening is provided adjacent to and communicating with each of the recesses. A screw is selectively disposable within each of the threaded portions to secure the rod in position within the respective recess.

3,399,613
LIGHT COPYING DEVICE WITH A COOLING ARRANGEMENT
Jan Van Malland, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 30, 1966, Ser. No. 561,835
Claims priority, application Netherlands, July 3, 1965, 6508597
2 Claims. (Cl. 95—77.5)



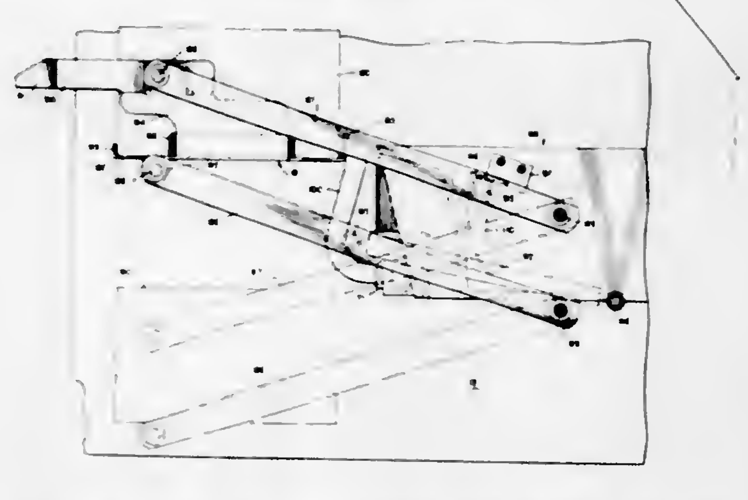
1. A light copying device with a cooling arrangement, comprising a light source in the form of an elongated gas-discharge body, which is housed in a transparent cylindrical body which is rotatable about its axis of revolution and the outer periphery of which constitutes a copying surface, on a peripheral part of which can be disposed light copying material with an original to be copied and a copy carrier, a dividing duct with an outlet port of the cooling device which provides a flow of coolant to cool the copying surface being arranged along the outer periphery of the cylindrical body in the direction of its length and outside the region in which the light copying material is applicable, characterized in that the outlet port of the dividing duct extends as a slot-shaped aperture mainly throughout the length of the cylindrical body and is bounded on the one hand by a bending face extending up to the cylindrical body and on the other hand by a face arranged at a distance from the cylindrical body, concentrically thereto and extending over part of the circumference thereof, the latter face, together with the cylindrical body, forming a duct which is a prolongation of the dividing duct of the cooling device.

3,399,614
REMOTELY CONTROLLED MOUNTS
George J. Fischer, 569 Melville,
St. Louis, Mo. 63130
Filed June 15, 1965, Ser. No. 463,992
5 Claims. (Cl. 95—86)



A camera mount has a truck which can be driven in either direction along an elongated track by a reversible electric motor, has a turntable which can be rotated in either direction relative to said truck by a second reversible electric motor, has a tilt table which can be tilted in either direction relative to said turntable and hence relative to said truck by a third reversible electric motor, and has an elongated cable that has one end thereof movable with said truck to permit remote control of the direction and duration of movement of said truck and of said turntable and of said tilt table.

3,399,615
PHOTOCOPY MACHINES WITH LIQUID RESERVOIR ELEVATOR
Alfred M. Hyosaka, Chicago, Ill., assignor to Speed-O-Print Business Machines Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 12, 1966, Ser. No. 578,734
5 Claims. (Cl. 95—89)

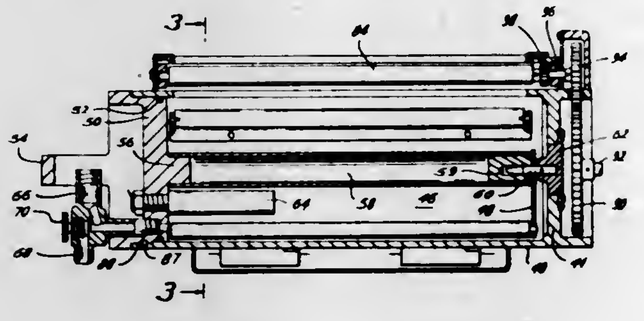


1. A photocopy machine comprising means for conveying an original sheet and a copy sheet through said machine, means for reproducing the image of said original sheet on said copy sheet, said last-mentioned means including a tray adapted to hold a liquid used in reproducing said image on said copy sheet as the latter is conveyed through said liquid, electrically-energized drive means operatively associated with said first-mentioned means, a liquid reservoir package, tube means connecting the bottom of said tray and said package, elevator means supporting said package contiguous to one side of said tray for raising and lowering said package between a raised position in which the liquid contents of said package flow

into said tray and a lowered position in which the liquid contents of said tray flow back into said package, said electrically-energized drive means including a switch in the electrical circuit thereof, and means on said elevator means activating said switch to energize said drive means when said elevator means is elevated to raised position and deactivating said switch to de-energize said drive means when said elevator means is lowered from said raised position.

3,399,616
FILM PROCESSOR FOR RECORDERS

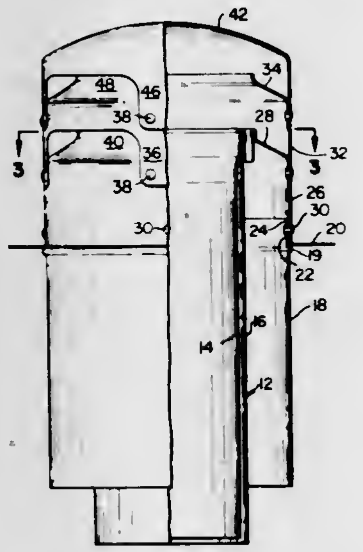
John A. Stafford, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Application Aug. 4, 1966, Ser. No. 573,753, which is a continuation-in-part of application Ser. No. 481,626, Aug. 23, 1965. Divided and this application Apr. 14, 1967, Ser. No. 630,865
6 Claims. (Cl. 95—94)



A processing attachment for recorders used in well logging includes a cylindrical container having lengthwise extending ingress and egress openings disposed on one side of the central axis of the container. A roller guide assembly is mounted in the container on a removable end wall thereof and has guide rollers disposed lengthwise of the container on the opposite side of the central axis of the container. The container is fluid-tight for containing a developing fluid above the rollers but below the openings, and a drive mechanism is mounted adjacent the egress opening and adapted to move film through the fluid at variable speeds as determined by a well logging operation.

3,399,617
GAS EXHAUST VENTILATOR

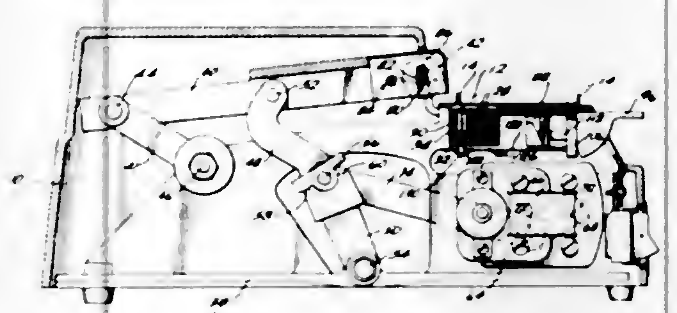
Jack G. Gray, Los Altos, Calif., assignor to Wallace-Murray Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 17, 1967, Ser. No. 624,060
3 Claims. (Cl. 98—60)



A vent top for connection to a pipe or flue extending from a heating device within a housing unit is provided and comprises a plurality of tubular top members which are axially spaced apart and connected together by circumferentially spaced apart leg portions which define adjacent openings, an uppermost tubular top member having a dome-shaped end. The other said top members are open at both ends and taper inwardly at one end from the attached leg portions of the adjoining top member.

3,399,618
IDENTITY CARD AND KEY-CONTROLLED SHIFTABLE DATE PRINTER

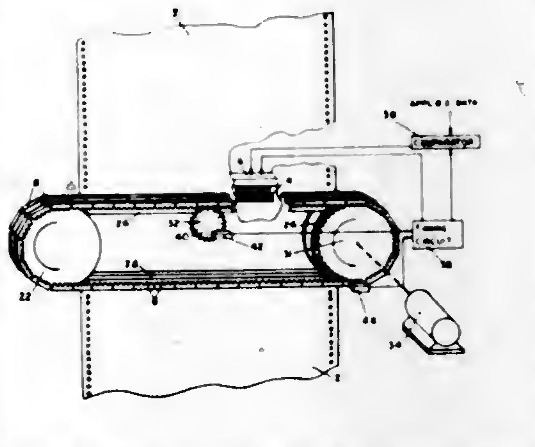
George L. Congdon and Donald J. Lemens, Fort Atkinson, Wis., assignors to Demco Library Supplies, Incorporated, Madison, Wis., a corporation of Wisconsin
Filed Apr. 22, 1966, Ser. No. 544,624
14 Claims. (Cl. 101—45)



In a library book charge-out machine, a record slip is printed in part by an identity card and in part by a selected date-printing die which is one of a series mounted on rolls on a transversely reciprocable carriage. The carriage is advanced for such movement as will bring a selected date-printing die into printing position when the operator depersses a key identified with the selected die. A printing roll is reciprocable over the slip in a direction to which the carriage movement is transverse. A toggle lever system lifts the printing roll above the work during its advance and presses it against the work upon its return.

3,399,619
TYPE ARRANGEMENT IN ENDLESS BAND LINE PRINTERS

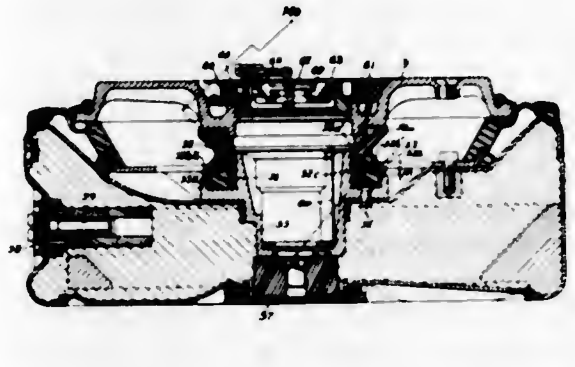
John C. Sims, Jr., Sudbury, Mass., assignor to Mohawk Data Sciences Corporation, East Herkimer, N.Y., a corporation of New York
Filed Sept. 19, 1966, Ser. No. 580,411
15 Claims. (Cl. 101—93)



A type carrier for an on-the-fly printer includes a plurality of non-connected, abutting type slugs moving at a constant velocity about a closed path defined by a pair of parallel rails and two rotatable pulleys having peripheral surfaces tangent to the ends of the rails. Each type slug is provided with a longitudinal groove on a side of the slug opposite the side which contacts the path and a resilient band encircles the path through the slug grooves to hold the slugs in place. The pulleys are provided with teeth and one of the pulleys is driven to propel the slugs, which have mating teeth, along the path.

3,399,620
DETONATOR FOR LAND MINES

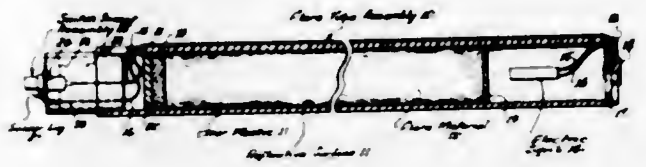
Otto Pecksen, Herrenalb, near Karlsruhe, Horst Ziolkowski, Karlsruhe, Baden, and Paul Madlener, Karlsruhe-Durlach, Germany, assignors to Industrie-Werke Karlsruhe Aktiengesellschaft, Karlsruhe, Germany, a corporation of Germany
Filed Apr. 10, 1967, Ser. No. 629,770
Claims priority, application Germany, Apr. 16, 1966, J 30,631
11 Claims. (Cl. 102—8)



A detonator for use in a land mine with an all around tiltable release member which is formed in part by a pressure cover resistant to bending stresses and which is supported on the mine casing by an elastic outer ring body and an additional hard elastic inner ring body.

3,399,621
UNDERWATER FLARE

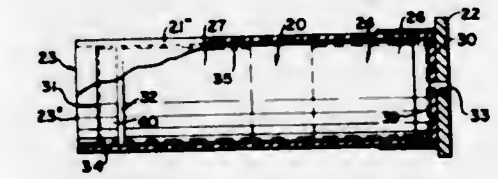
George H. Schillreff, 644 N. Vista Bonita Ave., Glendora, Calif. 91740
Filed Jan. 5, 1968, Ser. No. 696,071
10 Claims. (Cl. 102—37.8)



An underwater flare which is electrically ignited and utilizes a transparent plastic casing within which the burning takes place, thus reducing the flame size while increasing the brilliance of the light produced. The transparent plastic flare casing is readily attached to an all plastic, re-usable ignitor handle and can be ignited near the water surface or several hundred feet underwater by simply pressing the firing button. In addition, one of the areas of the clear plastic casing can be provided with a reflective means.

3,399,622
RELOADABLE SHOTGUN SHELL DEVICE

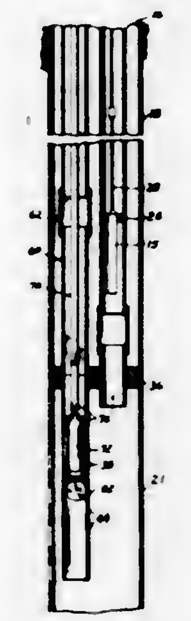
Ronald J. Houdek, Lakota, N. Dak. 58344
Filed May 22, 1967, Ser. No. 640,013
4 Claims. (Cl. 102—42)



A reloading tube for a shotgun shell. The tube contains the conventional elements of a shotgun shell, i.e. shot, wadding and a powder charge. Cap closures are secured to each end of the tube. For reloading, the complete tube is inserted in an empty cartridge casing.

3,399,623
APPARATUS FOR AND METHOD OF PRODUCING VISCID OIL

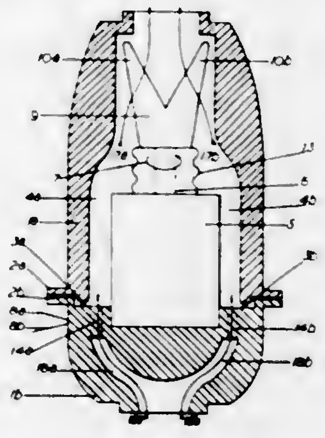
James R. Creed, 2920 SW. 63, Oklahoma City, Okla. 73159
Filed July 14, 1966, Ser. No. 571,165
2 Claims. (Cl. 103—1)



A dual type packer is run into a well bore on the depending end of a tubular pumping string for communicating with the well bore below the packer. A fluid pump is installed in this first string of tubing. A second string of tubing is run into the well through the packer and provided with a check valve below the packer. Hot gases are then injected into the well bore or circulated through the second string of tubing to dilute viscid oil, which is removed from the well by the action of the pump in the first string of tubing.

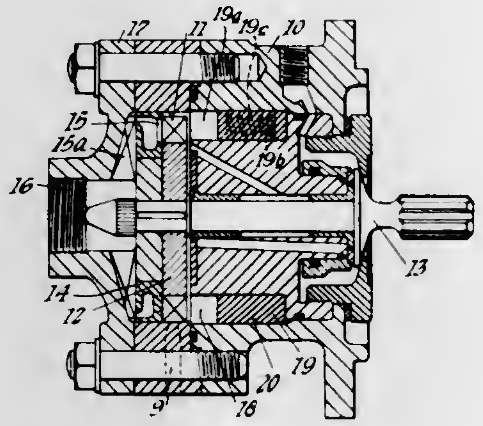
3,399,624
CIRCULATION PUMPS

Rollan Roger Desire Jean Echard, Paris, and Jamine Nicole Louise Krait, Fontenay-aux-Roses, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 15, 1966, Ser. No. 542,859
Claims priority, application France, May 18, 1965, 17,456
10 Claims. (Cl. 103—87)



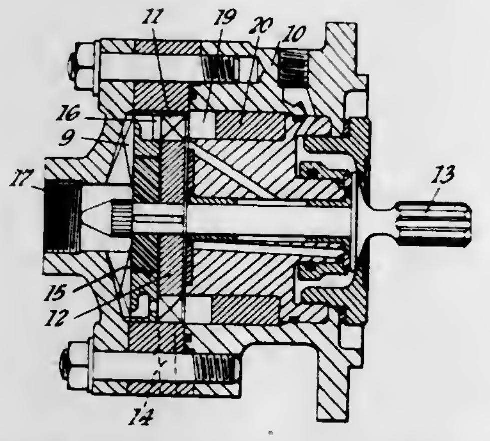
A circulating pump using resilient flaps mounted on an electromagnetically operated rotary actuator to provide the fluid impelling force.

3,399,625
LIQUID DISPLACEMENT PUMPS
Robert Thomas John Skinner, Kenilworth, England, assignor to Joseph Lucas (Industries), Limited, Birmingham, England, a British company
Filed Aug. 23, 1966, Ser. No. 574,347
2 Claims. (Cl. 103—97)



A liquid displacement pump comprising a body with an interior cavity, a bladed rotor in the cavity, an inlet and an outlet at positions spaced around the rotor periphery, a part annular recess in the wall of the cavity extending around the rotor periphery between the inlet and outlet, a piston defining the base of the recess, and means responsive to the pressure in the pump outlet for moving the piston to vary the volume of the recess.

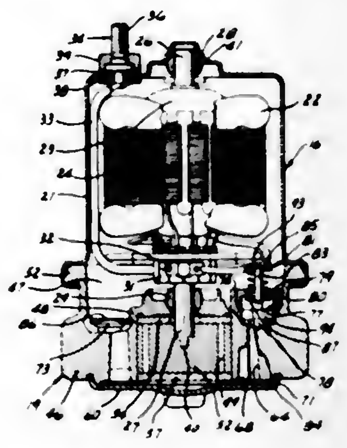
3,399,626
LIQUID DISPLACEMENT PUMPS
Robert Thomas John Skinner, Kenilworth, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Aug. 23, 1966, Ser. No. 574,348
4 Claims. (Cl. 103—97)



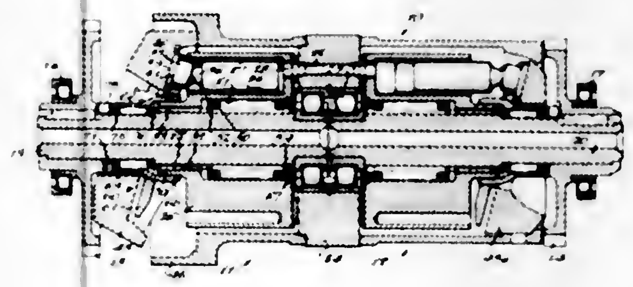
A liquid displacement pump comprising a body having a cavity containing a rotor, an inlet and an outlet at angularly spaced positions around the rotor periphery, a part annular recess extending between the inlet and outlet, adjacent to the side of the rotor. The base of the recess is formed by a piston movable towards and away from the rotor. The piston has a passage extending through it and affording communication between the recess and the space in the body at the opposite end of the piston to vary the position of the piston.

3,399,627
IN-THE-LINE FUEL PUMP
Charles William Jeep, Jr., and Edgar W. Niemeyer, St. Louis, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed June 28, 1966, Ser. No. 561,183
8 Claims. (Cl. 103—118)

An in-the-line pump for an automotive fuel system is of the vaned rotor type having an electric motor drive. The motor is sealed to the pump housing and pressurized fuel is admitted to the motor chamber for cooling. A pressure regulator between the motor chamber and the pump inlet not only insures that fuel for cooling is present but also aids in vapor handling characteristics of the pump.

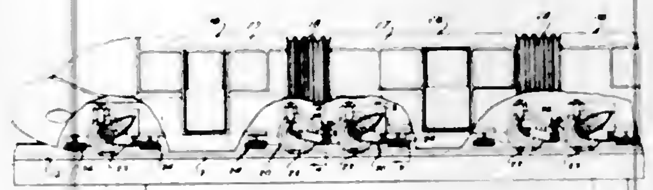


3,399,628
PISTON RETURN MECHANISM
Ronald J. Kubinski, Pecatonica, and Donald W. Hagemann, Rockford, Ill., assignors to Sundstrand Corporation, a corporation of Delaware
Filed May 17, 1966, Ser. No. 550,724
3 Claims. (Cl. 103—162)



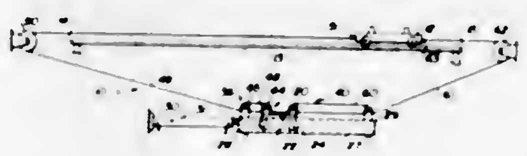
A piston return mechanism for an axial piston pump or motor including a spherical retainer member slidably received on a cylinder block projection internally splined to the drive shaft, with the spherical retainer being resiliently biased by a coiled compression spring seated within an integral rearwardly projecting sleeve on the spherical retainer.

3,399,629
MONORAIL TRAIN HAVING ARTICULATED TRUCKS
Alan B. Hawes, 8504 Seaview Ave., Wildwood Crest, N.J. 08260
Filed Mar. 25, 1966, Ser. No. 537,347
3 Claims. (Cl. 104—118)



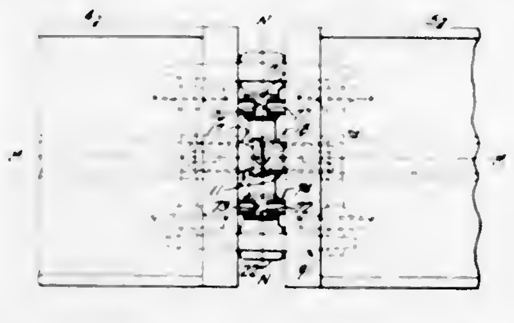
A monorail train having articulated trucks and a plurality of train car sections arranged in tandem relation, the complemental end portions of adjacent car sections each carrying a truck including a pair of vertical wheels and a pair of horizontal guide wheels, the trucks of the adjacent car sections being disposed so that one end of one truck is adjacent the rear end of the forward section and the other end of the other truck is adjacent to the front end of the next behind car section, interengageable means on the facing ends of said trucks and releasable fastening means to couple the pair of trucks together, said interengaging means including an ear on one truck receivable between a pair of lugs on the other truck, and said fastening means including a solenoid means slidably supported in one of said lugs and extendible into and retractable out of the ear.

3,399,630
RECIPROCAL CARRIAGE OPERATING APPARATUS
James L. Wilson, 2103 Emerson Road, R.R. 5, Abbotsford, British Columbia, Canada
Filed Aug. 3, 1965, Ser. No. 476,940
8 Claims. (Cl. 104—162)



Apparatus including a shuttle reciprocated by the piston rod of a hydraulic cylinder, a multiple block and tackle extending between one end of the shuttle and an adjacent fixed point and having a cable extending to a reciprocal carriage, and another multiple block and tackle extending between the opposite end of the shuttle and an adjacent fixed point and having a cable extending to said carriage, whereby operation of the hydraulic cylinder causes the shuttle to reciprocate which, in turn, causes the carriage to reciprocate through magnified strokes.

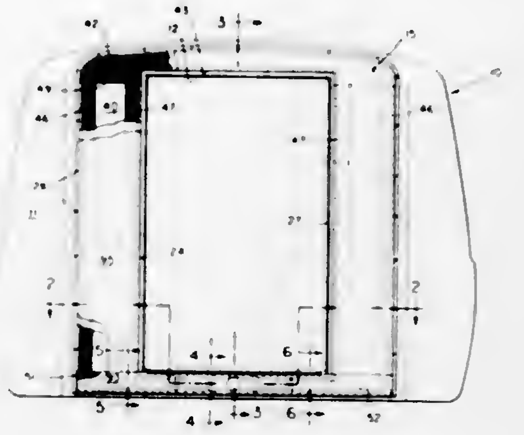
3,399,631
ARTICULATED RAILWAY CAR
Hans B. Weber, Bedford, Ohio, assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 1, 1966, Ser. No. 569,239
7 Claims. (Cl. 105—4)



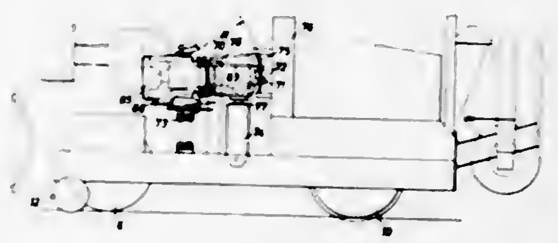
Car end structure including a connection for coupling adjacent ends of cars or car bodies within an articulated multiple-car unit wherein the adjacent end portions of the cars or car bodies are supported on a single car truck disposed under the connection. The elements of the connection are designed for being joined by movement along a straight-line path, to establish longitudinal rigidity between the car bodies of the articulated unit, and to provide convenient replacement of parts most subject to wear.

3,399,632
RAILWAY CAR DIAPHRAGM AND BUFFER STRUCTURE
Albert G. Dean, Narberth, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 24, 1966, Ser. No. 560,311
6 Claims. (Cl. 105—15)

A combined diaphragm buffer structure for the vestibule end of a railcar which is coupled to an adjacent car. Resilient shear means support the buffer plate to the end frame of the car at floor level. Cushion means extend between the end frame and the buffer plate and extend upwardly to frame the doorway opening. The compressibility of the cushion means along with the resilient shear means is such as to provide normal coupled pressure uniformly distributed around the diaphragm. The cushion means in addition serves to damp vertical and lateral oscillations of the face plate.



3,399,633
CONVERTIBLE RAIL-HIGHWAY TRACTOR
William Howard Herscovitch, 12 Bredenbekstrasse, 2 Hamburg-Ohlstedt, Germany
Filed Oct. 12, 1966, Ser. No. 586,057
Claims priority, application Great Britain, Oct. 20, 1965, 44,481/65; Mar. 15, 1966, 11,342/66; June 24, 1966, 28,481/66; June 30, 1966, 29,478/66
16 Claims. (Cl. 105—26.1)

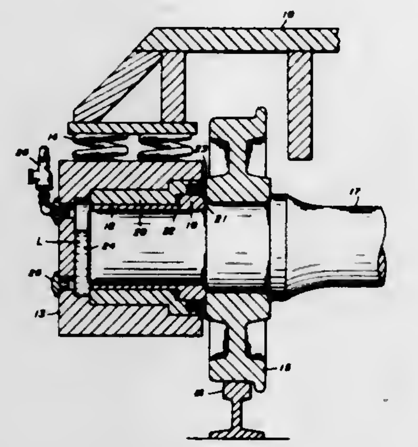


A rail vehicle having a longitudinally extending beam movably mounted thereon, said beam having coupler means mounted on the end thereof. Jack means mounted on the frame of the rail vehicle move the beam vertically when the coupler means is coupled to a railway car, the beam and the coupler means thus effectively function as if same were rigidly secured to the railway car coupler. The jack means permits a portion of the railway car weight to be distributed on the support wheels of the rail vehicle. Connection means between the beam and the frame permit the pushing or pulling force to be transmitted to the frame at an elevation substantially below the level of the coupler means whereby the overturning moment applied to the rail vehicle is minimized.

3,399,634
MOVEMENT LUBRICATING BEARING ASSEMBLY
Angelo Zunich, Hobart, Ind., assignor to United States Steel Corporation, a corporation of Delaware
Filed Mar. 8, 1966, Ser. No. 532,807
3 Claims. (Cl. 105—218)

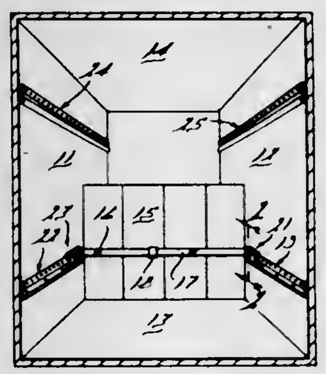
A journal bearing for rail cars in which the axle carries a removable adapter sleeve and the journal box contains a bronze bearing sleeve receiving the adapter sleeve.

The bearing is lubricated by axial movement of the adapter sleeve as it works back and forth endwise in the bearing sleeve. Structure simplifies repairs, since damage normally is confined to the sleeves.



3,399,635
FREIGHT BRACING DEVICE

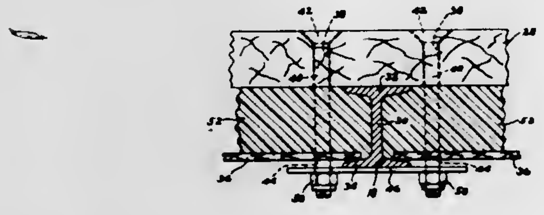
Robert E. Heard, Plymouth, Mich., assignor to Evans Products Company, a corporation of Delaware
Filed Mar. 21, 1966, Ser. No. 535,935
2 Claims. (Cl. 105—369)



A lading system including flexible straps and anchor fittings for retaining the straps in longitudinally adjusted positions within the cargo area. The anchor fittings are designed in such a way that the force of the load upon the strap holds the anchor fitting in its locked position.

3,399,636
FLOOR SECURING MEANS

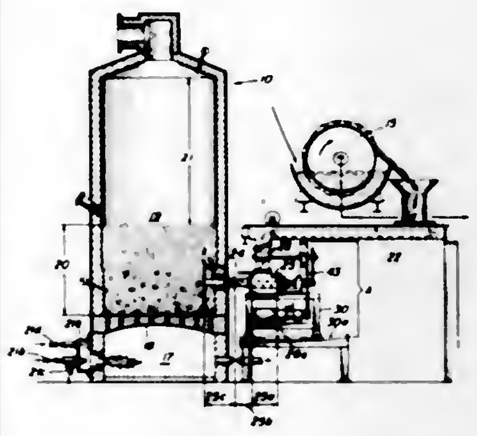
John A. K. Krug, Jr., St. Charles, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Nov. 4, 1966, Ser. No. 592,135
2 Claims. (Cl. 105—422)



This disclosure relates to means for securing floor boards to supporting stringers in an insulated box car and to the method of forming the floor structure for receiving an insulating foam material. The present invention provides floor securing means for an insulated railway car in which a subflooring is held in position by the means securing the floor boards. The securing means comprising a plate extending beneath each stringer at an angle of around 45° with respect to the longitudinal axis of the stringer and having a bolt receiving elongate slot adjacent each end thereof positioned outwardly of the associated stringer thereby to secure two adjoining floor boards. The bolts extend through openings in the floor boards and subflooring with the elongate slots providing a tolerance thereby to minimize any alignment problems.

3,399,637
SCREW FEEDER FOR FEEDING SEWAGE SLUDGE OR THE LIKE TO A COMBUSTION CHAMBER

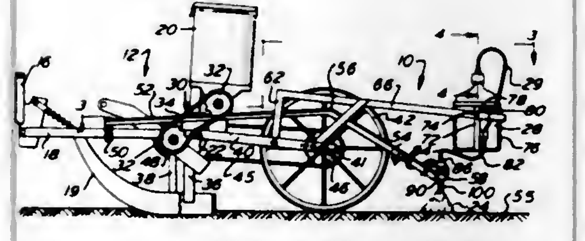
William Arthur Hirschfield, Fairfield, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Filed May 10, 1967, Ser. No. 637,394
15 Claims. (Cl. 110—8)



This invention provides improved apparatus for feeding of high-moisture organic waste material or dewatered sewage sludge from a source of supply such as a hopper or conveyor into a combustion unit, through a screw feeder into which the waste material is packed by means of rotary paddles insuring continuity of progress of the waste material through the feeder.

3,399,638
AGRICULTURAL SPRAY DEVICE

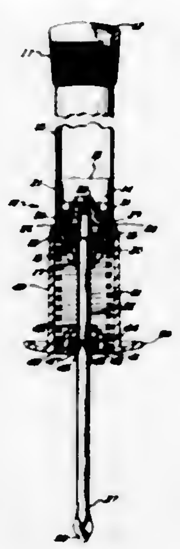
John E. Waldrum, Ambler, and Paul W. Bishop, Telford, Pa., assignors to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware
Filed June 23, 1967, Ser. No. 648,462
9 Claims. (Cl. 111—6)



A low volume agricultural liquid spray device including a reservoir for the liquid to be sprayed and feed means to deliver the liquid under constant head via a conduit to a spindle having a bore to define a flow path and spray means depending from the spindle, drive means to rotate the spindle at a pre-determined rate about its axis with said spray means also being rotated at a predetermined rate to dispense low volumes of the agricultural liquid in a relatively coarse spray, but in a uniform manner.

3,399,639
LIQUID DISPENSER

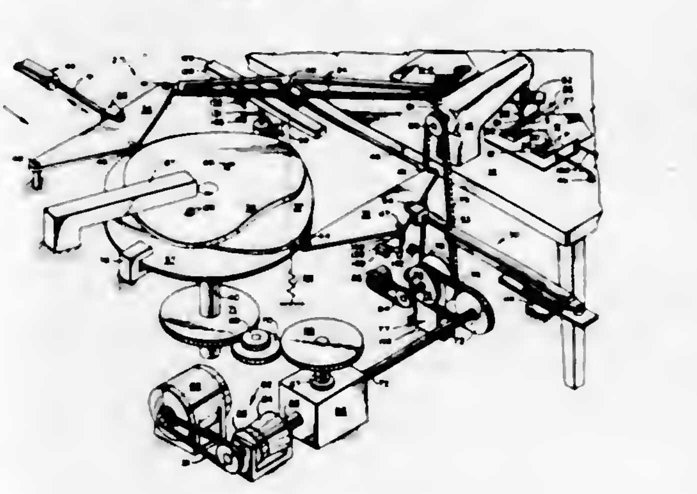
Paul A. Enblom, Eden Prairie, Minn., assignor to Judd Ringer Corporation, St. Louis Park, Minn., a corporation of Minnesota
Filed Sept. 28, 1966, Ser. No. 582,628
9 Claims. (Cl. 111—7.4)



A dispenser for forcibly ejecting liquids, such as plant foods into or upon the soil. The dispenser has a tubular member which serves as a combination liquid reservoir and handle and has in its lower end a pump assembly including a piston and pressure chamber arrangement, the upper end of the pressure chamber opening into the lower end of the reservoir. The piston is fastened to the upper end of a tubular probe which projects through the lower end of the pump assembly and which includes inlet and discharge ports arranged so that liquid may be dispensed from the pump assembly out through the probe. When the probe is forced against the soil, the pump assembly is moved against the action of a biasing spring to admit a predetermined, measured volume of liquid from the reservoir around the piston into the pressure chamber. Thereafter when the downward force on the dispenser is released, the pump assembly is returned to the position to which it is biased and the relative movement between the piston and pressure chamber forcibly ejects the measured volume of liquid out of the pressure chamber through the probe.

3,399,640
AUTOMATIC SEWING MACHINE SYSTEM

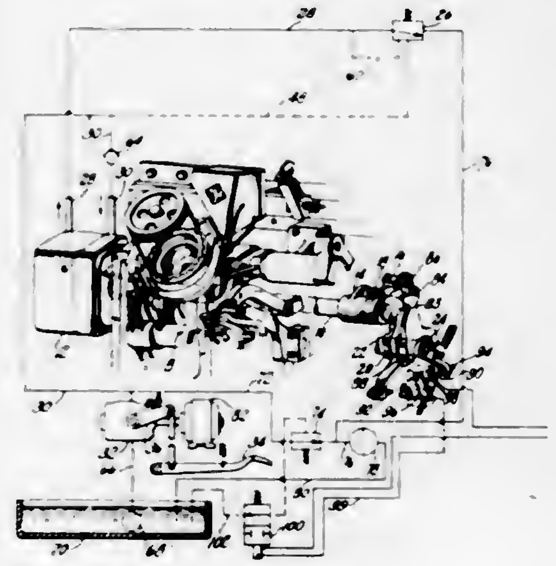
Carney J. Bryan, 4607 Mercury Drive, Greensboro, N.C. 27400, and Herman Rovin, 51 Karen Drive, East Norwalk, Conn. 06851
Filed Jan. 25, 1966, Ser. No. 522,915
15 Claims. (Cl. 112—2)



1. An automatic sewing machine system comprising a movable needle for stitching fabric workpieces, drive means connected to the needle for moving the needle to form stitches, brake means connected to said drive means for stopping the needle, a motor, clutch means connecting said motor to said drive means for providing power thereto, locking means connected to said drive means and engageable in a predetermined position for locking said drive means to secure the needle in an inactive position, speed sensing means responsive to the speed of said drive means for conditioning said locking means toward engagement after the speed of said drive means has fallen below a predetermined safe level, and means responsive to said drive means in other than said predetermined position for momentarily releasing the brake means and re-engaging the clutch means for moving said drive means until said drive means reaches said predetermined position for engagement of said locking means.

3,399,641
DRIVING AND STOPPING MECHANISMS UTILIZING PUMPS OF THE VARIABLE OUTPUT TYPE

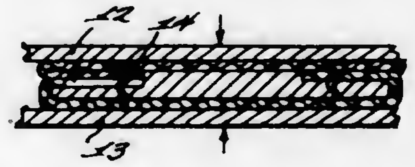
Blandford W. Greene, Manchester, and Robert J. Desmond, Ipswich, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed Feb. 26, 1965, Ser. No. 435,597
5 Claims. (Cl. 112—219)



A driving and stopping mechanism for a machine such as a heavily constructed shoe sewing machine including a shaft, a displacement unit connected to the shaft and driven by a variable output pump, a treadle to control the output of the pump and a differential pressure relief valve arranged to retard the rotation of the shaft below that corresponding to the output of the pump.

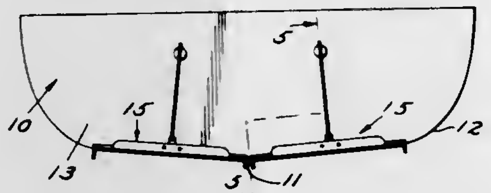
3,399,642
PROCESS FOR PREVENTING SEAM PUCKER

Gibson O. Etchison, River View, R. Allen McDaniel, Fairfax, and George E. Hines, River View, Ala., assignors to West Point-Pepperell, Inc., West Point, Ga., a corporation of Georgia
Filed Mar. 30, 1967, Ser. No. 627,204
3 Claims. (Cl. 112—262)



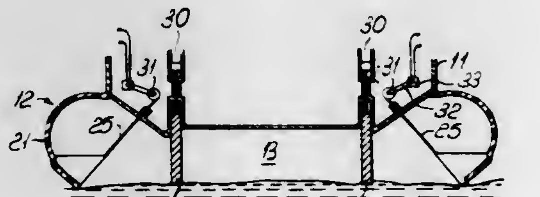
A process for preventing fabric puckering along a line of stitches in a fabric article. A nonwoven fabric is sewed to the back of the fabric in said article by placing a line of stitches through the upper and lower surfaces of both the fabric and the nonwoven fabric. The nonwoven fabric is permanently collapsible to a small thickness and is collapsed when the article is pressed. This generates slack in the thread in the line of stitches, permitting the thread to shrink in laundering without puckering the fabric.

3,399,643
TRIM ATTACHMENT FOR POWER BOATS
Charles H. Bennett, 14845 Plymouth Road, Detroit, Mich. 48227
Filed Mar. 20, 1967, Ser. No. 624,345
16 Claims. (Cl. 114—66.5)



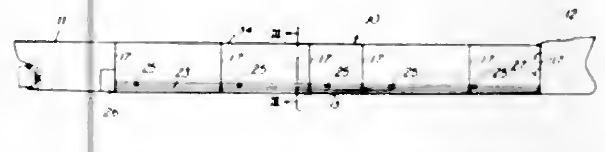
The trim attachment shown herein comprises a pair of trim members which are hinged to the stern along their forward edges and have downwardly extending walls along the side edges. Power operated means extend between the trim members and the stern of the boat to actuate the trim members. The trim members have a flange adjacent the rear edge tending to rigidify the member along the rear edge. Each trim member is made of flexible material so that it will flex in the manner that when one rear corner moves in one direction, the other rear corner moves vertically in the opposite direction.

3,399,644
GAS-CUSHION VEHICLES
Rowland Delville Hunt, Hythe, England, assignor to Hovercraft Development Limited, London, England, a British company
Filed Nov. 9, 1966, Ser. No. 593,124
Claims priority, application Great Britain, Nov. 11, 1965, 47,962/65
5 Claims. (Cl. 114—67)



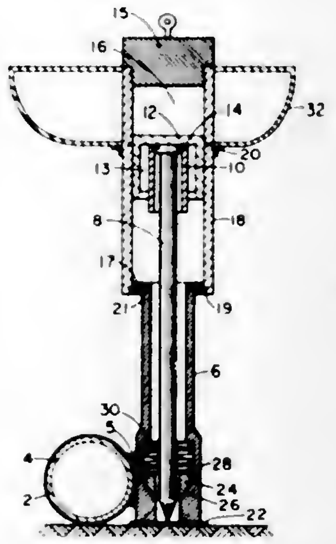
5. A gas cushion vehicle for traveling over surfaces of land and water having a fore-and-aft axis and comprising a body, a flexible skirt attached to and depending from the body for laterally containing beneath the body at least one vehicle-supporting cushion of pressurised gas, and a keel structure extending downwardly from the body with its length substantially parallel to the fore-and-aft axis, the keel structure being of substantially rigid construction capable of supporting the vehicle on a hard land surface and at least partly surrounded by the flexible skirt, the width and length of the keel structure being so related that, when in contact with the surface over which the vehicle is traveling, the keel structure provides a relatively small resistance to movement of the vehicle parallel to its fore-and-aft axis and a relatively large resistance to movement transversely of said axis, at least one of said flexible skirt and said keel structure being movable vertically relative to the vehicle body so as to vary the relative downward extent of said skirt and said keel structure.

3,399,645
TANKER CONSTRUCTION
Paul C. Dahan, Pittstown, N.J., assignor to Mobil Oil Corporation, a corporation of New York
Filed Apr. 17, 1967, Ser. No. 631,398
5 Claims. (Cl. 114—74)



A tanker comprising cargo tanks formed above bottom ballast tanks and a tunnel along the keel for housing the main cargo piping. Piping is provided to interconnect the bottom of each cargo tank and the main cargo piping in the tunnel.

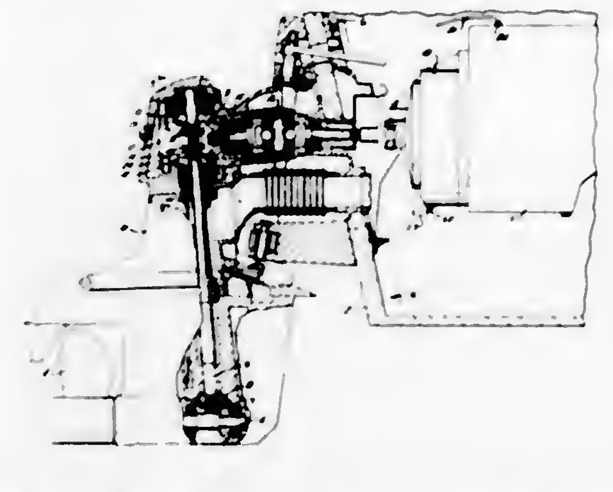
3,399,646
SUBMARINE ANCHOR ASSEMBLY
Renic P. Vincent, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Aug. 14, 1967, Ser. No. 660,525
11 Claims. (Cl. 114—206)



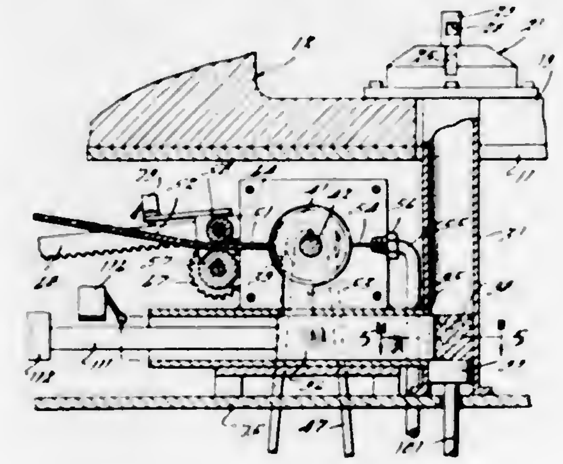
An explosively driven submarine anchor assembly suitable for securing pipelines to the ocean floor comprises an explosively driven nail surrounded by a tubular member having a deceleration means therewithin to prevent the nail from passing entirely through the assembly and into the ocean floor. Affixed to the tubular member is a clamping means suitable for securing a pipeline to the anchor body. Means may also be used in the base of the aforesaid tubular member for preventing upward movement of the nail after it has been driven. The gun barrel(s) used in firing the nail is affixed to an air tank which causes the firing mechanism to automatically rise to the surface after the firing step has been completed.

3,399,647
ACTUATING MEANS FOR MARINE CLUTCH
Charles F. Alexander, Jr., and Daniel F. McCormick, Oshkosh, Wis., assignors, by mesne assignments, to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 336,254, Jan. 7, 1964. This application Oct. 21, 1966, Ser. No. 588,623
8 Claims. (Cl. 115—34)

The drive train of an engine driven marine propulsion unit includes shiftable means to selectively render the propeller inoperative. Variable friction clutch means are interposed in the drive train between the shiftable means and the engine and is constantly engaged with an engine driven member. The friction clutch means is operable to drive the propeller when the shiftable means have rendered the propeller operative and is otherwise adapted to impose a relatively small input torque to the drive train. Operation of the shiftable means and the friction clutch means are synchronized to provide for shifting of the shiftable means only when a relatively small input torque is imposed on the drive train.



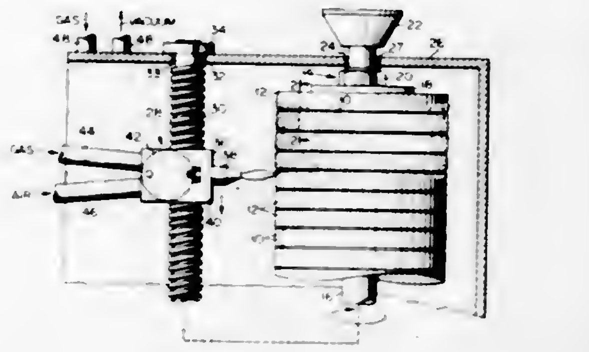
3,399,648
APPARATUS FOR PRODUCING OIL-IMPREGNATED FIBERS
Martin L. Abel, 14141 Balfour, Oak Park, Mich. 48237
Original application Apr. 1, 1963, Ser. No. 269,576, now Patent No. 3,226,801, dated Jan. 4, 1966. Divided and this application Apr. 2, 1965, Ser. No. 445,084
10 Claims. (Cl. 118—37)



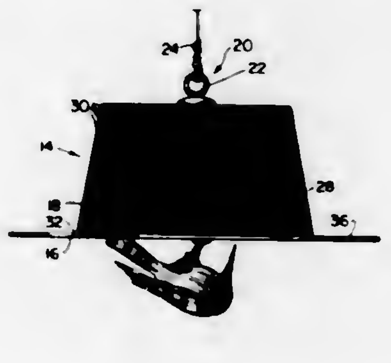
Apparatus for shredding fibers from a length of webbing material and mixing a predetermined amount of oil with the fibers to produce a charge of oil impregnated fibers. Means feed the webbing into a chamber containing a rotating shredding blade and an oil injection opening where the fibers and oil are mixed. Oil impregnated fibers are fed from an outlet in the chamber to a receiver to form the charge.

3,399,649
APPARATUS FOR MAKING SAW BLADES
David J. Kidgell, Excelsior, Minn., and Frank A. Besha, Los Gatos, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 31, 1963, Ser. No. 334,829
6 Claims. (Cl. 118—47)

1. Apparatus for making improved metallic cutting and sawing blades having plane sprayed edges, said apparatus comprising, in combination, rotating means for supporting at least one metallic cutting and sawing blade secured to said rotating means, spacing means secured in abutting relation to each side of each of the blades supported on said rotating means, said spacing means extending a substantial distance beyond the periphery of each of said blades and configured to provide shielding and guiding surfaces adjacent said blades, flame spraying means disposed adjacent said blades and directed into the gaps between said spacing means and toward the exposed periphery of each of said blades, and guide means mounted to move said flame spraying means in a controlled manner adjacent the exposed periphery of each of said blades.



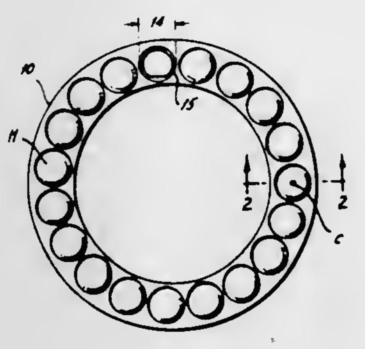
3,399,650
SELECTIVE BIRD FEEDER
Mary J. Goodman, 861 Canal Drive, McLean, Va. 22101
Filed Aug. 9, 1966, Ser. No. 571,289
17 Claims. (Cl. 119—51)



17. A suet or the like feeder comprising: a food confining overbody made with small size apertures; a combined base-guard portion having larger size apertures extending laterally beyond the confines of said overbody; the small size apertures in said feeder overbody constituting means for allowing only small birds to feed above said base-guard while large and small birds, having the capability to hang upside down under the base guard portion may gain access to the food through the larger size apertures in the bottom.

3,399,651
SUSCEPTOR FOR GROWING POLYCRYSTALLINE SILICON ON WAFERS OF MONOCRYSTALLINE SILICON
Joseph C. Fornari, Lansdale, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware
Filed May 26, 1967, Ser. No. 641,645
8 Claims. (Cl. 118—500)

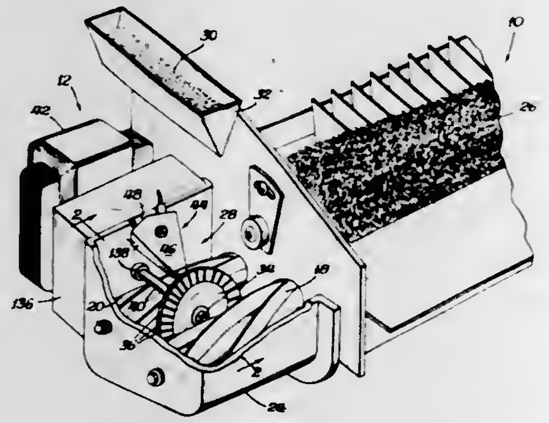
A silicized carbon susceptor for the high temperature vapor plating of a relatively thick layer of polycrystalline silicon on oxidized surfaces of single crystal silicon wafers. The susceptor provides shallow retaining wells



to receive the wafers, the bottoms of the wells being contoured so that the edges of the wafers do not contact the well bottom.

3,399,652
AUTOMATIC TONER CONCENTRATE DETECTOR

Stanley A. Gawron, Mount Prospect, Ill., assignor to Addressograph-Multigraph Corporation, Mount Prospect, Ill., a corporation of Delaware
Filed June 14, 1967, Ser. No. 646,056
18 Claims. (Cl. 118—637)

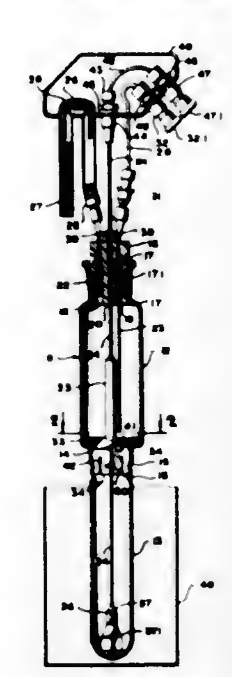


A rotating reflective disc located directly in a developer mix containing toner is electrically biased so that it will attract toner from the mix. The amount of toner attracted to the surface of the disc is a function of the concentration of toner in the mix. A light beam is directed to reflect off the surface onto a photoelectric unit, with the intensity of the light striking the unit being controlled by the amount of toner on the surface. The photoelectric unit and source of light are mounted in a protective housing in order to render them free of toner dust. The unit is calibrated to signal a dispensing apparatus to operate when the intensity of the reflected light indicates a less than optimum toner concentration.

3,399,653
METHOD AND APPARATUS FOR THE COLLECTION AND STORAGE OF PARASITIC LIFE

Jack D. Tiner, Washington, D.C., and Jacob Smit, Manassas, Va., assignors to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed May 6, 1965, Ser. No. 453,788
16 Claims. (Cl. 119—1)

11. A method for improving the collection of parasitic life in liquid solution deposited by gravity in the bottom portion of a container from infected plant life located in an upper portion of the container, said container being flooded with nutrient for said life, comprising aerating said solution by raising and lowering a portion thereof inside a tube from the bottom to the upper portion of the container, at a cyclic rate on the order of once a minute.

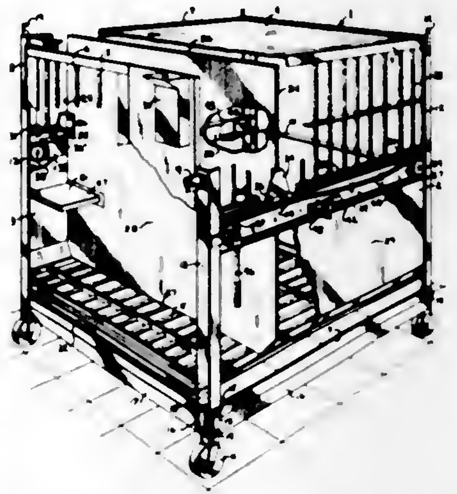


ERRATUM

For Class 119—51 see:
Patent No. 3,399,650

3,399,654
ANIMAL RESTRAINING CAGE

Gary J. Schroer, Kansas City, Mo., assignor to Schroer Manufacturing Company, Inc., Kansas City, Mo., a corporation of Missouri
Filed Oct. 24, 1966, Ser. No. 588,848
16 Claims. (Cl. 119—96)



1. An animal restraining cage having a pair of spaced apart walls and a front end wall;

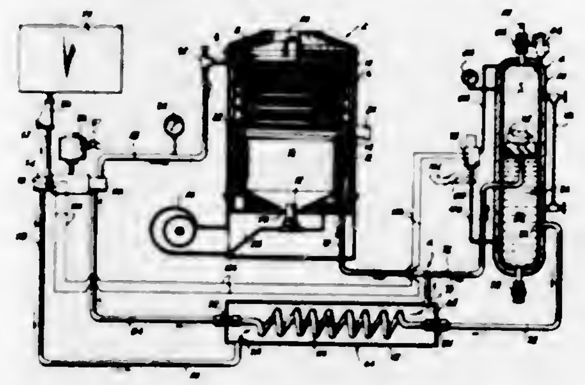
(a) a restraining wall receivable in said cage, means mounting said restraining wall in said cage in a predetermined relation with said end wall and for movement toward and away from said end wall, said means including,

(b) a front sprocket rotatably mounted on said cage adjacent each of said spaced apart walls, a rear sprocket rotatably mounted on said cage adjacent each of said spaced apart walls and spaced rearwardly of said front sprockets, a pair of parallel endless chains adjacent each of said spaced apart walls and respectively engaged with one of said front sprockets and one of said rear sprockets,

(c) said restraining wall having a pair of brackets mounted thereon and extending therefrom, said brackets being respectively secured to corresponding positions on said chains, means synchronizing the rotation between a pair of sprockets not joined by one of said chains, and means for selectively rotating one of said sprockets, whereby a corresponding movement in both of said chains is produced causing said restraining wall to be moved while maintaining said predetermined relation with said end wall.

3,399,655
FORCED CIRCULATION STEAM GENERATOR WITH THERMAL-MECHANICAL PRE-REMOVAL OF CORROSIVE GASES FROM THE LIQUID SUPPLIED TO THE HEATING COIL

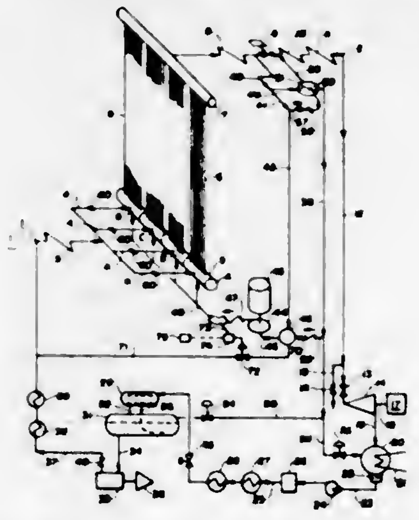
Perry Arant, Newport Beach, Calif., assignor to Clayton Manufacturing Company, Los Angeles, Calif., a corporation of California
Filed Apr. 24, 1967, Ser. No. 633,195
14 Claims. (Cl. 122—406)



Steam generating apparatus with forced circulation including a heating coil and a steam separator, and wherein raw feedwater, preferably preheated, is introduced into the system as make-up water at a juncture point between the heating coil and the steam separator and there blended with a stream of steam-containing liquid from the heating coil. The blended mixture is flashed in the steam separator, forming more steam and releasing corrosive gases contained in the feedwater and making available gas-free liquid which is then circulated from the separator through the heating coil by a circulating pump to be heated and cyclically blended with raw feedwater and flashed in the separator, thus continually removing and preventing corrosive gases from entering the heating coil.

3,399,656
CIRCULATION SYSTEM FOR A STEAM GENERATOR

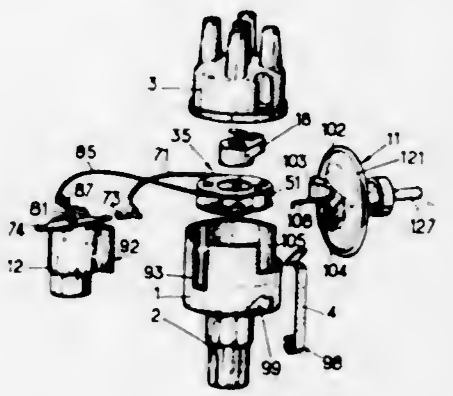
Charles Strohmeyer, Jr., Wyomissing, Pa., assignor to Electrodyne Research Corporation, Reading, Pa.
Filed Jan. 19, 1967, Ser. No. 610,414
10 Claims. (Cl. 122—406)



The invention provides a means for control distribution of fluid from the feedwater inlet of a steam generator to and selectively among portions of parallel tubes which are a portion of the steam generator heat absorption circuits and which comprise a portion of a fluid recirculation conduit loop by selective throttling of the feedwater flow to the parallel tubes independently of the recirculating fluid flow.

3,399,657
COMBUSTION ENGINE IGNITION

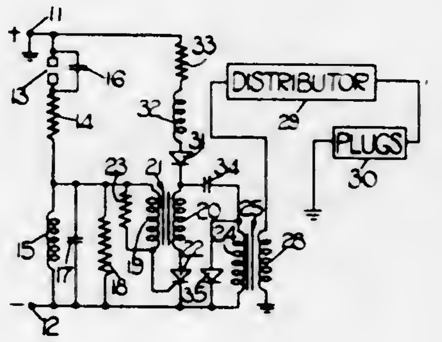
Claude Amblard, Issy-les-Moulineaux, France, assignor to Societe Anonyme pour l'Equipement Electrique des Vehicules S.E.V. Marchal, Issy-les-Moulineaux, France
Filed Jan. 11, 1967, Ser. No. 608,652
Claims priority, application France, Jan. 14, 1966, 45,902; July 28, 1966, 71,282
25 Claims. (Cl. 123—117)



A combustion engine ignition device including fixed and movable breaker points supported on a plate for actuation by a cam which extends through an aperture in the plate and in one embodiment has an annular surface supporting the plate. Axially projecting from the aperture in the plate is a hub which receives a cylindrical centering surface on the cam whereby the plate is centered solely by the centering surface on the cam.

3,399,658
SPARK IGNITION SYSTEM

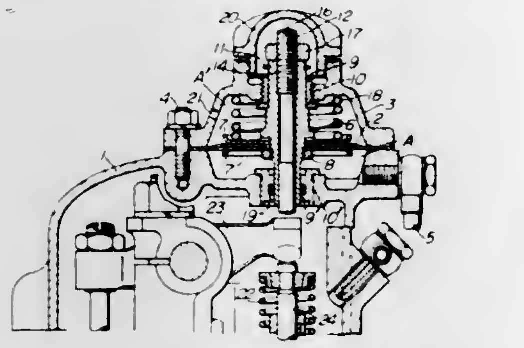
Brian Gilbert, Sutton Coldfield, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Apr. 26, 1966, Ser. No. 545,405
Claims priority, application Great Britain, May 5, 1965, 18,904/65
3 Claims. (Cl. 123—148)



In a spark ignition system, current flow in a winding is interrupted by a semi-conductor switch, and the energy available as a result of the interruption is used to produce a spark. A feedback transformer is used to turn the switch off rapidly, and in addition, a capacitor is provied which maintains the current flow in the winding until the switch is fully off.

3,399,659
AUTOMATIC NONCOMPRESSION STARTING DEVICE

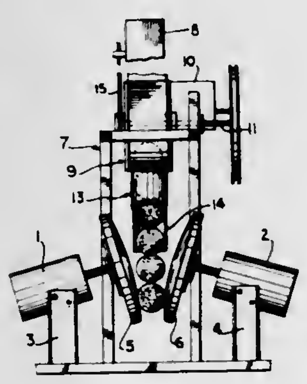
Haruo Isoda, Tokyo, Japan, assignor to Tadao Yamaoka, Ashiya-shi, Japan
Filed Oct. 24, 1966, Ser. No. 588,805
2 Claims. (Cl. 123—182)



A noncompression starting device made integrally with a valve rocker arm chamber of an engine wherein a diaphragm having a spindle directly engageable with an exhaust valve rocker arm is normally urged by a spring acting on one side of the diaphragm so as to press the rocker arm and hence the exhaust valve to an open or noncompression position. Lubricating oil is introduced on the other side of the diaphragm, and when the engine is cranked to a predetermined revolution, the pressure of the lubricating oil overcomes the spring biasing force, thus releasing the noncompressive state of the engine and permitting the engine to start.

3,399,660
BALL THROWING MACHINE HAVING TWO ROTATABLE DISCS WITH CONVERGING AND DIVERGING INTERSTICES

Edward Swartout, 46 Crescent Place, Yonkers, N.Y. 10704
Filed Oct. 23, 1965, Ser. No. 503,100
7 Claims. (Cl. 124—6)

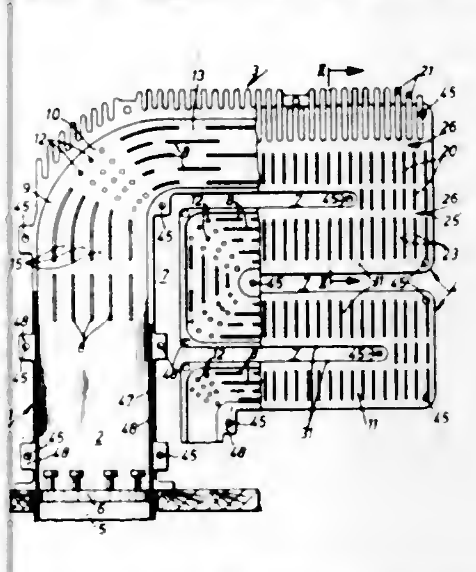


1. A ball-throwing machine comprising two discs rotatably mounted in such relative positions that the axes of said discs shall intersect at a point midway between the two discs, and that the planes of said discs shall intersect at a point outside the peripheries of said discs; means for rotating said discs; means for introducing a ball into the converging interstice between said discs in such a manner that said ball shall be ejected from the diverging interstice between said discs at a high rate of speed.

3,399,661
GAS OR LIQUID FUEL FIRED SPACE HEATER

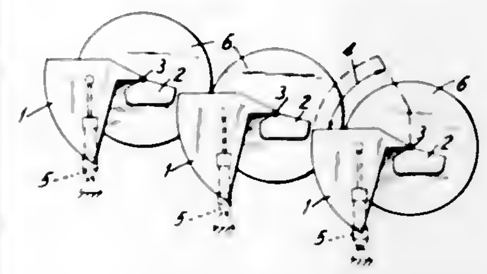
Philipp Kreis, 34–36 Neumarkter Strasse, Munich, Germany
Filed June 19, 1967, Ser. No. 647,163
7 Claims. (Cl. 126—118)

A compact space heater includes heat exchange coils for combustion products which follow a sinuous path having updraft and downdraft channels with internal interrupted ribs aligned with the path of combustion products flow and external interrupted vertical ribs.



3,399,662
MULTISECTION COMBUSTION GRATE WITH LATERAL SEALING MEANS

Richard Holstein, Denkendorf, and Herbert Voigt, Esslingen, Germany, assignors to Haniel & Lueg G.m.b.H., Dusseldorf-Grafenberg, Germany
Filed Mar. 16, 1967, Ser. No. 623,742
Claims priority, application Germany, Mar. 16, 1966, H 58,814
10 Claims. (Cl. 126—176)

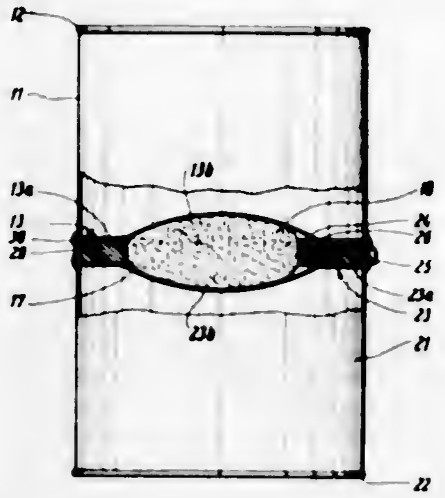


The disclosure relates to multisection combustion grates and particularly to such grates which are useful for burning refuse and the like which constitute inferior and highly ballast-rich fuels. The principal feature of the disclosure is the provision of circular sealing disks at laterally opposite ends of each grate section, these sealing disks cooperating with stationary sealing means, such as the walls of a combustion chamber, to provide a maze sealing against entry of combustion air into the combustion chamber around the grate section pivoting means, and to prevent exit of combustible gases from the combustion chamber around the grate pivoting means.

3,399,663
MULTIPLE-CONTAINER UNITS

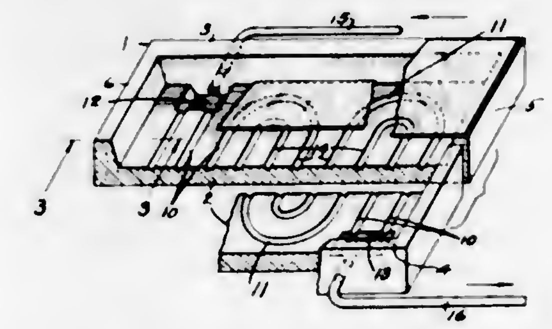
Walter Klaiber, Schornbach, Germany, assignor to Elbatainer Kunststoff- und Verpackungs GmbH. & Co., Ettlingen-Baden, Germany, a firm
Filed Apr. 21, 1967, Ser. No. 632,690
9 Claims. (Cl. 126—262)

A unit which a plurality of containers arranged in end-to-end-relation. The containers are connected to each other and have adjoining end walls which define a given space between themselves. Within this space is situated a combustible material as well as an ignition means which is manually operable so that upon actuation thereof it will ignite the combustible material to heat the contents of the containers. The ignition means is accessible from the exterior of the space in which the combustible material is located so that this ignition means can be actuated from the exterior of the unit to ignite the combustible material for heating the contents of the containers. The adjoining end walls have recesses extending inwardly toward the interior of the containers and have a concave exterior configuration substantially forming parts of spheres, and it is these end wall recesses of the container which receive between themselves the combustible material which is to be ignited. A ring of heat-insulating material surrounds the combustible material in the space between the adjoining container end walls and the ignition means includes an ignitable mass situated between the heat-insulating ring and the combustible material next to the latter as well as an ignition cord extending from the ignitable mass to the exterior of the unit so as to be accessible for igniting the ignitable mass. The containers are interconnected by an outer ring.



3,399,664
SOLAR HEATER

Frank L. Suhay, Burbank, Calif., assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Aug. 8, 1966, Ser. No. 571,955
2 Claims. (Cl. 126—271)

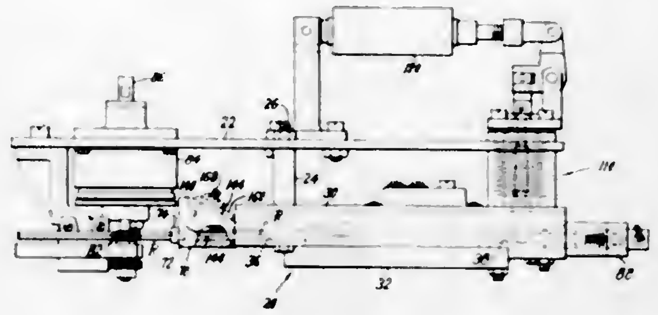


The invention comprises a solar heater having a casing the base of which is formed by molding or otherwise with a fluid ductway, the ductway communicating with the surface of the base. Outlet and inlet conduits are provided at the ends of the ductway and overlying the ductway is a high heat conducting metal plate which encloses the ductway.

3,399,665
APPARATUS FOR MELTING AND DISPENSING THERMOPLASTIC MATERIAL

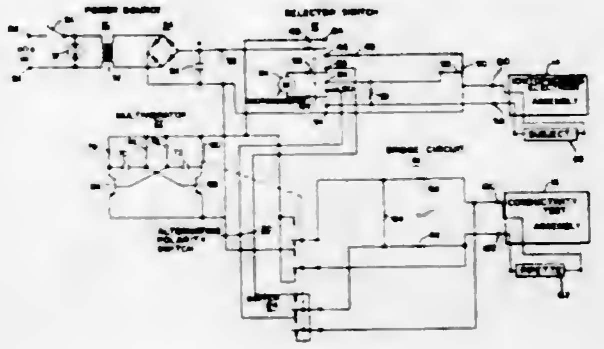
Gordon V. Sprague, Jr., Danvers, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed May 24, 1967, Ser. No. 640,970
4 Claims. (Cl. 126—343.5)

Apparatus for melting and dispensing thermoplastic material supplied in the form of a rod comprises a heated melt body having a melt chamber and a heated passageway formed with an inlet passage provided with valve means for closure of the inlet passage during idle periods to prevent "blow-back" of molten material through the inlet. The valve means includes a valve member resiliently movable for opening the passage by pressure of the leading end of a rod for admission thereof to the melt chamber. The valve member suitably comprises a resilient disc normally seated oblique to said passage and adapted to cut through a heat softened rod for seating and closure of the inlet passage.



3,399,666
MEASUREMENT SYSTEM FOR CLINICAL DIAGNOSIS

Billy G. Broach, Huntsville, Ala., assignor to Heat Technology Laboratory, Inc., Huntsville, Ala., a corporation of Alabama
Filed Nov. 9, 1964, Ser. No. 409,671
8 Claims. (Cl. 128—2.1)

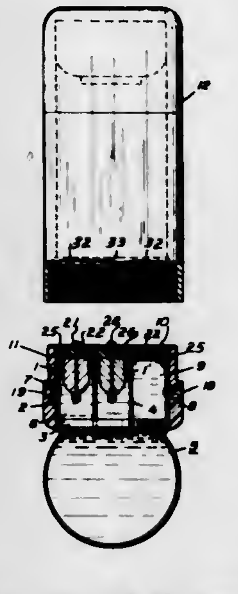


A measurement system for the clinical diagnosis of cystic fibrosis wherein a source of direct current is first applied to the skin of a subject and a sweat sample produced. The sweat sample is then subjected to conductivity measurements through a synchronous switching system interconnecting the source of direct current with the sample.

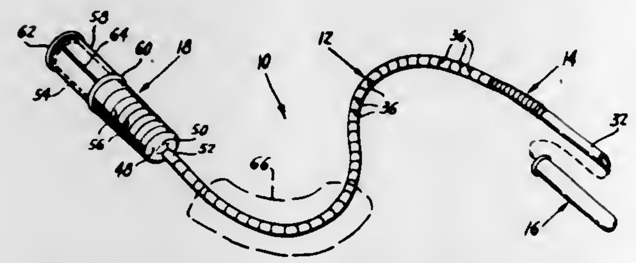
3,399,667
COMPOSITE GLASS ELECTRODE

Kazuyuki Nishimoto, Ibaraki-shi, Osaka-fu, and Yoshio Iida, Hirakata-shi, Osaka-fu, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan
Filed Oct. 18, 1965, Ser. No. 496,896
5 Claims. (Cl. 128—2)

A pH sensor comprising a glass container having a bulb of a pH sensitive glass composition and a neck on said bulb of another glass composition, the coefficient of thermal expansion of the neck and the bulk being the same. The neck has at least one small hole therein for an electrical liquid path through the neck. A spacer consisting of a disk having a hollow stem passing through it is mounted in the glass container by being secured to the container along the circumference of the disk. This spacer divides the glass container into a pH sensitive glass electrode and a reference electrode. A first silver chloride electrode is mounted in the pH sensitive glass electrode and a second silver chloride electrode is mounted in the reference electrode. The glass electrode is filled with a buffer solution and the reference electrode contains an electrically conducting solution. The hole in the neck is filled with a porous material and an insulating wafer covers the glass container. Electrical connectors connected to the silver chloride electrodes project through the insulating wafer. The sensor can be joined to an oscillator unit to form a single body which can be used as a radio capsule for measuring pH by telemetry.



3,399,668
DISPOSABLE CHOLANGIOGRAPHY CATHETER
Edward S. Lundgren, 85 Sierra Vista Drive,
Tucson, Ariz. 85719
Filed Feb. 28, 1966, Ser. No. 530,691
1 Claim. (Cl. 128—2)



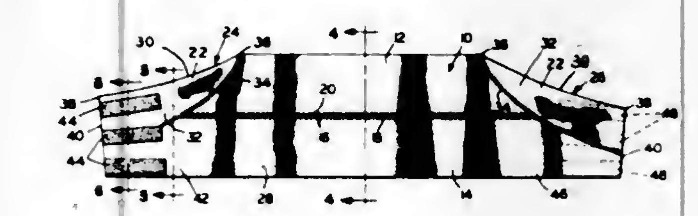
A surgical instrument for use in open obdominal surgery and comprising an elongated length of flexible transparent plastic conduit having opposed open ends, the conduit having a blunted or rounded end edge at one end thereof and a smooth outer surface immediately adjacent thereto to facilitate its entry into a body passage, linear scale indicia extending axially from the other end of the conduit inwardly to a point adjacent to but spaced from said smooth portion, friction means on the exterior side of the conduit extending axially thereof between the adjacent inner ends of the indicia means and said smooth portion of the conduit, and means connected with the other end of the conduit for introducing a fluid under pressure therein.

3,399,669
BODY BINDER
David Kaplan, 124 S. Main St.,
Sharon, Mass. 02067
Continuation-in-part of application Ser. No. 516,441, Dec. 27, 1965. This application Sept. 28, 1966, Ser. No. 582,692
14 Claims. (Cl. 128—78)

1. A binder comprising

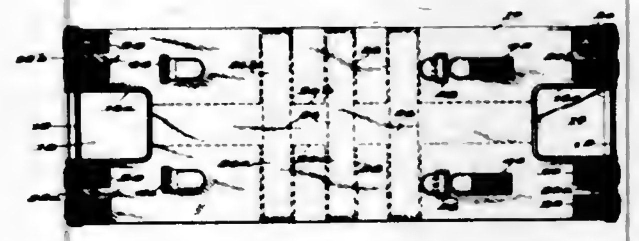
an elongated body-encircling panel made of elastic material, said panel having a soft lining adapted to contact the skin of the wearer,

fastening means secured to the ends of the panels and adapted to be joined together at the front of the body of the wearer,



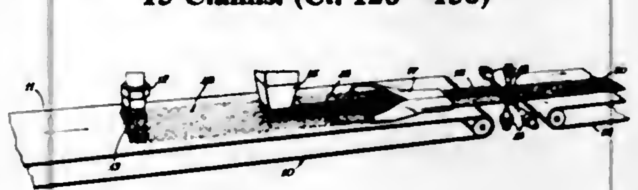
and at least one outside fold provided along one edge of the panel with the soft lining exposed at the edge along the fold.

3,399,670
RESTRAINING DEVICES
Joseph K. Veasey, 15 E. Atlantic Blvd.,
Ocean City, N.J. 08226
Filed Feb. 9, 1966, Ser. No. 526,187
6 Claims. (Cl. 128—134)



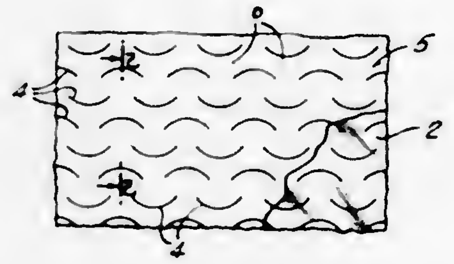
1. A restraining device of the character described comprising an elongated, generally rectangular body member of pliable sheet material having length adapting it to be applied as a wrap about the body and arms of a person to be restrained and to provide a small amount of overlap of its opposite end portions, and of height as to extend approximately between the hip and shoulder lines of said person, complemental quick-attachable means on said opposite end portions, and vertically disposed rigid means, one affixed to one said end portion and the other to the other said end portion, for effecting quick roll-up of said end portions one on the other whereby to achieve a fast tightening of the body member about said person.

3,399,671
SPRAY COATED ABSORBENT DRESSING
Donatas Satas, Palatine, Ill., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 31,182, May 23, 1960, now Patent No. 3,232,819, dated Feb. 1, 1966. This application Feb. 1, 1966, Ser. No. 524,304
15 Claims. (Cl. 128—156)



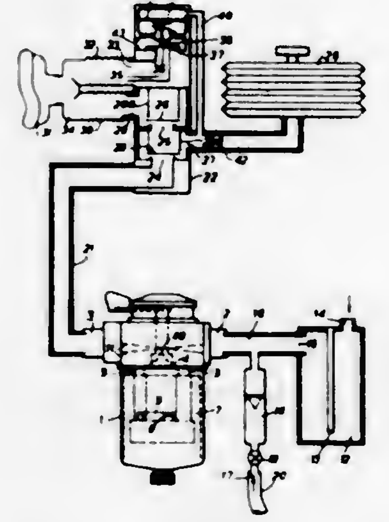
1. An integral absorbent body comprising a nonintegrated layer of fibers retained between two sheet-like integrated layers at least one of said sheet-like layers comprising an accretion of randomly arranged overlapping and interfitting solid filamentous strands having lengths predominately in the range of 200 to 2500 microns and diameters predominately 10 microns and less, and irregularly shaped nodular particles, both strands and particles comprising normally solid polymer being coalesced into a unified air-permeable and moisture permeable structure.

3,399,672
DRESSING
Jack H. Gardner, Highland Park, and George A. Crowe, Jr., Plainfield, N.J., assignors to Johnson & Johnson, a corporation of New Jersey
Filed Feb. 8, 1966, Ser. No. 525,895
9 Claims. (Cl. 128—156)



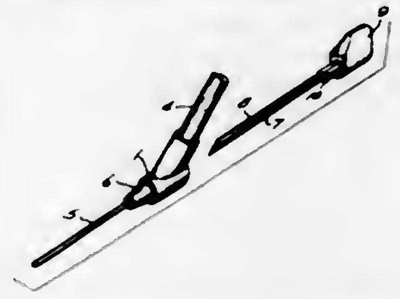
1. A dressing comprising an absorbent substrate and a hydrophobic, surfactant treated film facing covering portions of at least one surface of said absorbent, said film having an outer surface and a surface contacting said absorbent, said film containing a series of openings through which wound exudate may pass to said absorbent substrate, the outer surface of said film having been treated directly with a surface active agent, the surface tension of the outer surface of said treated film facing being somewhat higher than the surface tension of wound exudate, by virtue of which wound fluids which contact the facing will wet the same and will tend to spread laterally over said outer surface of said facing.

3,399,673
VOLATILE ANAESTHETIC VAPORISING APPARATUS
Wilfred Jones, Long Lee, Keighley, and William Edmondson, Keighley, England, assignors to Cyprane Limited, Haworth, near Keighley, England, a British company
Filed June 2, 1965, Ser. No. 460,681
Claims priority, application Great Britain, June 9, 1964, 23,825/64
3 Claims. (Cl. 128—188)



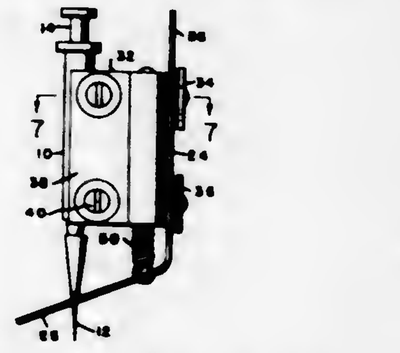
A portable anaesthetic apparatus comprises a valve-controllable volatile anaesthetic vaporiser having a connection from its inlet to a high region outlet from an oxygen economiser reservoir furnished with a high region air inlet-exhaust port, a pendant partly dividing plate in said reservoir between said inlet and said outlet, an oxygen supply inlet to the connection between the vaporiser and the reservoir, a connection between the outlet from said vaporiser and a flow control valve unit, twin vertically spaced-apart light-weight plate valve members controlling two flow passage ports leading to a connection to a face mask, a third inlet port between said two ports with an inlet connection from a bellows unit, and a passage from the bellows inlet connection to a pressure chamber in said valve unit behind a diaphragm, said diaphragm controlling a valve which normally closes an expiration port from the face mask to atmosphere.

3,399,674
CATHETER PLACEMENT UNIT
Karl A. Pannier, Wallace H. Ring, and James L. Sorenson, Salt Lake City, Utah, assignors to Le Voy's Inc., a corporation of Utah
Filed July 1, 1965, Ser. No. 468,869
6 Claims. (Cl. 128—214.4)



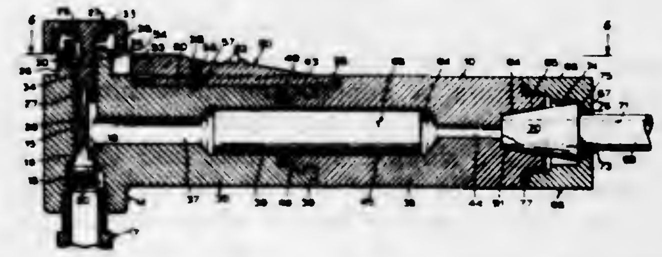
A catheter placement unit embodying a catheter and needle in coaxial relationship, the needle being entirely removable after the catheter is positioned in a body lumen.

3,399,675
HYPODERMIC INJECTOR INCLUDING A NEEDLE GUIDE WITH PAIN DESENSITIZING MEANS
Clifford W. Hill, 1328 Wood Valley Road,
Mountainside, N.J. 07092
Filed Oct. 23, 1965, Ser. No. 503,874
3 Claims. (Cl. 128—215)



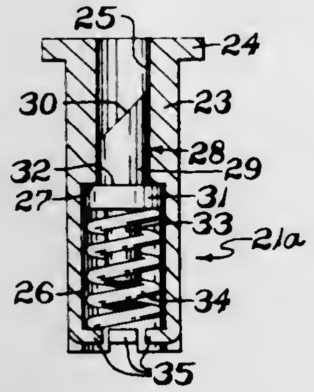
Hypodermic injector of simple construction having an abutment of heat absorptive material, to be refrigerated and then placed on the patient to desensitize the area contacted by the abutment against the pain of the needle and to guide the needle into the patient's body.

3,399,676
LIQUID DISPENSING APPARATUS FOR USE IN BODY TREATMENT
Jack E. McLaughlin, 676 King Ave.,
Yuba City, Calif. 95991
Filed Feb. 12, 1965, Ser. No. 432,297
6 Claims. (Cl. 128—229)



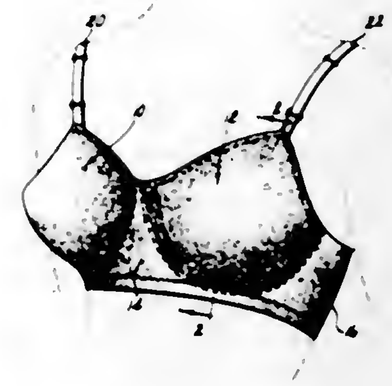
Apparatus for mixing and dispensing a temperature controlled, medicated douche from any source of water, under pressure, including means for maintaining the medicated solution so discharged at a substantially uniform concentration, temperature, and pressure, from the beginning to the end of the flow of the solution, and which means includes a water soluble solid body of a medicament in a conduit for the water, so shaped and related to the conduit as to provide a substantially uniform and constant surface area in contact with the water during dissolution of the medicament.

3,399,677
CATHETER AND VALVE THEREFOR
Joseph C. Gould, Riverton, and Myron C. Monck, Pennsauken, N.J., and John H. Lynch, Norristown, Pa., assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed July 1, 1966, Ser. No. 562,357
10 Claims. (Cl. 128—349)



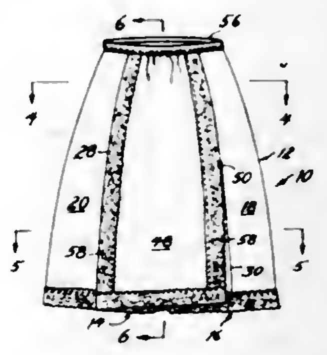
1. An inflatable bag catheter comprising a flexible drainage tube closed at its distal tip and open at its proximal discharge end, said drainage tube at its distal end having an opening in the side wall of the drainage tube to allow fluid which is to be removed from the body cavity into which the catheter is inserted to enter said drainage tube through said opening and travel the length of said drainage tube and be discharged at the proximal discharge end of the tube, said drainage tube having an inflatable element on the distal end thereof inwardly of said opening in the distal end of said drainage tube, a flexible inflating tube having an outside diameter materially smaller than the internal diameter of said drainage tube, said inflating tube being housed within said drainage tube and opening at its one end into said inflatable element and at its other end passing through the wall of the drainage tube in the proximal end thereof and terminating as a flexible inflation arm laterally off-set from the proximal end of said drainage tube, said inflating tube providing a passage for introducing inflating fluid into said inflatable element and for withdrawing inflating fluid from said inflatable element, and a valve inserted in the proximal open end of said inflation arm for maintaining the proximal end of the inflation arm normally closed, said valve comprising a hollow rigid generally cylindrical-shaped valve body which includes an outwardly extending flange at its proximal end intended for engaging in locking relationship a locking type syringe tip, the hollow interior of said valve body being comprised of an axial upper bore and an axial lower bore, said lower bore being of larger cross-sectional area than the cross-sectional area of said upper bore, a poppet housed within said valve body, said poppet being comprised of (1) an upper stem which has a sloping upper face and (2) a poppet head attached to the distal end of said upper stem, said upper stem being slidably housed within said upper bore of said valve body when said valve is in a closed condition and having a cross-sectional area which is less than the cross-sectional area of said upper bore of said valve body to allow inflating fluid to flow between the upper stem and the interior wall of the valve body when the valve is in an open condition, said poppet head being slidably housed within the lower bore of said valve body and having a cross-sectional area less than the cross-sectional area of the lower bore of said valve body to allow inflating fluid to flow between the side walls of the poppet head and the side walls of the lower bore of said valve body when the valve is in an open condition, compressible means housed within the distal end of the lower bore of said valve body for urging the upper face of said poppet head in sealing relationship with the shoulder formed at the juncture of the upper bore with the lower bore of the valve body, and means for retaining said poppet and said compressible means within the hollow interior of said valve body.

3,399,678
FOUNDATION GARMENT
Evelyn Faron, Franklin Park, Ill., assignor to A. Stein & Company, Inc., Des Plaines, Ill., a corporation of Delaware
Filed June 23, 1966, Ser. No. 559,983
9 Claims. (Cl. 128—479)



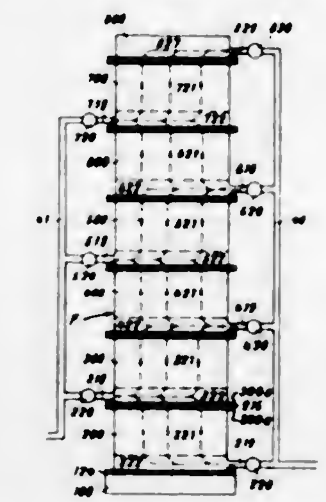
1. A breast cup construction comprising a foundation layer formed of a fabric sheet having sufficient stiffness to maintain a desired shape, said layer including at least two segments stitched together along seams to provide it with a conical shape, a seamless intermediate layer attached to said foundation layer and overlying the outer surface thereof, said intermediate layer having a thickness and deformability sufficient to conceal the seams of said foundation layer, and a seamless outer layer attached to said foundation layer and overlying the outer surface of said intermediate layer.

3,399,679
GIRDLE-SLIP
Herbert Barg, Merion, Pa., assignor to True Form Foundations, Inc., Darby, Pa., a corporation of Pennsylvania
Filed Dec. 27, 1965, Ser. No. 516,234
2 Claims. (Cl. 128—519)



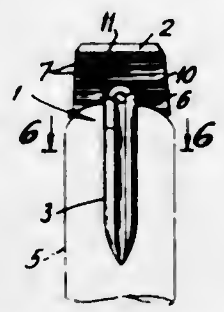
A combined slip and girdle including a girdle having leg portions associated therewith. Front and back panels are secured to the girdle to prevent see-through. The girdle is composed of elastic and non-elastic material which are joined at vertical seams. The front and back panels are also joined at the same vertical seams as the elastic and non-elastic material. A portion of one edge of the front and back panels may be unattached.

3,399,680
APPARATUS FOR THE TREATMENT OF VEGETABLE MATTER, IN PARTICULAR TOBACCO
Laszlo Egri, Basel, Switzerland, assignor to Tamag Basel A.G., Birsfelden, Switzerland, a corporation of Switzerland
Filed July 28, 1966, Ser. No. 568,457
Claims priority, application Switzerland, Aug. 2, 1965, 10,842/65
14 Claims. (Cl. 131—134)



1. Apparatus for the treatment of vegetable matter, in particular tobacco, by means of a gaseous medium, comprising a plurality of tower-like cells superimposed on top of one another to provide at least one column, each cell being laterally bounded by wall means, a gas permeable partition member situated within each cell for subdividing the latter into a charging compartment for the tobacco and a flow compartment for the gaseous medium, said charging compartment of each cell being arranged above said flow compartment thereof, conduit means for conveying the gaseous medium provided for each flow compartment, cover means for the uppermost cell of said column, floor means for the lowermost cell of said column, said cover means cooperating with said uppermost cell to provide therebetween an additional flow compartment, a conduit for the gaseous medium communicating with said additional flow compartment.

3,399,681
CIGAR NIB
Robert A. Lodi, 1730 Victor St., Bronx, N.Y. 10462
Filed July 7, 1965, Ser. No. 470,042
2 Claims. (Cl. 131—189)



A cigar nib having a head portion and a finger portion with a transverse passage extending between opposite faces of the head portion, the passage communicating with longitudinal channels in opposite faces of the finger portion, with the channel being adapted to extend inward of a cigar end when the finger portion is inserted within the cigar end.

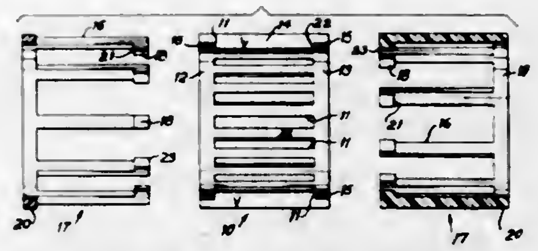
3,399,682
METHOD OF SIMULTANEOUSLY PERMANENTLY DYEING AND WAVING HUMAN HAIR
Toshio Isaji, Aichi-gun, Aichi-ken, Japan, assignor to Kabushiki Kaisha Hoyu Shokai, Higashi-ku, Nogoya-shi, Japan, a joint-stock company of Japan
No Drawing. Filed Aug. 5, 1963, Ser. No. 300,043
7 Claims. (Cl. 132—7)

1. A method for the permanent dyeing and waving of human hair comprising treating said hair with an aqueous solution containing about 1–7 percent by weight of a water-soluble mercapto compound selected from the group consisting of thioglycolic acid, thiosuccinic acid, thiolactic acid, and thiophenol, and about 0.5 to 5 percent by weight of a chromium complex of a O-O′ dioxyazo compound having at least one sulfonic acid radical, wherein said chromium complex is selected from the group consisting of a chromium complex derived from (1-amino-6-nitro-2-naphthol-4-sulfonic acid→1-naphthol-8-sulfonic acid), the chromium complex derived from (1-amino-2-naphthol-4-sulfonic acid→3-methyl-2-(m-sulfophenyl)-5-pyrazolone), the chromium complex derived from (1-amino-6-nitro-2-naphthol-4-sulfonic acid←2-naphthol), the chromuim complex derived from (1-amino-2-naphthol-4-sulfonic acid→1-naphthol-8-sulfonic acid), the chromium complex derived from (5-chloro-6-anisidine→G-acid).

3,399,683
METHOD FOR WAVING AND STYLING HAIR
Arthur W. Forbriger, Indian Hill Village, and Alvin J. Piller, Green Township, Ohio, assignors to The Realistic Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Apr. 11, 1966, Ser. No. 541,479
7 Claims. (Cl. 132—7)

1. In a process of treating hair to impart a permanent set and style thereto which includes the steps of treating the hair with a reducing agent for keratin and then treating the hair with an aqueous solution of an oxidizing agent for reduced keratin, the improvement which comprises performing the reducing step on a rod of sufficiently small circumference to deform the hair, removing the hair from such rod before performing the oxidizing step, setting the hair, and performing the oxidizing step while the hair is set.

3,399,684
HAIR CURLER
Joseph Meli, 11 Middle Lane, Jericho, N.Y. 11753
Filed Mar. 12, 1965, Ser. No. 439,334
2 Claims. (Cl. 132—40)



This invention relates to an expandable hair curler so that curls of varying width may be obtained as desired. This objective is obtained herein by the use of a central cylindrical cage and a pair of slidably interlocking cylindrical end pieces, each having a plurality of finger elements for slidably engaging said central cage, in captive relationship.

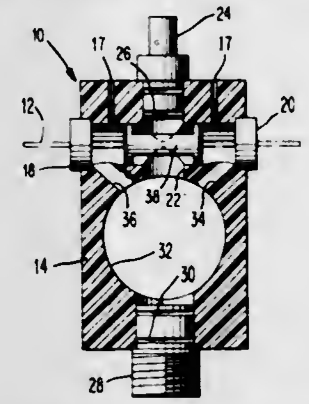
3,399,685

MODULAR SYSTEM FOR A CONTINUOUS ELECTROLYTIC DEPOSITION PROCESS FOR WIRE

Ernest W. Jones, Philadelphia, Pa., Joseph S. Mathias, Riverton, N.J., and Vladimir R. Weiss, Audubon, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 2, 1966, Ser. No. 524,587

11 Claims. (Cl. 134—64)



A wire plating module which includes a static agitating means. The static agitating means is arranged to provide a maximum turbulence by providing staggered conduits which include radial input passageways and radial output passageways arranged orthogonally thereto. Maximum turbulence is required in the plating of an alloy since one constituent thereof plates out faster than the other constituents and the extreme turbulence prevents the depletion of the faster plating constituent.

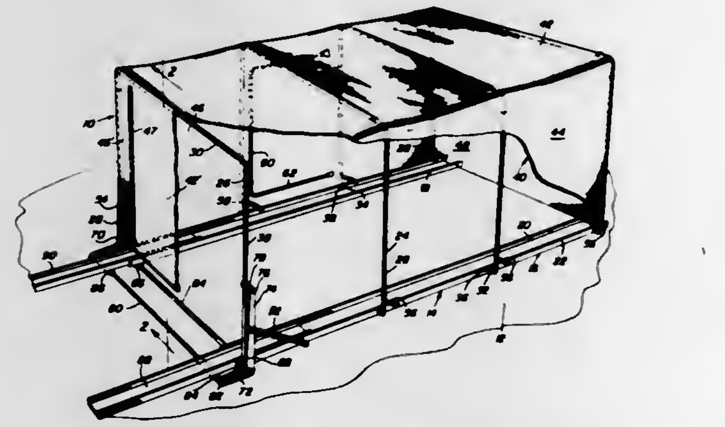
3,399,686

PORTABLE GARAGE

Clarence V. Horton, P.O. Box 762, Greeley, Colo. 80632

Filed Jan. 26, 1967, Ser. No. 611,884

10 Claims. (Cl. 135—1)



A collapsible vehicle shelter of lightweight construction adapted to be readily manually transported from one location to another and including treadle means over which the wheel of an associated vehicle may be moved to automatically erect the vehicle shelter over the vehicle, the shelter also including anchor means upon which at least one of the associated vehicle wheels is adapted to rest so as to anchor the lightweight shelter to the ground against unwanted movement by high winds.

3,399,687

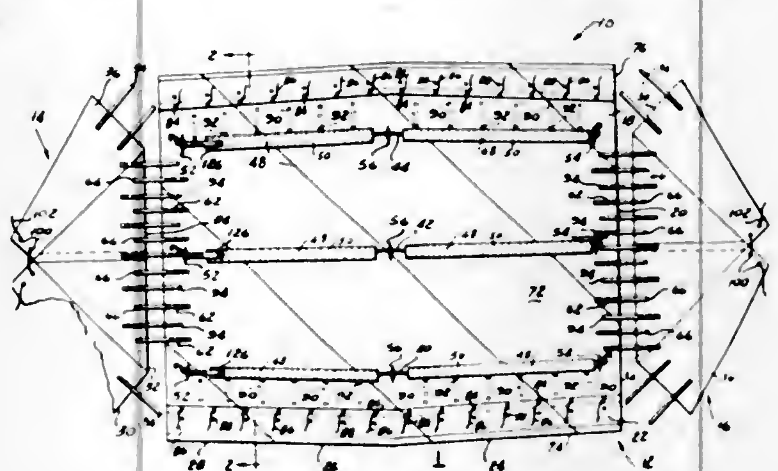
SIMPLIFIED BOAT CANOPY

Leonard P. Frieder, Clarks Green, Pa., assignor to Gentex Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 27, 1966, Ser. No. 545,600

22 Claims. (Cl. 135—6)

In general my invention contemplates the provision of a simplified boat canopy having a boat-carried frame made up of transverse arches carrying a cover provided with catenaries adapted to be releasably secured to the arches. I provide arch-engaging ties on both sides of the top at each end thereof and I form openings in the cover to permit the catenary couplings to pass through the cover so that the cover is reversible. I provide readily releasable adjustable means for tensioning the cover on the frame.



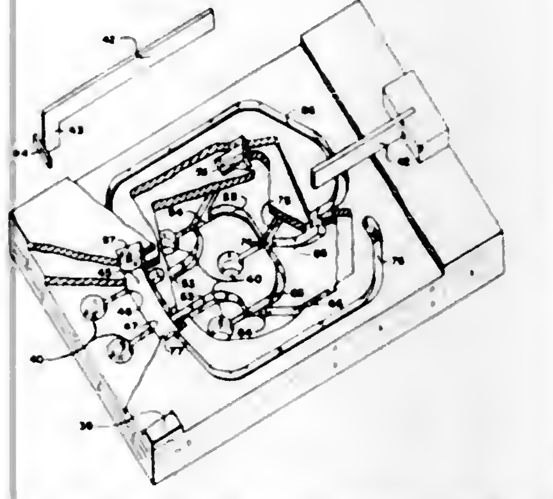
3,399,688

MECHANICALLY ENTRAINED FLUIDIC OSCILLATOR

William J. Westerman, Jr., Winter Park, Fla., assignor to Martin-Marietta Corporation, Middle River, Md., a corporation of Maryland

Filed Apr. 1, 1965, Ser. No. 444,561

4 Claims. (Cl. 137—81.5)



This invention relates to a mechanically entrained fluidic oscillator having a very stable frequency and utilizing a plurality of fluidic components. The physical arrangement includes an oscillatory member, a bistable fluid element for powering the oscillatory member, and a pair of monostable fluid elements operated by said oscillatory member, arranged to cause the switching of said bistable element at the correct time to assure a very stable frequency. Switching occurs in response to the time at which the oscillatory member interrupts a fluid flow to the control port of a monostable member. Advantageously, no close manufacturing tolerances are involved in the construction of this oscillator.

3,399,689

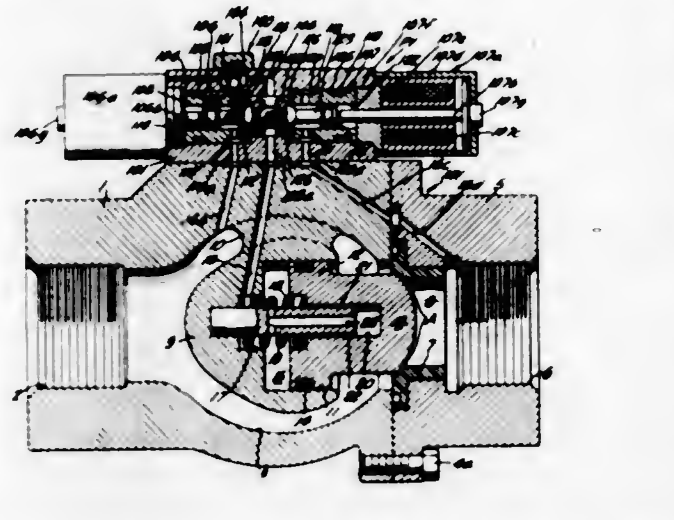
CONTROL VALVE INCLUDING INDEPENDENTLY OPERABLE PILOT VALVES

Robert S. Keane, Placentia, Calif., assignor, by mesne assignments, to Victor Equipment Company, San Francisco, Calif.

Filed Oct. 18, 1965, Ser. No. 497,330

27 Claims. (Cl. 137—220)

A control valve in which a main valve mounted in the flow line is actuated by a piston in a valve chamber by line pressure, the chamber having inlet and outlet exhaust ports controlled independently by normally closed pilot valves, which permit selective movement of the valve to any desired open, closed, and intermediate positions, the main valve having pressure areas effective to substantially hydraulically balance the valve in open position and enable regulating flow in the flow line. The valve chamber is also connected through an orifice with a cavity containing a resilient member having an internal void which permits it to deform when an opening shock pressure above normal is applied to the main valve in its closed position, thereby to enable unseating of the valve to relieve the shock pressure.



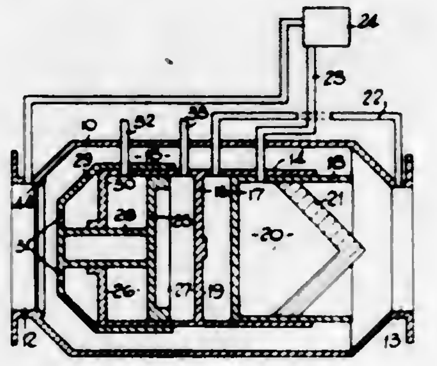
3,399,690

OVER PRESSURE CUTOFF

Kenneth Theodore Guy, Ruislip, England, assignor to Rotax Limited, London, England

Filed Aug. 30, 1966, Ser. No. 576,018

6 Claims. (Cl. 137—220)



1. A fluid control valve comprising in combination, a casing, an inlet and an outlet defined at opposite ends of the casing, a pair of closure members mounted within the casing and slidable relative thereto to control the flow of fluid through the casing, a pair of double acting pistons operatively connected to said closure members respectively, first passage means through which fluid under pressure from downstream of the valve can be applied to one side of one of said pistons to move the associated closure member to reduce the flow of fluid through the casing, second passage means through which fluid at a predetermined pressure can be applied to the other side of said one piston, so that the magnitude of the pressure downstream of the valve is controlled in accordance with the magnitude of said predetermined pressure, valve means operable to control the application of fluid under pressure to one or the other side of said other piston whereby the associated closure member can be moved to permit or prevent the flow of fluid through the valve, resilient means biasing said valve means into one position in which the closure member associated with said other piston is in a position to permit the flow of fluid through the valve, first fluid pressure operable means responsive to pressure downstream of the valve, said first fluid pressure operable means being arranged to move said valve means to another position against the action of said resilient means when the pressure downstream of the valve exceeds a safe value, latch means operable when said valve means is moved to said other position to retain the valve means in this position, and operator controllable means operable for releasing said latch means.

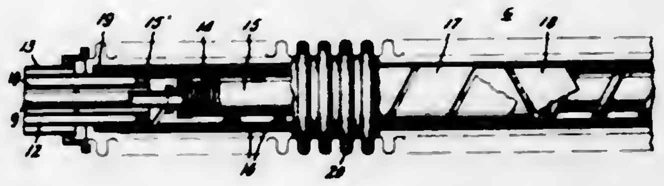
3,399,691

LIQUID TRANSFER SYSTEM

Karl F. Schoch, Scotia, and Andrew I. Dahl, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed Aug. 15, 1966, Ser. No. 572,526

14 Claims. (Cl. 137—375)



A liquid helium transfer system includes a liquid helium pump for transferring helium through a cooled flexible transfer line into a receiving vessel. A sensor in the vessel controls operation of the pumps so that a constant level of helium is maintained in the receiving vessel even though the helium is pumped at variable flow rates.

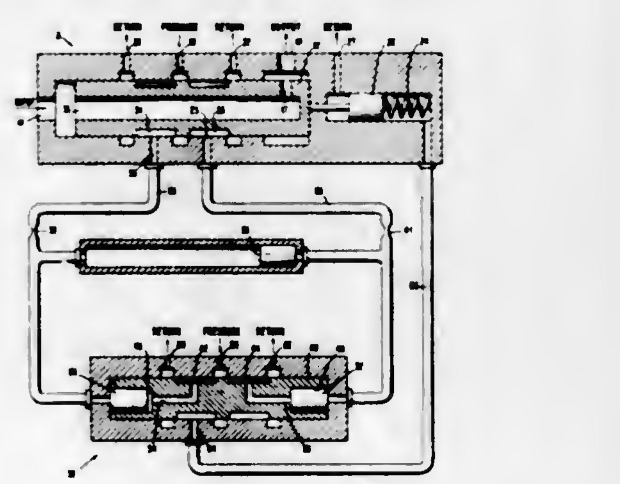
3,399,692

HYDRAULIC FLOW VALVE SYSTEM

Roland C. Hebert, New Windsor, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

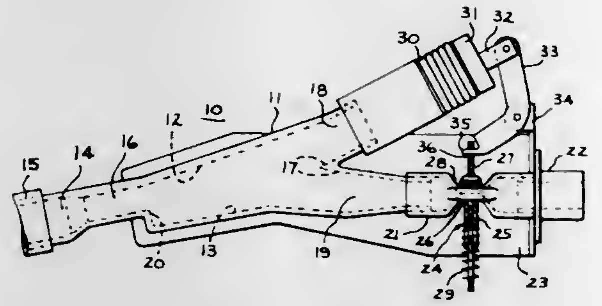
Filed May 6, 1966, Ser. No. 548,291

10 Claims. (Cl. 137—492.5)



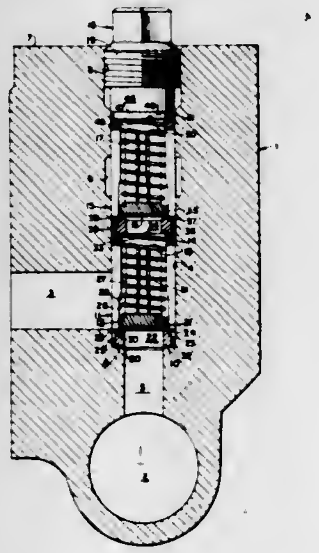
A control device for a flow valve which permits the flow valve to move at the instant that the hydraulic flow exceeds a first and lower level. The control device then provides a return force, the application of this return force being delayed until the hydraulic flow reaches a second and higher level. The return force is chosen to have a value slightly less than the force produced across the flow valve by the hydraulic flow at the second level whereby the flow valve remains in position up to the instant that the flow falls below the second level, at which time the flow valve is reset by the return force. When the flow valve returns to its initial position, the return force ceases.

3,399,693
FLUID DIVERTER CHECK VALVE
Daniel N. Toma, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed June 8, 1966, Ser. No. 556,209
7 Claims. (Cl. 137—494)



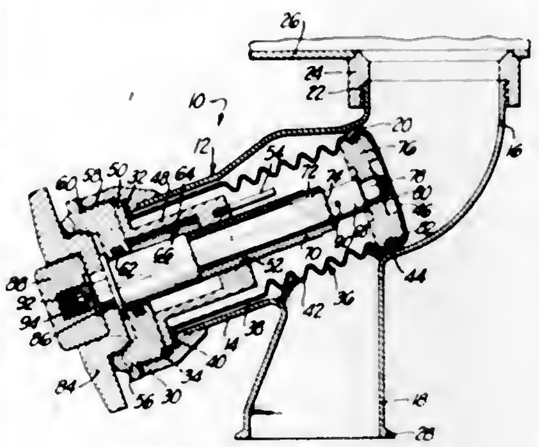
1. A valve including:
(a) a fluid conduit member adapted to be connected to a source of fluid flow, said conduit member including, a first passage and a second passage;
(b) a tube connected in fluid flow relationship with said second passage;
(c) closure means biased normally to close said tube against fluid flow;
(d) fluid responsive means connected in fluid flow relationship with said first passage and adapted to move in response to introduction of fluid therein;
(e) linkage means connecting said fluid responsive means and said closure means to open said tube to fluid flow in response to movement of said fluid responsive means;
(f) and means for directing fluid flow through said first passage to move said fluid responsive means and thereafter through said second passage and said tube.

3,399,694
HIGH SPEED, HIGH POWER RECIPROCATING PUMPS AND VALVE STACKS THEREFOR
John A. Vinson, Gainesville, Tex., assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Aug. 31, 1965, Ser. No. 483,958
3 Claims. (Cl. 137—512)



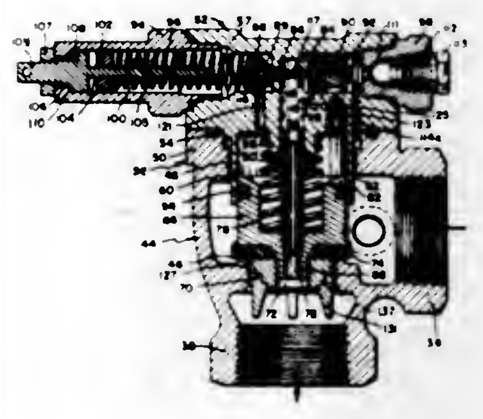
High power, high speed operation of reciprocating pumps, such as are used for water flooding in secondary recovery of oil, is achieved by use of an improved suction and discharge valve stack employing rigid valve discs each operating in a guiding and retaining cage, the valve discs and cages being so interrelated as to eliminate mechanical interference between the discs and cages during operating movement of the discs.

3,399,695
VALVE INCLUDING ELASTOMERIC BOOT WITH SEALING RING
Theodore A. Steblin, 54 Grace Walk, Pasadena, Calif. 91105
Filed Nov. 25, 1966, Ser. No. 596,927
8 Claims. (Cl. 137—551)



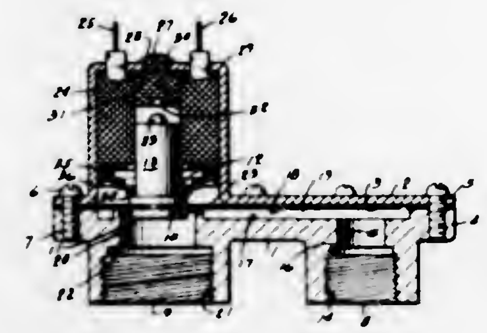
This invention is directed to a valve having an elastomeric boot. The boot has an outer flange which is clamped and sealed to the valve body. The boot is of one piece construction and extends around the valve disc. The boot seals against the valve seat in the closed position. By this construction, the moving parts are sealed from the valved fluid.

3,399,696
DIFFERENTIAL BY-PASS VALVE
Harry N. Shaw, Chicago, Ill., assignor to The Bastian-Blessing Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 22, 1966, Ser. No. 544,499
14 Claims. (Cl. 137—563)



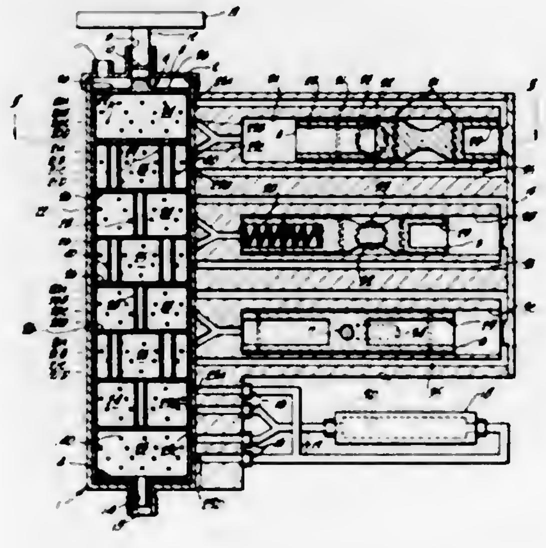
1. In a liquefied gas transfer system, the combination comprising a supply tank having liquefied gas therein under pressure, a displacement pump connected to the outlet of the supply tank, an outlet conduit for the pump connected to a point of use having a gauge pressure, a pressure differential by-pass valve interconnecting said conduit and said supply tank including a check valve closing in the direction of flow of liquefied gas to the supply tank, a main pressure differential responsive means for actuating said check valve, open conduit means for applying pump outlet pressure to one side of said main pressure responsive means to close the check valve, means for venting said one side of the main pressure responsive means to the pressure in the supply tank including a spring closed pilot valve, a pilot pressure differential responsive means controlling said pilot valve, means for continuously applying pump output pressure to one side of the pilot pressure responsive means to urge the pilot valve to its open position, means for continuously applying supply tank pressure to the other side of the pilot pressure responsive means and to one side of the pilot valve, conduit means interconnecting the other side of the pilot valve to said one side of said main pressure responsive means to reduce the pressure upon said one side of said main pressure responsive means for opening said main valve.

3,399,697
SOLENOID VALVE
Samuel H. Schwartz, Deerfield, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed July 6, 1965, Ser. No. 469,714
2 Claims. (Cl. 137—612.1)



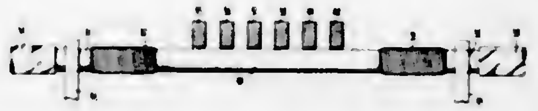
A valve assembly having a valve body with an inlet and an outlet and having a resilient diaphragm disposed to be substantially taut across the interior of the valve and having a solenoid actuated valve head wherein the valve head includes a portion of the resilient diaphragm and the armature of the solenoid assembly. The armature is securely attached to the diaphragm and fits loosely within the outlet valve seat to carry the diaphragm into and out of engagement with the seat thereby opening and closing the outlet.

3,399,698
MECHANICAL SEQUENTIAL CONTROL SYSTEM
John D. Bentley, 69 Columbia St., Pasadena, Calif. 91105
Filed June 29, 1964, Ser. No. 378,624
3 Claims. (Cl. 137—624.15)



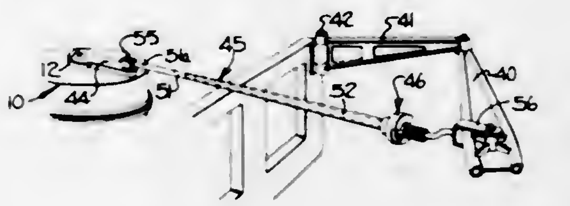
A valve device for cyclic operation through one or more pre-selected programs of an apparatus actuable bidirectionally by a pressurized fluid. The device includes a housing having a cylindrical bore, and a hollow cylindrical valve member is fitted snugly in the bore to be rotatable and also to be movable axially between two positions. Fluid fed to the housing is gated to and from the apparatus through radial ports in the valve member and associated ports in the housing as the member is rotated. The operational program established by the device is altered by moving the valve member axially in the bore.

3,399,699
FLUID FLOW CONTROL VALVE
George B. Greene, Lafayette, Calif., assignor to Green Engineering Company, a corporation
Filed Sept. 21, 1964, Ser. No. 397,988
2 Claims. (Cl. 137—637)



A fluid flow control system utilizing a fluid-tightly wound spring which may be flexed by mechanical means to open the turns of the spring, thereby permitting fluid flow between the spring's interior and exterior. A perforated paper tape reader and a bail valve utilizing the fluid-tightly wound spring is also shown and described.

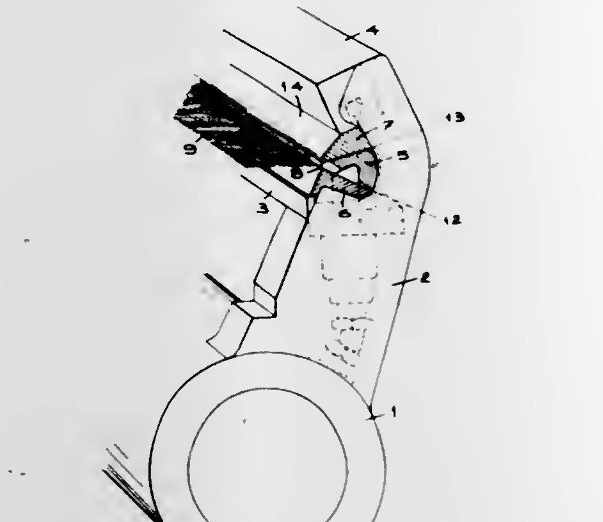
3,399,700
WEFT-INSERTER DRIVE FOR SHUTTLELESS LOOMS
Walter J. Crenshaw, Clemson, S.C., and William P. Durst, Atlanta, Ga., assignors to Riegel Textile Corporation, Ware Shoals, S.C., a corporation of Delaware
Filed Jan. 6, 1967, Ser. No. 607,718
9 Claims. (Cl. 139—123)



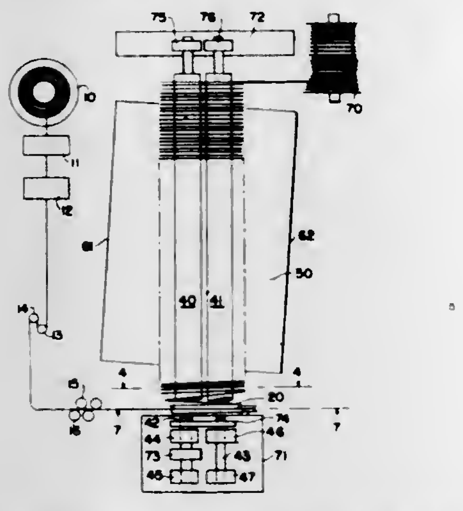
An apparatus for manually disconnecting the drive of the weft-inserting member of a shuttleless loom from a central motion mechanism, especially to enable reverse operation of the loom for "finding the pick." A locking means also is provided for locking the weft-inserting member against unintentional movement when the drive is disconnected.

3,399,701
REED FOR A LOOM
Lambertus te Strake, Deurne, Netherlands, assignor to N.V. Machinefabriek L. te Strake, Deurne, Netherlands, a Dutch company
Filed Nov. 2, 1965, Ser. No. 506,066
Claims priority, application Netherlands, Nov. 3, 1964, 6412786
3 Claims. (Cl. 139—188)

A reed for a jet-operated loom, comprising upper and lower bars that support reed blades, upper and lower covers which extend from the beating sides of the upper and lower bars, respectively; which have converging opposed surfaces for delimiting the upper and lower mats of warp threads forming the shaft; and which have closely spaced outer edges extending adjacent to the woven fabric, the reed being mounted to pivot upon an axis which is substantially spaced, on the fabric side, from a plane which is perpendicular to the fabric and passes through the beaten edge of the fabric, so that during the beating movement of the reed, the lower cover passes just below the lower mat of warp threads and below the fabric and the upper cover is lifted off the upper mat of warp threads and the fabric.



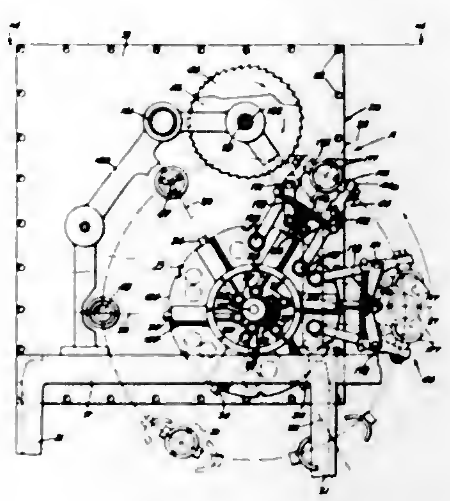
3,399,702
APPARATUS FOR TREATING WIRE AND RODS
Herbert Kenmore, New Milford, Conn.
(10 E. 40th St., New York, N.Y. 10016)
Filed Aug. 22, 1966, Ser. No. 574,203
9 Claims. (Cl. 140—1)



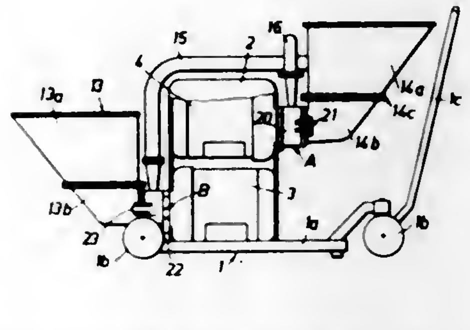
The invention relates to an apparatus for the treating of wire and similar products of the type in which the wire is continuously formed into a horizontal, travelling helix rotating and treated while in the form of the helix and comprises a wire propelling and helix forming device adapted to take up the wire, form it into a helix at unusually high speeds without slippage and deliver the wire in helix form directly to one or more horizontal supporting rolls which rotate at the same high speed as the wire helix.

3,399.703
ARTICHOKE PROCESSING MECHANISM
Raymond C. Schwacofer, 23496 Sunset Drive,
Los Gatos, Calif. 95030
Original application Sept. 15, 1965, Ser. No. 489,461, now Patent No. 3,374,881, dated Mar. 26, 1968. Divided and this application Jan. 15, 1968, Ser. No. 697,795
2 Claims. (Cl. 146—52)

An artichoke processing mechanism wherein an oil tight housing has a plurality of shafts journaled in axially parallel relation therein and interconnected by selected drive mechanism to a power drive mechanism. The mechanism includes a rock shaft having an indexing wheel journaled therein, and a plurality of selectively actuated artichoke gripping jaws, each jaw being mounted on a cam pin which can be rotatively adjusted and locked in adjusted position to provide a fine and easy adjustment for centering each pair of the jaws relative to processing stations located at selected positions around the indexing wheel. Oiling means oils all of the shaft bearings and other mechanism in the housing.



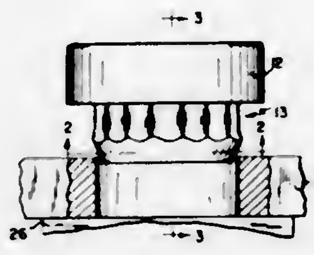
3,399,704
COMMINUTING APPARATUS
Fritz Otto, Hameln an der Weser, Germany, assignor, by mesne assignments, to Belder Trust, Reg. Vaduz, Liechtenstein
Filed Mar. 7, 1966, Ser. No. 532,215
Claims priority, application Germany, Dec. 11, 1965, St 24,752
8 Claims. (Cl. 146—182)



A comminuting apparatus comprises two comminuting units each of which includes a rotary comminuting member, a material admitting inlet and an outlet, and a motor, the motors being superimposed and having horizontal output shafts facing in opposite directions. The comminuting units are mounted on a common support. Means is provided on the support for connecting at the will of the user the outlet of at least one of the units with the inlet of the other of the units so as to make it possible to comminute the material in one of the units alone, in the other of the units alone, in both units simultaneously or first in one and thereupon in the other of the units.

3,399,705
SELF-STAKING INSERT
Arthur R. Breed, Euclid, and Edward A. Anderson, Cleveland Heights, Ohio, assignors to The Lamson & Sessions Co., Cleveland, Ohio, a corporation of Ohio
Filed Feb. 10, 1966, Ser. No. 526,604
14 Claims. (Cl. 151—41.73)

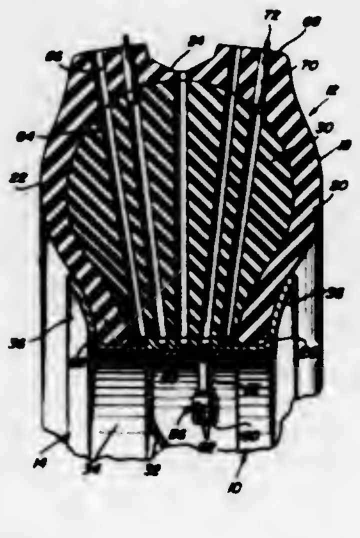
A self-staking insert having a polygonal shank wherein the sides are planar and adjacent sides of the polygon are joined by arcuately curved surfaces so as to provide a continuous peripheral surface which approaches circularity, a bulge portion at the leading end of the shank which is wider than the receiving hole if prepunched and which tapers to a circular end face.



3,399,706
PROCESS FOR TREATING RACING TIRES WITH PERCHLOROETHYLENE, NAPHTHA AND A RUBBER SOLVENT AND COMPOSITION
George Prusha, 50 Bronson St., Berea, Ohio 44017
No Drawing. Filed Oct. 5, 1965, Ser. No. 493,246
11 Claims. (Cl. 152—211)

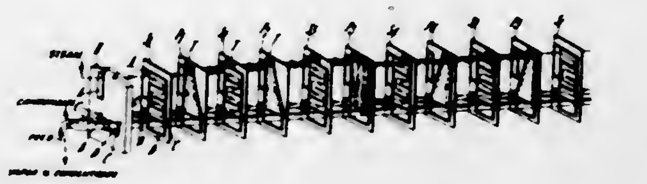
A composition comprising a major proportion of perchloroethylene, about 25 to about 30% of a high naphtha boiling at least at 300° F., and about 25% to 10% of a hydrogen-containing rubber solvent boiling below 300° F. is suitable for application to the tread portions of tires (particularly miniature racing tires) to decrease slippage, prevent dust pickup during races on a closed track. The composition is also applicable for treating belts, friction clutches and the like.

3,399,707
TIRE CONSTRUCTION
Gordon E. Williams, 113 Goddard St.,
Athol, Mass. 01331
Filed Nov. 12, 1965, Ser. No. 507,365
8 Claims. (Cl. 152—321)



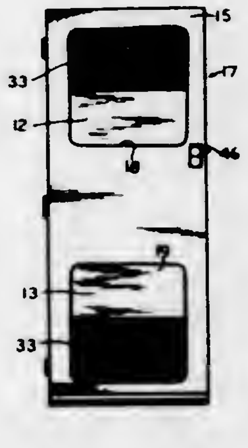
A generally solid tire construction for disposition between the bead retaining flange portions of a wheel rim with an annular space defined between the inner peripheral portion of the tire construction and the opposing portions of the wheel rim spaced intermediate the bead retaining flanges thereof, the tire construction including generally radial and circumferentially spaced cooling air passages opening radially outwardly of the tread portion of the tire construction and radially inwardly into the annular space between the wheel rim and inner peripheral portions of the tire construction.

3,399,708
PARALLEL FLOW PASSAGE, PLATE TYPE EVAPORATORS
John Dennis Usher, Redhill, and Ronald Hugh Linsdell, Crawley, England, assignors to The A.P.V. Company Limited, Crawley, England, a British company
Filed Apr. 7, 1966, Ser. No. 540,879
Claims priority, application Great Britain, Apr. 8, 1965, 15,011/65
8 Claims. (Cl. 159—28)



This invention relates to a plate evaporator in which the plates are arranged in one or more units, each unit providing a parallel flow path for the liquid in process and comprising plates defining alternating liquid boiling passages and steam heating passages. The number of rising boiling passages in a unit exceeds the number of falling boiling passages.

3,399,709
DOOR WITH ADJUSTABLE SCREEN PANEL
John Frederick Thompson, Neutral Bay, New South Wales, Australia (Flat 5, Wardell Court, corner Frazer and Wardell Roads, Marrickville, New South Wales, Australia 2204)
Filed Apr. 26, 1966, Ser. No. 545,422
Claims priority, application Australia, May 3, 1965, 58,272/65
9 Claims. (Cl. 160—37)

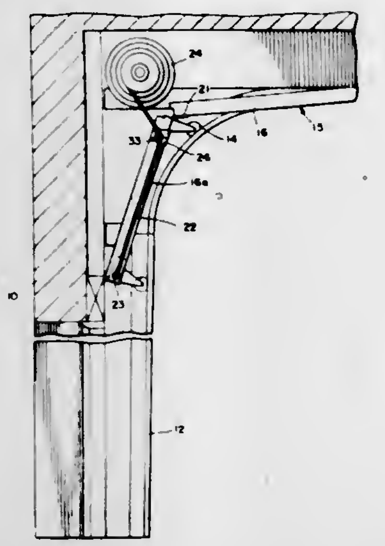


A door having upper and lower ventilating openings with slidable panels inside the door for opening or closing the openings.

3,399,710
CABLE BRAKE FOR OVERHEAD DOOR
Ray H. Neisewander, 1010 Edwards St.,
Springfield, Ill. 62703
Filed Jan. 25, 1967, Ser. No. 611,659
2 Claims. (Cl. 160—201)

A cable brake for overhead door which brings the door to rest in the raised position so that the door may be closed by exerting only a generally downward pulling force without exerting a substantial outward pulling force.

The cable brake is secured adjacent the top of the lowermost section or panel of the door and includes a sheave



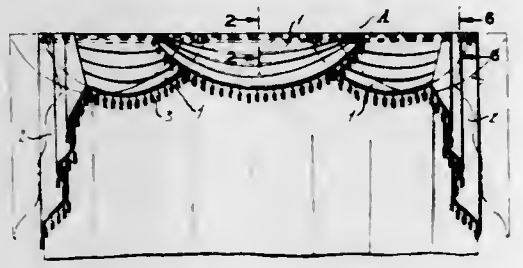
positioned in a U-shaped channel extending transversely to the door. The lifting cable is reeved about the sheave and confined therein by the side channels.

3,399,711
ORNAMENTAL WINDOW TREATMENT

Josef F. Stulac, Florissant, Joseph J. Cornish, Normandy, and Bruce B. Selkirk, Ladue, Mo., assignors to Midwest Curtain Company, St. Louis, Mo., a corporation of Missouri

Filed Apr. 5, 1967, Ser. No. 628,681

8 Claims. (Cl. 160—330)



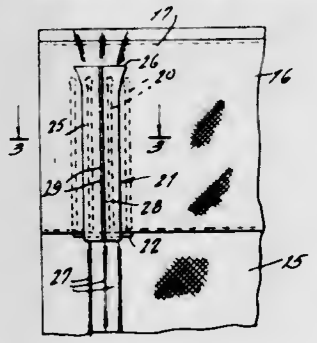
An ornamental window treatment comprised of a plurality of independent decorative units, including cascades, festoons and jabots, of predetermined dimensions for use in pre-selected combinations for ornamentation of a window opening; there being clip members for supporting said units upon a curtain rod in accordance with a prearranged pattern.

3,399,712
DRAPERY PLEAT FORMING AND SUPPORTING ASSEMBLY

Sidney Weisberg, Maplewood, N.J., assignor to Worthy Products Corp., New York, N.Y., a corporation of New York

Filed Mar. 10, 1966, Ser. No. 533,332

7 Claims. (Cl. 160—348)



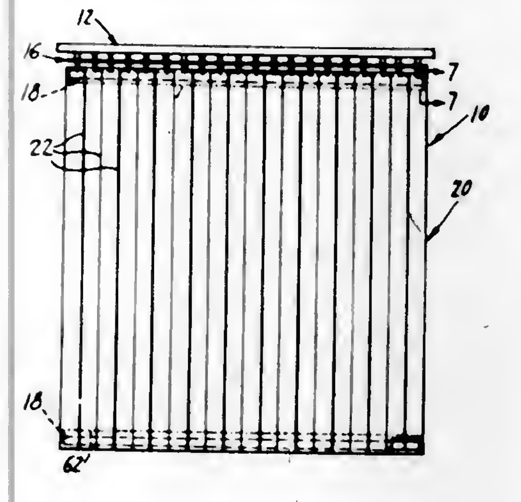
A drapery pleat forming and supporting assembly in which a plurality of spaced pins are swingably secured to a plurality of elongated fin members. The pins are received between the fins when the assembly is in the operative position so that individual pleats supported for their entire length are formed in the drapery.

3,399,713
DRAPERY HANGER

Reginald D. Wilson, 5025 Baltimore National Pike, Baltimore, Md. 21229

Filed June 24, 1966, Ser. No. 560,283

7 Claims. (Cl. 160—348)



A curtain structure is provided having pleat formers at the upper and lower ends mounted on a support from the uppermost pleat former.

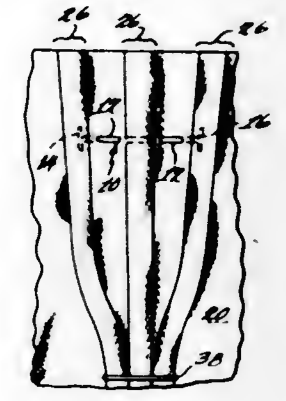
The curtain structure of the invention comprises pleat formers at the upper and lower ends thereof characterized by a plurality of nestable hinged plates having a concave side and a convex side. The mounting means of the invention comprises a trackway, a plurality of supports movably mounted on the trackway and a continuous fabric support characterized by a plurality of nestable hinged plates having a concave side and a convex side.

3,399,714
PERMANENTLY PLEATED DRAPERIES

Rhomie Hoyle Farrell, Swepsonville, N.C., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware

Filed Dec. 8, 1966, Ser. No. 600,193

8 Claims. (Cl. 160—348)



A permanently pleated drape in which the shape of each crimped-in pleat is permanently retained by a mechanical retainer extending through the folds of the pleat generally at a right angle thereto. The retainer permits some movement of the folds relative to each other but prevents complete opening and flattening of the folds. In the preferred embodiment the retainer is constructed of flexible plastic in the form of a narrow stem portion having slightly enlarged ends, the latter acting as barbs to prevent withdrawal of the retainer from the fabric.

The retainer is initially inserted through the fabric with the aid of a hollow needle which is subsequently removed.

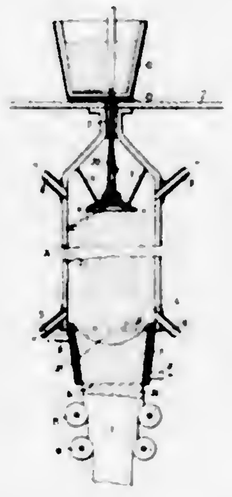
3,399,715
METHOD FOR THE CONTINUOUS CASTING OF METAL

Fritz Harders, Post Ergste uber Schwerte (Ruhr), and Franz Oeters, Dortmund, Germany, assignors to Dortmund-Horder Huttenunion Aktiengesellschaft, Dortmund, Germany

Filed Sept. 3, 1965, Ser. No. 484,796

Claims priority, application Germany, Sept. 22, 1964, D 45,482

7 Claims. (Cl. 164—66)



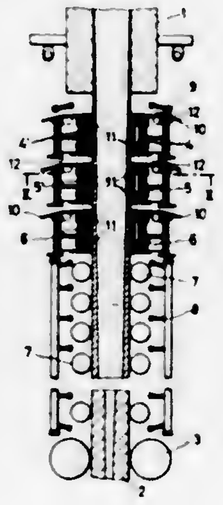
Method for continuous casting of metal by passage through a vertical chamber wherein solidification of cooling takes place includes dispersing the molten metal on introduction to the cooling chamber so that it falls as droplets, circulating a gaseous coolant through the falling stream of droplets within the tower so as to cool the droplets, reuniting the cooled droplets at the lower end of the chamber, and subjecting the resultant mass to pressure so as to complete solidification.

3,399,716
METHOD FOR COOLING HOT METAL, ESPECIALLY CONTINUOUSLY CAST METAL

Irving Rossi, Morristown, N.J., and Armin Thalmann, Uster, Switzerland, assignors to Concast Incorporated, New York, N.Y.

Filed Jan. 17, 1966, Ser. No. 520,921

14 Claims. (Cl. 164—89)



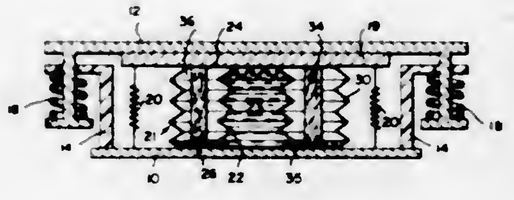
Hot metal, such as a strand of metal emerging from a continuous casting mold, is cooled by positioning a cooled surface adjacent a surface of the metal with a gap between the surfaces. A liquid coolant under controlled pressure is circulated through the gap and turbulence is generated in the flow of coolant in the gap to penetrate a film of vaporized coolant that forms on the surface of the metal to extract heat from the film by intimate contact with it. The turbulence and resultant cooling effect is controlled by varying the pressure of the coolant in the gap.

3,399,717
THERMAL SWITCH

Ronald E. Cline, Woodland Hills, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

Filed Dec. 27, 1966, Ser. No. 604,957

8 Claims. (Cl. 165—32)



Briefly, this disclosure relates to a thermal switch incorporating heat pipe thermal flow control. A thermal switch is a device which provides a variable thermal conductance and is generally temperature actuated. Thermal switches use various actuation devices, such as for example, bimetals, expanding fluids, and the expansion of materials undergoing a phase change are the most common. However, almost all such switches use flexible metal conductors for heat transfer. This disclosure teaches the use of a heat pipe as a heat transfer medium. The heat pipe assembly incorporates an expansible chamber containing a capillary element and a quantity of liquid sufficient to keep the capillary element wet and a saturated vapor atmosphere within the chamber over a predetermined range of temperatures. Many liquids can be used but pure water which is deionized and distilled is preferred. The water boils at the hot surface of the heat pipe thus absorbing heat from the hot surface. Vapor is condensed at the cold surface which completes the transfer of heat from the hot surfaces to the heat sink. The water condensed at the cold surface is then transferred by capillary action of the capillary element to the hot surface. This device operates in any attitude and its operation is independent of gravity or ambient pressure.

3,399,718
STEAM OPERATED HOT WATER HEATER

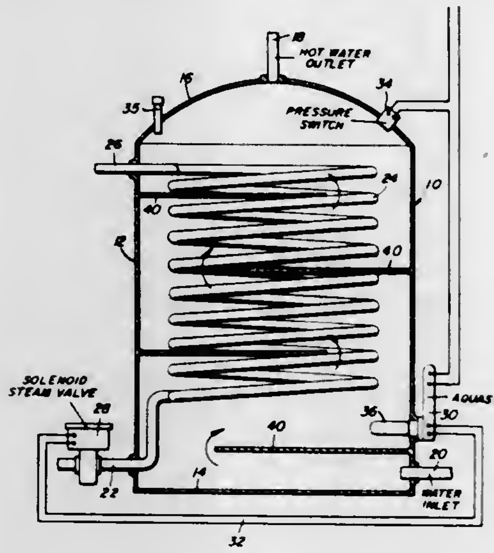
James A. Phillips, Jr., Quantico, Md., assignor of thirty percent to James A. Phillips, Sr., and Leah M. Phillips, jointly, Quantico, Md.

Filed Feb. 8, 1965, Ser. No. 431,018

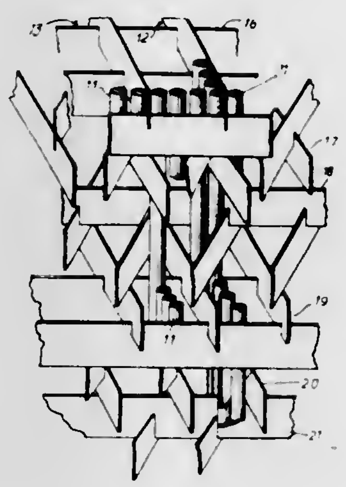
7 Claims. (Cl. 165—39)

1. A hot water tank, means for heating water in said tank, a water inlet pipe projecting into said tank near the bottom thereof, control means provided on said hot water tank adjacent to said water inlet, said control means being adapted to respond to temperature changes within said hot water tank and being electrically connected to a solenoid steam valve, a steam inlet pipe projecting into said tank near the bottom thereof, said solenoid steam valve being connected to said steam inlet pipe and being adapted to close and open the passageway for steam in said steam inlet pipe, a water outlet pipe opening into

said hot water tank at an elevation above said inlet pipe, and a steam condensate outlet pipe projecting into said tank near the top thereof, said means for heating water in said tank being connected to said steam inlet pipe and said steam condensate outlet pipe.

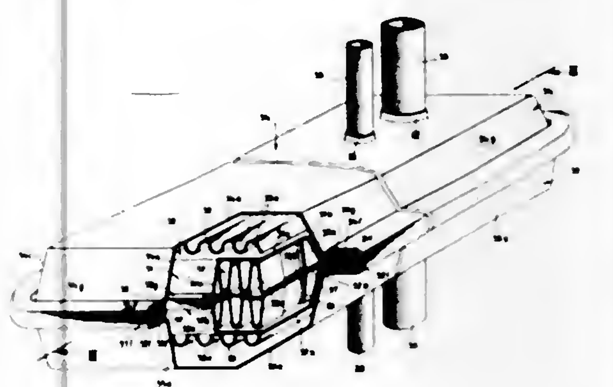


3,399,719
LOCATING STRUCTURE
John Alan Forrest, Etobicoke, Ontario, Canada, and George Oliver Jackson, Timperley, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Dec. 9, 1965, Ser. No. 512,693
Claims priority, application Great Britain, Dec. 23, 1964, 52,258/64
10 Claims. (Cl. 165—47)



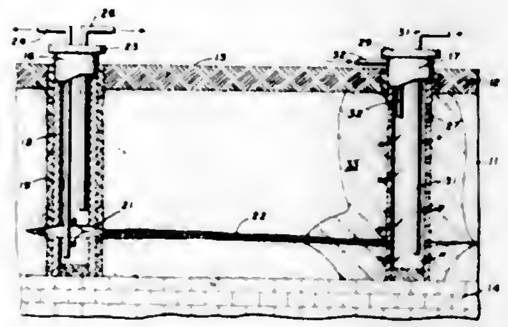
In an assembly of elongate heat exchange elements (for example nuclear reactor fuel rods or pins) arranged parallel to one another in a regular lattice array forming straight rows of elements with gaps between the rows in at least two directions, a locating structure is provided by strips stacked crosswise and on edge to form a stack over substantially the whole heat exchange length of the element array, the strips of each layer in the stack being only in gaps which run in the same direction and being disposed in less than half the number of such gaps, whereas the stack as a whole provides at least one strip in every gap in each direction. The effect is to distribute the locating structure far more extensively in a lengthwise direction than hitherto, and thereby to arrange that the area available for flow is uniform at all levels of the heat exchange length, instead of imposing severe flow restrictions by the hitherto common constructions which employed complete grid structures placed at intervals along the heat exchange length.

3,399,720
PLATE HEAT EXCHANGER
Hans Doelz, Halle, Edgar Hipperling, Reichenbach, and Joachim Seidel, Mylau, Germany, assignors to VEB Apparatebau Mylau, Mylau, Plauen, Germany
Filed Sept. 30, 1966, Ser. No. 583,405
13 Claims. (Cl. 165—166)



A plate type heat exchanger defining two substantially U-shaped paths for the fluid media undergoing heat exchange, one of which surrounds the other thereof, said paths separated from each other by relatively thin layers of heat conducting material which take up heat from the warmer fluid and transmits it to the cooler fluid with the cross-sectional area of the cooler fluid path being greater than that of the warmer fluid path.

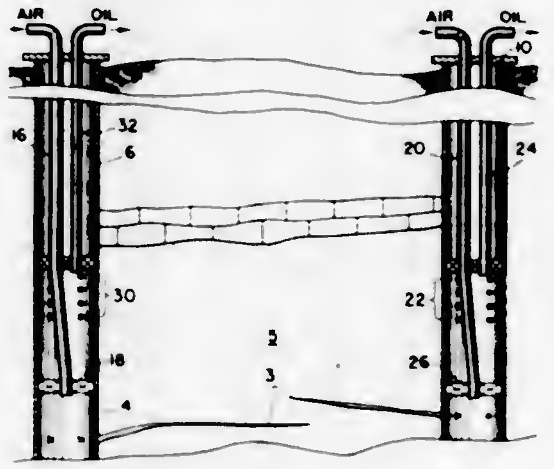
3,399,721
FORWARD IN SITU COMBUSTION METHOD FOR RECOVERING VISCOUS HYDROCARBONS
Lloyd K. Strange, Grand Prairie, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Apr. 7, 1967, Ser. No. 629,275
4 Claims. (Cl. 166—2)



This specification describes:

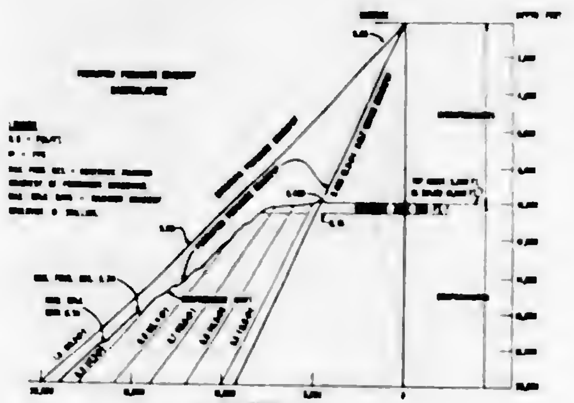
A method for the recovery of viscous hydrocarbons from a subterranean formation employing forward in situ combustion. A fracture extends, between first and second spaced wells, in the formation. Fluid can flow only between the first well and the fracture. However, fluid can flow between the entire formation thickness and the second well. A forward combustion front is passed into the formation a certain distance from the second well. The area traversed by the front is then made water-wet. Thereafter, another forward combustion front is passed into the formation principally along the fracture from the first well. This front is moved toward the second well until it has substantially traversed the formation between the spaced wells. Then, the formation between these wells is saturated with water introduced thereinto from the first well. During the preceding operations, displaced oil may be recovered from one, or both, of the wells. The latter combustion front is moved forward in the formation by a combustion-supporting gas. This gas is controlled in its flow for substantial oxygen utilization at the combustion front and the appearances of only minimal amounts of free oxygen at the second well. The free oxygen appearing at the second well is prevented from causing destructive combustion therein by employing a cooling fluid.

3,399,722
RECOVERY OF PETROLEUM BY A CYCLIC THERMAL METHOD
Thomas S. Buxton and James E. Pease, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed May 24, 1967, Ser. No. 640,905
11 Claims. (Cl. 166—2)



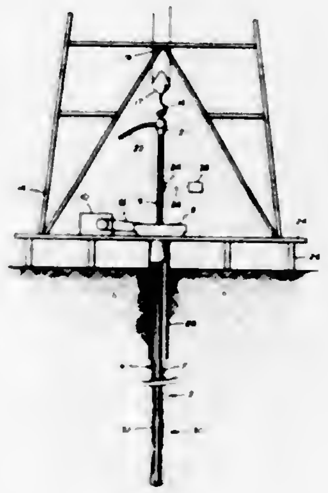
An improved thermal recovery method is described in which a zone of high permeability is first created in a lower portion of the pay, after which ignition at that level is effected and combustion carried out for a period sufficient to heat the formation to a temperature ranging from about 700° F. to about 2,000° F. for a distance of at least 20 feet from the well; thereafter the well is killed by introducing a fluid into the lower portion of the pay, the well casing at the upper portion of the pay is perforated and oil of reduced viscosity is produced therefrom until the temperature of the oil approaches the original formation temperature, thereafter combustion in the aforesaid lower portion killing the well and subsequent production are repeated as described above. It is contemplated that an operation of this type can be carried out in a multi-well field with the process being employed in one or more of the wells simultaneously but at different stages.

3,399,723
PROCESS FOR DRILLING GEOPRESSURES
Charles A. Stuart, Metairie, La., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 357,485, Apr. 6, 1964. This application Oct. 10, 1966, Ser. No. 596,361
25 Claims. (Cl. 166—4)



A method for drilling a borehole in a hydropressure-geopressure environment wherein a light weight mud is used to drill the hydropressure section of the borehole. The light weight mud is used until the target depth is reached or a kick is encountered and penetration of the geopressure section confirmed. A kick is defined as a flow into the borehole caused by the effective hydrostatic pressure of the mud column being less than the pore pressure of the formation. The kick is controlled and the borehole may be drilled deeper or protective casing may be set.

3,399,724
ACOUSTIC METHOD FOR TREATMENT OF STUCK PIPE IN A WELL
Warren B. Brooks, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Dec. 5, 1966, Ser. No. 599,301
16 Claims. (Cl. 166—4)



1. In a method of loosening a pipe string stuck at a subterranean location within a well, the steps comprising:
   (a) securing said pipe string against torsional vibration at a first point P_1, and
   (b) applying to said pipe string at a second point P_2 torsional vibrations at a frequency producing a wavelength λ satisfying the relationship:

$$\lambda=4l/n_1$$

   wherein:
      l is the distance between P_1 and P_2
      n_1 is an integer of the arithmetic progression, $n_1=1, 3, 5 \ldots,$
   and within the range λ_1 to λ_2 as defined by the relationships:

$$\lambda_1=\frac{8L}{2n_2+1}$$

$$\lambda_2=\frac{8L}{2n_2-1}$$

   wherein:
      L is the distance between P_2 and a point P_3 at the subterranean location at which the pipe is stuck, and
      n_2 is an integer of the arithmetic progression $n_2=2, 4, 6 \ldots.$

11. In a method of determining the subterranean location at which a pipe string is stuck within a wellbore, the steps comprising:
   (a) maintaining the upper portion of said pipe string adjacent the surface of said well in a condition permitting rotational movement,
   (b) applying a torsional force on the upper portion of said pipe string,
   (c) releasing said torsional force to cause free torsional oscillation of said pipe string, and
   (d) measuring the frequency of said torsional oscillation to determine the location at which said pipe string is stuck.

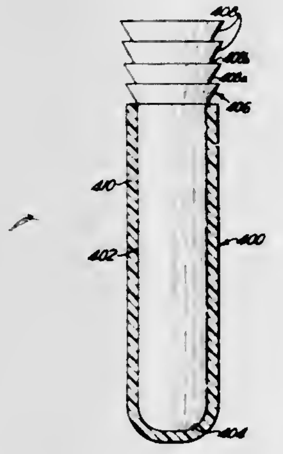
3,399,725
WATER FLOODING PROCESS FOR THE RECOVERY OF PETROLEUM AND IMPROVED WATER FLOODING PROCESS

David J. Pye, Alamo, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 329,256, Dec. 9, 1963. This application July 29, 1966, Ser. No. 568,766
4 Claims. (Cl. 166—9)

An improved water flooding process is disclosed in which water-soluble, substantially linear organic polymers characterized by a resistance property of at least 1.5 are dissolved in the aqueous flooding medium in an amount from 0.001 to about 0.2 percent by weight. The aqueous flooding medium is substantially free of molecular oxygen. The improved process produces surprising benefits when applied to the secondary recovery of oil having a viscosity within the range from 0.1 to 6 centipoises, especially in formations with high variability in permeability distribution and opportunity for cross flow.

3,399,726
METHOD OF PLUGGING PERFORATIONS IN CASINGS

Martin H. Harris, Pittsburgh, James W. Jennings, Verona, and Francis M. Smith, Gibsonia, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed May 23, 1966, Ser. No. 552,163
6 Claims. (Cl. 166—42)



The invention comprises casing plugs having an end cap having a largest diameter slightly larger than the diameter of the casing perforations and a tapering body. The plugs may be either permeable or impermeable to fluids. The method comprises introducing the plugs into a well one at a time in a carrier liquid and transporting them to the perforations where the liquid flowing into the perforations causes the plugs to turn and seat therein. Several system parameters are adjusted to assure that the hydrodynamic drag exerted upon the nose of the plug is sufficient to displace the plug laterally into the perforation.

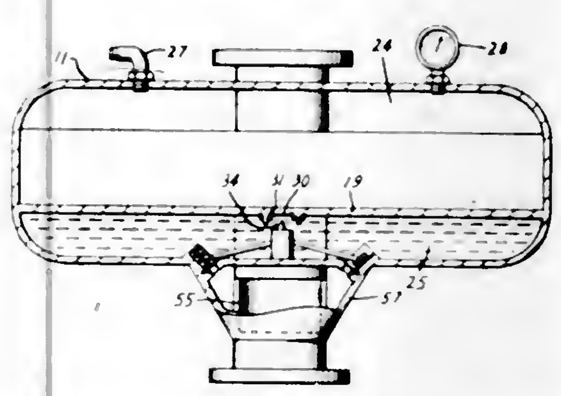
3,399,727
METHOD FOR PROPPING A FRACTURE

Harold L. Graham and Othar M. Kiel, Houston, Tex., assignors to Esso Production Research Company, a corporation of Delaware
No Drawing. Filed Sept. 16, 1966, Ser. No. 579,822
10 Claims. (Cl. 166—42)

A method for propping a fracture in a subterranean formation using a fluid suspension of impermeable proppant particles. The particles are a ceramic material having internal pores or cells containing a material with a substantially lower density than the ceramic material, for example, a glass sphere having internal voids or bubbles. The low average density of the particles will reduce their tendency to settle in the fluid suspension. The cellular structure will permit localized, partial crushing of the particles rather than complete fragmentation under applied load. Localized crushing will increase the contact area between the particle and the fracture wall which will result in improved load carrying by the proppant particles.

3,399,728
CONDUIT CLOSURE APPARATUS

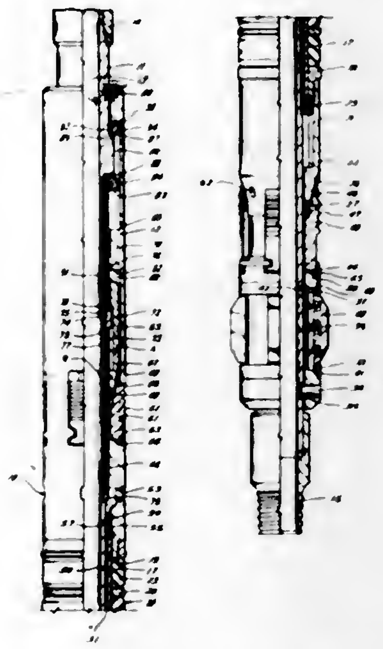
Allan R. Taylor, 1700 Mustang Trail, Rte. 3, Humble, Tex. 77338
Filed Dec. 1, 1966, Ser. No. 598,399
13 Claims. (Cl. 166—53)



An apparatus for automatically closing off fluid flow through a conduit, such as an oil well casing, in response to a change in fluid pressure in the conduit. It includes a body member connected to the conduit and having a chamber for receiving and storing a supply of pressurized gas, such as air. Means are provided for applying the pressure of this supply of gas to operate closure means to thereby close off fluid flow through the conduit. In the oil industry, the apparatus may be termed an "Automatic Blow-out Preventor" or "Auxiliary Blow-out Preventor."

3,399,729
RETRIEVABLE WELL PACKER

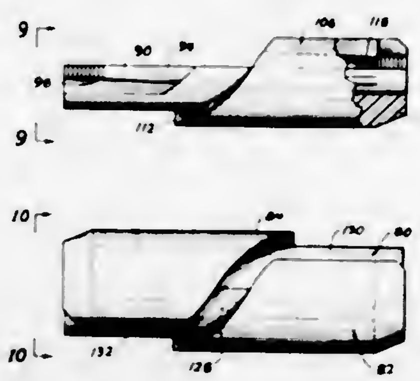
Howard L. McGill, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Dec. 30, 1966, Ser. No. 606,272
16 Claims. (Cl. 166—120)



A well packer apparatus wherein the expanding anchor comprises two distinct means, one being mechanically actuated and adapted to anchor the packer against movement in one direction and the other being hydraulically operated and adapted to anchor the packer against movement in the other direction. Structure is provided for positively preventing premature operation of either of the anchor means. Additionally, an integral bypass device is included for selective pressure equalization as well as a pressure balancing system.

3,399,730
ROD GUIDE OR PARAFFIN SCRAPER

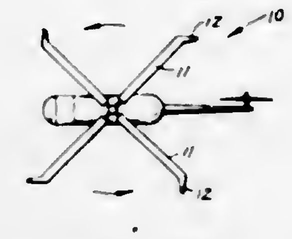
Melvin E. Pourchot, Shawnee, Okla., assignor to Central Research, Inc., Shawnee, Okla., a corporation of Oklahoma
Filed Feb. 9, 1967, Ser. No. 614,898
8 Claims. (Cl. 166—176)



A guide, a paraffin scraper, or the like, for a reciprocating rod wherein the guide is constructed of two substantially identical half sections adapted to be disposed adjacent the opposite sides of the outer periphery of the rod. Telescopic orientation of the two half sections wedges the guide or scraper around the outer periphery of the rod.

3,399,731
ROTOR-BLADE

Algy F. Giles, Jr., 6010 Belneath, Houston, Tex. 77033
Filed July 18, 1967, Ser. No. 654,232
1 Claim. (Cl. 170—159)

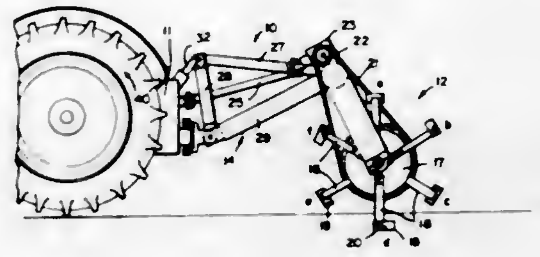


A rotor-blade for helicopters which imparts a smoother ride and greater lift at low speeds with a smoother ride at high speeds also. A swept-back tip at the end of each blade. This design greatly reduces the audible sound produced at the tips of the rotor.

3,399,732
CULTIVATING MEANS AND METHOD

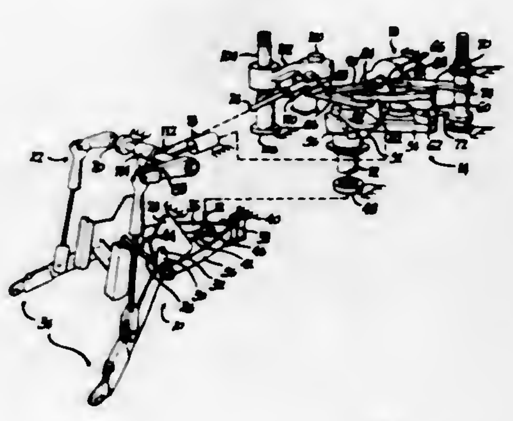
John C. Prejean, Lafayette, La. 70501
Filed Oct. 14, 1965, Ser. No. 495,925
7 Claims. (Cl. 172—1)

A cultivating means and method is provided to prepare level mud-covered surfaces for rice growing. A cultivating machine comprises a frame, a central elongated axle and a plurality of cultivating blades positioned to extend radially outwardly from the axle and move in a circular path around the axle with the blades being positioned perpendicular to the ground in their lowermost position. Thus, ridges of soil can be moved forwardly over a wet field while simultaneously moving the ridges in a side to side direction to form a level layer of loosely compacted soil over a substantially level ground base.



3,399,733
LOAD-DEPTH CONTROL LINKAGE

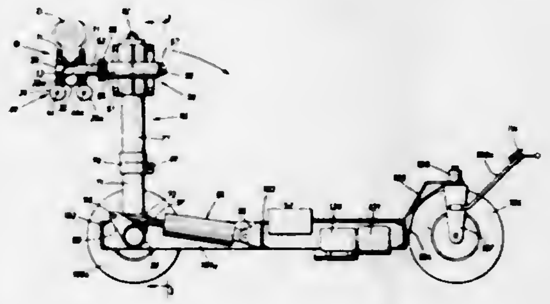
Max R. North, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed July 26, 1965, Ser. No. 474,927
8 Claims. (Cl. 172—9)



A tractor hydraulic lift cylinder valve control linkage automatically and selectively operated either in response to the position of the draft links of the tractor or in response to the draft force imposed on the links or to mixed conditions of draft and position of the links. The selection of the conditions desired to be sensed are made manually and consists in rearranging certain of the links of the control linkage.

3,399,734
MOBILE ROCK DRILL CARRIAGE

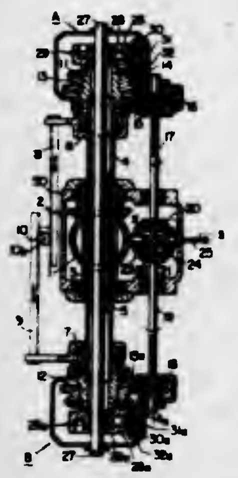
John C. Folinsbee, Lynn Lake, Manitoba, Canada, assignor to Sherritt Gordon Mines Limited, Toronto, Ontario, Canada, a company of Canada
Filed June 6, 1966, Ser. No. 555,357
10 Claims. (Cl. 173—34)



A drill carriage having an elongated drill guide on which a percussion drill is mounted, a mast and a vehicle. The mast is telescopic and composed of two parts, one rotatable relative to the other. One of the parts is pivotally connected to the drill guide and the other part pivotally connected to the vehicle. Thus the drill guide may be positioned in a variety of elevations and directions. Means at both ends of the drill guide extend to engage the rock face in order to stabilize the drill guide during drilling.

3,399,735
CONTINUOUSLY FEEDING AND ROTATING DEVICE FOR BORE DRILLING RODS

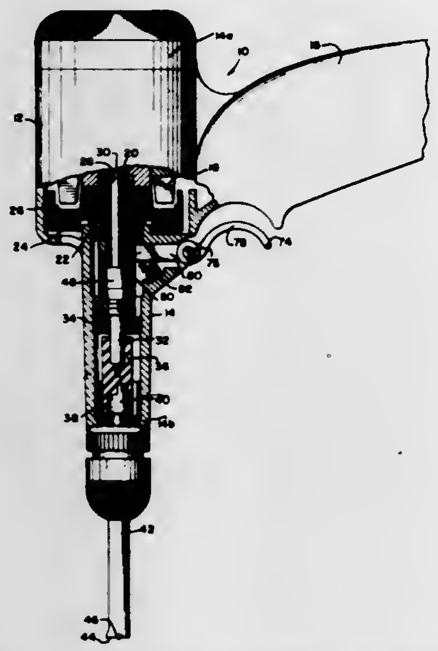
Nobuhisa Ikeda, Tokyo-to, Japan, assignor to Kabushiki Kaisha Tone Boring, Tokyo-to, Japan
Filed Mar. 14, 1967, Ser. No. 622,978
7 Claims. (Cl. 173—149)



The drilling rod of a bore drilling machine is continuously fed in its axial direction with rotation by two rotating chucks alternately grasping the drilling rod so that it is continually supported, at least one of the chucks undergoing reciprocation with rotation, and the operations of the chucks are alternated by a differential gear mechanism which is controlled interrelatedly with the reciprocation of at least one of the chucks. Examples of mechanical and hydraulic driving mechanisms for producing this reciprocation are given.

3,399,736
POWER-OPERATED TOOL HAVING POSITIONING MEANS

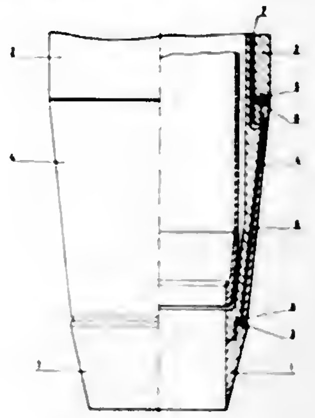
Edward L. Allen, Athens, and Paul K. Bizilia, Sayre, Pa., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New York
Filed Apr. 14, 1966, Ser. No. 542,613
6 Claims. (Cl. 173—163)



A wire wrapping tool powered by an electrical induction motor the torque of which is supplemented by a band weight on the tool fan. The tool includes driving and driven shafts connected by a helical spring which normally transmits rotation between such shafts, and also comprises a control element operable for interrupting the transmission of rotation through the spring whereby the latter returns the driven shaft to a predetermined angular position.

3,399,737
ELONGATED OBJECT ADAPTED TO BE DRIVEN INTO A RESISTANT MEDIUM SUCH AS SOIL AND A METHOD FOR FACILITATING THE DRIVING IN OF SUCH AN OBJECT

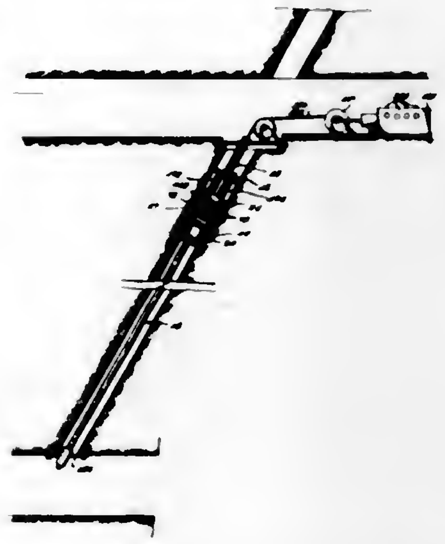
Heinrich Karl Simon Philip Begemann, The Hague, Netherlands, assignor to Stichting Waterbouwkundig Laboratorium, Delft, Netherlands, a corporation of the Netherlands
Filed June 21, 1966, Ser. No. 559,218
Claims priority, application Netherlands, June 23, 1965, 6508087
6 Claims. (Cl. 175—19)



This invention relates to an elongated object adapted to be driven into a resistant medium, said elongated object having a cylindrical mantle section with a conical end part, said conical end part having at least one truncated conical mantle part comprising an elastic annular membrane, a fluid space recessed into said mantle part behind said elastic membrane and means to intermittently impress a fluid pressure in said fluid space as well as the method for driving said object into the resistant medium.

3,399,738
RAISE DRIVER

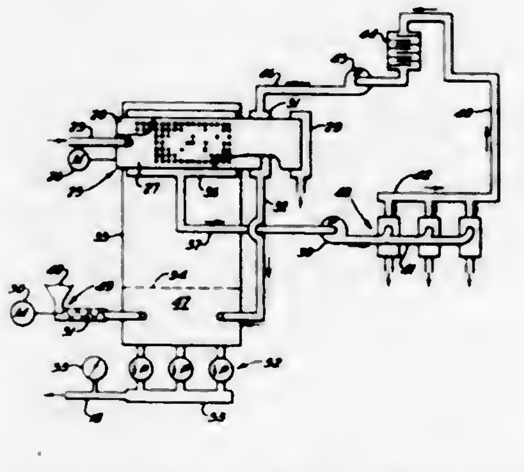
John C. Haspert, Arcadia, Calif., assignor to Smith Industries International, Inc., Los Angeles, Calif., a corporation of California
Filed June 6, 1966, Ser. No. 560,953
15 Claims. (Cl. 175—53)



A self-propelled earth boring machine as provided for drilling a pilot hole through an earth formation and then reaming the hole. The machine has a front main carriage mounting a power driven rotary cutter support, a rear feed carriage, and power means operatively connected between the carriages for driving the carriages in relative endwise reciprocation. The carriages mount power operated thrust means which may be selectively extended and retracted laterally of the carriages. When drilling a pilot hole, the feed carriage is anchored in a surrounding casing by extension of its thrust means into anchoring engagement with the casing. The main carriage is then driven in reciprocation relative to the feed carriage, and drill stem sections are successively connected end to end to the rotary cutter supports when the main carriage is retracted in such a way as to cause the drill stem to progressively penetrate the earth formation during forward extension of the main carriage. When reaming the pilot hole, the carriages are driven in relative reciprocation, and the thrust means on the carriages are alternately extended and retracted into and from anchoring engagement with a fixed rail extending through the pilot hole and/or the reamed wall of the hole to cause stepwise progression of the machine through the earth formation.

3,399,739
APPARATUS FOR TREATMENT OF HYDRAULIC JET DRILLING LIQUID

Robert J. Goodwin, Oakmont, Ernest A. Mori, Hampton Township, Allegheny County, and Joseph L. Pekarek and Paul W. Schaub, Penn Hills Township, Allegheny County, Pa., and Robert E. Zinkham, Richmond, Va., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Original application Sept. 24, 1963, Ser. No. 311,035. Divided and this application June 14, 1967, Ser. No. 646,014
5 Claims. (Cl. 175—206)

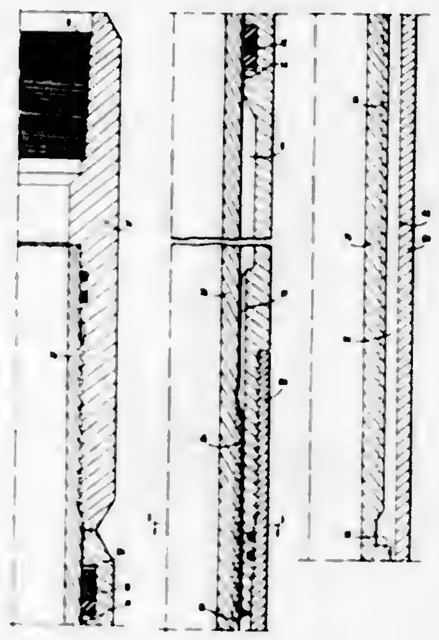


Apparatus for treating an abrasive-laden liquid used in hydraulic jet drilling of wells. The apparatus includes a first separator for removing from the drilling liquid solid particles larger than the abrasive particles, a second separator for removing the abrasive particles, and a third separator for removing the particles smaller than the abrasive particles. The liquid from the third separator is mixed with abrasive particles and returned, without admixture with a liquid containing any appreciable concentration of particles other than the abrasive particles, to the well for further drilling.

3,399,740
HYDRAULIC JARRING TOOL FOR USE IN WELLS

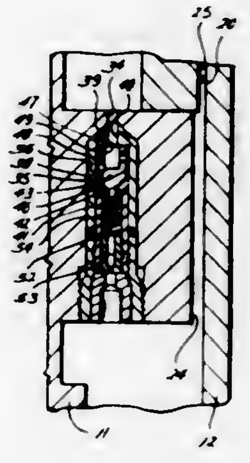
Burchus Q. Barrington, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Aug. 18, 1966, Ser. No. 573,312
6 Claims. (Cl. 175—297)

A jarring tool including a frustoconical collar supported for axial sliding movement between abutments of a mandrel. The collar, when spaced from the mandrel, defines a flow-restricting passageway operable to impede mandrel movement. Moving the collar axially along the mandrel changes the flow capacity of the passageway.



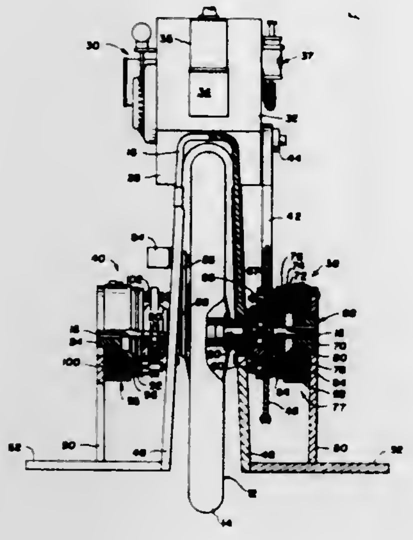
3,399,741
WELL JAR

Robert C. Monroe, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Feb. 24, 1967, Ser. No. 618,403
5 Claims. (Cl. 175—297)



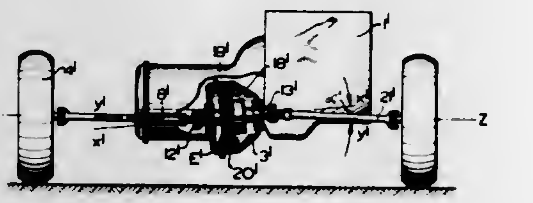
A hydraulic mechanism in a well jar provides a time delay by means of a piston moving in a compression bore to compress a hydraulic fluid in a chamber. The piston is released upon its movement into an enlarged bore to produce a large jarring in the mechanism. A normally open bypass valve is provided in the system to increase the bypass of fluids around the piston, which limits the amount of fluid pressure generated in the chamber and thereby limits the amount of the jarring force. However, the bypass valve is arranged to close upon the application of a large force to the moving piston which, in turn, permits an increased pressure and a much larger jarring force to be generated by the mechanism. Therefore, the system provides a means for selectively permitting a light or heavy jarring force to be applied to a stuck object in a well bore.

3,399,742
POWERED UNICYCLE
Franklin S. Malick, 518 Greenleaf Drive, Monroeville, Pa. 15146
Filed June 23, 1966, Ser. No. 559,842
7 Claims. (Cl. 180—21)



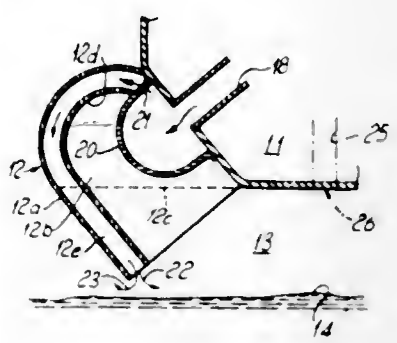
This patent discloses a powered unicycle controlled by a first transducer comprising either a hand-held potentiometer or a vertical-sensing gyroscope, cooperating with second and/or third transducer means comprising, respectively, wheel-associated tachometer means and/or gyroscope means sensing the rate of change of angle of the unicycle with respect to the vertical. Through fast-acting electronic control circuitry, the above transducers quickly apply powerful accelerating or braking torque, as required, to the wheel, affording a vehicle that is more readily mastered and/or gives a more sporting ride than known unicycles pumped by the rider and/or stabilized by gyroscopes themselves providing forces to prevent changes in the attitude of the vehicle.

3,399,743
DRIVE UNIT FOR VEHICLES
Richard Hetmann, Tamm, Wurttemberg, Germany, assignor to Firma Dr. Ing. h.c. F. Porsche K.G., Stuttgart-Zuffenhausen, Germany
Filed Mar. 3, 1966, Ser. No. 531,583
Claims priority, application Germany, Mar. 25, 1965, P 36,381
4 Claims. (Cl. 180—55)



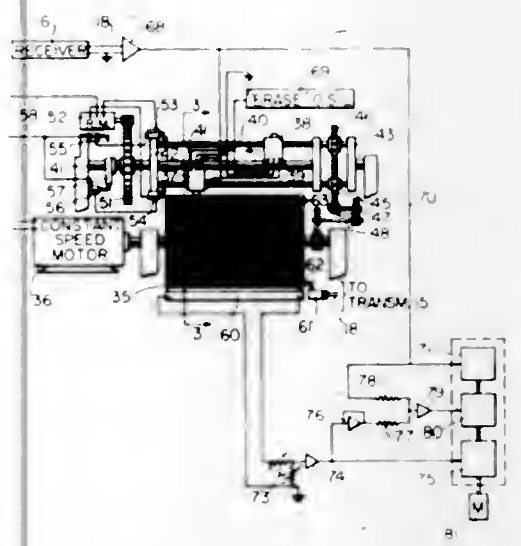
A drive unit for vehicles, especially for motor vehicles which consists of a block arranged transversely to the driving direction between the driven wheels and including the internal combustion engine, the change-speed gear and the axle gear, in which the axle gear is accommodated laterally offset with respect to the change-speed gear and is in permanent driving connection therewith by means of a constantly meshing connecting gear. The connecting gear includes two toothed gears in engagement at a center of engagement wherein they each have mutually parallel axial planes and axial planes extending through the center of engagement and angularly intersecting each other.

3,399,744
AIR CUSHION SUPPORTED VEHICLES WITH DISTRIBUTING DUCT WITHIN THE CUSHION SPACE
Leslie Arthur Hopkins, Dibden Purlieu, England, assignor to Hovercraft Development Limited, London, England, a British company
Filed Apr. 18, 1966, Ser. No. 543,306
Claims priority, application Great Britain, Apr. 21, 1965, 16,878/65
6 Claims. (Cl. 180—128)



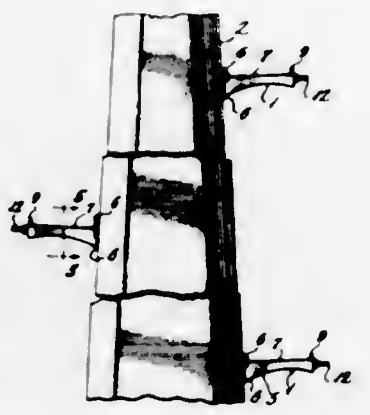
The space occupied by the vehicle-supporting cushion of an air cushion vehicle is supplied with pressurised air from a flexible duct disposed within the cushion space itself so as to avoid the occupation of useful space in the passenger or cargo compartments of the vehicle. The duct is disposed outwardly of a peripheral portion of the vehicle body and is bounded by a cushion-containing flexible skirt attached to and extending outwardly from said peripheral portion. The duct may be of porous material, and the porosity thereof may vary along the length of the duct so that air can be distributed to different regions of the cushion space at differing rates.

3,399,745
RECORDING ELASTIC WAVES WITH VARYING TRAVEL TIMES
Neil R. Sparks, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed May 4, 1967, Ser. No. 636,106
12 Claims. (Cl. 181—.5)



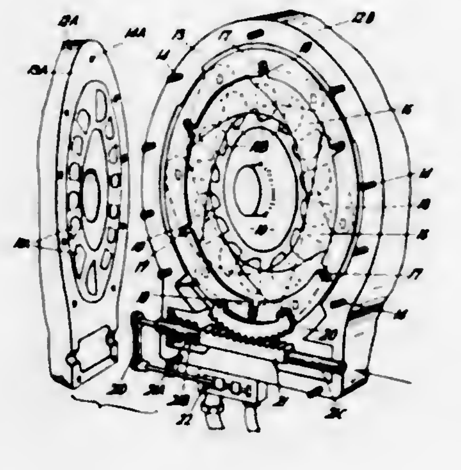
Seismic, acoustic, or elastic wave events traveling with constant amplitude and travel times between a moving pulsed transmitter and receiver are cancelled by reproducibly recording many received-signal traces, reproducing them simultaneously as an average or composite signal in synchronism with the next-received signals, subtracting the received and the composite signals with proper relative amplitudes to cancel the constant events, and displaying the remainder wave trace to show varying travel-time events that may otherwise be obscured. Preferably, when each received signal is reproducibly recorded for subsequent compositing, the oldest one of the previously composited traces is erased.

3,399,746
REMOVABLE STRUCTURE CLIMBING DEVICE
David Lee Wood, Houston, Tex., assignor to Universal Pole Bracket Corporation
Filed Nov. 28, 1966, Ser. No. 597,305
2 Claims. (Cl. 182—92)



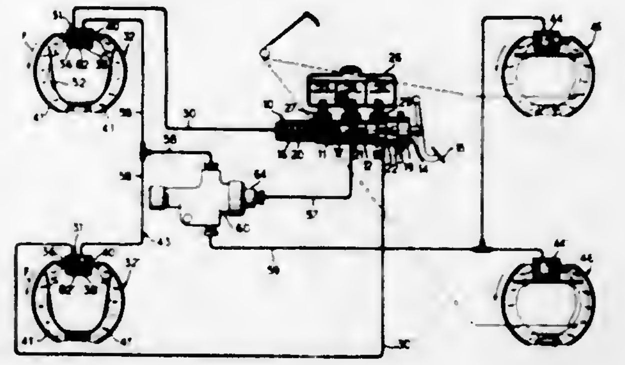
A removable apparatus for climbing structures which have a load bearing thin wall surface with an aperture therein. The apparatus contains a hooked rod which goes through the aperture and means for drawing the apparatus against the structure.

3,399,747
HYDRODYNAMIC FLUID BRAKE
William G. Westwell, Peterborough, and Roger H. Slee, Surrey, England, assignors to Perkins Engines Limited, London, England
Filed May 23, 1966, Ser. No. 552,234
Claims priority, application Great Britain, May 26, 1965, 22,283/65
2 Claims. (Cl. 188—90)



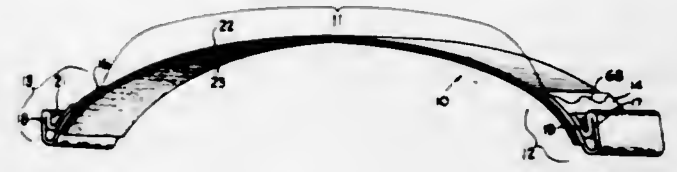
A hydrodynamic fluid brake including a casing housing a rotor and stator. A plurality of shutter members are located between the rotor and stator. When the casing is empty of hydraulic fluid, the shutters may be closed to interrupt the flow of air between the rotor and stator. For braking, the shutters are opened and hydraulic fluid is introduced into the casing. The interaction of the fluid between the rotor and stator provides a braking effect.

3,399,748
VOLUME CONTROLLING MEANS FOR HYDRAULIC BRAKES
Pierre André Georges Lepelletier, Chatou, Yvelines, France, assignor to Societe Anonyme Francaise du Ferodo, a corporation of France
Filed Feb. 18, 1966, Ser. No. 528,461
Claims priority, application France, Mar. 2, 1965, 7,551
6 Claims. (Cl. 188—152)



In a brake system for an automotive vehicle having brakes on two axles, the brake on one axle is provided with a primary and a secondary chamber and the brake on the other axle is connected to the secondary chamber of the first brake. Reinforcement means are provided for augmenting the volume and/or pressure of the fluid to the second brake during the course of braking upon reverse movement, that is, movement in the direction in which the pressure in the secondary chamber tends to be lowered. The reinforcement means can be a device for limiting the expansion of the secondary chamber, either mechanically or by cutting off the supply of fluid to the secondary chamber, and/or it can be a pressure booster in the secondary circuit.

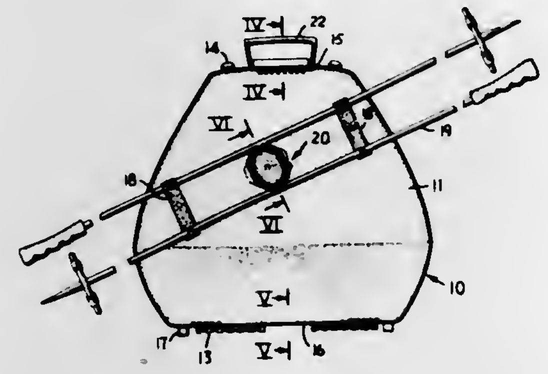
3,399,749
FLEXIBLE RESILIENT BRAKE BAND
Werner G. Baule, Arlington Heights, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 31, 1966, Ser. No. 590,769
12 Claims. (Cl. 188—259)



A brake band of the strap type is provided with zones having different combinations of flexibility and resilience along the length thereof. The midportion of the band is exceptionally flexible for compliance with a braking surface, while an end zone is relatively more resilient, providing an internal bias for separation of the band from the braking surface in the absence of an apply force.

3,399,750
HOLDING MEANS AND CARRYING MEANS FOR SKI EQUIPMENT
Richard G. Woolworth, Lancaster, Pa., assignor to Old Pal, Inc., Lititz, Pa.
Continuation of application Ser. No. 490,282, Sept. 27, 1965. This application Feb. 23, 1967, Ser. No. 618,232
30 Claims. (Cl. 190—41)

A carrying container for ski boots and ski poles in which the ski poles are removably supported on the exterior of the container and the ski boots are removably supported on a ski boot holder that itself is releasably mounted within the container by clamp means so that the holder and boots may be carried while they are mounted within

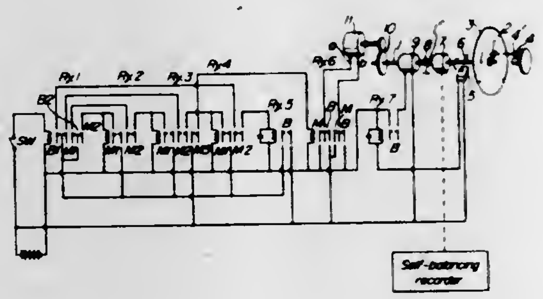


the container or carried by the holder independently of the container. The boots may also be removed from the boot holder while the boot holder is mounted in the carrying case.

3,399,751
CONVERSION DEVICE FOR INTEGRAL RECORDING OF PULSES

Hiroshi Hakata, Nara-shi, Japan, assignor to Shionogi & Co. Ltd., Higashi-ku, Osaka, Japan, a corporation of Japan

Filed Mar. 7, 1966, Ser. No. 532,414
Claims priority, application Japan, Mar. 18, 1965, 40/106,050
1 Claim. (Cl. 192—142)

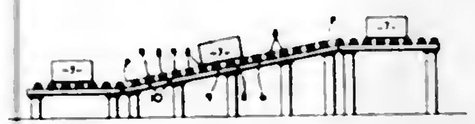


A conversion device for integral recording of pulses, comprising a pulse motor which can be driven stepwise by input electric pulses, speed reduction and clutch means coupled to said pulse motor, a potentiometer coupled to said speed reduction and clutch means so as to be driven by said motor to rotate over a predetermined angular range, potentiometer biasing means coupled to said potentiometer for normally biasing said potentiometer in a direction opposite to that in which said potentiometer is driven from said pulse motor, clutch releasing means coupled between said potentiometer and said speed reduction and clutch means releasing said clutch means at the instant when said potentiometer reaches the upper limit of said angular range under the drive of said pulse motor to allow said potentiometer to return to its normal position under said biasing means ready to start another rotation over said angular range, and voltage responsive recording means electrically coupled to said potentiometer for recording the output voltages from said potentiometer, whereby upon each rotation of said potentiometer a predetermined number of successive input pulses is converted into an angle of rotation of said potentiometer and a corresponding output voltage as an integral of the input pulses.

3,399,752
GRAVITY ROLLER CONVEYORS

Olaf J. B. Orwin, Birmingham, England, assignor to Fisholow Products Limited, Tipton, England, a British company

Filed Mar. 7, 1967, Ser. No. 621,217
5 Claims. (Cl. 193—35)

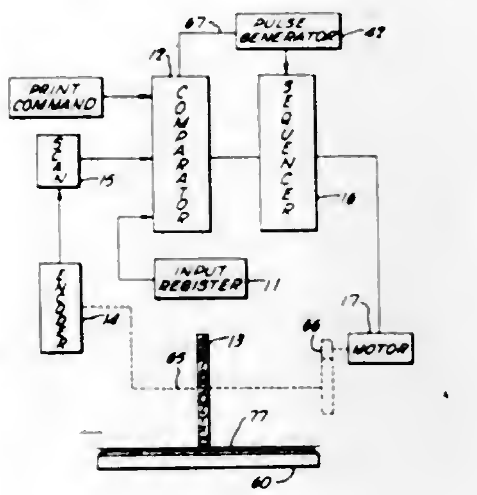


This invention relates to gravity roller conveyors, wherein one or more of the rollers are constructed as retarding rollers so as to control the maximum rate of advancement of the load to be conveyed down the gravity roller conveyor.

3,399,753
PRINTER WITH TYPE WHEEL ROTATABLE IN EITHER DIRECTION

William A. Revelle, Gardena, Calif., assignor, by mesne assignments, of sixty-five percent to Theresa Beckman, Compton, ten percent each to John E. Carr, Garden Grove, and Robert Y. Kodama, Buena Park, and fifteen percent to Richard J. Rengel, Rolling Hills Estates, Calif.

Filed Jan. 10, 1966, Ser. No. 519,620
14 Claims. (Cl. 197—49)



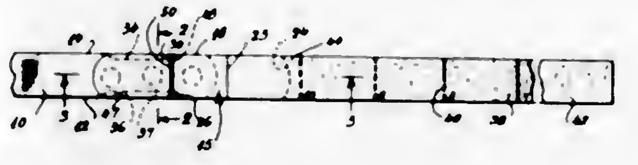
A printer system comprising electronic logical circuitry including an input register for storing a binary coded representation of a character to be printed and an encoder operatively connected to a print wheel which is scanned to produce a binary coded signal representing the position of the print wheel, i.e. the character in position to be printed. Binary outputs of the input register and the scanned encoder are compared to produce an enabling signal for gating pulses through a sequencer circuit for a stepping motor to move the print wheel in the shortest direction to position the desired character for printing. Upon an equal comparison of the binary outputs the enabling signal for gating the pulses is blocked and an equal comparison signal is produced to cause printing and thereafter cause the print wheel to advance to the next character.

3,399,754
EASY THREADABLE PRINTING INK RIBBON

William J. Rooney, 670 Corlis Ave., Phillipsburg, N.J. 08865

Filed Aug. 8, 1966, Ser. No. 570,952
1 Claim. (Cl. 197—172)

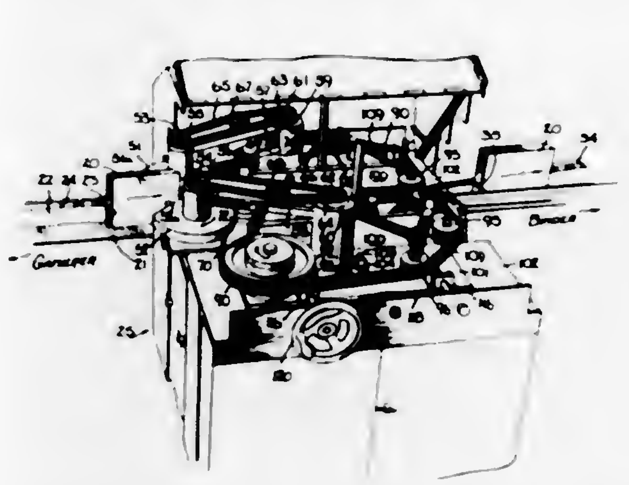
An easy threadable printing ink ribbon for typewriters having means for joining a self adhesive coupling tab and the fabric inked ribbon of the typewriter to prevent accidental separation of the ribbon from the tab. The means include indentations on the end portion of the ribbon to permit opposite sides of the adhesive tab to grip each other through the indentations, parts of the ribbon outside of the indentations serving as mechanical locking means. The end portions of the ribbon also have holes through which parts of the tab sides mutually engage to supplement the grip of the tabs on indented portions of the ribbon. The tab lies flat and moves smoothly along with the ribbon end through tape guides on the typewriter.



3,399,755
MACHINE AND METHOD FOR TRANSFERRING AN ARTICLE FROM ONE APPARATUS TO ANOTHER

Robert A. Bryson and Richard B. Hawkes, Easton, Pa., assignors to T.W. & C.B. Sheridan Company, New York, N.Y., a corporation of New York

Continuation of application Ser. No. 428,787, Jan. 28, 1965. This application Aug. 28, 1967, Ser. No. 663,903
16 Claims. (Cl. 198—34)



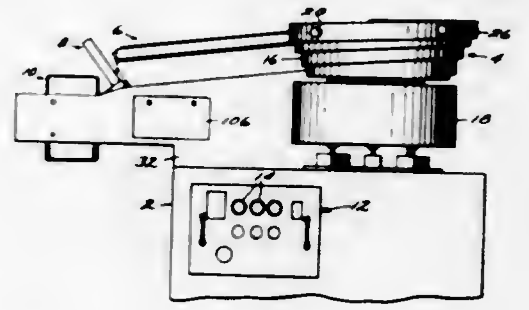
The disclosure relates to a transfer machine which receives an article from an infeed conveyor and subsequently delivers the article to an outfeed conveyor in a predetermined phase relation therewith regardless of a change in phase between the infeed conveyor and the outfeed conveyor. In response to the degree of a lagging phase relationship between the infeed conveyor and the outfeed conveyor, the transfer machine accelerates the article for delivery to the outfeed conveyor in the predetermined phase relationship. In an embodiment of the disclosure the interacting lobes of a cam arrangement enable the drive of the transfer machine to be accelerated when the infeed conveyor lags the outfeed conveyor.

3,399,756
COUNTING MACHINE WITH ADJUSTABLE ARTICLE CHANNELING MECHANISM

Michael C. Klapes, Lynnfield, Mass., assignor to Delta Engineering Corporation, a corporation of Massachusetts

Filed Feb. 24, 1967, Ser. No. 618,497
11 Claims. (Cl. 198—39)

This patent specification describes a machine for counting and batching articles and presents improvement over the apparatus disclosed in U.S. Patents Re. 25,013 and 3,001,636. The machine has a vibratory feeder that delivers articles to a moving conveyer belt, guide means that can be adjusted to define a channel along which the articles are advanced in single file by the conveyer, means for detecting and counting articles transported by the conveyer, and means for batching the articles in

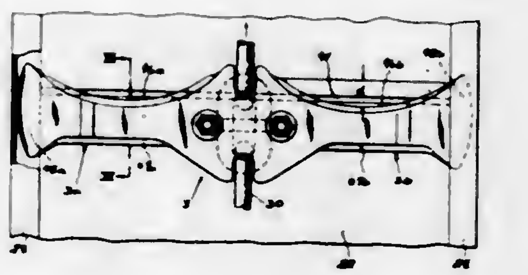


groups of predetermined number. The guide means consists of a fixed guide and a moveable guide, plus means for moving the moveable guide to vary the width of the article channel. Means also are provided for moving the detector means and the batching means in the same direction as the moveable guide so as to maintain them centered with respect to the article channel.

3,399,757
SCRAPING CONVEYOR

Ernst Braun and Gert Braun, Essen-Heisingen, Germany, assignors to Halbach & Braun, Maschinenfabrik Wuppertal-Barmen, Blombacherbach, Germany, a German company

Filed Mar. 27, 1967, Ser. No. 626,059
6 Claims. (Cl. 198—171)



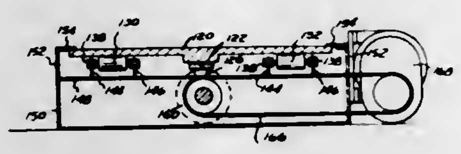
Scraping conveyor for mine excavator, with a series of flights longitudinally spaced on a centrally positioned single chain or on a pair of transversely spaced outer chains for movement in a closed path along the upper and lower surfaces of an apron to entrain mineral lumps deposited thereon. Each flight is of inverted U-profile, with a forwardly concave leading edge scraping the apron while traveling along the upper run of the chain or chains, the depth of curvature being sufficient for overriding transverse gaps between adjoining apron sections; the corresponding trailing edge is foreshortened to stand clear of the apron surface. In the specific case of a single-chain conveyor, each flight half on either side of the central chain has a concave forward edge and a free end guided in an endless track of a lateral rib bounding the apron to form a trough.

3,399,758
MOVING SIDEWALK

Willis Ford Karr, Warren, Mich., assignor to Federal Engineering Company, Inc., Detroit, Mich., a corporation of Michigan

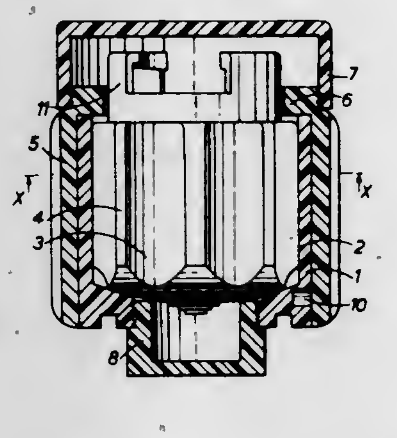
Filed Aug. 8, 1966, Ser. No. 570,957
2 Claims. (Cl. 198—181)

A pedestrian conveyor is formed of a plurality of pallets having forward convex edges and trailing concave edges, joined together so the concave edge of one pallet abuts the convex edge of the next in the chain, by link arms which are pivotally supported on one pallet for motion in the plane of the surface of the pallet about the center of its convex edge, and are rigidly connected to the next pallet. In one embodiment the pallets are supported on guide rails by injecting pressurized air between the rails and abutting surfaces of the pallets. In another embodiment they are supported on a series of short belts arrayed along the course. In a third embodiment they are supported on short removable roll sections which extend transversely to the conveyor course along its length. One of the embodiments of the invention provides hinges extending transversely across the width of the pallets so that they may traverse vertical inclines. Another embodiment supports the pallets on three rails which are positioned vertically with respect to one another so that the pallets may traverse inclines while maintaining their upper surfaces in a horizontal position through a leg and link mechanism.



3,399,759
PROTECTING HOLDERS

Douglas Stanley Love, East Grinstead, England, assignor to The Express Injector Company Limited, Brighton, England, a corporation of England
Filed Nov. 3, 1966, Ser. No. 591,891
4 Claims. (Cl. 206—1)

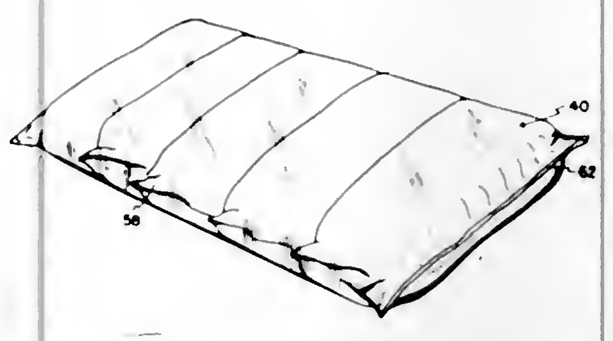


1. A holder for the protection and handling of a detachable nozzle cap of a needleless injector comprising in combination a hollow body for captively and nonrotatably accommodating the cap, the said hollow body having a first opening at one end for receiving the cap and a second opening at the other end providing access to the nozzle part of the cap, respective means for closing the openings, and an outer casing, which is turnably mounted on the hollow body and has locking means for securing the cap in the hollow body, the locking means being operated by the turning of the outer casing.

3,399,760
PACKAGE AND METHOD OF PACKAGING

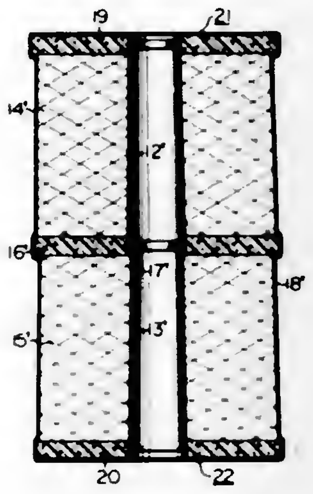
Valentine Hechler IV, 26 Meadow View, Northfield, Ill. 60093
Filed Nov. 1, 1966, Ser. No. 591,278
11 Claims. (Cl. 206—65)

Article and method of forming a package for particulate material in which individual packets of pliable material are arranged in side-by-side relation transversely in a weatherproof baler of pliable material and the distribution of particulate material in the packets when the package is laid flat induces a biaxial rigidity for handling the package thereafter as a rectangular flat parcel wherein the baler is drawn against both the ends and the sides of the packets with an interlocking between the ends of the packets for rigid self-bracing.



3,399,761
YARN PACKAGE

Akira Hayashi, Toyonaka-shi, Japan, assignor to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan
Filed June 19, 1967, Ser. No. 646,840
Claims priority, application Japan, July 4, 1966 (utility model), 41/62,364 (utility model), 41/62,365; Feb. 14, 1967 (utility model), 42/11,844, 42/9,122
10 Claims. (Cl. 206—65)

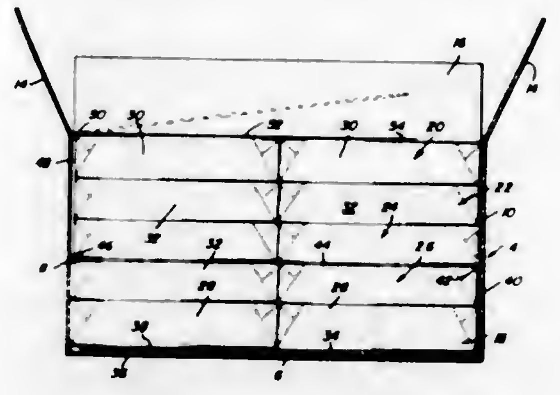


A yarn package containing one or more wound yarn masses on respective cores arranged in a stack, wherein a ring pad of foamed synthetic resin is placed on each outer end of the yarn mass-core assembly and between each pair of neighboring yarn masses of the latter, the whole assembly being enclosed substantially by a heat-shrunk protecting film, with a limited central area on each of the end surfaces of the yarn mass uncovered by the film for avoiding possible concentration of crimps otherwise to be caused by the heat shrinking of the film.

3,399,762
TYPEWRITER PAPER CARTON WITH LIFT STRIP

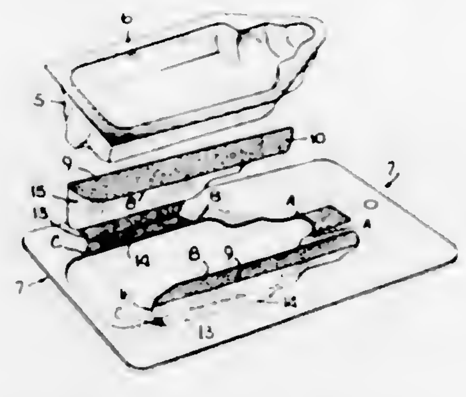
John R. Potter, Glens Falls, N.Y., assignor to Finch, Pruyn & Company, Inc., a corporation of New York
Filed May 31, 1967, Ser. No. 642,503
4 Claims. (Cl. 206—65)

A cardboard carton is loaded with stacked layers of individually wrapped reams of typewriter paper. These layers are conveniently set forth as (1) a bottom layer, (2) a top layer and (3) a plurality of intervening layers. The method and means for progressively emptying the carton is the innovation under consideration. A cardboard insert (called a mat or follower panel) is fitted between the carton's bottom and the two lowermost reams and is extracted by a novelly threaded ream dislodging up-ending lifting tape connected at its lower end to the insert.



3,399,763
BLISTER PACK AND METHOD OF FORMING THE SAME

Orison W. Stone, Valley Cottage, N.Y., assignor to Developak Inc., New York, N.Y., a corporation of New York
Filed May 4, 1966, Ser. No. 547,625
5 Claims. (Cl. 206—78)

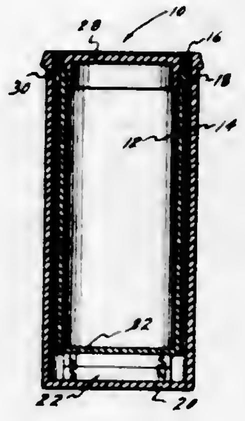


1. A blister pack comprising a flanged blister for containing an article and a mounting panel for the blister, said mounting panel comprising a sheet of a homogeneous material having at least one internal plane of cleavage and being provided with an aperture for receiving the body of the blister which projects beyond one face of the mounting panel with the blister flange overlying edge portions of said aperture on its opposite face, certain portions of the aperture edge portions being split along an internal plane of cleavage of said sheet whereby to define recessed areas for receiving and retaining corresponding portions of the flange of the blister.

3,399,764
MEDICINE BOTTLE

Herbert W. Rigor, 685 Quartz Way, Broomfield, Colo. 80020
Filed July 24, 1967, Ser. No. 655,541
9 Claims. (Cl. 206—1.5)

This inventinon relates to a safety container for medicines and the like which involves a special technique for opening same that prevents its being used by small children. Specifically, a hollow cylindrical inner container with a removable top and a small bar magnet attached to the bottom thereof is telescoped into an open-topped outer container that has a similar magnet fastened in its bottom. These two magnets function to hold the two containers telescoped one inside the other due to the attraction between the magnets when their unlike poles are adjacent one another, in which position the removable cap of the inner container is relatively inaccessible from the standpoint of its being removed or grasped for the purpose of removing the inner container from inside the outer one. Rotation of the inner container a half turn relative to the outer container places the like poles of the magnets together and the resulting repulsion forces exerted therebetween push the inner container out of the outer container where the user can grasp same and remove the cap.



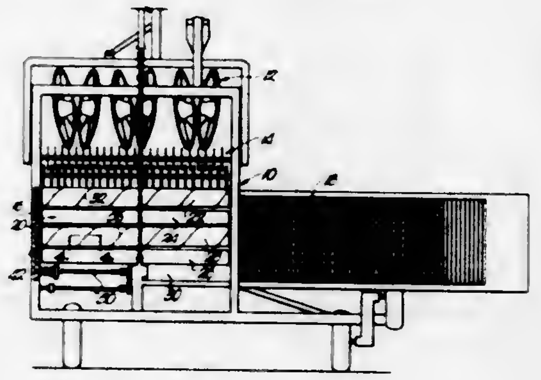
3,399,765
OIL PHASE SEPARATION

Ira E. Puddington and Joseph Redmond Farnand, Ottawa, Ontario, Canada, assignors to National Research Council Ottawa, Ontario, Canada, a body corporate of Canada
No Drawing. Filed Apr. 6, 1964, Ser. No. 357,766
10 Claims. (Cl. 209—5)

Concentration and separation of an oil phase from dispersed hydrophilic solids is obtained by subjecting an aqueous mixture of the solids to an intensive milling and kneading operation with controlled conditions of viscosity and concentration of the oil phase so that a modified oil phase separates as a distinct layer on an oleophilic mill surface.

3,399,766
COMBINATION CLEANER AND CONVEYOR FOR HARVESTERS

Eugene C. Rollins, Ogden, Utah, assignor to Hesston Manufacturing Company, Inc., Hesston, Kans., a corporation of Kansas
Filed Feb. 10, 1966, Ser. No. 526,520
5 Claims. (Cl. 209—107)

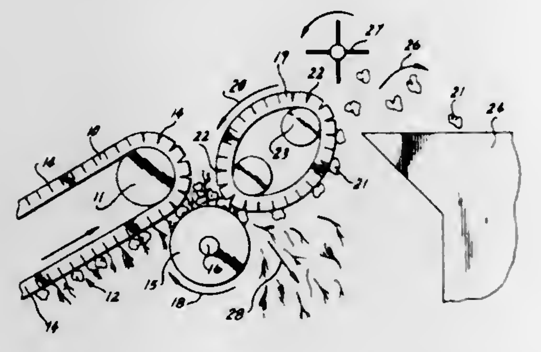


A beet cleaning conveyor including a series of rolls, spaced to present beet-receiving troughs therebetween, and rotatable about horizontal axes that slope upwardly toward the beet discharge end of the conveyor, with alternate rolls having helical flighting for both transverse and longitudinal advancement of the beets. The flighted rolls have larger diameters than those of the smooth rolls and are rotated in the direction of transverse beet flow, but faster than the rate of rotation of the smooth rolls. The smooth rolls are rotated against transverse beet flow and have their upper surfaces in a common horizontal plane with the upper surfaces of the flighted rolls.

3,399,767

SLOTTED BELT TYPE COTTON-TRASH CLEANER

William E. Rood, Jr., 1500 S. 7th St.,
Phoenix, Ariz. 85034
Filed July 8, 1965, Ser. No. 470,523
4 Claims. (Cl. 209—108)

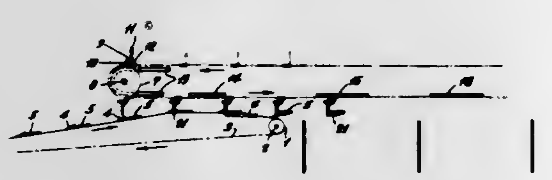


1. Cotton cleaning apparatus for separating trash from cotton tufts comprising:
   - (a) a flexible, normally round, elliptically mounted belt,
   - (b) said flexible belt mounted on first and second pulleys,
   - (c) major and minor axes of the ellipse formed by said flexible belt having a ratio of from about 1.05 to about 1.25,
   - (d) transverse slots disposed on the surface of said flexible belt, and
   - (e) means proximate to said flexible belt for introducing trash and cotton tufts into contact therewith, whereby cotton tufts are grasped by said slots in said flexible belt and separated from said trash.

3,399,768

LUMBER OR BOARD SORTING APPARATUS

Bo Folke Holmberg, Nyland, and Uhlrich Kohlberg, Farsta, Sweden, assignors to Aktiebolaget Hammars Mekaniska Verkstad, Nyland, Sweden
Filed May 12, 1966, Ser. No. 549,597
Claims priority, application Sweden, May 19, 1965, 6,507/65; Oct. 28, 1965, 13,902/65
5 Claims. (Cl. 209—125)

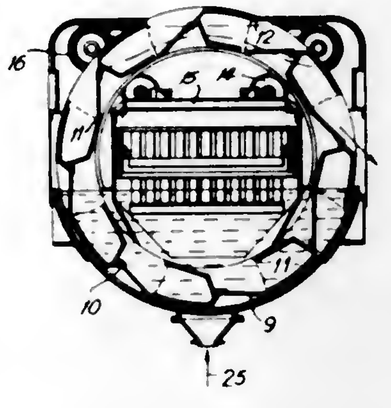


A lumber or board sorting apparatus in which a transverse conveyor moves the lumber or boards to sorting compartments or bins and a carrier cooperable therewith serves for moving the lumber or boards from such conveyor to the preselected compartments. The carrier is of a generally L-shaped configuration and includes means for either turning substantially about a vertical axis when releasing a board in a selected compartment or in a substantially vertical plane when executing such operation.

3,399,769

DENSE MEDIA SEPARATOR FOR COAL DRESSING

Efim Mikhailovich Cherkov, Veniamin Sergeevich Tikhonov, and Alexei Ignatjevich Ilchenko, Lugansk, U.S.S.R., assignors to Gosudarstvenny Proektno-Konstruktorsky Institute "Gipromashugleobogashchenie," Lugansk, U.S.S.R.
Filed Oct. 15, 1964, Ser. No. 404,088
15 Claims. (Cl. 209—172.5)

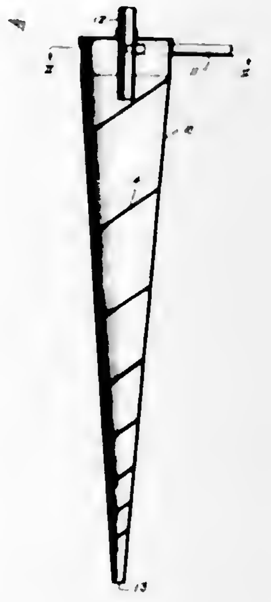


A separator for concentrating coal, ore and other minerals in heavy media, the separator containing a tank in which there is vertically installed a rotating elevator wheel with buckets. The buckets are provided with charge openings facing inside the tank, and with discharge openings facing outside, and are further provided with flaps that automatically close the discharge openings during the loading phase of the separation and the charge openings during the discharging phase of the separation.

3,399,770

METHOD FOR CENTRIFUGAL SEPARATION OF PARTICLES FROM A MIXTURE

Salomon M. Salomon, Madison, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Jan. 19, 1966, Ser. No. 521,685
1 Claim. (Cl. 209—211)

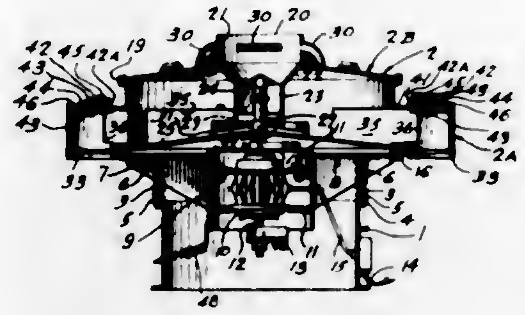


Method for removing impurities from a pulp suspension. A stream of the pulp suspension is introduced tangentially into the larger end of a conical chamber. An outlet for removal of the suspension with the impurities removed is provided at the larger end of the chamber and another outlet for removal of the impurities is provided at the smaller end of the chamber. The impurities move to the wall of the chamber due to centrifugal force, and helical flutes winding from the larger to the smaller end are formed on the surface of the chamber wall to direct or guide the impurities to the outlet at the smaller end of the chamber.

3,399,771

DISTRIBUTORS OF MATERIAL

Bohdan D. Hryniowski, 3078 Marcel Ave.,
St. Laurent, Quebec, Canada
Filed July 26, 1966, Ser. No. 567,878
12 Claims. (Cl. 209—245)

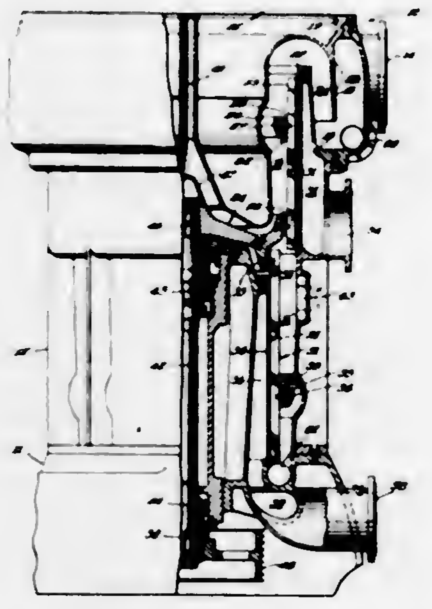


A material distributor for distributing material equally in all directions from a feeding means. The distributor comprises a round plate centrally located with respect to a material inlet duct. Both the duct and the plate are vibrated to ensure that the material flows evenly from the duct onto the plate and also to ensure that the material is distributed evenly off the plate. The distributor is provided with means either within the duct or as a result of the spacing between the duct and the plate for controlling the flow of the material from the duct onto the plate.

3,399,772

DUPLEX PULP SCREEN

Salomon M. Salomon, Madison, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Feb. 14, 1966, Ser. No. 527,246
8 Claims. (Cl. 209—273)

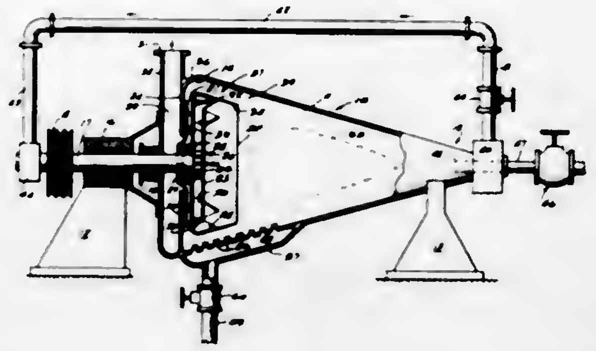


A screening apparatus for screening fibrous material in liquid suspension such as paper pulp. The apparatus includes a pair of vertically extending cylindrical screens being radially displaced one from the other and further being axially displaced one from the other. A shaft extends through the screening apparatus and includes a hub secured to the end of the shaft and extending radially outwardly from the shaft. Two groups of foils are secured to the hub and one group of foils extends axially in a direction opposite of the other group of foils. A pair of outlets are provided for receiving desired constituent of material which may be either the same constituent or a different constituent.

3,399,773

APPARATUS FOR SEPARATING SOLIDS FROM LIQUIDS

Ivan Jay Read, R.R. 2, Plymouth, Ind. 46563
Filed Apr. 14, 1967, Ser. No. 630,992
10 Claims. (Cl. 210—196)



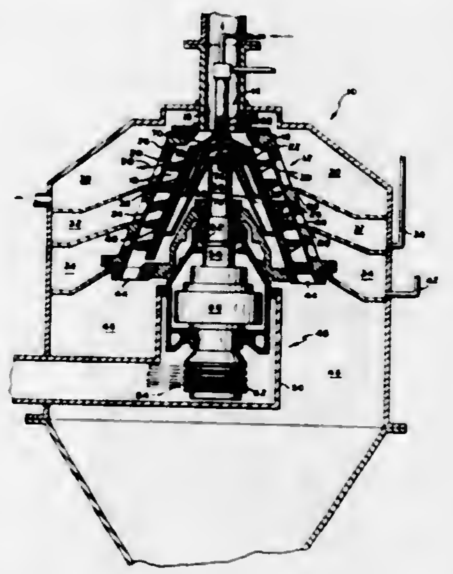
Apparatus for separating solids from liquids, specifically "foots" from liquefied unrefined animal fats, in which the flowable feed material is introduced at the larger end of a stationary, conical shell into a driven impeller that imparts an outward swirling movement to the feed material to cause it to hug the inner surface of the shell in its flow to the small end thereof.

Separately controlled amounts of the material reaching the small end are respectively discharged and recirculated, the recirculated material being introduced into a shrouded impeller for imparting thereto a swirling forward flow deflected generally inwardly of the feed material flow. Slots are provided in and along the lower portion of the shell adjacent its larger end for passage therethrough of solids that are thrown outwardly from the feed material or settle therefrom.

3,399,774

SCREENING CENTRIFUGES

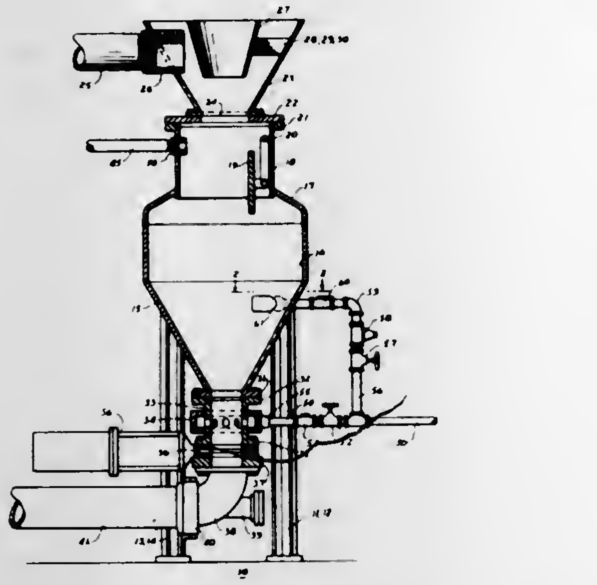
Per Nyrop, Norwalk, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Filed Feb. 23, 1967, Ser. No. 618,191
8 Claims. (Cl. 210—213)



The present invention relates to a washing arrangement for screening centrifuges wherein the vanes of the helical conveyor are bent in the area of the wash zone to conform to the pitch of the wash liquid discharge openings.

3,399,775
SEWAGE TREATMENT APPARATUS-GRIT WASHER-EJECTOR

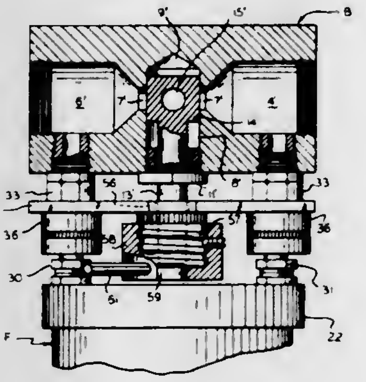
Charles P. Ciaffone, Sturbridge, Mass., assignor to CPC Engineering Corporation, Sturbridge, Mass., a corporation of Massachusetts
Filed Feb. 1, 1967, Ser. No. 613,292
3 Claims. (Cl. 210—221)



The pneumatic ejector is adapted to receive in a generally inverted cone-shaped vessel the water-grit-organic matter mixture characteristic of common sewage flow, wherein the base of the ejector is an inverted cone in which the heavy grit settles permitting the light organic matter to rise to the top, allowing for an overflow so that virtually all of the organic matter is carried off through an overflow pipe, the ejector container itself being equipped with a flap valve suitable for closing off the inlet to make the vessel air tight, the bottom being equipped with a gate valve, again suitable for making the vessel air tight, whereby compressed air can be admitted to the ejector to build up a pressure therein and with the opening of the gate valve, the grit ejected strongly through a bottom discharge pipe and delivered to a deposit site. Provision is made for continuous backwash of the grit which settles in the ejector with a view to removing virtually all organic matter and washing the grit substantially free of odoriferous organic material.

3,399,776
DETACHABLE SNAP-ON FILTER FOR A HYDRAULIC SYSTEM

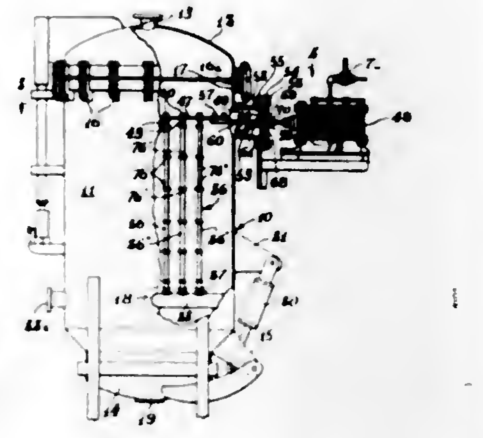
Robert R. Knuth, Milwaukee, Wis.
(807 E. Harding Drive, Appleton, Wis. 54911)
Filed Sept. 2, 1965, Ser. No. 484,554
1 Claim. (Cl. 210—234)



A filter and valve arrangement which utilizes a pair of valved couplers and nipples. The nipples are fixed to the filter housing and form the inlet and outlet connections. The couplers are secured to the valve body and are adapted to be detachably secured to the nipples. The valve body includes a valve passage which, when the filter is removed, bypasses the couplers.

3,399,777
FILTER CAKE STABILIZING AND CLEANING MEANS

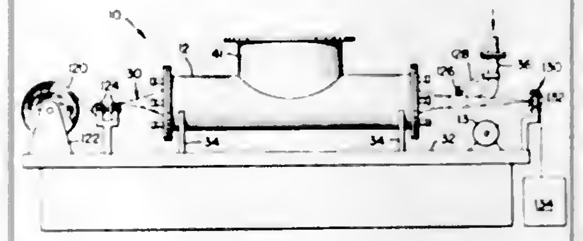
Joseph J. Passalaqua, Libertyville, Ill., assignor to Industrial Filter & Pump Mfg. Co., Cicero, Ill., a corporation of Illinois
Filed May 6, 1965, Ser. No. 453,759
14 Claims. (Cl. 210—332)



The improvement to multiple, spaced wall type, vibrated filter elements, comprising a plurality of spaced stabilizer bars attached to the filter element frames constructed to stabilize the filter element cake during filtering and drying operations and to resonate and aid in removing the cake during vibration of the filter elements.

3,399,778
FILTER APPARATUS HAVING TUBULAR FILTER MEDIUM

Raymond J. O'Neill, Berkeley, Calif., assignor to De Laval Turbine Inc., Millbrae, Calif.
Filed Aug. 10, 1966, Ser. No. 571,452
12 Claims. (Cl. 210—387)

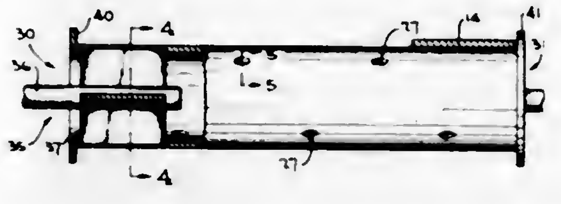


An improved filter unit utilizing a tubular filter member and means for removably closing the opposed ends of a stretch of the filter member when the stretch is across a fluid flow path defined by a pair of fluid conduits. One of the conduits extends into the filter member and has structure forming a part of the closing means. Means is also provided to advance the filter member relative to the fluid flow path to allow a clean stretch thereof to be moved into place across the path.

3,399,779
CONTINUOUS BELT-TYPE FILTER ARRANGEMENT

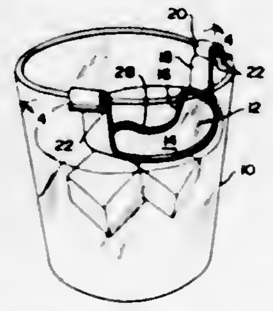
Raymond L. Demmer, Ogdensburg, N.J., assignor to Komline-Sanderson Engineering Corporation, Peapack, N.J., a corporation of New Jersey
Filed Feb. 15, 1966, Ser. No. 527,599
7 Claims. (Cl. 210—391)

A filter arrangement including a hollow roll with apertures in the surface to cause liquid trapped in the web to pass to the interior of the roll and out the open ends of the roll by gravity. The apertures are advantageously spaced and formed, end flanges are provided on the roll, and specially placed spray nozzles are included to encourage flow of liquid to the interior of the roll and free of the web.



3,399,780
PROTECTOR OR GUARD FOR A GLASS CONTAINING AN ICED DRINK

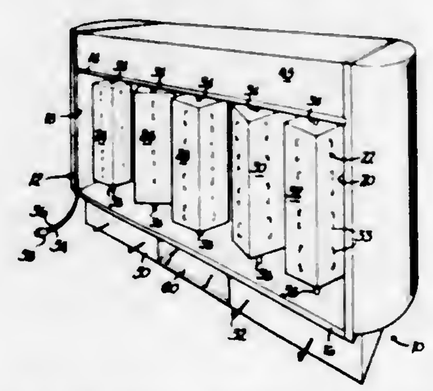
Michael Macaluso, Jr., 222 Chili Ave. 14611, and John Anthony Corsetti, 179 Nichols St. 14609, both of Rochester, N.Y.
Filed Dec. 27, 1966, Ser. No. 604,797
5 Claims. (Cl. 210—469)



A lip protector device used in combination with a drinking glass or the like wherein the device is a one-piece plastic member having a generally flat level base platform rimmed with a rib and of generally C shape for permitting entry of ice cubes into the glass at the inside portion of the C while blocking flow of ice cubes from the glass by the body of the C shape with the outside portion of the C shape adjacent the glass wall. A pair of flat resilient arms extend from each end of the platform and are bent upwardly to resiliently engage outwardly against the glass with each arm having a snap clip member snap engaging the glass lip. The outer portion of the C shape platform can have straining serrations. The snap clip elements can be generally tubular across the width of the arm for resiliently engaging the lip and/or can have a plurality of inwardly projecting lugs for assisting in tighter engagement of the glass lip.

3,399,781
DISPLAY DEVICE

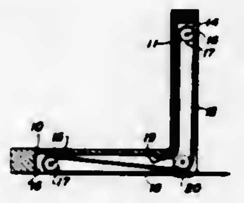
Richard B. Nalbandian, 8900 E. Jefferson, Apt. 15, Detroit, Mich. 48214
Filed Aug. 22, 1966, Ser. No. 573,922
4 Claims. (Cl. 211—1.5)



A display device which includes an open sided frame having a plurality of independently mounted display carriers with independent drive means for each of the carriers which will sequentially expose articles supported by the carriers.

3,399,782
BOOK ENDS

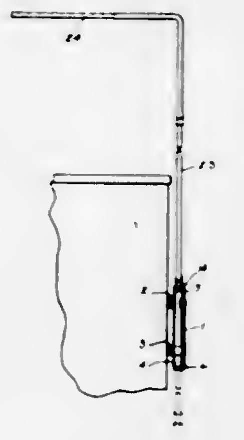
Raymond E. Bascom, P.O. Box 585, Keene, Tex. 76059
Filed Feb. 6, 1967, Ser. No. 614,225
3 Claims. (Cl. 211—43)



A pair of book ends between which a row of books are held by means of a length of interconnecting elastic. As books are added to or removed from the row of books the elastic is extended or retracted. An arrangement of rollers within recesses in the walls of the book ends enable the length of elastic to be folded upon itself so as to increase its extensible length. In addition, the vertical member and the base of each book end are detachably interconnected so as to provide a collapsible construction for storage or shipping.

3,399,783
RETRACTIBLE CLOTHES RACK

Stanley G. Injeski, Milwaukee, Wis., assignor to Worldsbest Industries, Inc., Cudahy, Wis., a corporation of Wisconsin
Filed Mar. 9, 1967, Ser. No. 621,911
2 Claims. (Cl. 211—103)

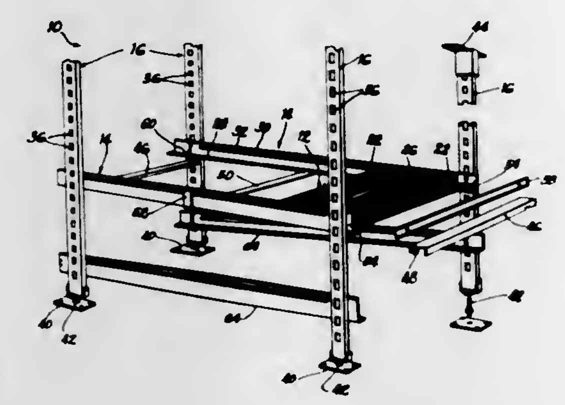


There is disclosed herein a support tube with resilient bearing members insertable at each end of the tube for receiving a rod that is rotatable and vertically movable within the bearing members for positioning an arm serving as a clothes rack. The bearing members and a plug in the end of the rod are of particular configurations for facilitating assembly and retention of the rod in its raised position.

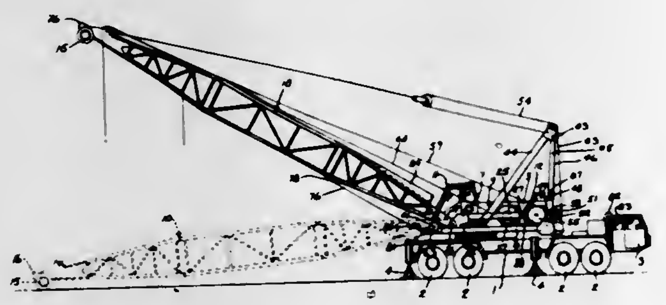
3,399,784
SHELVING UNITS WITH ROLLING SHELVES

Henry M. Buchbinder, Olympia Fields, Ill., and Robert J. Winsler, Elkton, Ky., assignors to Ardco, Inc., Chicago, Ill., a corporation of Illinois
Filed Aug. 1, 1966, Ser. No. 569,178
4 Claims. (Cl. 211—151)

A shelving unit, comprising a plurality of shelves having wheels on opposite sides thereof, a plurality of pairs of side rails for supporting said wheels, means for supporting said side rails at an inclined angle so that the shelves will roll by gravity along said rails to the lower ends thereof, humps on said rails at the upper ends thereof for detaining certain of said wheels to hold each shelf in a loading position, an additional pair of return rails for supporting the wheels of empty shelves for return movement in the opposite direction relative to the direction of movement of the shelves on said side rails, and means supporting said return rails at an inclined angle but sloping oppositely relative to said side rails.



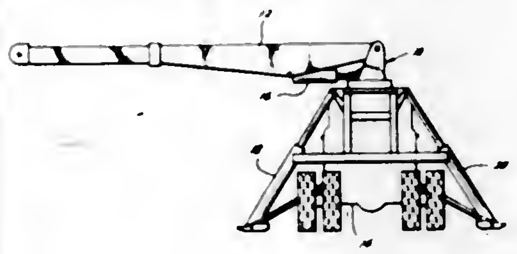
3,399,785
BOOM HANDLING APPARATUS
George W. Mork, South Milwaukee, Wis., assignor to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware
Filed Dec. 9, 1966, Ser. No. 600,541
9 Claims. (Cl. 212—39)



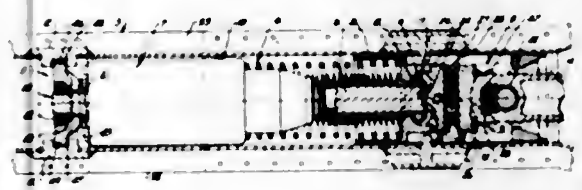
Two examples of cranes are disclosed, each having a boom with the boom foot movable between a traveling position over the back of the revolving frame and an operating position at the front of the revolving frame. The boom foot in one is hinged to the ends of arms, the other ends of which are fastened to an hydraulically driven torque tube to swing the boom foot between its two positions. The boom foot in the other is mounted on endless chains which carry it between its two positions. An automatic, boom-stop cable, take-up drum is shown, also.

3,399,786
ROD EYE ASSEMBLY
Don R. Honeycutt, Bryan, Tex., assignor to Albritton Engineering Corporation, Bryan, Tex., a corporation of Texas
Filed Sept. 19, 1966, Ser. No. 580,270
2 Claims. (Cl. 212—58)

A rod eye assembly for use in a hydraulic crane unit which includes first and second circular ends having a cross section smaller than in the rod eye body with circular bearings provided around each circular end which are adapted to be supported by the crane whereby the rod eye body is rotatably supported, and a fluid passageway in each body end communicating with a double acting hydraulic piston for actuation of the unit and a fluid swivel connector connected to each end of the body thereby eliminating the necessity of seals internally of the rod eye assembly and eliminating flexure and fatigue of hydraulic connecting lines.

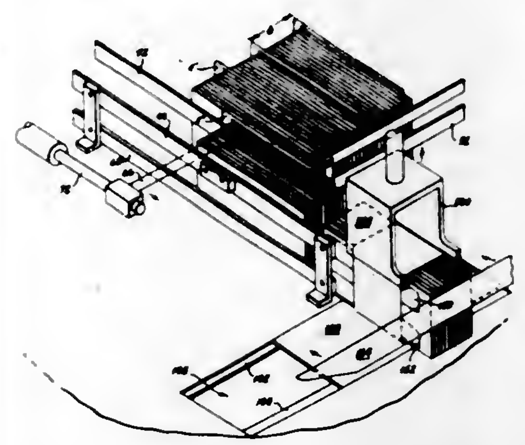


3,399,787
CAR DRAFT-RIGGING WITH SWIVEL-JOINT STRUCTURE
Andrey L. Zanow, Cleveland, Ohio, assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 9, 1966, Ser. No. 600,593
9 Claims. (Cl. 213—64)



Railway car draft rigging including a draft gear, a car coupler, and structure for connecting the draft gear to the coupler and the car body. The draft gear is of the double-acting type requiring one end to be anchored to the car body and the other end attached to the coupler butt whereby it elongates or shortens in response to draft or buff forces, respectively. The invention is concerned particularly with a configuration of swivel connections at opposite ends of the draft gear which are spacesaving in a manner to minimize the length of the draft rigging.

3,399,788
APPARATUS FOR HANDLING ENVELOPES
Vincent E. Heywood, Worcester, Donald H. Bushey, Shrewsbury, and William A. Chapman, Jr., Hubbardston, Mass., assignors to United States Envelope Company, Springfield, Mass., a corporation of Maine
Continuation-in-part of abandoned application Ser. No. 326,024, Nov. 26, 1963. This application Oct. 18, 1965, Ser. No. 502,759
16 Claims. (Cl. 214—8.5)

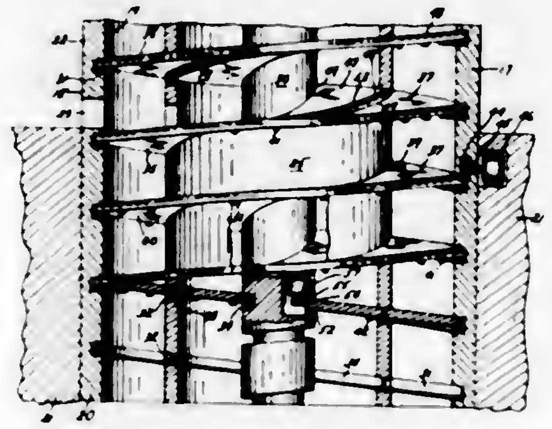


1. In combination with a machine having means for advancing a continuous succession of envelopes on their edges along a path perpendicular to the planes of the envelopes, the improvement of means for constantly feeding individual envelopes into the upstream end of the succession and withdrawing groups of envelopes to be packaged from the downstream end of the succession while maintaining the succession under moderate and substantially constant compression which comprises:

(a) Back-pressure exerting means disposed in the path of the advancing succession, said means having a range of movemeni at least equal to the thickness of a group of envelopes to be packaged, a normal position at the upstream extremity of its range of movement, but being yieldable under a predetermined pressure exerted by the advancing succession to move forward at least a distance equal to the thickness of a group of envelopes to be packaged, and

(b) means positioned within the range of movement of said back-pressure exerting means for laterally transferring the forward-most group of envelopes in the succession upon advancement of said group to a predetermined point into a packaging station, said station having means for exerting a predetermined pressure on said group.

3,399,789
PARKING GARAGE CONSTRUCTION
Solomon Forst, 666 W. 188th St., New York, N.Y. 10040
Filed July 21, 1965, Ser. No. 473,682
1 Claim. (Cl. 214—16.1)



A parking garage construction including a circular building having first, second and third concentrically disposed walls, the first and second rigid helical platforms supported for spiral movement between said walls, said first and second walls having aligned openings therein, whereby any portion of either of said helical platforms may be aligned therewith for entry or discharge of vehicles, and powered means for moving said helical platforms independently of each other.

3,399,790
ELEVATOR SPOUT GUIDE
Glen O. Turnbull, Rock Island, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed July 11, 1966, Ser. No. 564,353
11 Claims. (Cl. 214—42)

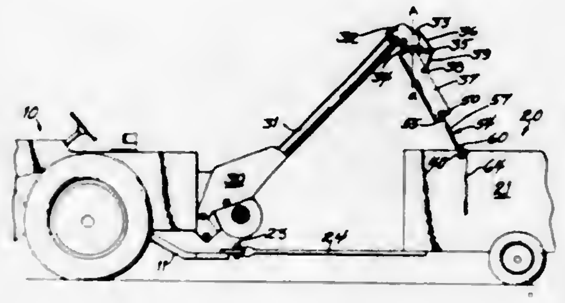
1. A field traversing farm implement having a trailing box type wagon hitched thereto;

said trailing wagon having upright side walls,

a material elevator extending upwardly from and along the longitudinal axis of said implement and terminating in a discharge end above said trailing wagon,

a downwardly directed discharge chute carried by said elevator such that it receives material from said discharge end and can swing with respect thereto about a substantially vertical axis, said downwardly directed discharge chute terminating in a free end adapted to overlie said box type wagon,

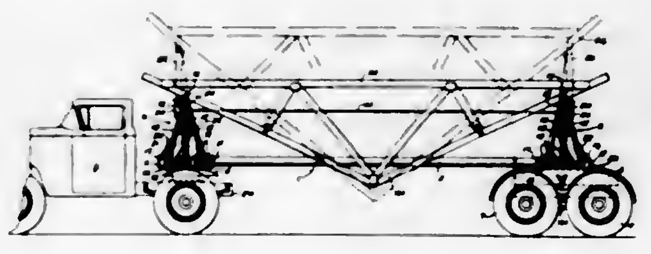
mount means secured to the upper terminal edges of said upright side walls, said mount means including headed pins projecting outwardly from said upright side walls,



elongated guide means including springs secured at their upper ends to the free end of said downwardly directed discharge chute and at their lower ends to said mount means, latches carried by the lower ends of said mount means for releasable connection to the headed pins of said mount means, said latches having apertures formed therein of a size larger than the heads of said headed pins,

and pull ropes secured to and hanging downwardly from said latches through which an operator can control the latches to connect and disconnect said latches to said mount means.

3,399,791
SIDE DUMPING TRAILER
Wayne M. Goodwin, Dallas, Tex., assignor to Barns Lumber and Manufacturing Company, Dallas, Tex., a corporation of Texas
Filed Sept. 26, 1966, Ser. No. 581,779
8 Claims. (Cl. 214—77)

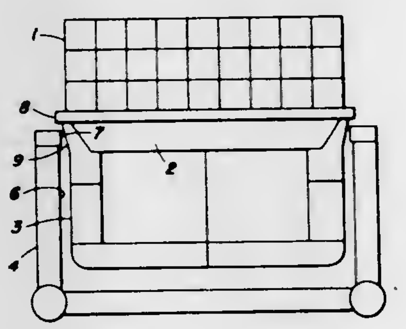


1. In a trailer device, an elongated central frame member; a front frame member attached to the central frame member; a rear frame member attached to the central frame member; a pair of load support members pivotally attached to the front and rear frame members arranged to pivot laterally outwardly thereof; each load support member including a horizontal member, a vertical member, angularly extending members secured to the horizontal member and a longitudinal member rotatably attached to the frame member to which the lower end of the vertical member and the angularly disposed members are secured; fluid support means attached between the load support members to hold the load support members in upward position, each said fluid support means including a hydraulic cylinder attached to one of the vertical members, a piston rod pivotally attached to the other vertical member, said piston rod having a piston on the inner end thereof slidably disposed in the cylinder, a fluid conduit communicating with each cylinder at each end thereof, valve means positioned in each conduit to open and close

the flow of fluid through the conduit, and control means operably attached to the valve means accessible at one end of the trailer whereby the valve means may be operated from one end of the trailer; and spring means attached between the support members arranged to move the support members to upright position after being pivoted outwardly to dump a load.

3,399,792
LOADING BARGES ONTO SHIPS USING DRYDOCKS

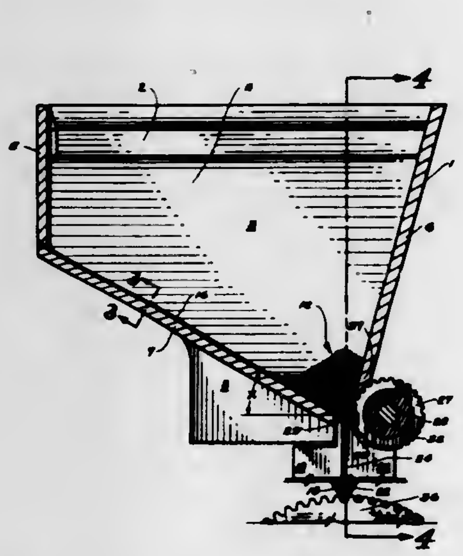
George W. Chester, 19 Titus Ave.,
Carle Place, N.Y. 11514
Filed Apr. 10, 1967, Ser. No. 629,596
5 Claims. (Cl. 214—152)



This disclosure teaches a method for moving conventional cargo containers via ships. Containers are first loaded onto barges. A drydock is raised under the barges to support them above water. Then a ship is floated into the drydock and the drydock is lowered to sit the barges on the ship. Off loading is accomplished by the converse of this method. While on barges the containers may be moved to dock facilities, where the containers can be handled by ordinary stevedoring techniques.

3,399,793
BULK HANDLING OF CYLINDRICAL BODIES WITH LEADS

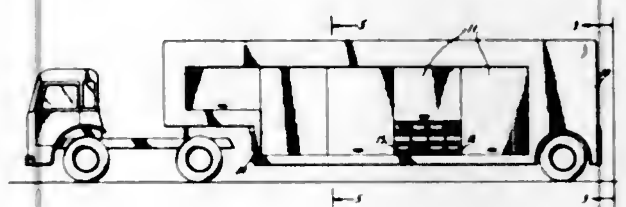
Philip F. Walker, Wauwatosa, and Carl M. Batcha, and Helmut F. Weisser, Milwaukee, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Continuation-in-part of application Ser. No. 433,828 Jan. 18, 1965. This application Nov. 10, 1965, Ser. No. 507,217
4 Claims. (Cl. 214—301)



An apparatus for handling at relatively high speeds cylindrical bodies with leads extending from the ends thereof. First and second plates from a slot to accommodate the cylindrical bodies. A flange restricts lateral movement of the cylindrical bodies. A hopper feeds the cylindrical bodies to the guide slot and an agitator prevents flow blockage.

3,399,794
TRUCK BODY

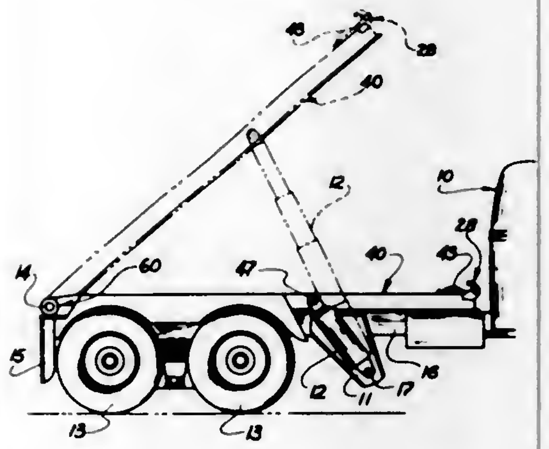
Gail Hummel, 3939 N. Romero Road,
Tucson, Ariz. 85705
Continuation-in-part of application Ser. No. 510,106, Nov. 26, 1965. This application Mar. 30, 1967, Ser. No. 644,040
3 Claims. (Cl. 214—394)



A truck body having an overhead frame detachably supporting interchangeable modular load carrying units. The modular load carrying units are uniform in external dimensions and are constructed and equipped to accommodate various transportation requirements.

3,399,795
LOADING APPARATUS FOR DEMOUNTABLE VEHICLE BODIES

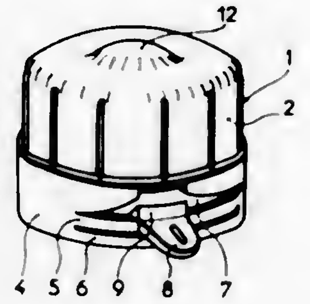
Richard V. Clucker and Walter Gust, Jr., Kenton, Ohio, assignors to Harsco Corporation, Harrisburg, Pa., a corporation of Pennsylvania
Filed Aug. 15, 1966, Ser. No. 572,610
6 Claims. (Cl. 214—517)



1. A loading apparatus for vehicle bodies comprising, in combination, track forming frame means; body means including supporting runner means guided by said frame means and a body latch element on the body means; power means for moving said body means longitudinally of said frame means; movable latch means on said track forming frame means and including a latch shoulder moveable between a closed position in latched engagement with said body latch element and an open position, and a cam surface for engagement by said body latch element; hold open means for retaining said movable latch means in said open position, said hold open means including a resetting trigger disposed in the path of movement of said body latch element for moving the latch means to a closed position upon discharge of the body means; and an actuator for moving said latch means from said closed position to said open position.

3,399,796
SAFETY STOPPER FOR PHARMACEUTICAL BOTTLES AND FLASKS

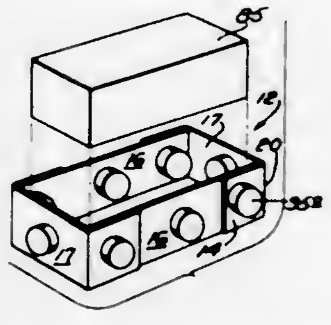
Maurice Steiner, 40 bis Ave. de Suffren,
75 Paris 15eme, France
Filed Apr. 14, 1967, Ser. No. 631,077
Claims priority, application France, Apr. 18, 1966, 57,981
2 Claims. (Cl. 215—9)



Safety sealing system for bottles and flasks having necks provided with means for closing with screw-caps and bayonet caps, comprising a stopper having at its base and beneath the zone which cooperates with the neck-closure means an elastically deformable portion and a locking member which is adapted to cooperate with said closure means for the purpose of preventing the rotation of said stopper as long as said deformable portion of the stopper is not subjected to a deformation stress which renders said locking member inoperative.

3,399,797
CUSHIONING CONTAINER

Harry Freeman, Slatersville, R.I., assignor to Tainer Tech Corp., a corporation of Massachusetts
Filed Nov. 9, 1966, Ser. No. 593,106
3 Claims. (Cl. 217—52)

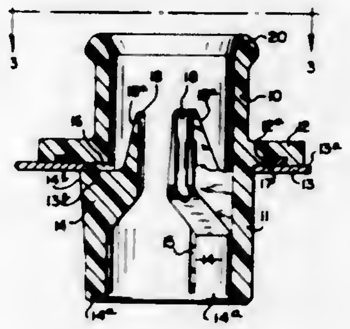


A cushioning container comprising supporting walls folded with portions in overlapping relation with registering openings in the overlapping portions into which there is inserted a resilient compressible material which acts to hold the overlapping walls in position and also cushions any commodity placed in the container against shocks from impact and the like.

3,399,798
SNAP-IN BUNG

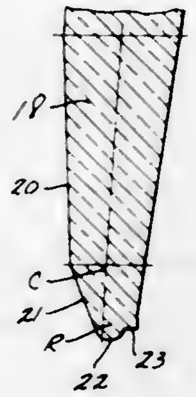
Adam J. Sentz, Strongsville, Ohio, assignor to The Barth Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 9, 1966, Ser. No. 571,231
6 Claims. (Cl. 217—113)

A bung adapted for snap-in insertion into a circular hole in a wall of a container has inner and outer tubular portions and between them a radially outwardly extending annular flange adapted to engage the outer face of the wall of the container when the bung is positioned in the opening. The inner tubular portion is of a size to pass through the opening in the container and has a plurality of tongues integral with the inner tubular member and attached at their inner ends only and of such resilient material that these tongues tend to be urged outwardly to a diameter at their upper ends which is greater than the size of the opening in the container. These tongues are squeezed inwardly as the bung is pushed through the opening into the container and the tongues are spaced from the flange by the thickness of the wall of the container so that after the bung is fully inserted the tongues snap radially outwardly beneath the inner face of the wall of the container surrounding the opening.



3,399,799
GLASS PARTS FOR FORMING CATHODE-RAY TUBE ENVELOPES

Arthur C. Meiresonne, Columbus, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Original application Aug. 24, 1966, Ser. No. 579,448, now Patent No. 3,322,522, dated May 30, 1967. Divided and this application Feb. 20, 1967, Ser. No. 617,304
6 Claims. (Cl. 220—2.1)

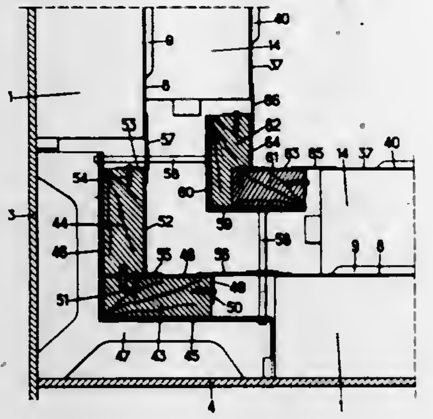


This invention relates to hollow glass parts, each having a distinctively-contoured annular flange portion adapted to permit improved sealing to another hollow glass part having a complemental sealing surface, such parts being of particular utility in forming cathode-ray tube envelopes and the like.

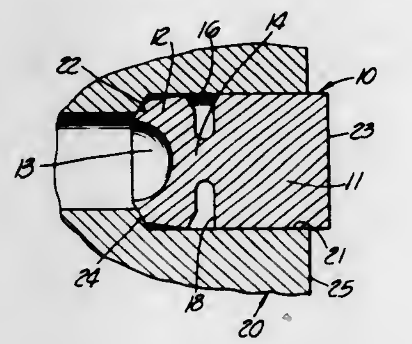
3,399,800
TANK FOR LIQUEFIED GAS

Auguste Gilles, Paris, France, assignor to Société à Responsabilite Limitée dite: Gaz-Transport, Paris, France
Filed Feb. 14, 1966, Ser. No. 527,254
Claims priority, application France, Mar. 5, 1965, 8,149
9 Claims. (Cl. 220—15)

An integral tank structure for ships carrying liquefied gas comprising in succession an inner hull, an outer insulating casing, an outer fluid tight casing, an inner insulating casing and an inner fluid tight casing, the two fluid tight casings being made of thin metal having a low coefficient of expansion, reinforced by transverse frames, and supported at their corners by rigid metallic supports projecting through the insulating casings.

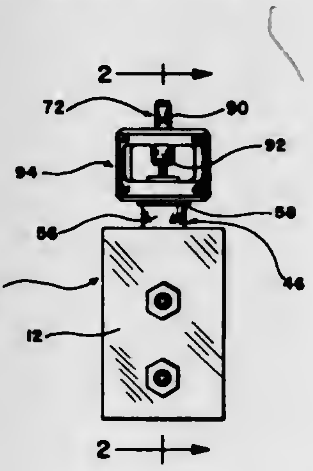


3,399,801
EXPANSIBLE PLUG FOR FLUID SYSTEMS
John H. Bent, 2418 Fontezuela Drive,
Hacienda Heights, Calif. 91745
Filed Sept. 6, 1967, Ser. No. 665,813
4 Claims. (Cl. 220—24)



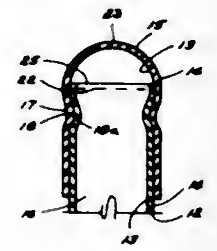
A metal plug has a first portion which expands within a drilled hole under applied axial force, and has a second portion relatively movable by such force into contact with the first portion of the plug to limit the degree of its radial expansion.

3,399,802
QUICK-OPENING VALVE
Benjamin M. Wedner, Pittsburgh, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed May 26, 1967, Ser. No. 641,595
15 Claims. (Cl. 220—47)



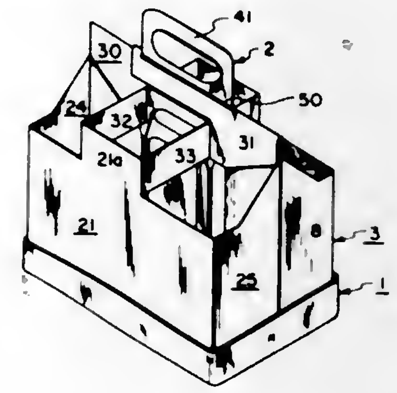
A valve for substantially instantaneously transferring a relatively small quantity of fluid under a relatively high pressure utilizing a rupture disc. Means are provided to position the rupture disc in a passageway between two ports, to rupture the disc from outside the valve, and to provide quick and simple means to replace the rupture disc so that the valve may be used repeatedly and economically.

3,399,803
SELF-LOCKING MEDICAMENT CAPSULE
Harold J. Oglevee, Grosse Pointe Woods, and Ralph E. Mottin, Grosse Pointe Park, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
Filed Oct. 11, 1966, Ser. No. 585,888
3 Claims. (Cl. 202—60)



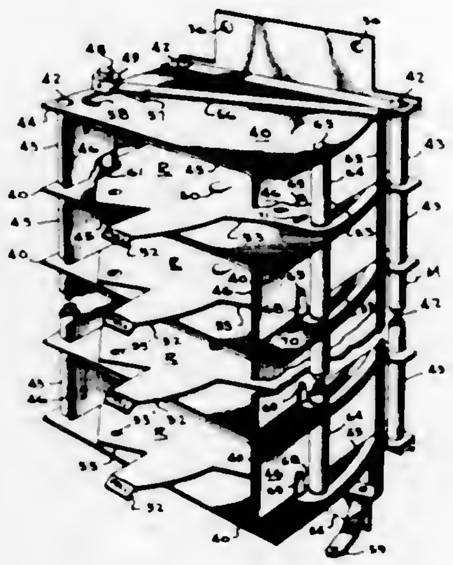
A separation-resistant hard shell capsule adapted for fabrication on automatic dip molding machinery is provided having a cylindrical telescopically-joined coaxial cap and body. The inner wall of the cap has an inwardly extending circumferential ridge defining an opening small enough to allow the body to enter into a partly locked position in the cap. The opening is large enough, however, to allow the body to enter into a fully locked position in the cap. Optionally, the body has a circumferential groove located for matching contact with the ridge in the fully locked position. The capsule can be made and filled in large numbers at normal production rates on conventional machinery.

3,399,804
ARTICLE CARRIER
Prentice J. Wood, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed June 17, 1966, Ser. No. 558,409
10 Claims. (Cl. 220—118)



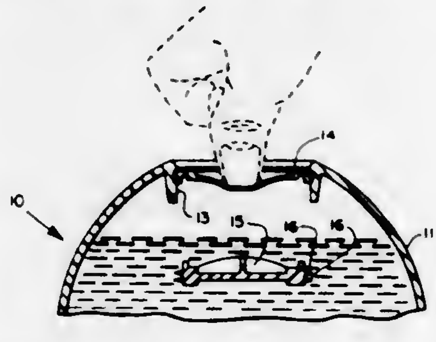
A combination plastic and paperboard article carrier is disclosed wherein a plastic loadbearing base is detachably secured to an upright plastic handle having a hand gripping aperture and two downwardly extending prongs which are disjointably secured to the base. The walls and partitions of the carrier are formed of renewable paperboard and the end and side walls coincide generally with the outer edge portions of the base and the medial partition formed of paperboard is disposed about and envelopes at least a part of the plastic handle. Transverse partition strips of paperboard extend between the side walls and the medial partition structure to divide the parts of the carrier on either side of the handle into a plurality of article receiving cells. According to one modification, the plastic handle and its hand gripping aperture extend above the medial paperboard partition structure while in another modification of the invention, the plastic handle is completely surrounded by the medial partition structure of paperboard and the apertures therein are disposed in coincidental relationship to the aperture formed in the plastic handle.

3,399,805
PHONOGRAPH RECORD VENDING DISPENSER
Jack C. Moore, Freeport, Bahama Islands
Filed Oct. 26, 1966, Ser. No. 589,591
9 Claims. (Cl. 221—119)



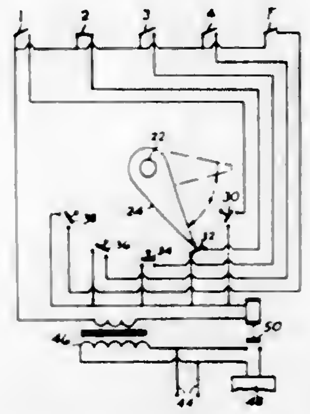
A phonograph record vending dispenser for records having a plurality of spaced slots for each record to be available for selection with a plurality of spaced storage subassemblies for a plurality of records, with said assemblies being pivotally supported about a vertical axis for dispensing movement in a horizontal plane for dispensing movement of a single record through one of said selected discharge slots and having means responsive to the deposit coinage to cause all of said platforms to move to said dispensing position and lock means for restraining all of the platforms responsive to movement of one of said platforms from its retracted position.

3,399,806
DELAYED OPENING DISPENSER
Malcolm B. Lucas, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed May 1, 1967, Ser. No. 635,137
6 Claims. (Cl. 222—5.45)



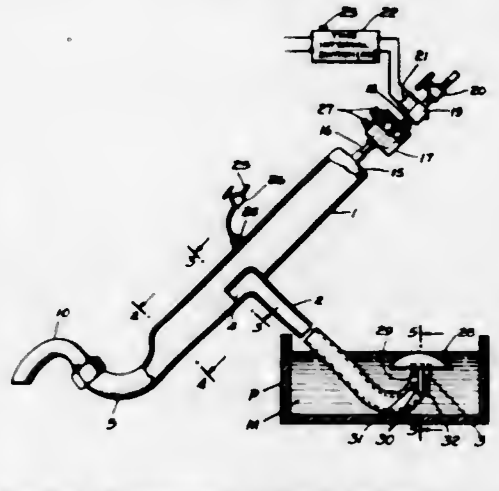
A dispenser comprising a container having a water soluble seal in its dispensing outlet. A separating member is interposed between the soluble seal and the container contents to prevent the contents of the container from dissolving the seal before the dispenser is activated. The separating member is moved, removed, or fractured when activating the dispenser such that its contents can be dispensed after the water soluble seal has been dissolved.

3,399,807
CONTROL OF LIQUID DISPENSING UNITS OF THE METERING TYPE
Richard P. Couture, 1715 S. Washington,
Tacoma, Wash. 98405
Filed Mar. 7, 1967, Ser. No. 621,280
1 Claim. (Cl. 222—17)



A control for metering-type liquid dispensers, particularly service station gasoline pumps, includes a cylindrical dial having its peripheral surface calibrated in dollar or other selected measuring units. When a customer requests a given amount of gasoline, the operator closes a set switch corresponding to the dollar value of the amount of gasoline requested. He then activates the pump and proceeds with the servicing of the vehicle. As soon as the desired dollar volume has been delivered by the pump, cam means associated therewith actuate an electric switch in series with the set switch, opening the circuit and shutting off the pump.

3,399,808
VACUUM OPERATED LIQUID DISPENSING MEANS
Harry R. Bucy, 625 S. Glenwood Place,
Burbank, Calif. 91506
Filed Feb. 21, 1966, Ser. No. 538,128
16 Claims. (Cl. 222—70)

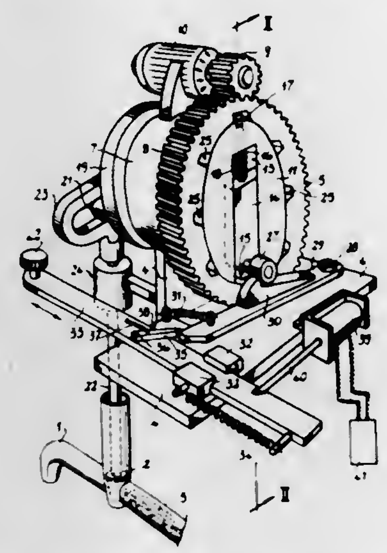


A device for dispensing molten metal in predetermined amounts comprising a closed elongated hollow body member having an intake member which includes an intake orifice submerged in the molten metal supply and a delivery orifice communicating with the interior of the said member at a point above the level of the supply. The body member includes a gooseneck delivery spout normally closed by a check valve means disposed below the level of the body of molten metal retained by the gooseneck spout. A vacuum producing means is connected to the interior of the member above the delivery end of the intake conduit and a time interval switch means controls the time interval to which the interior of the member is subjected to vacuum. Additionally, means is provided for optional supply of a non-oxidizing atmosphere to the interior of the member when it is not subjected to vacuum.

3,399,809

OPERATING DEVICE FOR A CLOSING MEMBER OF AN ICE-CREAM DISPENSING NOZZLE IN AN ICE-CREAM CONTINUOUSLY PRODUCING APPARATUS

Mario Simonich, Via Legionari di Polonia, 25, Bergamo, Italy
Filed Apr. 14, 1967, Ser. No. 630,934
10 Claims. (Cl. 222—70)

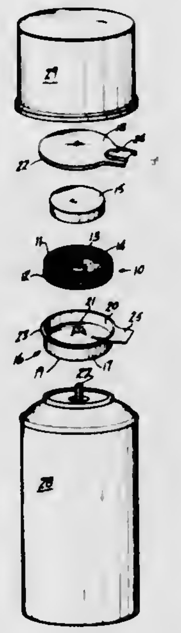


A mechanical operating device for a closing member of the outflow opening of an ice-cream dispensing nozzle in a creamy ice-cream continuously producing apparatus. The device includes a first continuously rotating body, a second body connected to said closing member by a kinematic assembly, and manually operable means for mechanically controlling the rotatable restraint and release, respectively, of the first body and second body to each other.

3,399,810

DEVICE FOR DISPENSING HEATED FLUIDS

Frederick A. Burne, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Jan. 6, 1967, Ser. No. 607,731
6 Claims. (Cl. 222—146)

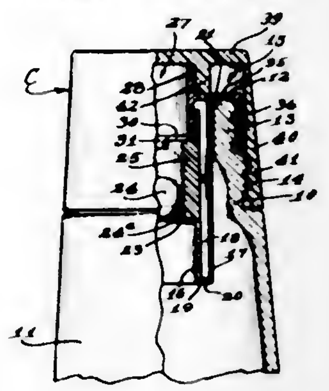


A device for dispensing heated fluids which comprises a fluid container having an outlet nozzle and a heat exchanger adjacent said outlet nozzle, said heat exchanger comprising an inlet orifice communicating with the container outlet nozzle, an outlet orifice communicating with said inlet orifice, a porous metal member within the heat exchanger chamber between the aforementioned inlet and outlet orifices and a barrier adjacent said inlet orifice to provide distribution of discharged fluid through the aforementioned porous member.

3,399,811

LIQUID POUROUT FITMENT

Ira H. Miller, West New York, N.J., assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Jan. 27, 1967, Ser. No. 612,171
5 Claims. (Cl. 222—147)

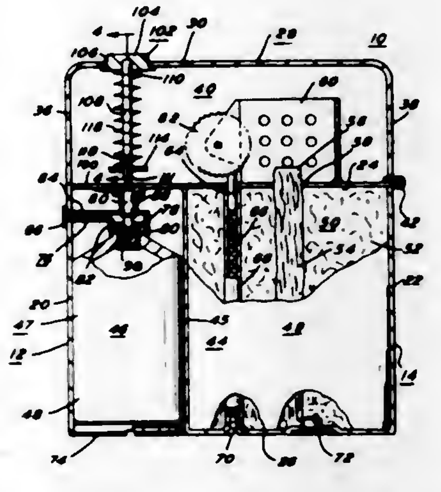


A liquid pourout fitment and closure combination, the latter being permanently attached to the neck of a bottle to provide a pilfer-proof package. The pourout fitment is made in two parts, the first part being received in the open mouth of the bottle, and the second part engaging the first part and including a skirt retained on the outer surface of the neck of the bottle by interfitting ridges and grooves on the inner surface of the skirt and the bottle neck. The fitment includes a ball check-valve permitting surge-free flow of fluid from the bottle, but which prevents refilling of the bottle. A means for venting the bottle is incorporated in the fitment so that pouring of contents from the bottle is accomplished without the usual gurgling and surging effect.

3,399,812

CIGARETTE LIGHTER-EXTINGUISHER MEANS

Charles F. Walker, 7047 Lincoln Drive, Philadelphia, Pa. 19119
Filed Aug. 31, 1965, Ser. No. 484,028
20 Claims. (Cl. 222—192)

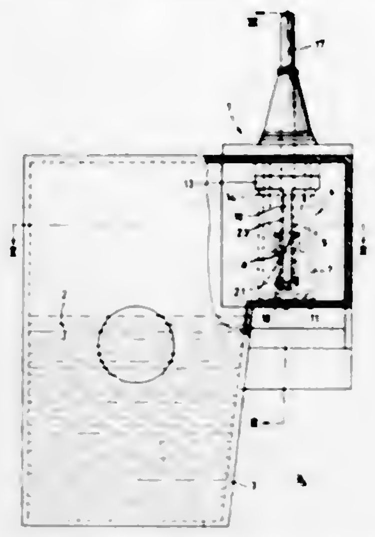


A cigarette lighter-extinguisher device comprising a case, a lighter means supported within said casing and a fire extinguishing means supported within said casing for dispensing a fire extinguishing fluid, the casing including a body with a lid having an open position exposing said lighter means and a closed position enclosing said lighter means, said actuating means for said fire extinguishing means having a movable element engagable to activate said fire extinguishing means only when said lid is in its closed position.

3,399,813

DETERGENT DOSING DEVICE FOR DISHWASHERS

Artur Wilhelm Josef Theyssen, Schwelm, Westphalia, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 10, 1967, Ser. No. 629,613
Claims priority, application Germany, Apr. 9, 1966, G 46,560
8 Claims. (Cl. 222—438)

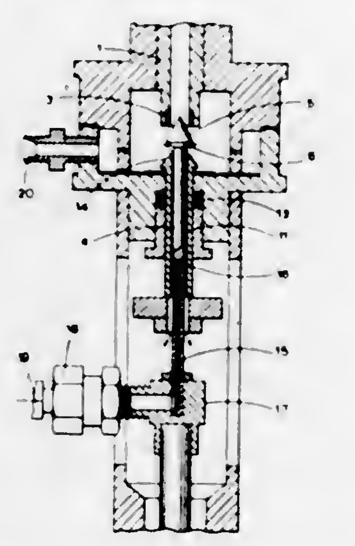


A dosing device for introducing a predetermined amount of detergent into the wash region of a dishwasher. The dosing device is mounted on a pivoting door of the washer. The device includes a container and a cylinder-plunger unit which receives a fixed amount of detergent from the supply container when the door of the dishwasher is pivoted to a position substantially normal to the initial position. The structure providing access between the supply container and the cylinder-plunger unit controls the amount of detergent introduced into the unit.

3,399,814

POWDER FEEDER WITH ROTARY, AXIALLY MOVABLE FLOW CONTROLLER

William Albert Currie, Greenford, Ealing, London, England, assignor to Messrs. Berk, Limited
Filed Sept. 28, 1966, Ser. No. 582,569
Claims priority, application Great Britain, Sept. 28, 1965, 41,245/65
4 Claims. (Cl. 222—549)

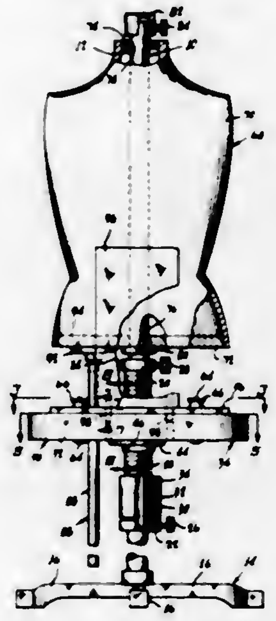


A powder feeding device includes a hopper having a bottom opening provided with a valve seat. A conical valve member coaxial with the valve seat is provided with a depending axially bored valve stem slidably coaxially supported in a sleeve and delineating a vertical passageway therewith, the top of the sleeve being provided with a bottom stop for the valve and being vertically adjustable. The bottom of the stem is connected to a source of compressed air and the stem is provided with an outlet port between its ends to permit the flow of air between the tube and sleeve to prevent the deposit of powder therein.

3,399,815

STRETCHING FORM FOR FUR GARMENTS AND THE LIKE

Frank Katona, 28 Linden Road, Sylvan Glen, M.C.R., Bordentown, N.J. 08505
Filed Sept. 28, 1965, Ser. No. 490,870
9 Claims. (Cl. 223—68)



1. A stretching form for fur garments and the like comprising:

(a) a standard;

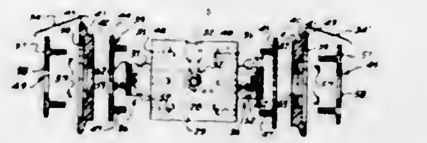
(b) a body part including a shoulder portion about which a garment may be draped; and

(c) means below the body part engageable with the lower portion of said garment, said means and body part being mounted on the standard for relative adjustment toward and away from each other, at least a portion of said means being spaced vertically downwardly from the body part in selected positions to which said means and body part are adjusted relatively to each other, said portion of said last-mentioned means being expansible independently of the body part, radially of the standard.

3,399,816

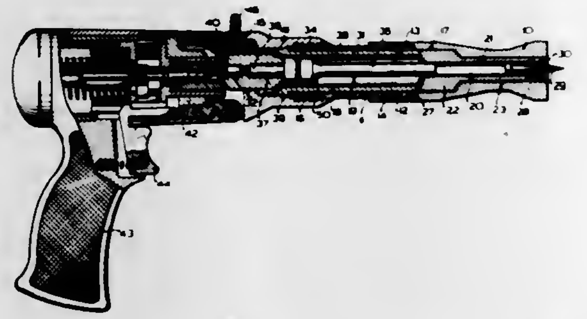
ADJUSTABLE ROLLER GUIDE

Fred Staklinski, Los Angeles, Calif., assignor to De Luxe Laboratories, Inc., New York, N.Y., a corporation of New York
Filed July 7, 1966, Ser. No. 563,475
11 Claims. (Cl. 226—79)



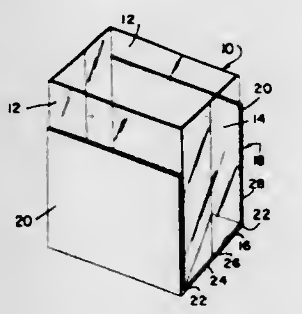
A roller for guiding traveling strips of different widths by having end members formed for supporting portions of the strips adjacent their longitudinal edges and having flanges to preclude sidewise motion of the strips. One, or both, of the end members being positionable axially of the body member of the roller to two different positions. Such positions are determined by resilient means carried by one of the roller body, or end, members which are engageable with recesses in the other member, with those recesses being in sets spaced longitudinally and circumferentially from each other to establish the adjusted positions. It is only necessary to turn the end member with respect to the roller body to move the resilient means out of one set of recesses, then slide the end member axially while turning it to the required circumferential extent to engage with the next set. The roller may also include a sprocket for driving a perforated strip.

3,399,817
DEVICES FOR DRIVING PINS INTO MASONRY, STRUCTURAL MEMBERS OR THE LIKE
Karl Diehl, Wuppertal-Elberfeld, Germany, assignor to Carl Bauer, Wuppertal-Cronenberg, Germany, a kommanditgesellschaft of Germany
Filed Sept. 1, 1965, Ser. No. 484,364
Claims priority, application Germany, Sept. 7, 1964, B 78,430
7 Claims. (Cl. 227—10)



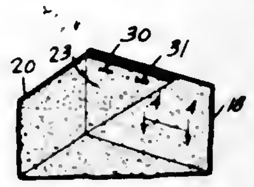
A device for driving pins into masonry or the like in which a cartridge holder is arranged in a housing of the device movable from an inactive position to a cocked position upon insertion of a pin in the muzzle of the device and exertion of forward pressure on the latter, wherein a piston driven forwardly upon detonation of a charge in the cartridge holder drives the pin into the masonry, and wherein the piston and elements of the device for cooperating therewith are constructed and arranged to cooperate with each other to brake forward movement of the piston with a force increasing during forward movement of the latter.

3,399,818
CONTAINER
Douglass M. Stegner, 1816 Circle Road, Ruxton, Md. 21204
Filed May 17, 1966, Ser. No. 550,748
7 Claims. (Cl. 229—14)



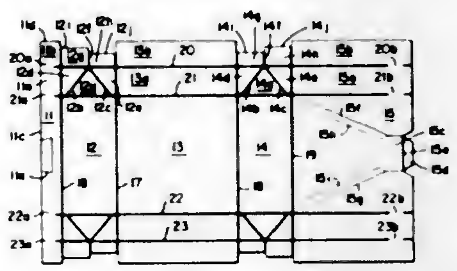
This invention relates to a self-sustaining paperboard support member having side panels joined at fold lines to a bottom panel containing a central fold line parallel to the first said fold lines which has a flexible liner, such as a bag, adhesively secured to the side and bottom panels. When the fold lines are disposed in a common plane the bag is thereby distended and its top supported in a fully open condition whereby the support member and its adhesively attached bag or liner may be placed within a receptacle such as a box while the top of the bag is retained in fully open condition to facilitate filling of the same.

3,399,819
CONTAINERS FOR MOIST PRODUCTS
George S. Rennie, 2 Redland Crescent, Scarborough, Ontario, and Leonard S. Campbell, 5 Teal Court, Don Mills, Ontario, Canada
Filed Jan. 14, 1966, Ser. No. 520,584
23 Claims. (Cl. 229—31)



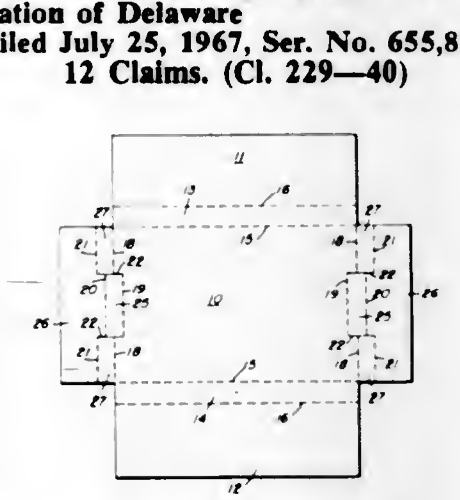
This invention relates to containers for products such as fresh eviscerated chickens, and includes a container body constructed from a pair of liners having a corrugated medium therebetween. One of the liners forms an inner surface portion of the container while another of the liners and the corrugated medium define an outer surface portion of the container. The one liner includes a layer of material capable of absorbing and retaining water and a continuous barrier layer of moisture impermeable material laminated to and between the absorbent material and the corrugated medium to prevent moisture internally of the container from reaching the corrugated medium and the other liner.

3,399,820
SINGLE STRUCTURE CARTON AND BLANK
Thomas W. Foster, Palo Alto, and Donald P. Nemoede, Santa Clara, Calif., assignors to Fibreboard Corporation, San Francisco, Calif., a corporation of Delaware
Filed Sept. 16, 1966, Ser. No. 579,925
14 Claims. (Cl. 229—37)



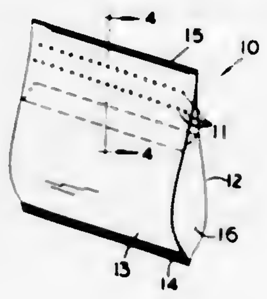
A single structure frozen food carton comprises top and bottom closures each having two outer flap portions sealed over intermediate inner flap portions. The inner flap portions are staggered to provide enhanced sealing characteristics.

3,399,821
BOOK WRAPPER
Norbert A. Ringholz, Sandusky, Ohio, assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed July 25, 1967, Ser. No. 655,828
12 Claims. (Cl. 229—40)



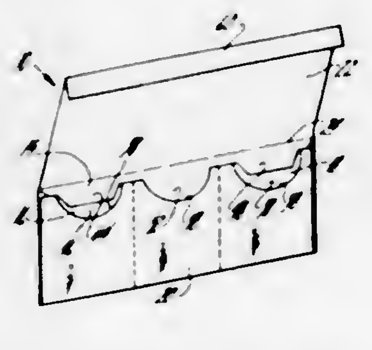
An easily assembled, one-piece corrugated paperboard shipping container is presented for mailing books or other flat objects, which incorporates an automatic bumper end feature to protect the corners of the object being mailed.

3,399,822
PLASTIC BAG
Emanuel Kugler, 124 Richmond Place, Lawrence, N.Y. 11559
Filed Aug. 1, 1967, Ser. No. 657,604
6 Claims. (Cl. 229—62.5)



A plastic bag having a plurality of valve-forming miniature flaps. Each valve consists of at least two flaps capable of partial overlap. The flaps permit air flow in only one direction. Thus, for example, gas formed in a food contained within the bag may flow out of the bag through the flaps, the flaps however preventing moisture, dirt or other contaminants from entering the bag from the outside.

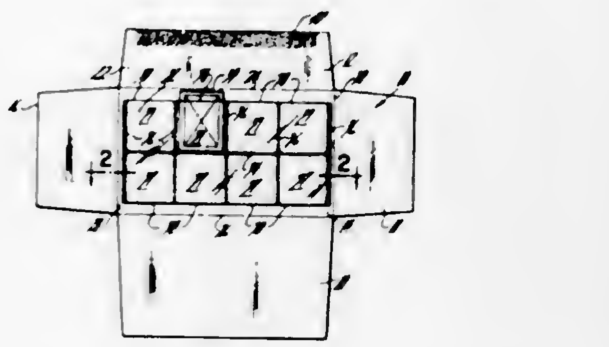
3,399,823
MULTIPLE POCKET ENVELOPE
Michael P. Johnson, Longmeadow, Mass., assignor to United States Envelope Company, Springfield, Mass., a corporation of Maine
Filed July 3, 1967, Ser. No. 650,865
7 Claims. (Cl. 229—72)



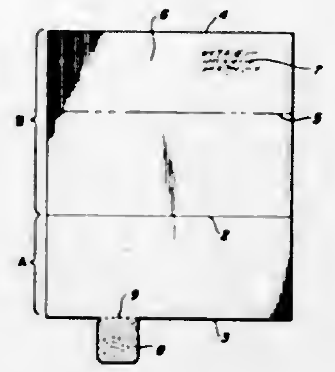
This disclosure is of a multiple pocket envelope made from a unitary blank having a front panel, side panels folded against the rear surface of the front panel and leaving a portion of the latter surface exposed therebetween, and a back panel covering both the side panels and the exposed rear surface portion. The front, back and side panels are adhesively joined together in assembly and cooperate to form a plurality of pockets therebetween. A sealing flap or closure panel integrally joined to the blank provides a closure for the pockets.

3,399,824
MULTIPLE POCKET ENVELOPE
Merrill J. Dodge, Longmeadow, Mass., assignor to United States Envelope Company, Springfield, Mass., a corporation of Maine
Filed July 3, 1967, Ser. No. 650,866
5 Claims. (Cl. 229—72)

This disclosure is of a multiple pocket envelope made from a blank having a patch bonded or otherwise fixed thereto along lines which divide the blank and patch into a number of pockets for receiving coupons or other generally flat articles. In addition to the main panel to which the patch is attached the blank includes side panels, a bottom panel and a closure panel or flap which are foldable over the main panel to form a closed envelope within which the pockets are contained and to hold in place the articles inserted in the pockets. A quantity of adhesive is placed on the closure flap and may be used to seal the closed envelope.



3,399,825
SOCIAL CORRESPONDENCE CARD CONSTRUCTION
Fred Kirchof, P.O. Box 1621, Phoenix, Ariz. 85001
Filed May 25, 1967, Ser. No. 641,334
1 Claim. (Cl. 229—92.8)



A correspondence card suitable for formal social correspondence. The lower portion of the card folds upwardly against the upper portion to mask a writing area. A tab, formed integrally with the lower edge of the card and having an adhesive disposed thereon, forms a seal which holds the lower portion of the card against the upper portion. A line of perforations permits one to open the card, leaving the tab adhesively secured to the upper portion which forms a decorative emblem in the upper portion of the card, outside the writing area.

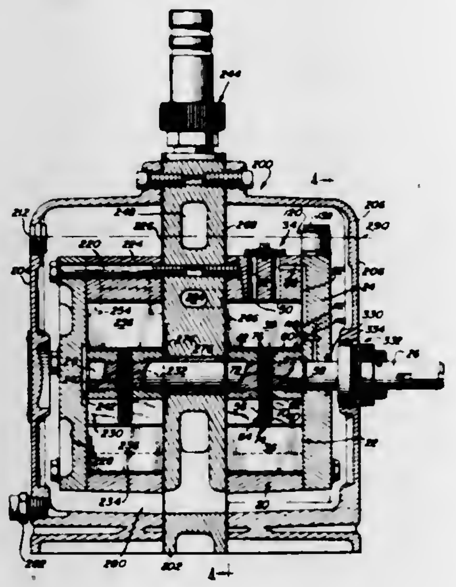
3,399,826
PUMP WITH AUXILIARY VACUUM PUMPING STAGE
Vytautas Andriulis, Chicago, Ill., assignor to Cenco Instruments Corp., Chicago, Ill., a corporation of Delaware
Filed Aug. 26, 1966, Ser. No. 575,392
33 Claims. (Cl. 230—152)

1. A mechanical vacuum pump of the rotary, fluid-sealed, internal vane type mounted within a housing and having intake and exhaust connections on said housing and comprising,

(a) a stationary pump assembly on the interior of the housing and including a central stator and end plates and a cylindrical bore within the stator,

(b) an eccentrically mounted cylindrical rotor journalled for rotation within the stator and forming a crescent pumping chamber in said bore and having a plurality of slots and a vane in each slot, the vanes adapted to reciprocate within the respective slots during rotation of the rotor and engage the inner cylindrical wall of the bore to sweep the crescent chamber,

(c) an intake port and an exhaust port in the assembly on opposite sides of the perigee point of engagement of the vanes with the bore, rotation of the rotor acting to decrease the pressure of the intake port by action of the vanes moving through the crescent chamber,

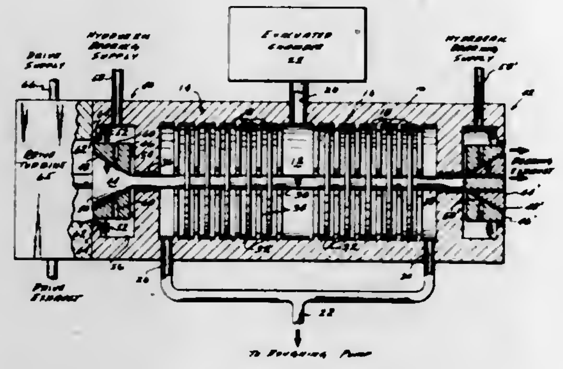


(d) means isolating the inner ends of the slots from one another pressure-wise so that the reciprocation of the vanes produces a pressure variation in each slot in synchronism with the rotor, thereby constituting each of said inner ends a slot pumping chamber,

(e) passageway means in the pump assembly connected between a first location where the slot pumping chambers which consecutively pass will be in communication with said passageway means while passing said first location and will be expanding during passing, and a second location in the vicinity of the exhaust port, whereby to reduce the pressure of gas in said exhaust port during operation of the pump by action of the vanes moving in the slot pumping chambers.

3,399,827
VACUUM PUMP SYSTEM

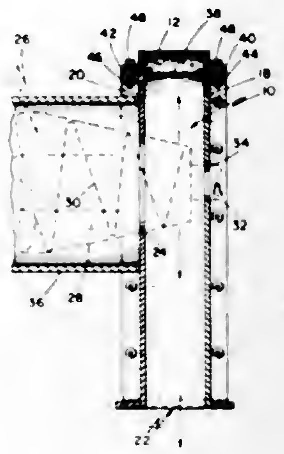
Everett H. Schwartzman, 457 34th St., Manhattan Beach, Calif. 90266
Filed May 19, 1967, Ser. No. 639,756
10 Claims. (Cl. 230—116)



The specification discloses an ultra high-speed turbomolecular vacuum pump driven on a common shaft by a torque-producing gas turbine. The bearings for the common rotor shaft are gas lubricated, and damped, resiliently supported.

3,399,828
CENTRIFUGE SOLIDS DISCHARGE RECEIVING COMPARTMENT

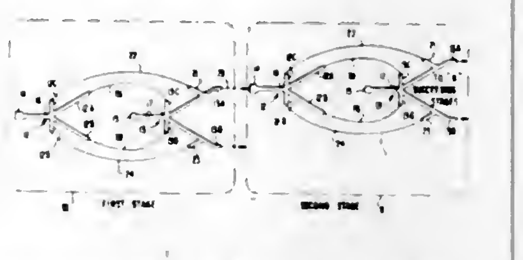
Fritz Fassle, Limburgerhof, Pfalz, Germany, assignor to Bird Machine Company, South Walpole, Mass., a corporation of Massachusetts
Filed Nov. 25, 1966, Ser. No. 596,949
6 Claims. (Cl. 233—47)



The application discloses a compartment for initially receiving sticky solids discharged by a centrifuge. To prevent the solids from building up on wall areas against which they are thrown, such areas are provided in the form of an elastic membrane forming a wall of an hermetically sealed chamber. Means are provided for periodically suddenly changing the pressure in the chamber causing instantaneous flexing of the membrane. There are thus exerted on any caked solids on the membrane sudden jarring and shearing forces in directions both parallel and normal to the underlying membrane surface, causing the solids cake to crumble off. In the preferred embodiment shown, the sudden flexing of the membrane is toward the interior of the compartment providing strong ejecting force as in a sling shot, and is produced by first evacuating the chamber to expand the membrane inwardly thereof and quickly opening the relief chamber to atmosphere so that the membrane instantaneously retracts toward the interior of the compartment.

3,399,829
FLUID OPERATED BINARY COUNTER

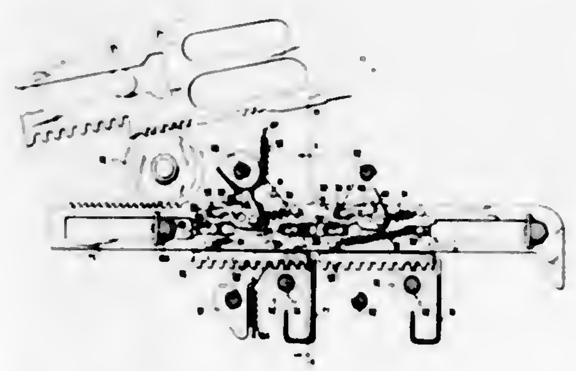
Edward F. Richards, Winter Park, Warren B. Depperman, Orlando, and Cornelius P. McKenzie, Gainesville, Fla., assignors to Martin-Marietta Corporation, Middle River, Baltimore County, Md., a corporation of Maryland
Filed May 4, 1965, Ser. No. 453,068
2 Claims. (Cl. 235—201)



This invention relates to a fluid operated binary counter stage utilizing first and second cascaded fluidic elements, with each element having means for producing a fluid jet deflectable between bistable output channels, and each element having control orifices by the use of which switching of its jet can be brought about. The first element can be powered by a pulsed fluid input, whereas the second element can be powered by a continuously pressurized fluid input. The output channels of the first element are connected to the control ports of the second element, whereas a jet pump is disposed in each output channel of the second element, and each jet pump is in turn connected by a feedback passage to a control port of the first element. The reduced pressure developed in a feedback passage is sufficient to cause a switching of the jet of the first element upon the initiation of an input pulse, but insufficient to switch the jet to the opposite output channel during the continuation of a pulse.

3,399,830
ACCUMULATOR SELECTING AND TENS TRANSFER MECHANISM FOR CALCULATING MACHINE

Richard E. Busch, La Puente, Calif., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Original application Aug. 11, 1964, Ser. No. 388,900, now Patent No. 3,348,768, dated Oct. 24, 1967. Divided and this application Oct. 22, 1965, Ser. No. 515,278
13 Claims. (Cl. 235—133)

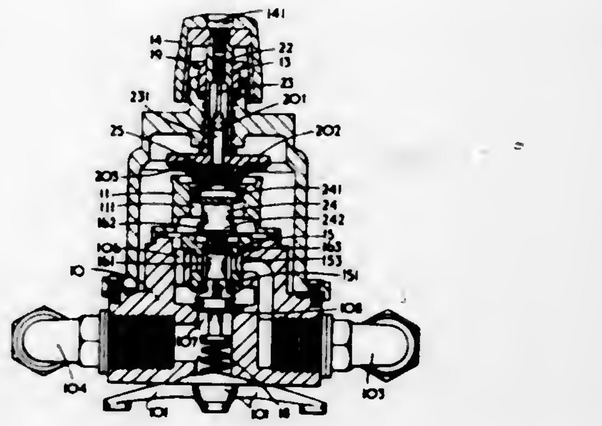


A tens transfer mechanism for use in a calculating machine of the type utilizing a plurality of secondary differential actuators for digitizing selected ones of a plurality of secondary accumulators wherein each secondary differential has slidably disposed thereon at least one transfer rack. Each secondary accumulator includes a tens transfer tooth which upon interacting with the transfer rack of its associated secondary differential actuator activates a mechanism to advance the next succeeding secondary accumulator by one increment. This mechanism includes a spring connected between each transfer rack and its associated secondary differential actuator. A latch holds each transfer rack fixed relative to its associated secondary differential actuator until released by the return stroke of its secondary differential actuator after the tens tooth on a secondary accumulator has interacted with the transfer rack of the preceding secondary differential actuator.

3,399,831
VALVE FOR CONTROLLING THE MIXING OF HOT AND COLD FLUIDS

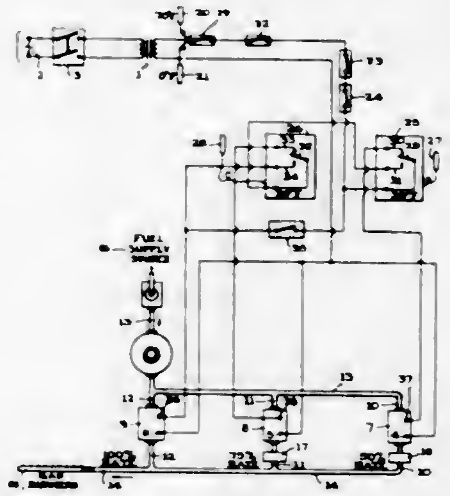
Lionel Charles Meynell, Wolverhampton, England, assignor to Meynell & Sons Limited, Wolverhampton, England
Filed Oct. 10, 1966, Ser. No. 585,380
Claims priority, application Great Britain, Nov. 9, 1965, 47,391/65
2 Claims. (Cl. 236—12)

The invention pertains to a mixing valve for hot and cold fluids and includes a conical valve with axially opposed seats which seat on conical valve seats thereby controlling the admission of hot and cold fluids from respective hot and cold inlet lines. Downstream of the valve seats is a heat sensitive device located in a mixing chamber. The heat sensitive device is connected at one end to the valve and at the other end to a manually settable spring biased temperature control handwheel. The valve is so arranged that cold fluid is discharged upon first opening the valve so as to prevent scalding when the valve is used for controlling water flow to such household devices as showers.



3,399,832
MODULATING FUEL CONTROL SYSTEM

Edward W. Wilson, Philadelphia, and Donald L. Wooden, Wayne, Pa., assignors to Peerless Industries, Incorporated, Boyertown, Pa., a corporation of Pennsylvania
Filed Oct. 12, 1966, Ser. No. 586,254
10 Claims. (Cl. 236—91)



1. In a control system for a heating system with fluid fuel burning means, the combination of; a main fuel supply line; an output supply line connected to deliver fuel to said fluid fuel burning means; first, second, and third electrically operated valve means individually connected to supply fuel from said main fuel supply line to said output supply line when energized; said second and third electrically operated valve means each connected to deliver fuel to said fuel burning means through said output supply line at individually different rates than said first electrically operated valve means; power supply means commonly connected with said first, second and third electrically operated valve means; indoor-outdoor reset thermostat control means, having a temperature control setting which is automatically variable with changes in outdoor temperatures about a preselected boiler water temperature setting, and having switch means operable to open and closed positions by said control setting; first temperature controlled switching means operable at a first

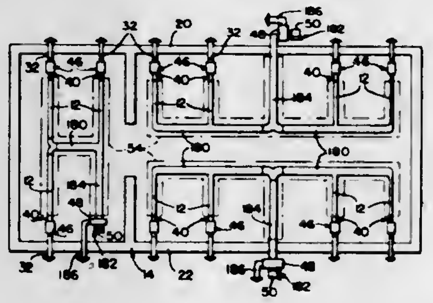
predetermined temperature assuming a first position at temperatures above said first predetermined temperature and a second position at temperatures below said first predetermined temperature; said switch means of said indoor-outdoor reset thermostat control means and said first temperature controlled switching means connected in series circuit with said power supply means; said third electrically operated valve means connected in circuit with said first position of said first temperature controlled switching means to be energized to deliver fuel at one rate to said burning means at temperatures above said first predetermined temperature; second temperature controlled switching means connected in circuit with said second position of said first temperature controlled switching means, and operable at a second predetermined temperature assuming a first position at temperatures above said second predetermined temperature and a second position at temperatures below said second predetermined temperature; said second electrically operated valve means connected in circuit with said first position of said second temperature controlled switching means to be energized to deliver fuel at another rate to said burning means at temperatures above said second predetermined temperature; and said third electrically operated valve means connected in circuit with said second position of said second temperature controlled switching means and operable to deliver fuel at still another rate to said burning means at temperatures below said second predetermined temperature; whereby fuel is delivered at three different rates to said burning means under varying temperature conditions.

3,399,833
LOW INTENSITY RADIANT HEATER SYSTEM AND BURNER THEREFOR

Arthur C. W. Johnson, Troy, Mich., assignor to Combustion Research Corporation, Troy, Mich., a corporation of Michigan

Filed Dec. 14, 1966, Ser. No. 601,700

26 Claims. (Cl. 237—53)



This invention relates to a low intensity radiant heater system and burner or a plurality of burners therefor, and more particularly to a gas-, or optionally an oil-fired burner unit in and associated with a radiant heating system, wherein the air for the burner, and optionally the burner structure itself with its controls and piping, are taken from an input section located outside of the structure enclosing an area to be heated, and the products of combustion from the burner(s) are discharged by an exhaust fan at the output end of the system, outside of the structure within which the radiant heating is generated and effected.

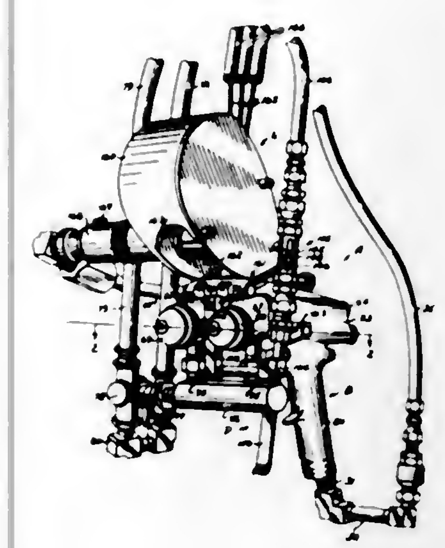
3,399,834
APPARATUS AND METHOD FOR FORMING PLASTIC ARTICLES

Richard C. Bradley, % Plastic Engineering and Chemical Co., 3501 NW. 9th Ave., Fort Lauderdale, Fla. 33309

Filed Feb. 17, 1964, Ser. No. 345,376

3 Claims. (Cl. 239—10)

1. The method of forming a plastic article including the steps of blending a mixture of plastic resin and promoter with a catalyst by projecting a pair of sprays of the mixture of plastic resin and promoter into one another from spaced apart terminal locations, projecting a spray of the catalyst into the sprays of the mixture of plastic resin and promoter, and directing the intermixed sprays in a predetermined direction.

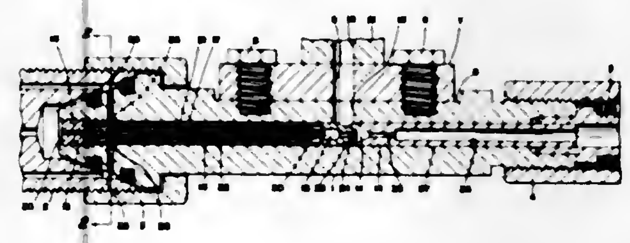


3,399,835
POWDER SPRAY TORCH

Elwin A. Hawk, Sr., East Rochester, Ohio, assignor to Coast Metals, Inc., Little Ferry, N.J., a corporation of Delaware

Filed July 29, 1966, Ser. No. 568,884

4 Claims. (Cl. 239—85)



The invention relates to a powder spray torch of the type in which powder is dropped into a powder chamber and is aspirated to the torch tip or nozzle by a combustible mixture of oxygen and acetylene, but is concerned primarily with the provision of means for adjusting or varying the area or point in the torch system at which a completely combustible mixture of the oxygen and acetylene is formed, to thereby greatly reduce or eliminate any possibility of flashback, and for enabling the torch to be operated at a higher than conventional ratio of oxygen pressure and velocity to acetylene pressure and velocity, so that a greater vacuum can be maintained for aspirating the powder, thereby increasing the capacity of the torch for depositing powder.

3,399,836
ATOMIZING PUMP

Fred Pechstein, Berlin, Germany, assignor to Firma Rudolf Albert, Hemer, Germany

Filed Nov. 21, 1966, Ser. No. 595,761

Claims priority, application Germany, Mar. 12, 1966, A 51,830

13 Claims. (Cl. 239—333)

1. A pump assembly for conveying liquids to be atomized and comprising, in combination:

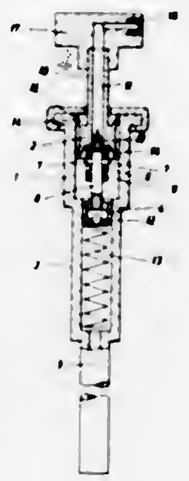
(a) first means defining a first variable volume space and a fluid flow passage in communication with said first space;

(b) second means defining a second variable volume space in commnnication with said first space;

(c) first valve means associated with said first means and disposed for isolating said passage from said first space;

(d) connecting means connecting said second means to said first valve means for controlling the opening and closing of said valve means and for providing a limited degree of relative movement between said first valve means and said second means; and

(e) biasing means associated with said second means for urging it into a condition corresponding to the minimum volume of said second space.

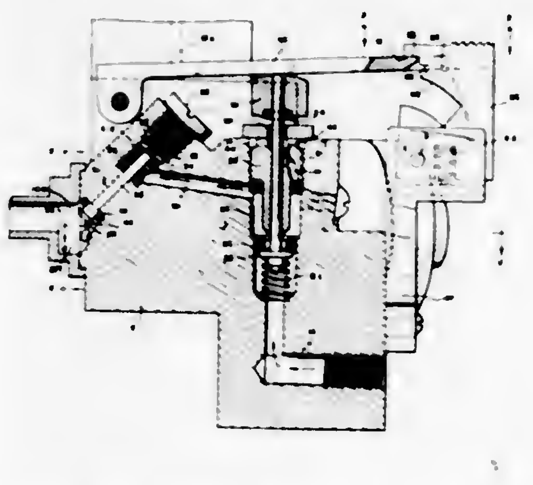


3,399,837
FOAM SPRAY GUN HAVING REPLACEABLE NOZZLE

Charles E. Frick, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

Filed Aug. 14, 1964, Ser. No. 389,539

30 Claims. (Cl. 239—415)



8. In a spray gun, means defining a cavity, an air inlet port in said cavity defining means, an air inlet passage leading to said air inlet port, air distributor means in said cavity defining means adjacent to said air inlet port for causing air to flow along at least part of said cavity defining means, at least one liquid inlet port located at said part of said cavity defining means, and a liquid inlet passage leading to said liquid inlet port.

30. A spray gun for foam or the like comprising a body, means for supplying fluid to port means in said body, link means pivoted to said body, a nozzle carried by said link means, locking means for releasably securing said link means in a position in which said nozzle abuts said body at said port means, and spring means carried by said link means for resiliently urging said nozzle against said body when said locking means secures said link means.

3,399,838
REDUCTION OF CEREAL GRAINS TO FLOUR

William F. Hanser, Cedar Rapids, Iowa, assignor to National Oats Company, Cedar Rapids, Iowa, a corporation of Illinois

No Drawing. Continuation-in-part of application Ser. No. 521,828, Jan. 20, 1966. This application May 13, 1966, Ser. No. 549,818

4 Claims. (Cl. 241—8)

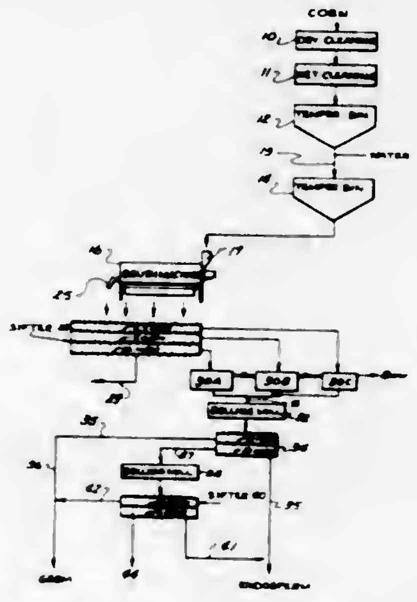
Whole kernels of grain covered with bran fibers are reduced to flour with a minimum of ruptured cells by chilling the kernels to an embrittlement state at a temperature in the range of about —50 to —225 F., and grinding the embrittled kernels and fibers thereon to flour fineness.

3,399,839
DRY MILLING CORN PROCESS

Herman Anderson and Dale W. Trommer, Algonquin, Ill., assignors to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey

Filed Mar. 2, 1964, Ser. No. 348,703

13 Claims. (Cl. 241—11)



1. In a process of milling corn to separate bran, germ and endosperm components of the corn, the improvement which consists in adjusting in increments the moisture content of the corn to within the range from about 19 to about 23% by weight, and then without substantial time lag subjecting the corn to the abrading action of a wire brush so as to remove bran from the corn.

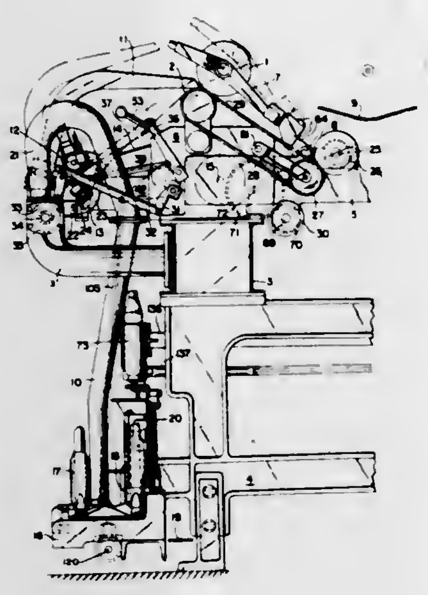
3,399,840
WINDING MACHINE FOR WINDING YARNS OR THE LIKE MATERIALS INTO CHEESE OR CONES

Junichi Hayashi, 167 2-chome Kofuen, Nishinomiya-shi, Hyogo-ken, Japan, and Shin Tsukuma, 7–13 Sakuragaoka, Itami-shi, Hyogo-ken, Japan

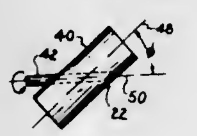
Filed May 21, 1964, Ser. No. 369,064

8 Claims. (Cl. 242—35.5)

A winding machine having a plurality of winding units with each unit having automatic means for retrieving yarn ends from the takeup package and the supply cop and knotting them together. A spare cop reservoir is provided for each winding unit, and cop supplying means are provided for supplying cops to the spare cop reservoir.

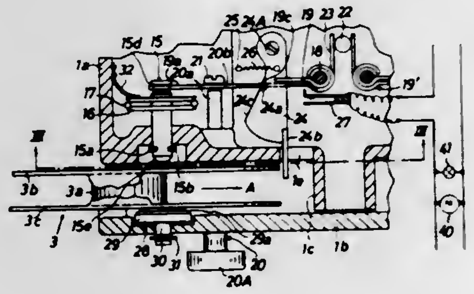


3,399,841
STRAND TRAVERSING DEVICE
Samuel Richard Genson, Bowling Green, Ohio, assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Dec. 21, 1965, Ser. No. 515,349
10 Claims. (Cl. 242—43)



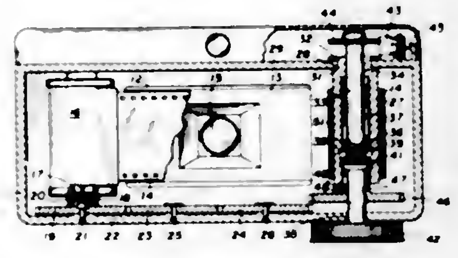
A strand traversing mechanism comprised of a cylindrical member with the curved surface of the member engaging the strand. The member being rotated about an axis which is oblique to the longitudinal axis of the member.

3,399,842
MOTION PICTURE PROJECTOR
Alfred Winkler, Munich, Karl Bammesberger, Munich-Untermenzing, and Heinz Krobel and Herbert Wilsch, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Aug. 30, 1966, Ser. No. 575,994
Claims priority, application Germany, Sept. 30, 1965, A 50,376
23 Claims. (Cl. 242—55.11)



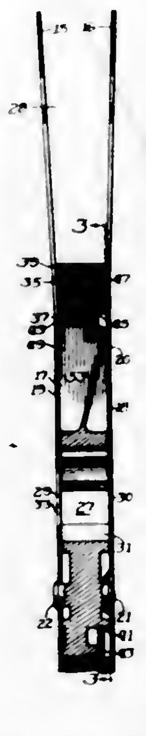
The housing of a motion picture projector has an open-sided recess which can receive a portion of a reel. A rotary spindle is reciprocable in the housing between a retracted position and an extended position in which its conical tip enters the central opening in the core of a reel which is introduced into the recess. The projector has actuating means for reciprocating the spindle and the recess accommodates guides which maintain the reel in such position that the opening of its core is at least substantially aligned with the spindle when the latter is held in retracted position.

3,399,843
FILM ADVANCING AND REWINDING MECHANISM
Hubert Nerwin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 27, 1967, Ser. No. 612,201
5 Claims. (Cl. 242—71.6)



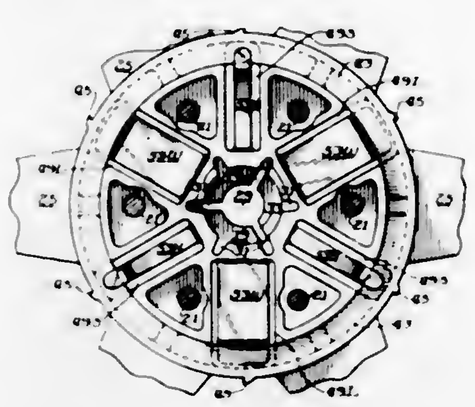
A camera, such as a cassette type, in which the knob or other control member used to advance the film is also employed to rewind it.

3,399,844
TAKE-UP REEL HAVING TORQUED SPROCKET RING
Frank L. Weninger, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 10, 1966, Ser. No. 593,395
5 Claims. (Cl. 242—74)



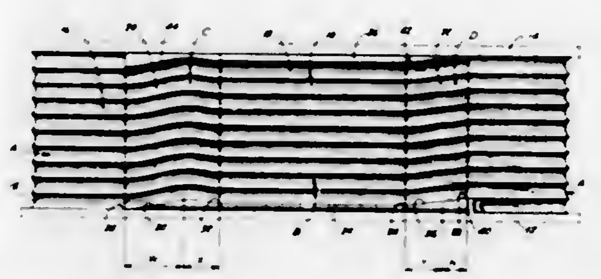
Disclosed is a rotatable web handling take-up reel having flanges extending from the reel hub to form a web chamber. A sprocket ring having web engaging teeth surrounds the hub and is held in slippable frictional engagement and for rotation relative the hub by elongated holding means formed integral with the hub at one end, and yieldably engaging the sprocket ring at the other end with sufficient torque to cause slippable co-rotation of the ring with the hub.

3,399,845
TAKE-UP REEL HAVING VARIABLY TORQUED SPROCKET RING
George F. Krtous and Frank L. Weninger, Chicago, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 10, 1966, Ser. No. 593,396
4 Claims. (Cl. 242—74)



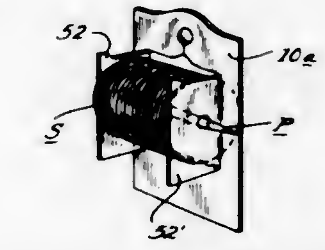
Disclosed is a rotatable web handling take-up reel having flanges extending from the reel hub to form a web chamber. A sprocket ring having web engaging teeth surrounds the hub and is held in slippable frictional engagement and for rotation relative the hub by a plurality of elongated holding means formed integral with the hub at one end, and yieldably engaging the sprocket ring at the other end with sufficient torque to cause slippable co-rotation of the ring with the hub. The elongated holding means are selectively usable and are arranged in sets having different yieldability characteristics so that a range of torques may be applied to the ring.

3,399,846
ANTI-HARMONIC CABLE SPOOLING METHOD AND APPARATUS THEREFOR
Franklin L. Le Bus, Sr., Longview, Tex., assignor to Le Bus Royalty Company, Longview, Tex., a partnership composed of the F. L. Le Bus Company and the G. F. Le Bus Rotary Tool Trust
Filed Mar. 23, 1966, Ser. No. 536,816
9 Claims. (Cl. 242—117)



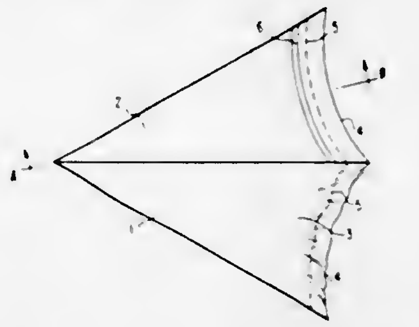
An anti-harmonic cable spooling method and means wherein the cable is wound on a cable spool drum in such a manner as to break up any harmonics for substantially eliminating cable whip between the cable spooling drum and the first fixed sheave. The cable is shifted laterally along the outer periphery of the drum during the winding operation in such a manner that the cable is first shifted through a distance different from the width of a cable groove, and subsequently shifted through a second distance wherein the cumulative movement of the cable is equal to the width distance between a pair of succeeding cable grooves of the parallel grooved sections.

3,399,847
FISHING LINE SPOOL HOLDER
Arthur R. Slate, Chicago, Ill., assignor to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York
Filed Feb. 9, 1967, Ser. No. 614,914
6 Claims. (Cl. 242—129.6)



A spool holder for fishing line designed to support a spool on a rod while line is transferred to a reel also mounted on the rod, thus avoiding twisting of the line, said holder being formed of a sheet of inexpensive sheet material such as cardboard capable of displaying advertising matter, and having weakened portions permitting the user to deform the sheet to operable form, with means for mounting the holder on a fishing rod and also having means for supporting a spool.

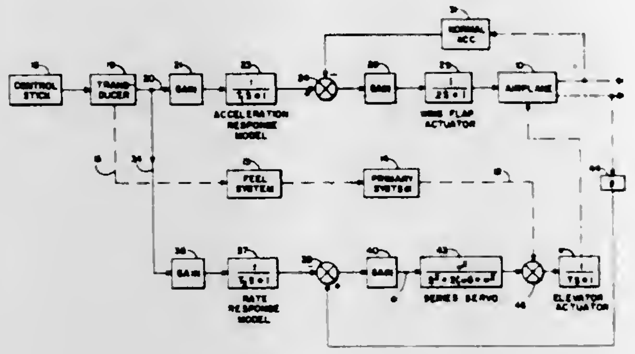
3,399,848
DEVICE FOR PREVENTING TRAILING-EDGE FLUTTERING OF PARAGLIDER AIRFOILS
Hansjurgen Weiss, Friedrichshafen, Germany, assignor to Dornier System G.m.b.H., Friedrichshafen, Germany, a limited-liability corporation of Germany
Filed Oct. 10, 1966, Ser. No. 585,423
10 Claims. (Cl. 244—41)



A longitudinal keel has leading edge members extending angularly rewardly from the forward end thereof and flexible airfoils are secured between the keel and these leading members. An elogated aerodynamically-disturbing means is carried on the underside of each of the airfoils and is disposed equidistantly from the adjacent trailing edge of the airfoils throughout the length of the disturbing means. The distance of the aerodynamically-disturbing means and the height thereof are approximately equal to the thickness of the boundary layer at the position of the aerodynamically-disturbing means.

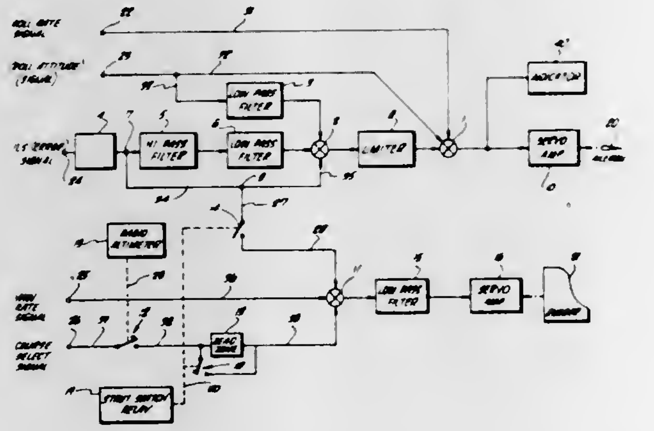
3,399,849
LIFT AND PITCH CONTROL APPARATUS FOR AIRCRAFT
Russell C. Hendrick, Fridley, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed May 11, 1966, Ser. No. 549,199
5 Claims. (Cl. 244—77)

Operation of a conventional manual control stick of an aircraft concurrently operates the wingflaps of an aircraft to obtain a direct lift control and operation of the elevator surface to alter angle of attack and additionally provide increase in lift for an aircraft. Operation of the control stick supplies an electrical signal to a Model to control the displacement of the wing flaps and a normal accelerometer senses the acceleration due to increased lift to balance the output from the Model. Operation of the control stick also directly through the conventional primary system controls the operation of the elevator and also through a stick force transducer supplies a stick force signal to a Rate Model to control a series servo which additionally operates the elevator surface. The Model provides for a desired aircraft response rate. Gain devices are provided so that the magnitude of the stick force signal supplied to control the wing flaps and the elevator may be proportioned to obtain the desired response.



3,399,850
AUTOMATIC LANDING APPROACH CONTROL SYSTEM FOR AIRCRAFT

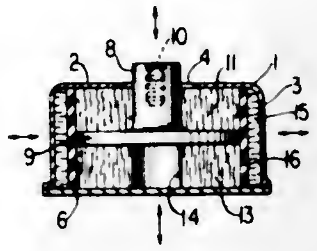
Kenneth C. Kramer, Thousand Oaks, and Don M. Archibald, Malibu, Calif., and Harold N. Toble, Mercer Island, Wash., assignors to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Continuation of application Ser. No. 463,548, June 14, 1965. This application Sept. 6, 1967, Ser. No. 687,932
10 Claims. (Cl. 244—77)



An automatic landing system is disclosed which includes a roll axis and a yaw axis control system. In the roll axis, runway heading error signals and the integral of ILS beam error signals are eliminated. Instead a lagged roll rate input term acts as one portion of a roll axis command. Accordingly a crab angle relative to runway heading is permissible provided that the angle is maintained with fixed limits as defined by a limit circuit connected between a command output signal junction and a roll axis control. Although runway heading error is employed in the yaw axis control system, it is employed only in the immediate vicinity of landing area, and is limited in its application by a dead zone circuit until touchdown when the dead zone limiting circuit is shorted out and runway heading error is directly applied in yaw axis control. Also applied at touchdown is ILS beam rate error.

3,399,851
VIBRATION ISOLATOR UNIT

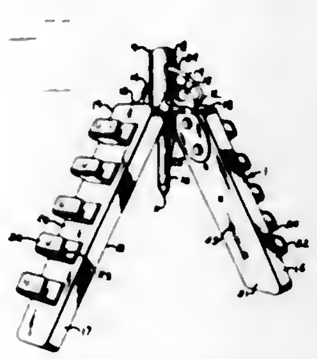
Romolo Racca, Cheshire, Conn., assignor to Nichols Engineering Incorporated, Shelton, Conn., a corporation of Connecticut
Filed Aug. 10, 1966, Ser. No. 571,638
2 Claims. (Cl. 248—22)



A shock and vibration isolator unit having both vertical and horizontal shock transmisssibility and including a cup-shaped housing mounted on a base plate. Sleeves of urethane material are arranged within the housing and engage with a disc-shaped head on a load-supporting stud. Discs of urethane material are also positioned within the housing on opposing sides of the stud head so that the sleeves and discs absorb shocks from the stud.

3,399,852
TRANSFER SADDLE

Samuel P. Armstrong, 4904 E. 23rd St., Kansas City, Mo. 64127
Filed Apr. 24, 1967, Ser. No. 632,988
6 Claims. (Cl. 248—49)

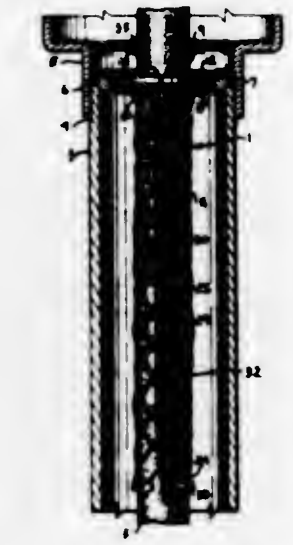


A transfer saddle holds transmission lines during the replacement or repair of the upper cross arm of telephone poles and the like and includes a nail member having a pointed shank adapted to be driven into the tapered top of the pole, the nail member having clevis members pivotally mounted thereon and supporting a pair of legs with upwardly open line receiving hooks spaced therealong. A pull ring is engaged with the nail member above the clevis members to simplify removal of the transfer saddle from the pole.

3,399,853
CABLE GRIP SUPPORT

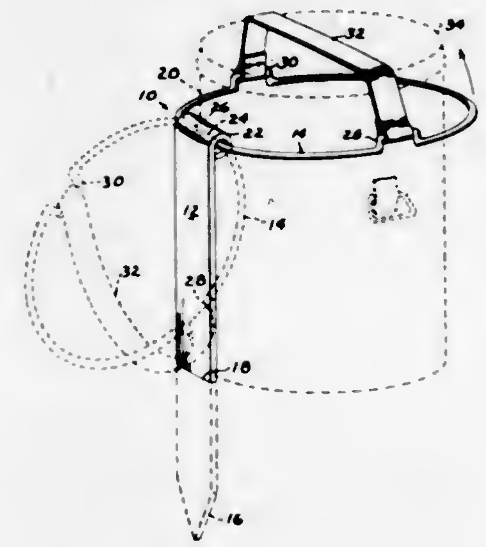
Charles T. Lewis, P.O. Box 95089, Oklahoma City, Okla. 73109
Filed Nov. 7, 1966, Ser. No. 592,373
7 Claims. (Cl. 248—60)

This invention relates to cable grip supports adapted to be positioned around a cable intermediate its length wherein the cable gripping device has a plurality of wire strands generally spirally interwoven to form an open mesh body that is split longitudinally thereof so the body may be opened to be placed around a cable. The portion of the body adjacent the split has strands forming returns or loops with the strands of the loops extending through rings or other suitable fastener receiving members whereby when the body is placed around a cable the fastener may be applied to close the body onto a tubular form. The support or grip includes a head member at the draft end of the mesh body in the form of a ring with hinged portions whereby said head member may be opened to be positioned around a cable. The strands of the body forms loops at the draft end with the strands extending through spaced openings in the head member whereby the strand extends continuously from an article receiving end of the body to the draft end and return to the article receiving end with the ends of the strands secured together at the article receiving end. The head member is provided with a plurality of circumferentially spaced guide members that may be selectively positioned in differently spaced relation from the outer periphery of the head member for centering the head member relative to correspondingly different openings in a support, the top end of a conduit riser, or the like.



3,399,854
GARBAGE CAN HOLDER

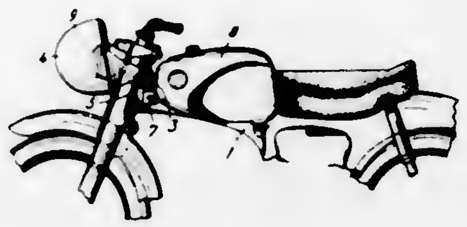
Woodrow W. Patterson, 3723 Princeton Ave., Nashville, Tenn. 37205
Filed Mar. 23, 1967, Ser. No. 625,453
4 Claims. (Cl. 248—121)



An upright ground engaging standard hingedly connected at its upper end portion to a ring loosely surrounding a garbage can maintained horizontal by a flexible can top spanning member.

3,399,855
ARRANGEMENT FOR DETACHABLY SECURING A HELMET TO A TWO-WHEEL VEHICLE

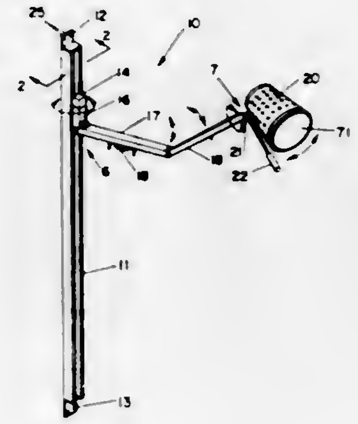
Takao Shirai, Tokyo, Japan, assignor to Kabushiki Kaisha Honda Gyutsu Kenkyusho, Saitama-ken, Japan
Filed Sept. 29, 1966, Ser. No. 582,904
Claims priority, application Japan, Dec. 7, 1965, 40/99,868
1 Claim. (Cl. 248—201)



A two-wheel vehicle having a headlight, a fuel tank behind the headlight and two brackets on the fuel tank, one for receiving a clasp on one chin strap of a helmet such that the clasp can be locked to the bracket, and another for detachably receiving the other of the chin straps.

3,399,856
ADJUSTABLE LIGHT FIXTURE

George A. Pecaut, 23219 Victory Blvd., Canoga Park, Calif. 91304
Filed May 25, 1966, Ser. No. 552,801
9 Claims. (Cl. 248—279)



1. A universally adjustable mechanism comprising:

longitudinally extending track means adapted for attachment to a supporting structure;

rollers means mounted upon said track means for movement along the length thereof and including a stop means;

stop receiving means affixed to said track means for receiving said stop means in a plurality of locations;

first tubular arm means having an end rotatably mounted upon said roller means for movement therewith;

a second tubular arm means having an end pivotally attached to said first arm opposite said end;

third tubular arm means pivotally attached to an end of said second arm means opposite said first arm means;

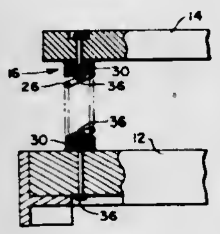
lock means separately positioned in each end of said second arm means adapted to retain it in one of a plurality of selected positions relative to the position of the respective adjacent arms; and

a structural mount upon said third arm means opposite said second arm means for receiving structure to be moved by said universal adjusting mechanism.

3,399,857

SPRING MOUNTING FOR VIBRATORY TABLES AND THE LIKE

William J. Schultz, El Paso, Tex.
(8405 W. Winslow Road, Palos Park, Ill. 60464)
Filed Jan. 16, 1967, Ser. No. 609,464
1 Claim. (Cl. 248—350)

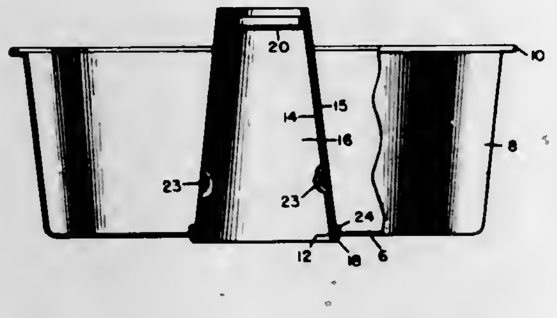


A spring mounting for mechanism of the above character in which a movable work member is resiliently sustained by a support by means of a plurality of coil springs in which each spring is connected at its opposite ends respectively to the support and member by a plug-like connector element encircled by the end turns of the spring and axially compressed to expand diametrically into gripping relation to the end turns of the spring.

3,399,858

FOIL BAKE PAN WITH HEAT TUBE

Jackson M. Luker, 207 E. Oregon St.,
Urbana, Ill. 61801
Filed Mar. 31, 1966, Ser. No. 539,122
10 Claims. (Cl. 249—117)



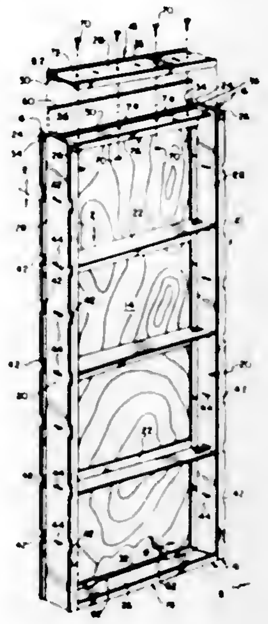
An inexpensive disposable bake pan fabricated from thin metallic foil having an upstanding heat tube constituting a pair of telescopic heat tubes secured in upstanding relationship with the pan bottom, said tube sections being disposed in nested relationship and fixed against relative endwise movement.

3,399,859

RIVETLESS CONCRETE WALL FORM PANEL WITH PLYWOOD FACING AND METAL STUDDING

George F. Bowden, Northbrook, and Richard T. Dagiel, Elk Grove Village, Ill., assignors to Symons Mfg. Company, Des Plaines, Ill., a corporation of Delaware
Filed Dec. 23, 1966, Ser. No. 604,420
9 Claims. (Cl. 249—189)

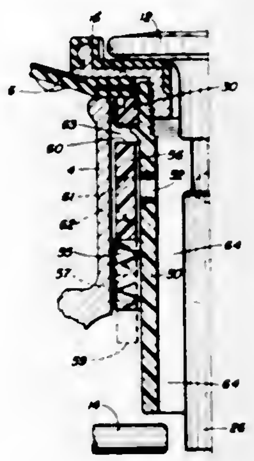
A rivetless concrete wall form panel comprising an upstanding plywood facing that is surrounded by studding in the form of a rectangular metal frame including a pair of oppositely disposed vertical frame members and a pair of oppositely disposed horizontal frame members, such panel being characterized by the fact that one of the horizontal frame members is removable and the further fact that the facing is removably held in the frame by way of anchoring strips which are disposed within mating complemental grooves in the four frame members and the adjacent edges of the plywood facing.



3,399,860

FLUSH VALVE INCLUDING ADJUSTABLE RESTRICTION

Henry R. Billeter, Deerfield, and Axel B. Nelson, Mount Prospect, Ill., assignors to Sloan Valve Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 23, 1967, Ser. No. 610,846
11 Claims. (Cl. 251—37)



A diaphragm type flush valve having a depending guide in the valve barrel which is equipped with adjustable restriction means to quiet and regulate the amount of water flow, the guide having a quiet acting refill head located adjacent the valve seat.

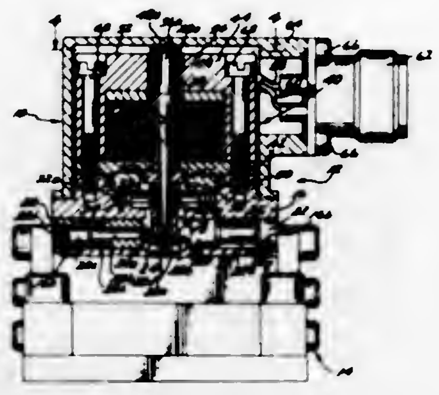
3,399,861

ELECTROMAGNETIC TORQUE MOTOR

Donald C. Howland, Costa Mesa, Calif., assignor to Cadillac Gage Company, Detroit, Mich., a corporation of Michigan
Filed Oct. 22, 1965, Ser. No. 501,351
8 Claims. (Cl. 251—129)

The present invention relates to an electromagnetic

torque motor having a diaphragm-like pivotal support means encircling the armature, said support means being substantially the same radial cross-section throughout its 360° encirclement and separate passage means in the armature insuring equal pressure on both sides of the support means.



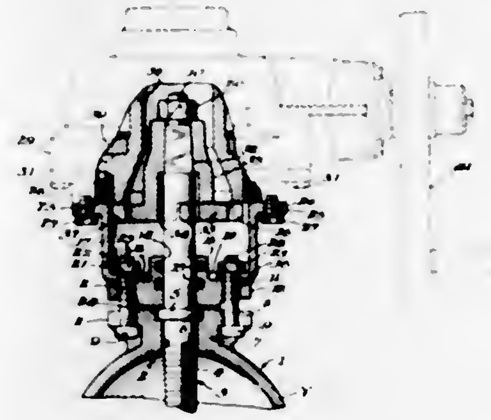
3,399,862

YOKE ADAPTOR FOR GEAR OR MOTOR OPERATOR

Joseph A. Cerow, Chicago, Ill., assignor to Crane Co., Chicago, Ill., a corporation of Illinois

Filed June 28, 1965, Ser. No. 469,057

5 Claims. (Cl. 251—214)



A detachable valve actuator for a turning, nonrising stem valve having O-ring stuffing box seals. The construction permits simple and convenient attachment of the actuator unit without disassembly of the valve, or disturbing the fluid seal and without alignment problems, by means of a stuffing box adaptor supported and bolted at the top of the stuffing box member of the valve to the usual slotted ears on opposite sides of the upper bonnet hub. Bolts of extended length to accommodate the added thickness of the flange portion of the adaptor are used in place of the usual ones supplied with the valve.

3,399,863

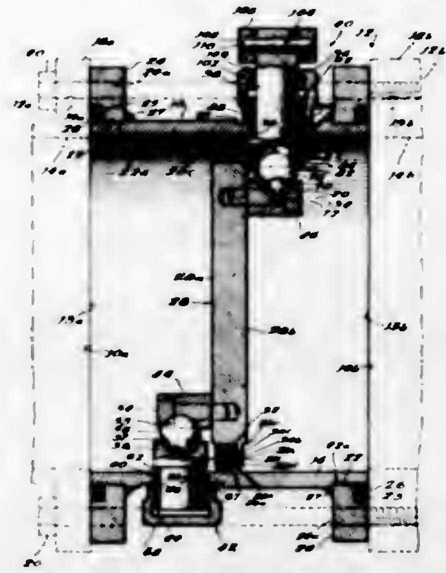
SKEWED AXIS BUTTERFLY VALVE FOR HIGH-PRESSURE SERVICE

Donald G. Fawkes, Chicago, Ill., assignor to Henry Pratt Company, a corporation of Illinois

Filed July 13, 1965, Ser. No. 471,583

19 Claims. (Cl. 251—306)

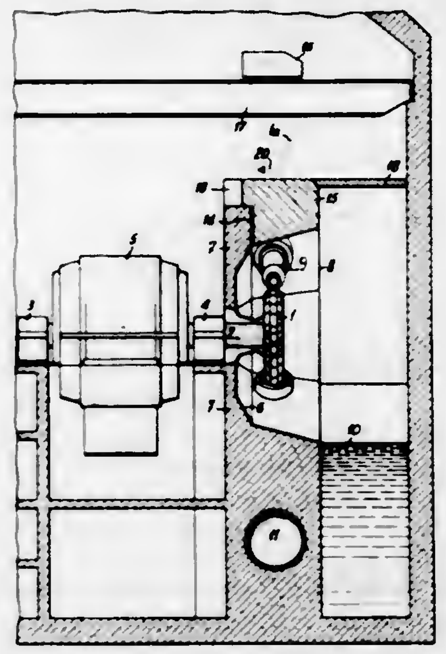
A butterfly valve for high-pressure service having a resilient sealing ring retained in a groove in the periphery of the valve disc by a body of plastic set in situ in the bottom of the groove with the plastic defining means locking the plastic in the groove.



3,399,864

PELTON TURBINE OF THE HORIZONTAL SHAFT TYPE

Lucien Armanet, Geneva, Switzerland, assignor to Ateliers des Charmilles S.A., Geneva, Switzerland, a company of Switzerland
Filed June 7, 1967, Ser. No. 644,177
Claims priority, application Switzerland, June 16, 1966, 8,847/66
4 Claims. (Cl. 253—113)



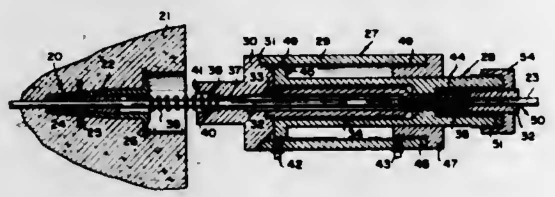
A Pelton turbine of the horizontal shaft type wherein the wheel driving the generator is subjected to more than two jets of water produced by injectors. The water spurting out of said injectors passes towards an exhaust channel through an opening formed laterally in the casing enclosing the wheel which casing is embedded in concrete.

3,399,865

JACKING APPARATUS FOR POST-TENSIONING CONCRETE

William F. Kelly, Avondale, La.
(100 Bellaire Drive, New Orleans, La. 70124)
Filed June 27, 1966, Ser. No. 560,463
5 Claims. (Cl. 254—29)

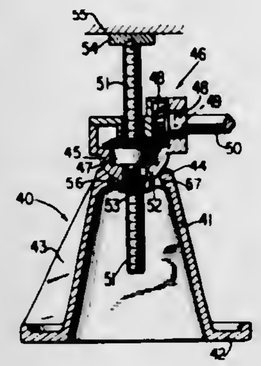
Jacking apparatus for post-tensioning concrete, including an elongated housing comprising an outer cylinder having a central bore, an inner cylinder spaced from said outer cylinder and having a longitudinal bore through which a tendon passes, the aft portion of the inner cylindrical member being reduced to provide an ejector member, a piston-like member positioned within the housing between said inner and outer cylinders, the piston-like member including a piston head, a shaft connected to the piston head, one end of the shaft being bored out to receive the inner cylinder, the outer terminal of the shaft being provided with a recess, a tendon-gripping assembly positioned in the recess, the tendon-gripping assembly including wedge segments for engagement with the tendon, a terminal of the wedge assembly being engaged by the ejection member upon completion of the jacking cycle, and power means for alternately applying pressure to both sides of the piston head to extend and retract the shaft.



3,399,866

JACK AND A BASE FOR TRAILERS WHEREIN THERE IS SPHERICAL SEAT BETWEEN THE JACK AND BASE STRUCTURE

Eugene V. Grumman, 1337 Burr St.,
Fairfield, Conn. 06430
Original application July 12, 1965, Ser. No. 471,063, now Patent No. 3,329,402, dated July 4, 1967. Divided and this application June 29, 1967, Ser. No. 650,014
3 Claims. (Cl. 254—101)



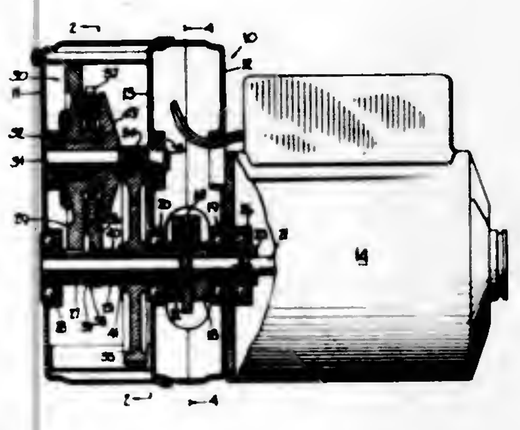
A jack for supporting and leveling a trailer, the jack having a base with a spherical-like seat, and the jack having a spherical member to fit said seat. The spherical seat arrangement permitting the jack to be placed on an incline to level and support a trailer or the like.

3,399,867

WESTON BRAKE HOIST CONSTRUCTION

Charles S. Schroeder, Villanova, Pa., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Oct. 28, 1966, Ser. No. 590,331
3 Claims. (Cl. 254—168)

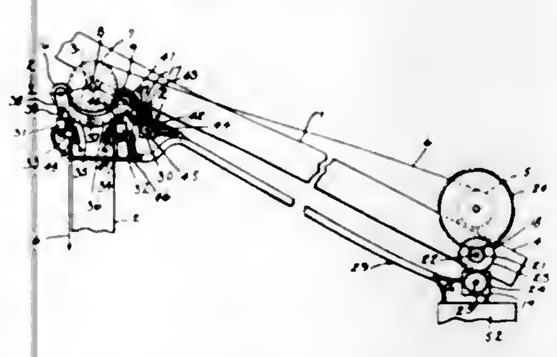
A hoist is equipped with a Weston brake through which a drive shaft controls lifting and lowering movements of a load sheave, and the pawl of the Weston brake is frictionally mounted on a shaft portion of the load sheave. When starting to rotate in load lifting direction, the sheave moves the pawl away from the Weston brake ratchet so that the pawl need not vibrate while the lifting continues. When rotating in lowering direction, the sheave moves the pawl to holding position against the ratchet so that the lowering may be controlled through slipping of the brake while the sheave slips relatively to the pawl.



3,399,868

ROPE PAY-OUT APPARATUS

Karl E. Reischl, South Milwaukee, Wis., assignor to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware
Filed Mar. 31, 1967, Ser. No. 627,552
8 Claims. (Cl. 254—175.7)



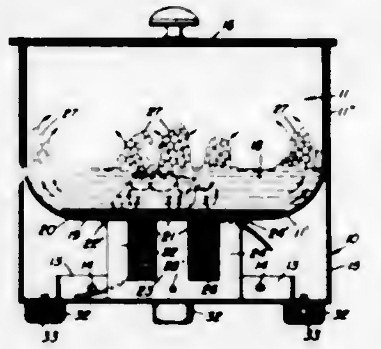
A cable drum is connected through a gear train containing a sprag clutch to drive an hydraulic pump when it pays out cable. The cable passes over a sheave and is held against the sheave by a roller under pressure from an hydraulic cylinder. A gear with sloping friction surfaces is gear driven from an hydraulic motor and the friction surfaces are held in driving engagement with the groove of the sheave by another hydraulic cylinder. The hydraulic pump energizes both hydraulic cylinders and the rotary hydraulic motor to pull the cable from the drum during pay out.

3,399,869

LIQUID AGITATING DEVICE

Walter J. Loria, 420 E. 86th St., New York, N.Y. 10028, and Jerome Suhre, 2370 Seneca Road, Scotch Plains, N.J. 07076
Filed Aug. 31, 1967, Ser. No. 664,870
26 Claims. (Cl. 259—114)

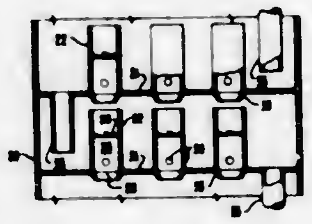
A liquid agitating device comprising a receptacle formed of nonmagnetic material with upwardly extending sides and an imperforate bottom for holding liquid therein. This device is provided with an electromagnet having spaced poles facing the underside of said bottom and a mechanically unconnected liquid agitator plate of paramagnetic material of a size laterally sufficient to bridge the spacing of said poles and fitting loosely in the receptacle over said bottom with a surface noncomplementary to the adjacent surface of said bottom having a part slightly spaced therefrom and means for providing a pulsating energizing current to the electromagnet whereby the part of said agitator plate spaced from said bottom is drawn periodically toward said bottom so as forcibly to expel liquid from space between said plate and bottom into the receptacle space above the plate and alternately is released so as to allow return flow of liquid therebetween.



3,399,870

APPARATUS FOR CONTACTING GASES AND LIQUIDS

Frederik J. Zuiderweg, and Willem H. Manger, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 21, 1965, Ser. No. 465,657
Claims priority, application Netherlands, June 25, 1964, 6407227
9 Claims. (Cl. 261—114)



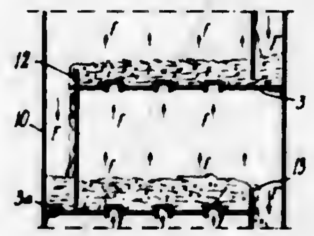
Apparatus for effecting contact between a gas and a liquid wherein a gas stream is flowed within a column through a plurality of trays having tubular gas-liquid contacting units disposed therein. Liquid is supplied to one side of a first tray and flowed into the contacting units through openings therein where it comes into contact with gas flowing upwardly through the contacting unit. At least a portion of the contacted liquid is recirculated through the contacting unit and transferred to one side of each successive tray where it is flowed across each succeeding tray in the manner discussed hereinabove.

3,399,871

BUBBLING VALVES OF LIQUID-PHASE AND GASEOUS-PHASE EXCHANGE APPARATUS

Pierre Bon, Pinsaguel, France, assignor to Compagnie des Ateliers et Forges de la Loire (St. Chamond-Firminy-St. Etienne-Jacob-Holtzer)
Filed July 14, 1966, Ser. No. 565,205
Claims priority, application France, July 28, 1965, 26,314
5 Claims. (Cl. 261—114)

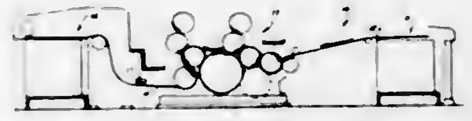
Bubbling valve for liquid-phase and gaseous-phase exchange apparatus consisting of a relative thin disk formed with rectilinear slots disposed tangentially on a circle concentric to said disk and adapted to reduce priming and providing a self-centering effect.



3,399,872

JET MANIFOLD INK OXIDIZER

Henry R. Dickerson, 741 S. Chase Lane,
Lombard, Ill. 60148
Filed May 18, 1967, Ser. No. 639,387
4 Claims. (Cl. 263—3)

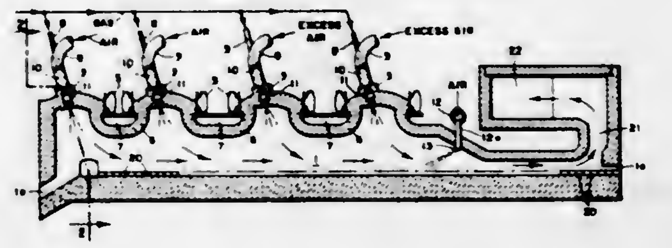


An ink drying device having a flat perforate wall disposed near the path along which a freshly printed sheet of material is moved away from the printing plates of a printing press following the printing operation. The drying device has an elongated and relatively thin chamber, the one wall of which converges with another from the opposite ends thereof toward the center thereof. Heated gas is forced into said chamber from said opposite ends and discharged substantially uniformly through the perforations in the perforate wall directly toward the printed surface of the sheet material moving along said path.

3,399,873

FURNACE FOR SCALELESS DIRECT HEATING OF METAL CHARGE DESTINED TO HEAT-TREATMENT

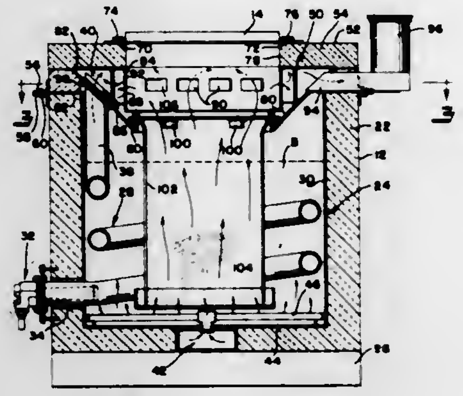
Kazimierz Dybal, Bytom, and Zygmunt Oglaza, Eugeniusz Stwora, and Kazimierz Suchon, Gliwice, Poland, assignors to Biuro Projektow Przemyslu Hutniczego, Gliwice, Dubois, Poland
Filed July 26, 1966, Ser. No. 567,886
Claims priority, application Poland, July 26, 1965, P 110,205
9 Claims. (Cl. 263—15)



A furnace for scaleless direct heating of a metal charge comprising a heating chamber for housing the charge and having two sets of burners adapted to direct an air-fuel mixture into the chamber, one of the air-fuel mixtures having a deficiency of air and the other having an excess of air.

3,399,874
FLUID BED HEATING AND COOLING APPARATUS

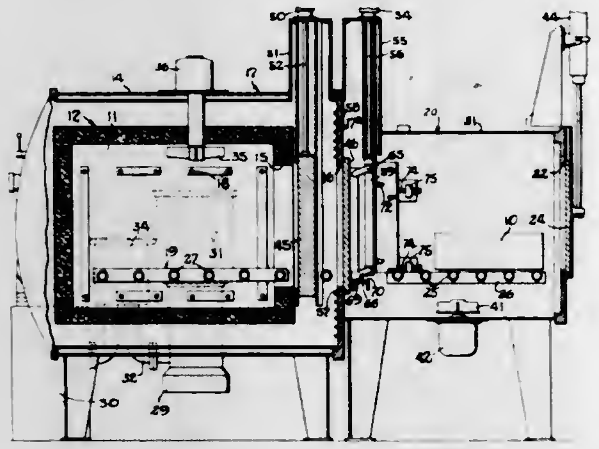
Charles I. Ritchie, Cleveland Heights, Ohio, assignor to Bangor Punta Operations, Inc., Bangor, Maine, a corporation of New York
Filed Jan. 9, 1967, Ser. No. 608,128
7 Claims. (Cl. 263—21)



A fluid bed apparatus for heating or cooling articles immersed therein, with the apparatus, when employed as a heater, including a gas-fired burner tube immersed within the fluid bed to improve the heat transfer to articles placed therein. The gaseous products of combustion of the burner tube are conveyed to a passage in the upper region of the apparatus for intimate commingling with the fluidizing gas and entrained organic fumes which may be provided by the heating of the immersed articles in the bed whereby any such organic fumes are incinerated prior to passage to the exhaust stack.

3,399,875
HEAT TREATING FURNACE

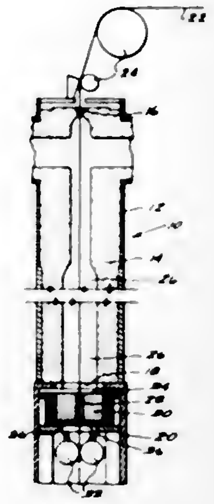
Harold N. Ipsen, deceased, late of Rockford, Ill., by the Illinois National Bank and Trust Co., executor, Rockford, Ill., assignor to Alco Standard Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 21, 1966, Ser. No. 554,236
8 Claims. (Cl. 263—36)



A passage for admitting workpieces into a chamber of a vacuum heat treating furnace is closed by two doors, one a relatively light weight vacuum sealing door movable upwardly and downwardly to open and close the passage and also movable broadwise into tight engagement with the walls of the furnace around the passage in order to establish a gas-tight seal for the chamber. The other door is simply movable upwardly and downwardly across the passage between the vacuum door and the heating chamber and is made of relatively heavy heat insulating material to shield and insulate the vacuum door from the heat in the chamber.

3,399,876
PREFORMED REFRACTORY BLOCK FOR STRIP HEATING FURNACES

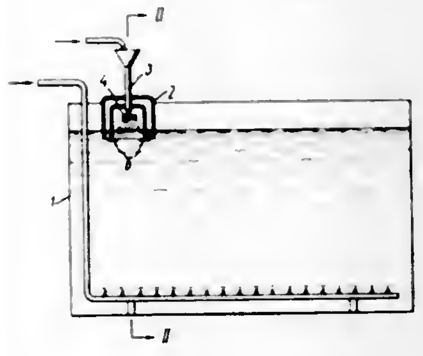
Howard G. Hart, Collinsville, and Donald F. Stock, Pittsburgh, Pa., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Feb. 24, 1966, Ser. No. 529,828
7 Claims. (Cl. 266—3)



A metallurgical vessel for heat treating continuous metal strip, the improvement comprising a preformed refractory block disposed at the discharge end of the vessel, said block having an elongated slot passing through the face surfaces thereof, in alignment with the open ends of the vessel to permit passage of said metal strip therethrough.

3,399,877
BATH FOR ISOTHERMAL AND STEP QUENCHING OF ARTICLES IN SALT AND ALKALI MELTS

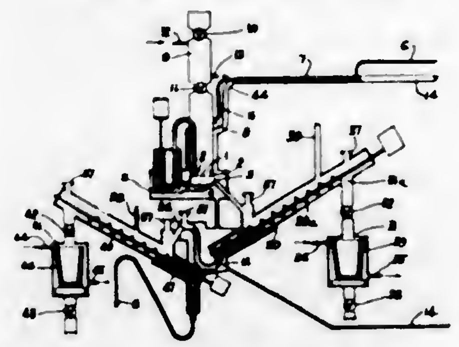
Valentina Nickolaevna Birjukova, Gorky, U.S.S.R., assignor to Gorkovsky Metallurgichesky Zavod, Gorky, U.S.S.R.
Filed May 21, 1964, Ser. No. 369,192
4 Claims. (Cl. 266—6)



1. Apparatus for isothermal and step quenching of articles, comprising a tank for holding a salt or alkali melt; a cover having open ends and being positioned on the tank above at least a part of the surface of said melt and having its lower edge immersed in said melt; at least one water inlet pipe secured in said cover in such a manner as to direct water onto the surface of the melt; a frame including a shield, said frame being joined to said cover so as to provide steam escape gaps between the open ends of the cover and the shield.

3,399,878
APPARATUS FOR THE PURIFICATION OF ALUMINUM

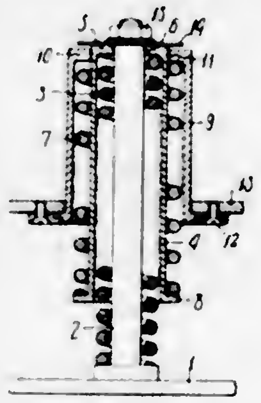
Jacques Merles, Tarascon-sur-Ariege, France, assignor to Pechiney, Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France
Original application July 14, 1964, Ser. No. 382,600. Divided and this application Mar. 22, 1967, Ser. No. 641,402
6 Claims. (Cl. 266—34)



An apparatus for the purification of aluminum by treatment of solid particles of impure aluminum with hot liquid mercury to take aluminum into solution and cooling the solution to crystallize amalgam which is separated and heated to free the aluminum from mercury.

3,399,879
SHOCK PREVENTIVE MEANS FOR NAUTICAL METERS

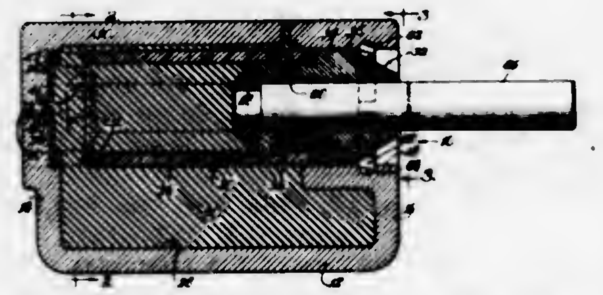
Takeshi Hojo, Tokyo, and Michio Fukano and Tetsuo Tanabe, Yokohama, Japan, assignors to Tokyo Keiki Seizosho Co., Ltd., Tokyo, Japan
Filed Feb. 16, 1966, Ser. No. 527,694
Claims priority, application Japan, Feb. 20, 1965, 40/13,095, 40/13,096
5 Claims. (Cl. 267—1)



At least two coil springs are concentrically disposed and connected with each other in series. One of the springs is adapted to be given a preload. A further spring of nonlinear spring constant is included in the series. Caps of both coil springs deflect to a lower foundation at the same time.

3,399,880
DAMPED SPRING

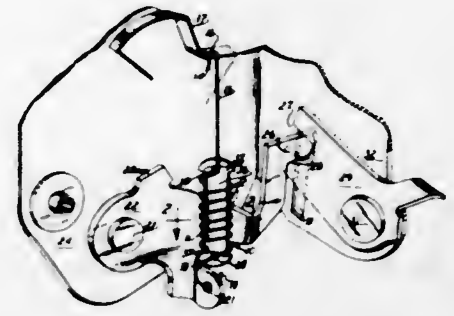
Robert L. Carlson, Chicago, Ill., assignor to W. H. Miner Inc., Chicago, Ill., a corporation of Delaware
Filed Feb. 23, 1966, Ser. No. 529,585
4 Claims. (Cl. 267—1)



A damped spring having an elongated casing with a primary chamber filled with a compressible solid eccentric to the longitudinal axis of the casing and receiving a piston, and a communicating auxiliary chamber whereby an additional volume of compressible solid is available whereby to accommodate increased travel of the piston and its associated piston rod.

3,399,881
VIBRATION DAMPENED SPRING UNIT

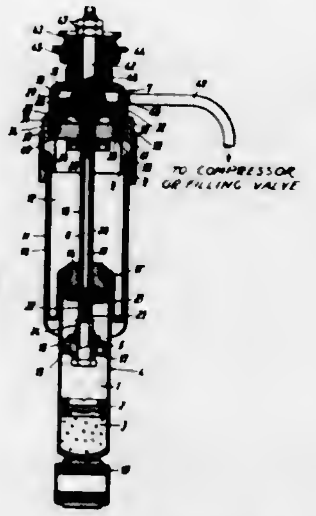
Charles E. White, Allen Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Feb. 13, 1967, Ser. No. 615,523
4 Claims. (Cl. 267—1)



A thin, deformable member having a width slightly greater than the internal diameter of a cylindrical coil spring is positioned within the spring in a transversely bowed configuration. In this configuration, respective side edges of the deformable member engage inner surface portions of the turns of wire forming the spring and function to dampen the vibrations and thereby decrease the acoustical energy output of the extension spring as the latter is flexed lengthwise.

3,399,882
HYDRAULIC SHOCK ABSORBER ASSEMBLY WITH PARALLEL-CONNECTED GAS SPRING AND AUTOMATICALLY CONTROLLABLE DAMPING, PARTICULARLY FOR MOTOR VEHICLES

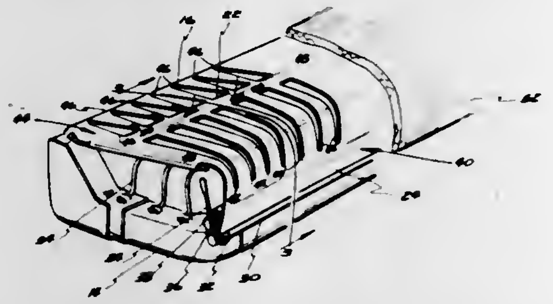
Erwin Hausmann, Wuppertal-Elberfeld, Germany, assignor to August Bilstein KG, Ennepetal-Altenvoerde, Germany, a corporation of Germany
Filed Jan. 3, 1967, Ser. No. 607,054
Claims priority, application Germany, Jan. 8, 1966, B 85,323
11 Claims. (Cl. 267—64)



Hydraulic shock absorber assembly wherein a gas spring, a control member and the shock absorber proper are united in an integral structure, the gas spring being mounted in a space sealed by a roller-type bellows located between a damping cylinder and a protective tube, the space being directly connected through a pressure gas connecting duct with a control chamber located at the free end of a piston rod and containing the control member.

3,399,883
SEAT CONSTRUCTION

Thomas J. McKey, 451 McKinley, Grosse
Pointe Farms, Mich. 48236
Filed Aug. 29, 1967, Ser. No. 664,068
8 Claims. (Cl. 267—89)

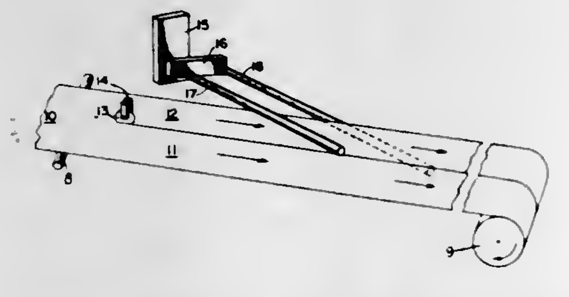


A seat construction incorporating a spring formed of a resilient sheet having forward and rearward down turned sides. Each down turned side is connected by a bend to a load-supporting midportion. The forward and rearward longitudinal edges of the sheet are supported in a frame so that the sheet will support a downwardly directed load.

A series of spaced, parallel, tapered slots extend from the midportion of the sheet and toward the supported edges and allows the load-bearing midportion to assume the contour of the load so that the load is spread over a large surface area.

3,399,884
METHOD AND APPARATUS FOR COMBINING WEBS

Abdul S. Bahrani, Colerain Township, Hamilton County,
Ohio, assignor to The Procter & Gamble Company,
Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 15, 1966, Ser. No. 534,380
7 Claims. (Cl. 270—52)

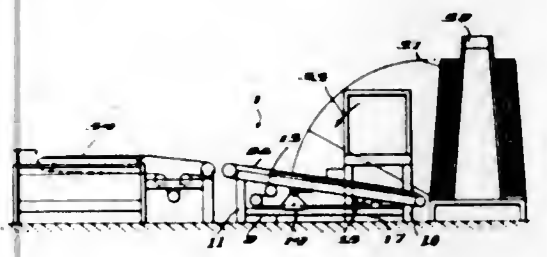


Apparatus and method for continuously laterally shifting at least one of a plurality of side-by-side moving webs of stretchable material by passing at least one of the webs between a pair of spaced cantilevered turning bars which are positioned obliquely to the web to be shifted. The turning bars are rotated as a unit about the axis of one of the bars to cause the web to wrap around a portion of each bar, thereby shifting that web laterally and in position adjacent to the remaining webs.

3,399,885
GLASS SHEET FEEDER FOR CUTTING AND PROCESSING MACHINES

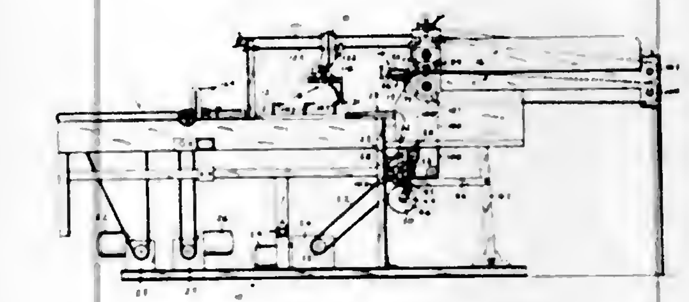
Albert H. Agett, Kingsport, Tenn., and Reno V. Carini,
Jeannette, and Robert F. Alverson, Pittsburgh, Pa., assignors to American Saint-Gobain Corporation, a corporation of Delaware
Filed Feb. 3, 1966, Ser. No. 524,810
4 Claims. (Cl. 271—1)

A sheet handling and feeding device including a supply rack for holding a plurality of sheets in vertical position, a sheet receiving table positioned adjacent to the supply rack for receiving individual sheets from the supply rack as they are pivoted from the vertical plane and allowed to fall by gravity onto the table, and sheet conveying mechanism for conveying the sheets received on the table away from the supply rack.



3,399,886
ARTICLE FEEDING APPARATUS AND METHOD

Frank G. Brockardt and Joseph H. Koch, Wheeling,
W. Va., assignors to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed May 16, 1966, Ser. No. 550,289
20 Claims. (Cl. 271—14)

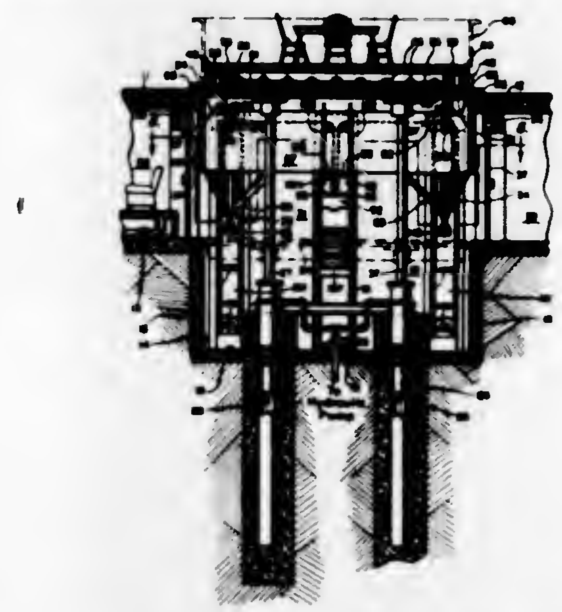


An apparatus for feeding articles, such as gusseted paper bags, including a mechanism for supplying stacks of bags to a pick-up station and including a vacuum pick-up for lifting the topmost article from the stack and delivering it to gripping elements which grip and support the bag and move it out of the path of movement of the vacuum pick-up so that the pick-up can move below the bag supported by the gripping means and engage the topmost bag on the stack. Thereafter the gripping means is moved in a path above the pick-up to insert the bag held by the gripping means between conveyors for discharging the bag from the apparatus. After discharge of the bag, the pick-up lifts the bag it has engaged for engagement by the gripping means. At the pick-up station, the leading edges of the articles, particularly gusseted bags, are supported in curved form and are engaged by the vacuum pick-up devices which are also arranged in a complementary curve to maintain the articles or bags bent and prevent the gussets in the bags from unfolding prior to engagement by the gripping means.

3,399,887
VERTICALLY MOVEABLE STAGE AND GUARD RAIL MEANS

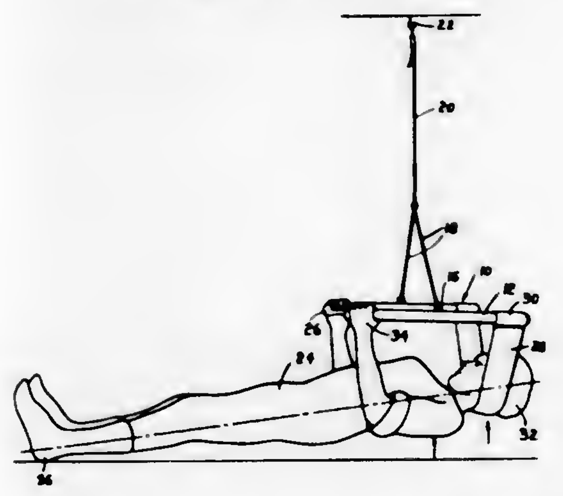
William Altier, Summit, Ill., assignor to Summit Candlelight Dinner Playhouse, Inc., Summit, Ill., a corporation of Illinois
Filed Jan. 17, 1966, Ser. No. 521,097
10 Claims. (Cl. 272—22)

1. A building structure of the character described having a main floor provided with a substantially rectangular opening therethrough and a lower floor vertically spaced below said main floor, comprising, in combination with said floors, a stage assembly having a relatively flat, horizontal top surface; means for moving said stage assembly vertically between a raised position wherein said top surface is substantially at the level of said main floor and a lowered position wherein said top surface is substantially at the level of said lower floor; and a guard rail frame means disposed at the edge portion of said main floor defining said opening therethrough; said guard rail frame means including two pairs of vertically disposed, spaced and parallel wall means, said pairs of wall means being rigidly connected together; means for moving said guard rail frame means between a lowered, retracted position wherein it is disposed substantially below the level of said main floor and a raised extended position wherein it extends vertically upwardly from the level of said main floor; and means operatively interconnecting said means for moving said stage assembly vertically and said means for moving said guard rail frame means whereby said guard rail frame means moves to its lowered, retracted position from its raised, extended position during movement of said stage assembly from its lowered position to its raised position and said guard rail frame means moves to its raised, extended position during movement of said stage assembly to its lowered position from its raised position.



3,399,888
ISOMETRIC EXERCISE CRADLE

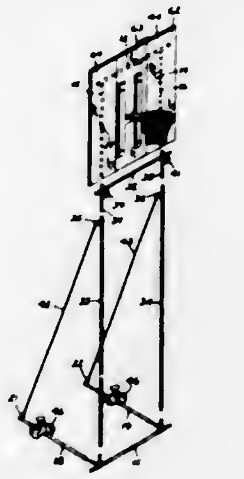
Lee Jensen, 1402 Manufacturers Road,
Chattanooga, Tenn. 37405
Filed Mar. 15, 1966, Ser. No. 534,478
4 Claims. (Cl. 272—81)



1. An exercising device comprising a U-shaped tubular metal frame of rigid construction, means supporting said frame from a central area thereof for pivotal movement about a generally horizontal axis and in overlying relation to the head and chest region of a person reclining on a generally horizontal supporting surface, handle means carried by said frame is spaced relation to the axis of pivotal movement, and head cradling means carried by said frame in spaced relation to the axis of pivotal movement and on the opposite side thereof from the handle means whereby a person can raise his body about a fulcrum at the point of engagement between the heels and supporting surface when the head cradling means supports the head and the handle means is pulled downwardly.

3,399,889
CONVERTIBLE SPORTS EQUIPMENT

Nicholas G. Harry, Harrington St.,
East Brookfield, Mass. 01515
Filed Aug. 14, 1964, Ser. No. 389,600
1 Claim. (Cl. 273—1.5)



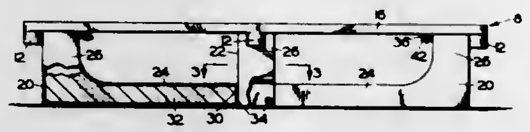
1. Convertible sports equipment, comprising
(a) two elongated elements of great length mounted vertically in spaced, parallel relationship,
(b) a board member having hinge means for folding and adapted to be mounted in vertical position at the upper ends of the elements of great length,
(c) two elongated elements of intermediate length having connecting members extending from each end and connected to the lower end of the elements of great length to form a base,
(d) two elongated elements of intermediate length adapted to be connected to the upper ends of the first-mentioned elongated elements to function as extensions thereof,
(e) an elongated element having connecting members extending from the ends thereof adapted to be connected horizontally between the upper ends of the previously mentioned elongated elements,
(f) a basketball basket having a tongue member radially projecting from a basket ring and bracket means connected to said tongue, and
(g) mounting means releasably joining said basketball basket to said board, said means comprising peg means adapted for insertion through corresponding holes in said bracket means and said board and clip means for releasably engaging said peg means.

3,399,890
POOL TABLE WITH BALLAST

John J. Galedrige, 3389 Ivan Way,
Mount View, Calif. 94040
Filed Jan. 17, 1966, Ser. No. 521,205
8 Claims. (Cl. 273—6)

1. A pool table comprising a table top having a playing surface, a plurality of pockets disposed on the periphery of said table top for receiving playing balls from

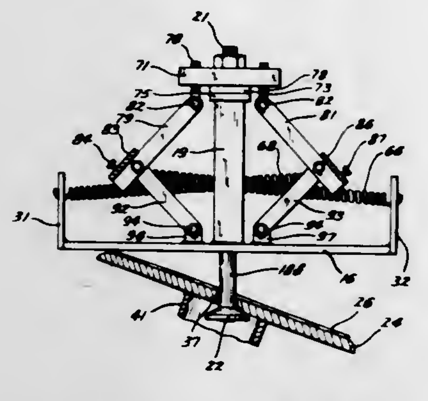
the playing surface, and at least one supporting leg for said table top, said supporting leg having a hollow construction arranged to receive a loose ballast material and



also having an inlet for said material whereby the leg is capable of receiving the ballast material at a selected time for adding weight to the table.

3,399,891
FOOTBALL PRACTICE REACTION MECHANISM

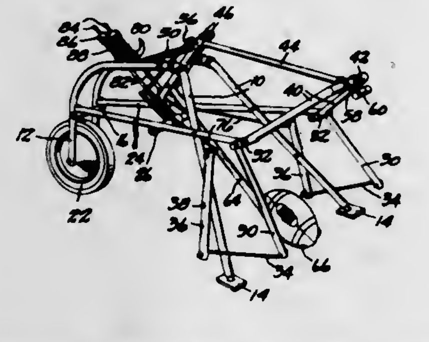
Andrew J. McCormick, 603 3rd Ave. NW., Pocahontas, Iowa 50574, and Walter F. Woodin, Laurens, Iowa 50554
Filed Dec. 31, 1964, Ser. No. 422,582
3 Claims. (Cl. 273—55)



This invention relates to football practice and conditioning apparatus, and more particularly to a reaction mechanism for suspending a tackling and blocking dummy. The arrangement is such that upon a would-be tackler hitting the dummy, a portion of the dummy unit fulcrums against an overhead structure to initiate actuation of a spring resistance mechanism to provide a resistance to the tackle supposedly typical of the resistance of the "opposite player." Upon release of the dummy, the mechanism is operable to return the dummy to its original position.

3,399,892
MECHANICAL FOOTBALL CENTER TRAINING DEVICE

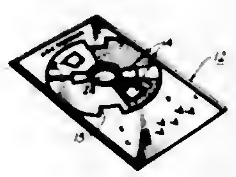
Walter S. Jurkiewicz, R.R. 2, Plymouth, Ind. 46563
Filed Aug. 1, 1966, Ser. No. 569,438
10 Claims. (Cl. 273—55)

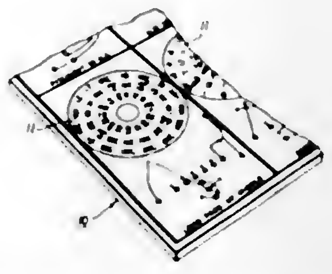


10. A football training mechanism comprising a rigid frame,
- a ball delivery member pivoted to said frame to swing vertically between a lower starting position and an upper delivery position,
- spring means urging said delivery member to said delivery position,
- latch means for releasably locking said delivery member in starting position,
- upper and lower leg-simulating members pivoted to said frame at the rear thereof and swinging between a leg-crouch-simulating position and a charge-simulating position,
- means interconnecting said leg-simulating members and ball delivery member for conjoint operation whereby said legs shift toward charging position as said delivery member shifts toward delivery position, and
- means carried by said last named means and operative to trip said latch means, and including a handle projecting from said upper leg-simulating member.

3,399,893
GAME BOARD UTILIZING DIFFERENT WINDOWED CARDS AND SPINNER THEREFOR

Calvin L. Payne, Jr., Hastings-on-Hudson, N.Y., assignor to Tudor Metal Products Corporation, Brooklyn, N.Y., a corporation of New York
Filed July 27, 1965, Ser. No. 475,156
2 Claims. (Cl. 273—94)

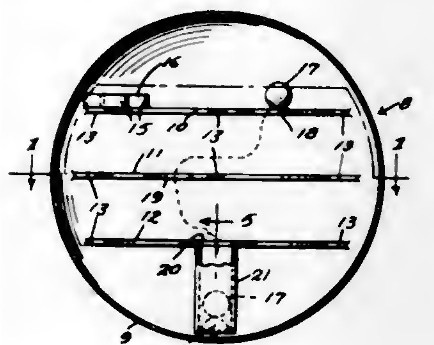




The application discloses a football game board having a metallic surface and groups of play indicia disposed over such surface. Associated with the board is a plurality of defense formation cards, each card having a central aperture and windows for revealing the indicia. The windows are differently located on each card. An arrow indicator having a magnetized base is received in the card aperture on said board and, when spun, may point to one of said windows.

3,399,894
SKILL GAME WITH BALL MOVABLE IN SPHERICAL CONTAINER

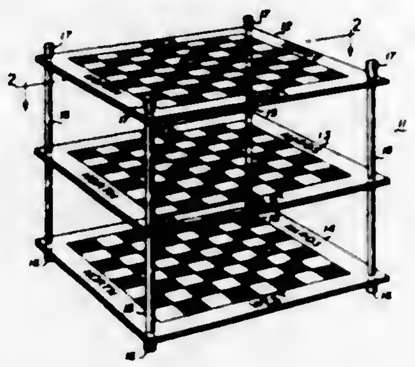
Richard Paul Smith, Pasco, Wash.
(11622 W. Silver Lake Drive, Everett, Wash. 98201)
Filed July 20, 1965, Ser. No. 473,384
6 Claims. (Cl. 273—115)



A hollow transparent sphere having floors disposed one above the other over and through openings in which a ball travels to a tube depending from the opening of the bottom floor, to sound an audible signal contained in the tube. Each floor has edge portions spaced from the sphere for escape of the ball from said floor. Said tube shields the audible signal from contact by the ball except when in the tube.

3,399,895
THREE-DIMENSIONAL CHECKER GAME APPARATUS

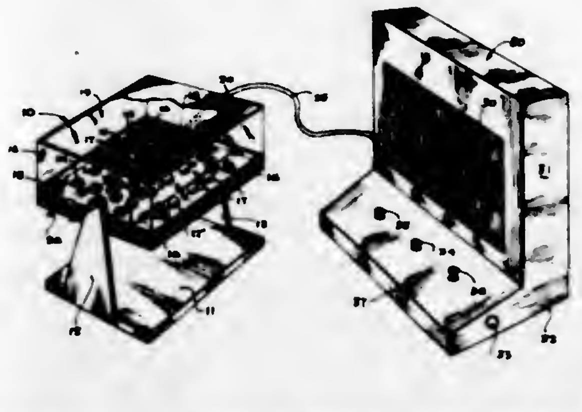
Alice L. Beach, 938 Boyce Ave., Palo Alto, Calif. 94301
Filed Jan. 10, 1966, Ser. No. 519,585
3 Claims. (Cl. 273—131)



A three-dimensional checker game employs identical vertically spaced game boards, each board having a checkered design composed of three groups of squares, with each group of squares having a visual characteristic different from those of the other two groups. One of the groups of squares consists of a predetermined number of squares identically placed on each of the boards, these squares occupying only the two center rows and two center columns and alternating therein with squares of another group so that they extend across the paths of movement of all of the game pieces. Play is conducted with pieces initially placed on squares defining a first pair of opposed player starting positions on the top board and a second pair of opposed player starting positions on the bottom board which are normal to the first pair of starting positions. Normal checker movement is permitted on both boards, and vertical movement between boards is permitted on the squares of said one group.

3,399,896
MATRIX TRANSFORMATION GAME DEVICE

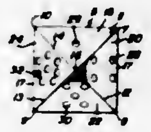
Walter M. Burnside, 324 Orchard, Waukegan, Ill. 60085
Filed July 6, 1965, Ser. No. 469,566
10 Claims. (Cl. 273—138)



An amusement device in which specific areas on a game board surface corresponding to particular indicia on a matrix must be operatively connected, as by rolling a ball onto an electrical contact, and wherein a matrix is formed of indicia supported on at least two horizontally reciprocable matrix plates connected to opposite ends of a lever arm which is reciprocably removable to effect transposition of said matrix plates and rearrangement of said matrix, and which is adapted to have associated therewith a vertically movable matrix plate disposed adjacent a lateral edge of a said horizontal matrix plate and forming a part of said matrix.

3,399,897
NUMERICALLY AND PHYSICALLY BALANCED GAME PLAYING DIE

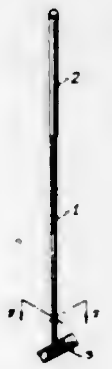
William N. Mitchell, 2646 Fairway, Visalia, Calif. 93277
Filed Sept. 8, 1965, Ser. No. 485,855
4 Claims. (Cl. 273—146)



The concept herein disclosed has to do with an octahedral die which is as nearly perfectly balanced in a numerical and physical sense as is reasonably possible. The totals around all six (6) corners equal 18 and the sides 1–2, 3–4, 5–6 and 7–8 are opposed. When this die is cast from the hand and comes to rest on a flat surface the facet or side facing skyward is opposed to the unreadable downward side. Significantly, the same amount of material is not taken from each side but from around a given reference point. This die is unique in that it is eight-sided and has sequentially oriented dimpled pips which coordinate in totaling 18 around any given corner.

3,399,898
GOLF PUTTER

Carl A. Burkland, 1574 Jordan Drive S., Salem, Oreg. 97302
Filed Oct. 2, 1964, Ser. No. 401,056
2 Claims. (Cl. 273—164)

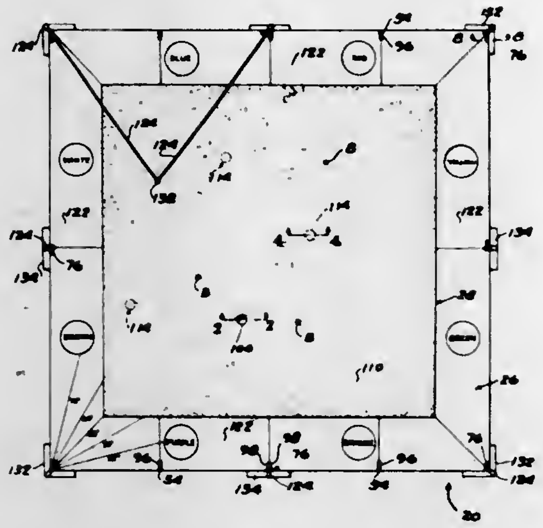


1. A golf putter comprising a shaft, a metal head of a square cross-sectional configuration of the same size throughout the length of said head and having four equal longitudinally extended sides and edges with each edge being at the meeting point of an adjacent pair of said sides, a flat putting face normal to the longitudinal axis of said head and a flat rear end face and said shaft being fixedly connected to said head at a position on said head one-third the length of said head from said putting face with at least one of said edges of said head being coplanar with the axis of said shaft and said shaft axis extending normal to the axis of said head.

3,399,899
GOLF PUTTING GAME

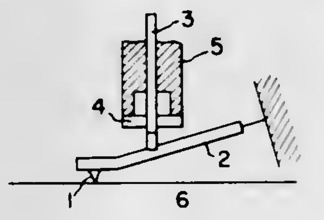
Frank B. Shepherd, 4788 Ranch Lane, Bloomfield Hills, Mich. 48013
Filed Oct. 18, 1965, Ser. No. 497,034
5 Claims. (Cl. 273—176)

Simulated putting green has a number of tape measures mounted around its periphery. Data tabs instruct that particular pairs of tapes be extended specified distances over the playing surface. Adjacent tapes are swung toward each other; and where they intersect, a ball is spotted. The procedure is repeated for each player, and putting proceeds in the usual manner. The cup is movable to a number of locations in the playing surface.



3,399,900
DYNAMIC MECHANISM HAVING A DAMPER

Kenkichi Tsukamoto, 47 Koyama Shimofusa-cho,
Kita-ku, Kyoto-shi, Kyoto-fu, Japan
Filed Aug. 24, 1966, Ser. No. 574,687
Claims priority, application Japan, Aug. 29, 1965,
40/52,431
3 Claims. (Cl. 274—25)



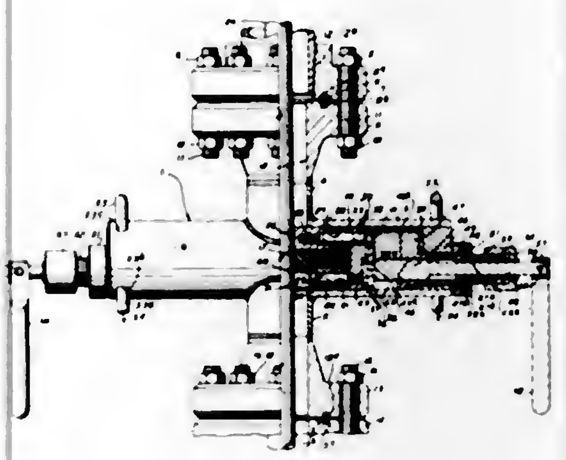
A device for the accurate production and transmission of dynamic motion in which the damper is elastically predeformed to produce an internal stress therewithin and a stress due to an external force applied at the time of operation of the damper and the internal stress are caused to substantially nullify each other, non-linear distortion of the damper thereby being reduced to a very low value thus causing the deformation of the damper to be very accurately proportional to the external force applied to the damper.

3,399,901
TUBING BLOWOUT PREVENTER

Morgan L. Crow and Frederick Lee Adams, Dallas, Tex., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed May 13, 1965, Ser. No. 455,451
8 Claims. (Cl. 277—129)

This blowout preventer used in oil and gas wells has a hollow body with a vertical bore and has coinciding lateral bores communicating with the vertical bore. In each lateral bore, there is a ram assembly and a seal assembly.

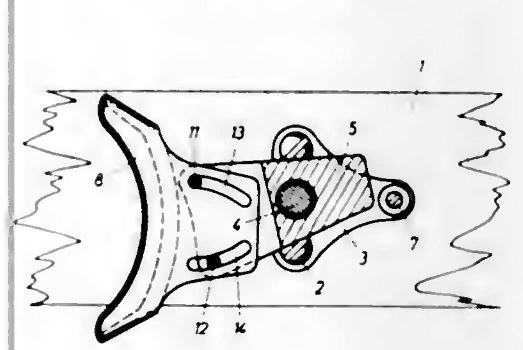
In one form of the invention, the ram assembly, for moving the seal assembly relative to the vertical bore, has an end plate slideable within the lateral bore and has a feed screw housing also slideable within the lateral bore with an outer elongated threaded end extending freely through the end plate. The feed screw housing is positioned within the lateral bore intermediate the end plate and a back plate. A feed screw is attached rotatably to the back plate and extends through the feed screw housing and its outer elongated end. A yoke element is dropped through an opening in the housing defining the lateral bore to lock the end plate in place so that by tightening a nut on the outer elongated threaded end of the feed screw housing, the feed screw housing and the end plate are drawn together to compress a packing therebetween into sealing engagement with the lateral bore.



Each seal assembly includes a top plate and a lower plate positioned on opposite sides of a resilient sealing element. A pin extends through the back plate of the ram assembly and attaches the top plate thereto. A similar pin attaches the lower plate to the back plate, so that both the top plate and the lower plate are movable relative to the sealing element.

3,399,902
SAFETY TOE IRON FOR SKI BINDINGS

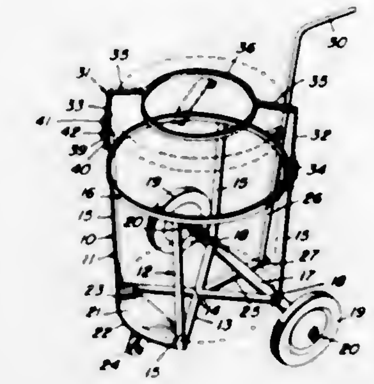
Günter Adam, Thorlenstrasse 43, Garmisch-Partenkirchen, Germany
Filed Feb. 16, 1967, Ser. No. 616,710
Claims priority, application Germany, Feb. 24, 1966,
M 68,519
4 Claims. (Cl. 280—11.35)



A safety toe iron for ski bindings comprises a main pivoted member, which is pivoted to the ski, and a sole holder member, which is engageable by the forward edge of the sole of the skiing boot under the action of a tightener on the heel of the boot. One of these two members carries two pivot pins, which are equally spaced on opposite sides of its longitudinal center line. The other of these two members is formed with two guide slots, which are respectively engaged by said pivot pins and extend each along an arc of a circle, which is centered on the rear end of the respective other guide slot, if the slots are formed in the sole holder, or on the forward end of the respective other guide slot if the slots are formed in the main pivoted member. The arrangement is such that the pivot pins engage the rear ends of said slots in the normal position of the toe iron.

3,399,903
PORTABLE HOLDER FOR REFUSE CANS

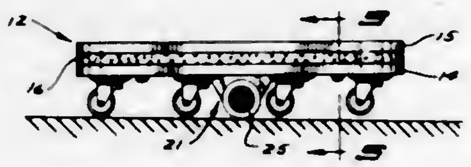
Charles R. Bailey, 3 Clarkin St., Charleston Heights, S.C. 29405
Substituted for abandoned application Ser. No. 35,222, June 10, 1960. This application Aug. 8, 1967, Ser. No. 684,090
3 Claims. (Cl. 280—47.34)



A portable wheeled holder or carrier for refuse cans characterized by a can lid securing yoke and latch hinged to the body of the holder which prevents accidental spilling of the contents.

3,399,904
SKATE BOARD STRUCTURE

James W. Schinke, R.R. 3, Rochester, Minn. 55901
Filed Sept. 9, 1966, Ser. No. 578,328
5 Claims. (Cl. 280—87.04)

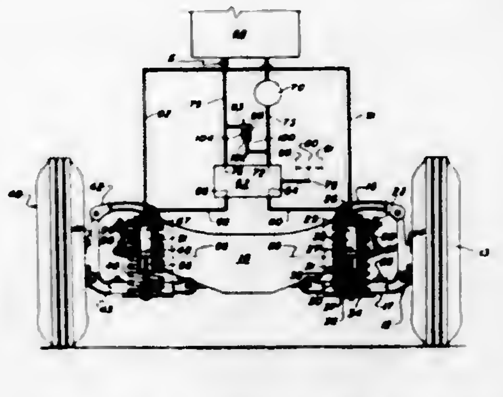


A skate board having a support member having spaced underlying casters, with the central of said casters providing a rocking movement, said support member consisting of a pair of superposed plate members having a resilient spacing member therebetween, and means disposed therebetween for the tiltable support of the upper of said plate members with respect to the lower one thereof.

3,399,905
CONTROLLED SUSPENSION SYSTEM FOR VEHICLES

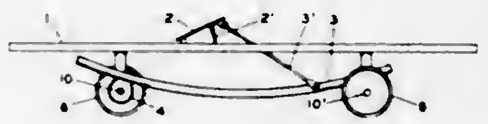
Arthur E. Vogel, Columbus, Ohio, assignor, by mesne assignments, of one-fourth to Arthur E. Vogel, Columbus, one-fourth to Robert Dawson, Coshocton, one-fourth to Warren H. F. Schmieding, Columbus, and one-fourth to Palmer Fultz, Columbus, Ohio
Continuation of application Ser. No. 136,121, June 17, 1961, which is a division of application Ser. No. 579,928, Apr. 23, 1956, which is a continuation-in-part of application Ser. No. 541,370, Oct. 19, 1955, which in turn is a continuation-in-part of application Ser. No. 519,038, June 3, 1955. This application Aug. 27, 1965, Ser. No. 491,474
22 Claims. (Cl. 280—124)

A controlled suspension system for vehicles of the type that include sprung and unsprung weight portions and springs on opposite sides thereof wherein fluid actuated suspension control means are selectively energized and deenergized by a fluid system provided with fluid pressure limiting means. As another aspect the fluid system incorporates novel control valve means wherein relatively movable walls are connected between the sprung and unsprung weights and include position command orifice means for controlling the height of said sprung weight portion. As still another aspect, the fluid control system can be adapted for the dual function of operating both the controlled suspension system and another powered component of the vehicle from a common constant volume source of pressurized fluid.



3,399,906
OCCUPANT-PROPELLED SKATE BOARD VEHICLE

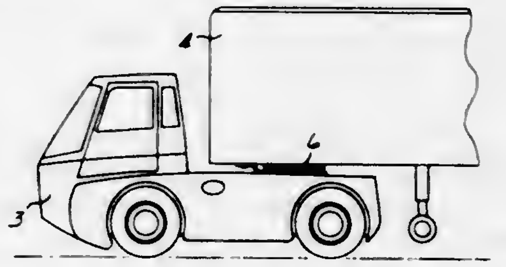
Lawrence A. Portnoff, St. Louis, Mo. (% Sidney B. Ring, P.O. Box 6825, Brentwood, Mo. 63144)
Filed Feb. 4, 1966, Ser. No. 525,077
1 Claim. (Cl. 280—221)



A skate board play vehicle capable of foot propulsion by occupant without pushing against the ground, said skate board including a platform having wheels activated by a toothed arm-gear assembly means for substantially immediate translation of motion to said wheels, said assembly means including an arcuately shaped toothed arm and gear in a ratchet relationship with the toothed arm being longitudinally disposed with respect to the gear, and means for substantially immediately moving said toothed arm, said means including a spring loaded pedal with the spring connected at one end to the pedal, said toothed arm being movable for engagement with the upper portion of the gear.

3,399,907
ELASTOMERIC ENERGY ABSORBER

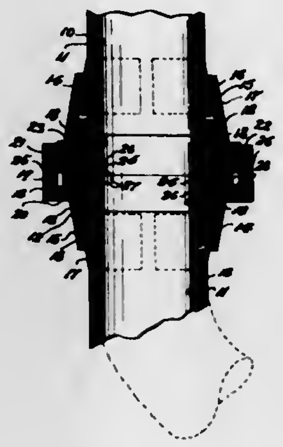
Richard D. Hein, Wabash, Ind., assignor to The General Tire & Rubber Company, a corporation of Ohio
Filed Aug. 2, 1966, Ser. No. 569,653
13 Claims. (Cl. 280—440)



This invention relates to an energy absorber utilizing a layer of elastomeric material, and more particularly relates to a spring which employs the principles of shear and compressive deformation of an elastomer to absorb load energies imposed on the spring.

3,399,908
COUPLING DEVICE FOR PLASTIC-LINED PIPE

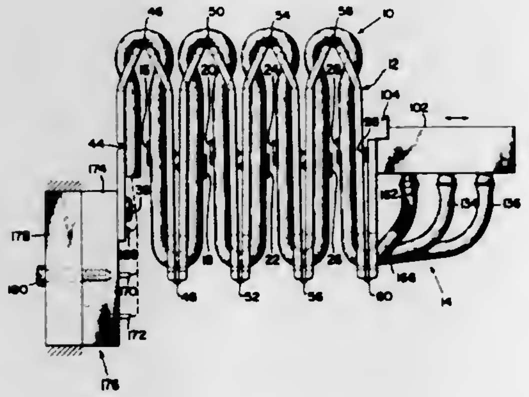
John Kurtz, 1480 Elaine Terrace, Union, N.J. 07083
Filed Jan. 10, 1966, Ser. No. 519,544
1 Claim. (Cl. 285—55)



Devices for coupling thin-walled plastic-lined pipes having outwardly flared open ends include annular metal gaskets having a flange normal to the axes of the pipes, an open passage therethrough lined with plastic, and tapered circumferential flanges to seat within the flared open ends of the lined pipes with the plastic-lined passage of the gaskets in alignment with the plastic lining of the pipes. Split tapered locking collars are disposed around each pipe adjacent the flared ends thereof and engaged by special coupling members drawn together by a union.

3,399,909
TRANSMITTING APPARATUS

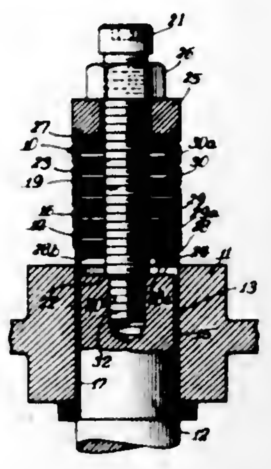
William J. Ambrose, Springfield, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Feb. 17, 1966, Ser. No. 528,245
10 Claims. (Cl. 285—61)



A non-crimpable, flexible, drawbridge type connector to interconnect two relatively moving parts e.g. an instrument and a casing in which the instrument is mounted; a truck and a trailer wherein an extensible resilient member and a jumper type fluid and/or electrical type transmission lines that extend along and are interwoven through apertures positioned along the length of the resilient member are retained in a firm position thereto by means of snap-on retainers to provide rapid connection and disconnection of the transmission lines to the resilient member.

3,399,910
SELF-CUTTING KEY STRUCTURE

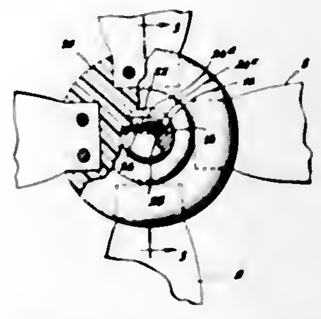
Donald G. Fawkes, Chicago, Ill., assignor to Henry Pratt Company, a corporation of Illinois
Filed Apr. 17, 1964, Ser. No. 360,547
2 Claims. (Cl. 287—52.05)



A structure for rotationally affixing a female member to a concentric male member. The structure is defined by an arcuate member having both inwardly and outwardly projecting keyway cutters thereon which cut keyways concurrently in each of the female and male members as an incident of insertion of the arcuate member therebetween. The keyway cutters further define keys in the thusly cut keyways for accurately maintaining the fixed association between the female and male members.

3,399,911
HUB AND SHAFT COUPLING

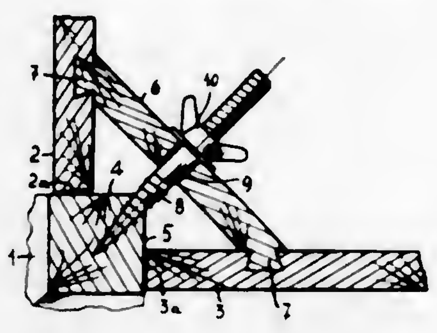
George J. Reisch, Shelton, Conn., assignor to General Electric Company, a corporation of New York
Original application Sept. 10, 1963, Ser. No. 307,888, now Patent No. 3,264,016, dated Aug. 2, 1966. Divided and this application Mar. 21, 1966, Ser. No. 554,222
2 Claims. (Cl. 287—53)



A hub and shaft coupling for use with a molded hub comprising a flexible latch integral with and positioned within the bore of said hub and containing a rib-like projection which engages a groove or recess formed on a flattened exterior surface of the shaft. The latch is self-biased so that it positively engages the shaft at all times and thereby transmits torque to the hub assembly. The self-biasing of the latch is obtained by urging its free ends radially inwardly with respect to a portion connected to the internal wall of the hub bore.

3,399,912
JOINT FOR CONVERGING SUPPORTING ELEMENTS, PARTICULARLY FOR CORNER STRUCTURES OF FURNITURE

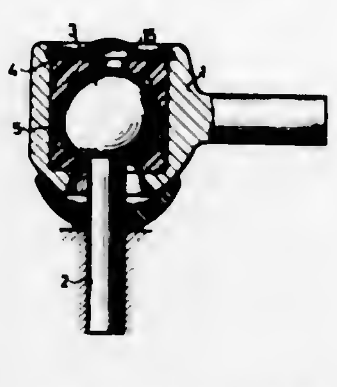
Pierluigi Maspero, Via Piave 13, Meda, Milan, Italy
Filed July 18, 1966, Ser. No. 565,880
Claims priority, application Italy, Nov. 16, 1965, Patent 734,287
3 Claims. (Cl. 287—54)



A corner block construction for use in furniture formed by a corner block having a longitudinally extending member, two side pieces arranged adjacent to and extending from the corner block and disposed substantially perpendicularly to each other and to the member extending from the corner block, each of the side pieces having dove-tail grooves in a surface thereof, a diagonal brace having a hole therethrough and provided at its end with dove-tail tenons arranged to engage within and coact with the dove-tail grooves for providing a connection with the side pieces, a screw member arranged perpendicularly to the diagonal brace and secured at one end into the corner block and extending through the hole in the brace with a thread at its opposite end, and a nut engaging the thread and bearing against the brace for urging the brace toward the corner block and for holding the corner block construction together.

3,399,913
BALL JOINTS, ESPECIALLY FOR GUIDES AND STEERING GEAR, PREFERABLY IN MOTOR VEHICLES

Rudolf Gottschald, Osterath, Germany, assignor to A. Ehrenreich & Cie, Dusseldorf-Oberkassel, Germany
Filed Dec. 13, 1966, Ser. No. 601,365
Claims priority, application Germany, Dec. 15, 1965, E 30,662
2 Claims. (Cl. 287—87)

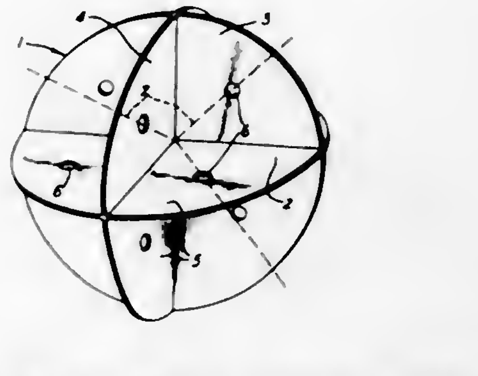


The present invention relates to a ball joint which is specially intended for guides and steering gear, wheel suspension and similar, preferably in motor vehicles, and which comprises a joint case and a joint pin together with a ball head being supported in the joint case so that it will be universally movable, one of the bearing surfaces being movable relatively towards each other being made from synthetic plastic material and the other being made of artificial coal.

3,399,914
LATTICEWORK COMPONENTS

Colin Kamet Lancelot Grant, 91 Highbury New Park, London, N. 5., England, assignor to Colin Kamet Lancelot Grant and George Charles B. Auger, both of London, England
Filed Aug. 15, 1966, Ser. No. 572,585
Claims priority, application Great Britain, Aug. 19, 1965, 35,719/65
8 Claims. (Cl. 287—189.35)

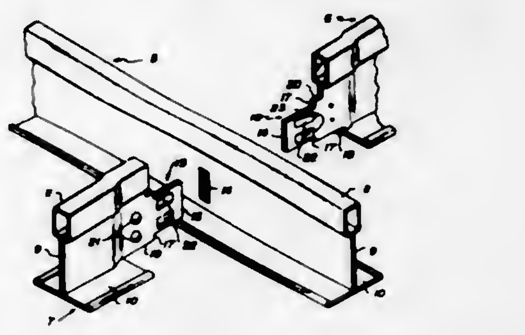
A hub member for the interconnection of a plurality of struts at a junction point in a latticework structure, comprising several intersecting flat webs. The intersecting webs divide each other into a group of sectors or flange areas. A strut may be attached to each of these flange areas. One of the webs is oriented in a first (e.g., horizontal) plane, and the remaining webs are oriented in mutually equiangularly spaced planes which are normal to the first plane



so that all of the planes meet at a common symmetrical center. The flange areas of the remaining webs are arranged along lines which branch out or radiate from the common center of the planes at angles less than or other than normal to the first plane.

3,399,915
STRUCTURAL MEMBER INTERCONNECTING ARRANGEMENT

William W. T. Stanzak, 2135 Rice Ave., Ottawa 13, Ontario, Canada
Filed Nov. 7, 1966, Ser. No. 592,376
Claims priority, application Canada, Apr. 19, 1966, 958,327
5 Claims. (Cl. 287—189.36)

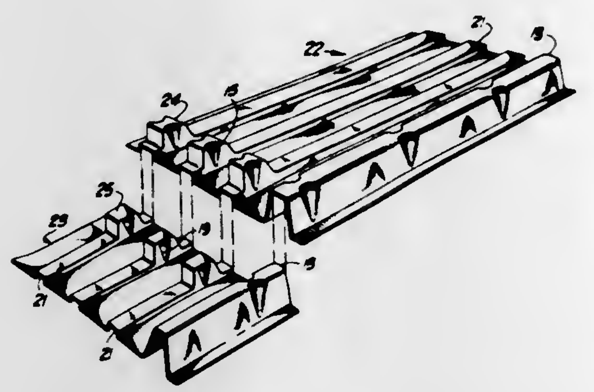


A connector for use in interconnecting a longitudinal structural member and a pair of directly opposed transverse structural members, such as those used in forming a grid work in a suspended ceiling, one of said connectors being normally provided on each of the adjacent ends of the transverse members and each connector having a tongue portion formed to fit snugly in a shared aperture in the longitudinal member, the depth of penetration of the tongues through the aperture being limited by shoulders located on each connector at the root of its tongue which includes a barb formed on the tongue so as to have its shoulder facing the root of the tongue and being so positioned that when the tongue has penetrated the aperture to its maximum depth, the shoulder on the barb engages with the longitudinal member to prevent its ready withdrawal.

3,399,916
INTERLOCKING BUILDING ELEMENTS

Arthur John Ensor, 13 Kaymar Drive, Ottawa 1, Ontario, Canada
Filed Nov. 7, 1966, Ser. No. 592,633
Claims priority, application Canada, Sept. 1, 1966, 969,330
2 Claims. (Cl. 287—189.36)

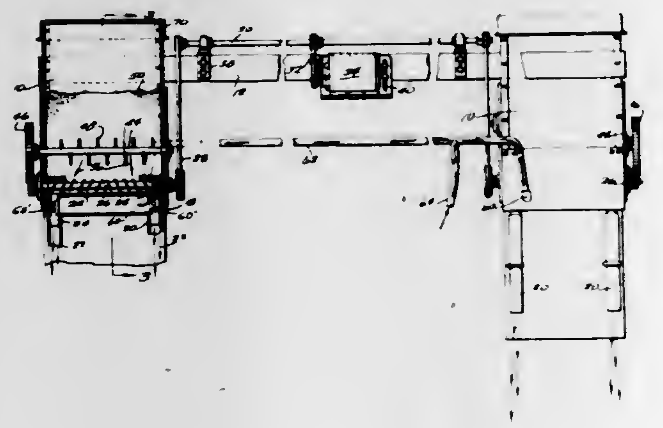
Building elements consisting of panels including nestable ribs, when nested are locked together. The means accomplishing the interlocking comprise a plurality of arcuate, resilient wedges formed in one of the ribs which are received by and which interlock with corresponding cut-



away portions in another of the ribs, means in the form of a bolt and a pair of clamping elements may be provided as reinforcing means.

3,399,917
EXHAUST TRACK SANDER APPARATUS

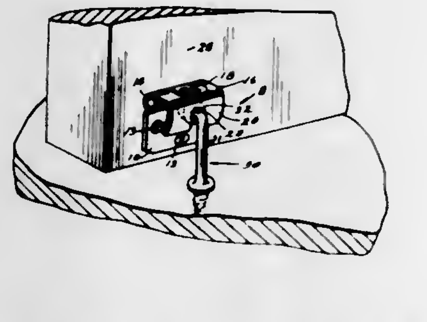
Ronald S. McLean, Box 29, Ranchester, Wyo. 82839
Filed Nov. 17, 1966, Ser. No. 595,215
1 Claim. (Cl. 291—3)



Apparatus for providing sanders for slippery road service in which the sanding apparatus is provided with a power system including a heating unit for keeping sand or other dispensable granular materials from freezing where there is moisture present therein.

3,399,918
DOOR LATCH

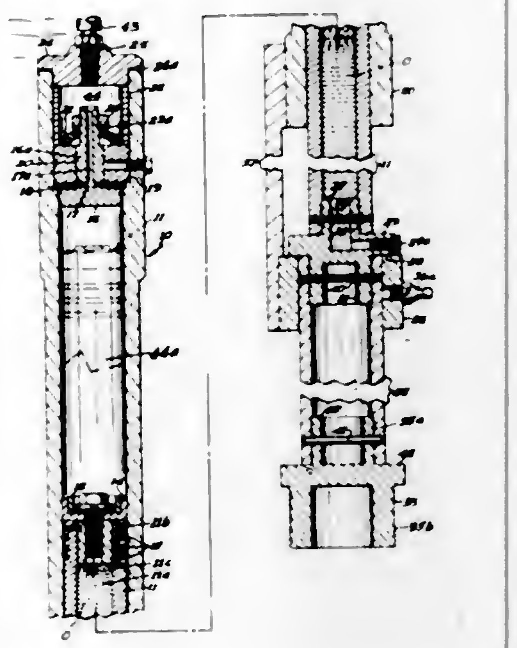
Frank P. Nagy, Rte. 3, Box 366–B,
Kannapolis, N.C. 28081
Filed Apr. 17, 1967, Ser. No. 631,312
8 Claims. (Cl. 292—136)



A door latch device comprising a plate hingedly mounted on a door and adapted to engage a doorstop. The plate is made up of two portions angularly disposed with respect to one another and has a free outer end with a slot therein which engages the doorstop.

3,399,919
PNEUMATICALLY CUSHIONED BUMPER

David L. Brunt, 419 3rd Ave. W.,
Williston, N. Dak. 58801
Filed Mar. 18, 1965, Ser. No. 440,764
3 Claims. (Cl. 293—89)



1. An air cushion device for absorbing shock impulses from an impact-receiving structure such as an automobile bumper or the like, said device comprising

a cylinder adapted to be fixedly connected to the frame of a vehicle, the hollow interior of said cylinder defining an air chamber connected in communicating relation with a source of air under pressure,

pressure responsive control means in one end of said cylinder comprising a sleeve element fixedly connected with said cylinder,

a substantially flat piston element positioned adjacent one end of said sleeve element and having a stem integrally formed therewith disposed within said sleeve element, an elongate passage in said piston element and stem having one end communicating with said source of air under pressure and having a port at the other end thereof communicating with said cylinder chamber,

said stem and piston element being slightly axially movable relative to said sleeve element between the normally closed position and an opened position,

means on said stem engaging said sleeve and limiting axial movement of said stem and piston element during movement thereof towards the open condition, said piston cooperating with said sleeve for limiting axial movement thereof towards the closed condition,

an annular yieldable closure element positioned around said stem and interposed between said sleeve element and said piston element to close said port when the air pressure within the cylinder chamber approximates a predetermined pressure, a yieldable member interposed around said stem and stem engaging means and being yieldable to permit said piston and stem to move slightly axially relative to said closure element from said normally closed position when the pressure within said cylinder falls below a predetermined level to interconnect the passage with said

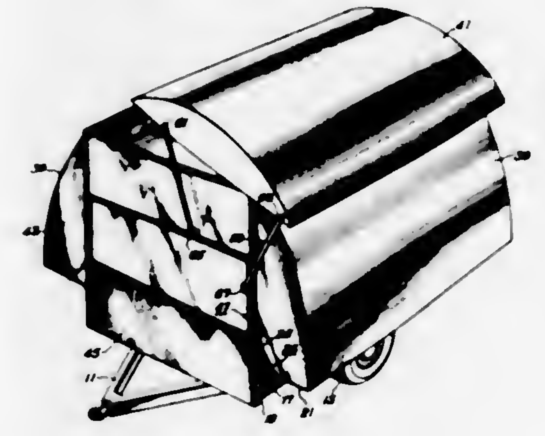
cylinder chamber and thereby permit air under pressure to be introduced into said cylinder chamber,

an elongate tubular piston slidable in said cylinder chamber and having yieldable means in one end thereof engaging the outer surface of said cylinder chamber with air sealed effect and defining a piston head,

the other end of said piston being adapted to be connected with the bumper of a vehicle, said piston being normally extended whereby shock impulse is transmitted to the piston by the bumper where it will be cushioned by air within the cylinder chamber during retraction of the piston.

3,399,920
COLLAPSIBLE CAMPERS

Richard L. Knowlton, 4629 Cummings Drive E.,
Fort Worth, Tex. 76118
Filed Aug. 3, 1966, Ser. No. 569,988
9 Claims. (Cl. 296—27)



1. A collapsible camper comprising:

a horizontal frame;

a rigid side extension panel rotatably supported by and extending along the length of each lateral edge region of said frame and being movable inwardly to a vertical position when the camper is collapsed and outwardly to a horizontal, laterally extending position when the camper is expanded;

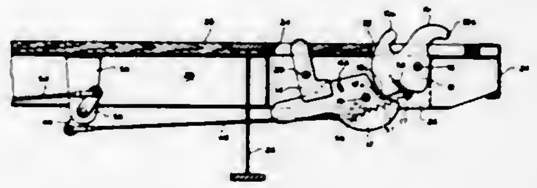
a rigid side wall panel rotatably secured to the longitudinally extending outer edge of each side extension panel to move to an extended substantially vertical position when the associated side extension panel is in said horizontal position, and to move to a collapsed substantially horizontal position when the associated side extension panel is in said vertical position, with said side wall panels being nested when collapsed such that their outer edges extend substantially across the collapsed width of said camper, and with the upper portions of said side wall panels converging toward each other when the camper is expanded;

a rigid roof panel pivotally linked to the frame and having a configuration that nests with the upper of said side wall panels, when collapsed, having a width to extend across the space defined by the vertically disposed side extension panels when the camper is collapsed, and having a width to extend across the converging portions of said side wall panels when expanded; and

closure means carried by said frame for sealing the end portions of said camper.

3,399,921
LATCHING MECHANISM

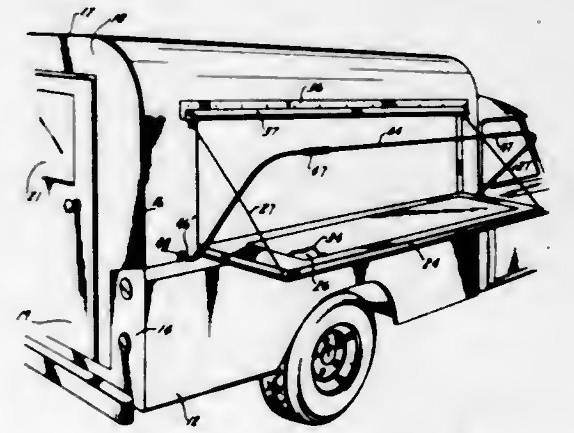
Paul E. Trost, Michigan City, Ind., Richard L. Palen, New Buffalo, Mich., and Evan Hammond, Michigan City, Ind., assignors to Clark Equipment Company, a corporation of Michigan
Filed Dec. 27, 1966, Ser. No. 604,746
13 Claims. (Cl. 296—35)



This invention relates to a latching mechanism for securing a freight container or the like to the bed of a vehicle for transport. The mechanism latches automatically when the container is placed on the vehicle, and it may be unlatched when it is desired to remove the container from the vehicle.

3,399,922
AUTOMOBILE CAMPER

Errol H. Burton, 34 N. Perry Lane, Tempe, Ariz. 85281
Filed Feb. 21, 1966, Ser. No. 529,063
7 Claims. (Cl. 296—23)

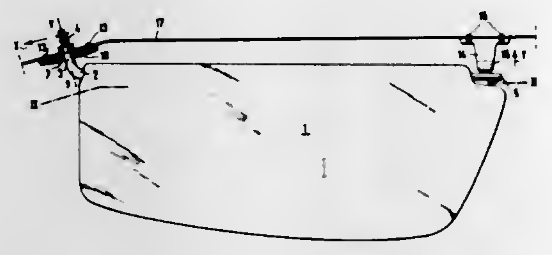


A truck-mounted camper including an opening in the side thereof having a hinged closure therefor; the closure is hinged along the bottom edge thereof and folds outwardly of the camper into a horizontal position to provide a sleeping surface. A covering is provided and is attached by means of snap fasteners.

3,399,923
PIVOTED LIGHT SHIELD AND SNAP-ACTION AUXILIARY RETAINER

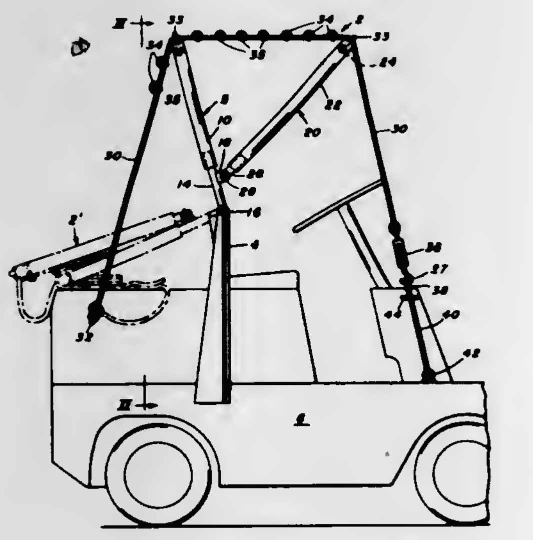
Heinz Bornefeld, Kriegerheimstr. 77, Wuppertal-Elberfeld, Germany, and Kurt Cziptschirsch, Am Heckendorn 43, Wuppertal-Barmen, Germany
Filed Jan. 13, 1966, Ser. No. 520,524
Claims priority, application Germany, May 29, 1965, H 52,112
6 Claims. (Cl. 296—97)

A light shield assembly, especially designed for use in motor vehicles, comprising a light shield mounted, along one edge thereof, upon a shaft, one end of which shaft is bent from the main portion of said shaft and forms a journal about which the main portion rotates, a pivot bearing rigidly secured to a fixed vehicle part, a trunnion in the form of a solid of revolution, said trunnion rotatably engaging said pivot bearing, and an auxiliary retainer rigidly secured to a fixed vehicle part and positioned to receive, in a bore therein, the free end of the light shield shaft. The journal of said shaft is rotatably mounted within the trunnion and the trunnion is constrained to rotate, relative to the pivot bearings, in a single plane, which plane is defined by a line coinciding with the axis of the journal and the center line of the bore in said auxiliary retainer. The bore of the auxiliary retainer is provided with an entrance slot and according to one embodiment of the present invention, the entrance slot lies within the plane of rotation of the trunnion relative to the pivot bearing. According to a second embodiment of the present invention, the entrance slot lies within a plane at right angles to the plane of rotation of the trunnion relative to the pivot bearing.



3,399,924
COLLAPSIBLE ROOF

Harry O. Larson, Superior, Wis., assignor to United States Steel Corporation, a corporation of Delaware
Filed Mar. 6, 1967, Ser. No. 620,859
8 Claims. (Cl. 296—111)

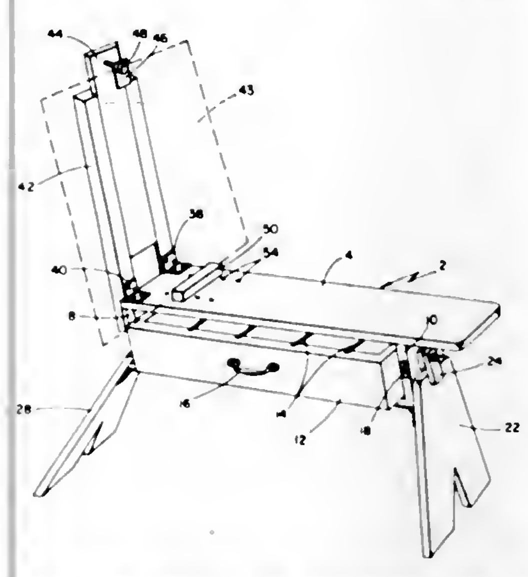


A collapsible roof, primarily intended for use on industrial lift trucks. U-shaped support members are pivotally connected in an upside down position to the truck body. Wire ropes are strung over these U-shaped members, and metal cross-bars are connected between the ropes. The ropes are pulled tight and secured at either end to the truck body so that the metal cross-bars provide a protective roof for the driver of the truck.

3,399,925
ARTIST'S BENCH

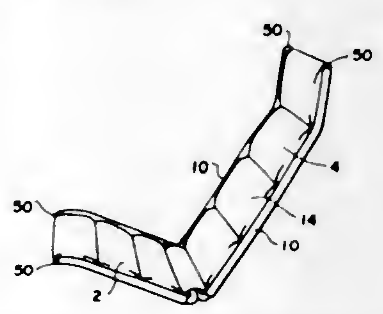
William G. Levy, Glen, N.H.
(℅ Yield House, North Conway, N.H. 03860)
Filed Feb. 15, 1967, Ser. No. 616,378
7 Claims. (Cl. 297—156)

A portable artist's bench having a seat member, a drawer slidable on the seat member, an easel-forming support foldable against one side of the seat member and legs foldable against the opposite side of the seat member.



3,399,926
FURNITURE CONSTRUCTION

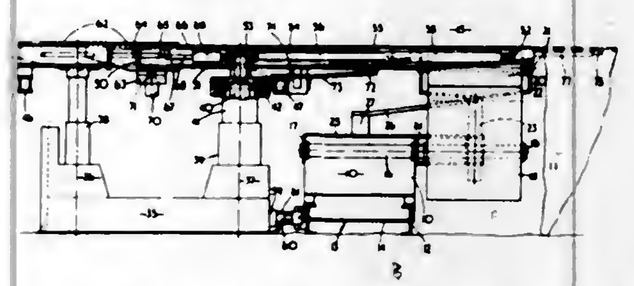
Bruce A. Hehn, 110 Shepherd Terrace, St. Clairsville, Ohio 43950
Filed Dec. 27, 1966, Ser. No. 605,027
9 Claims. (Cl. 297—457)



This specification pertains to furniture construction in which seat and back portions of flexible material extend between portions of a relatively rigid frame structure. The frame structure, preferably tubular, has longitudinal indentations which receive enlarged portions in the ends of the flexible material. The flexible material is then wrapped around the periphery of the frame structure including the enlarged end portions to maintain the same in the indentations and hold the flexible material to the frame.

3,399,927
SELF-ADVANCING MINE ROOF SUPPORT INCLUDING A PROTECTIVE MAT FOR THE ROOF

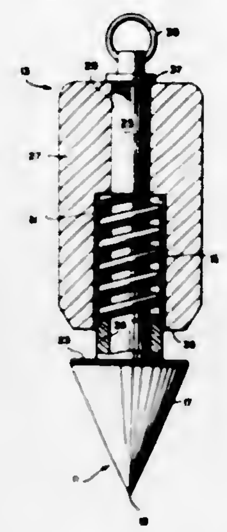
Karl M. Groetschel, 44 Stolzestrasse, 463 Bochum, Germany
Filed Apr. 21, 1966, Ser. No. 544,145
Claims priority, application Germany, Apr. 21, 1965, G 43,397; Great Britain, Aug. 3, 1965, 33,045/65; Aug. 21, 1965, 35,966/65
13 Claims. (Cl. 299—11)



A flexible mat is stored and an extended portion is led off from the mat. The extended portion is supported in an elevated position adjacent to the roof and the elevated portion is held stationary while the stored portion is moved along a lower path to withdraw a further length of the mat from the stored portion to increase the length of the extended portion. The extended portion of the mat is then provided with underpinnings at intervals along its length by a prop-supported superstructure.

3,399,928
RAM IMPACTOR

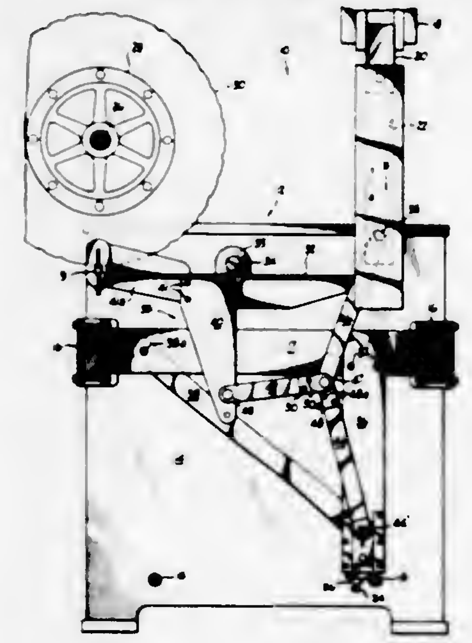
Frederick P. Robbins, 224 S. Michigan Ave., Chicago, Ill. 60604
Filed June 27, 1966, Ser. No. 560,569
2 Claims. (Cl. 299—37)



Ram impactor with bit having anvil-forming shoulder to receive impact of heavy mass hammer slidably suspended about bit shank by coil spring in axial cavity in hammer.

3,399,929
SUPPORT MEANS FOR WORK BED OF BRUSHMAKING MACHINE

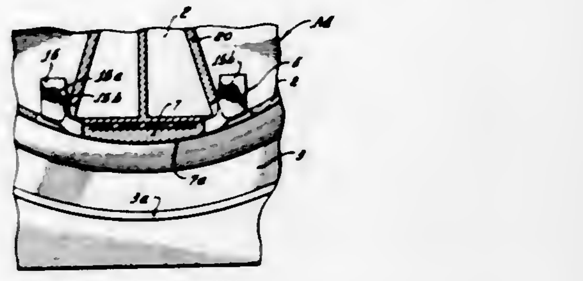
Harold J. Hazelton, Batavia, Ill., assignor to Carlson Tool & Machine Company, a corporation of Illinois
Filed June 15, 1966, Ser. No. 557,673
3 Claims. (Cl. 300—11)



A support for a brushmaking machine of the type wherein the work bed of the brushmaking machine is moved vertically through engagement of a cam wheel with a follower on a pivoted arm which is also pivoted to the vertically movable work bed, characterized in that toggle means is connected to the pivoted arm and to the vertically movable portion of the work bed to assist in supporting the work bed in different positions of vertical extension.

3,399,930
COMPOSITE VEHICLE WHEEL AND METHOD OF MAKING THE SAME

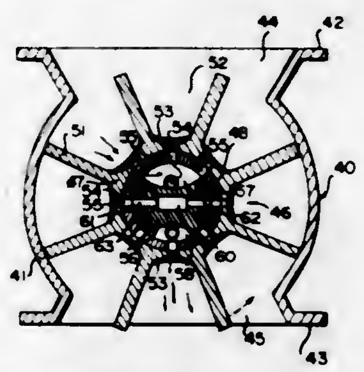
James C. Bennett, West Covina, Calif., assignor to Electro Chemical Industries, Inc., Pomona, Calif., a corporation of California
Filed Sept. 6, 1966, Ser. No. 577,277
11 Claims. (Cl. 301—65)



A vehicle wheel assembly and hub structure in which a hub of metal such as aluminum is constructed with radial spokes carrying metal insert elements on one side and an integrally formed outwardly extended rim simulating flange section which extends substantially to the outer periphery of the tire mounting rim. Each of the insert elements includes an elongate plate with a flange at one edge, the plate being embedded as by casting in a spoke end so that the flange is countersunk therein and extends radially outwardly with the outer edge of the flange being arcuate and engaging the inner periphery of the rim, and with a side surface extending outwardly to the rim and connected by a bead weld to the rim. The plate has openings for interlockingly receiving material of the hub during casting and at the opposite edge is provided with a rectilinear reinforcing and stiffening depressed section which is also embedded. At its opposite ends, the flange has a circumferentially extending frangible portion formed to provide a removable ear extending towards the wheel axis and outwardly offset from the plane of the flange, for initally positioning the insert element during the casting operation, but being removable prior to affixing the tire mounted rim to the flange.

3,399,931
FEED MECHANISM

Clarence W. Vogt, Box 232, Westport, Conn. 06880
Filed July 8, 1966, Ser. No. 563,835
12 Claims. (Cl. 302—49)



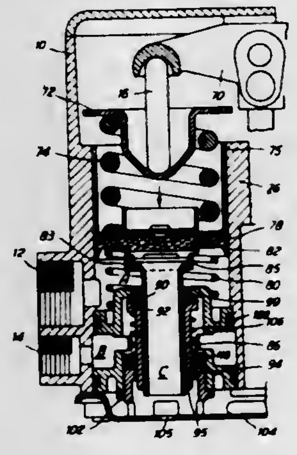
1. A feed mechanism for pulverulent material having gas entrapped therein, comprising a housing having radially disposed inlet and outlet, an impeller mounted for rotation within said housing, said impeller having a plurality of radiating vanes defining successive pockets movable past said inlet and outlet, the extremities of each of said vanes being adapted to engage the inner wall surface of said housing as said impeller is rotated, suction means including filters associated with said pockets for drawing gas from the pulverulent material in each pocket when a pocket is in communication with said inlet while restraining escape of pulverulent material contained in

such pocket thereby to compact the pulverulent material in such pocket, and discharge means when a pocket is in communication with said outlet to provide flow of gas under pressure to facilitate discharge of compacted material from such pocket into said outlet.

3,399,932

COMMUTABLE SHUTOFF VALVE WITH BALANCED SURFACES FOR PNEUMATIC APPARATUS, PARTICULARLY BRAKING SYSTEMS

Giuseppe Alfieri and Roberto Moriondo, Milan, Italy, assignors to Fabbrica Italiana Magneti Marelli S.p.A., Milan, Italy, a corporation of Italy
Filed July 12, 1965, Ser. No. 471,138
Claims priority, application Italy, July 15, 1964, 15,419/64; Mar. 3, 1965, 6,374/65
13 Claims. (Cl. 303—54)

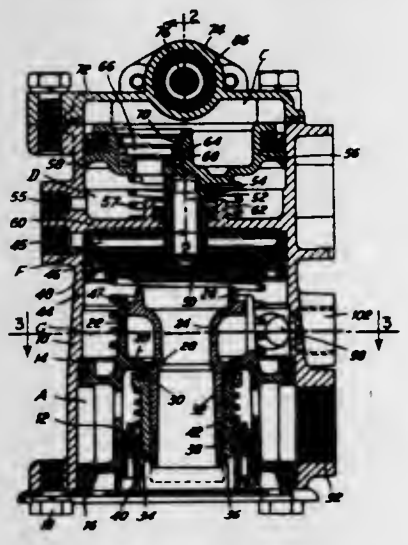


A distributor for pneumatic braking systems including a first chamber connected to the braking unit, a second chamber connected to a pneumatic source and a piston actuated movable pipe member for selectively connecting the chambers together and the first chamber to an atmospheric exhaust.

3,399,933

COMMUTABLE SHUTOFF VALVE WITH BALANCED SURFACES FOR PNEUMATIC APPARATUS, PARTICULARLY BRAKING SYSTEMS

Giuseppe Alfieri and Roberto Moriondo, Milan, Italy, assignors to Fabbrica Italiana Magneti Marelli S.p.A., a corporation of Italy
Original application July 12, 1965, Ser. No. 471,138, Divided and this application Feb. 2, 1967, Ser. No. 630,161
Claims priority, application Italy, July 15, 1964, 49,287/64; Mar. 24, 1965, 2,700/65
8 Claims. (Cl. 303—54)

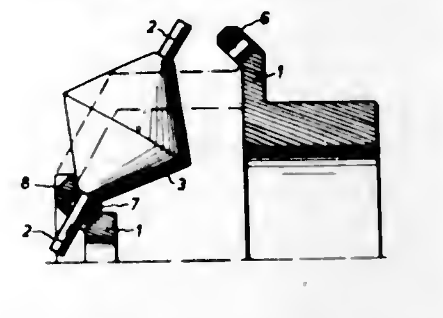


A distributor for a pneumatic braking system including a first chamber connected to the braking unit, a second chamber connected to a pneumatic source and a piston actuated, movable pipe member for selectively connecting the chambers together and the first chamber to an atmospheric exhaust.

3,399,934

BEARING MOUNTINGS FOR ROLLERS IN CONTINUOUSLY VARIABLE RATIO FRICTION DRIVES

Jean Ernst Kopp, Meyriez, Murten, Switzerland
Filed May 10, 1966, Ser. No. 548,952
Claims priority, application Switzerland, May 14, 1965, 6,876/65
2 Claims. (Cl. 308—15)

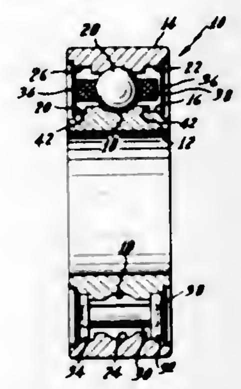


A bearing mounting for rollers in a continuously variable ratio friction drive in which each roller is rigid with its axle and the latter is supported by bearings in a support such that the ends of said axle are longitudinally movable, and one of the bearings is movable between a first operative position in which the roller can be driven and a second position in which the roller can be removed from the bearing.

3,399,935

ANTIFRICTION BEARINGS

William J. Mitschang, 7 Rose St., Glen Head, N.Y. 11545
Continuation-in-part of application Ser. No. 461,039, June 3, 1965. This application May 16, 1967, Ser. No. 648,517
3 Claims. (Cl. 308—200)



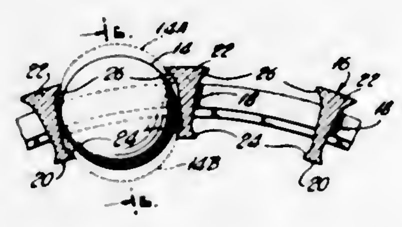
Antifriction bearings having sets of equal diameter roller bearing and ball bearing elements; the sets of roller and ball bearing elements being arranged in circumferentially spaced relationship about the antifriction bearing while spacing means retain the spaced sets of roller and ball bearing elements relatively spaced from each other with the roller bearing set of elements in bearing engagement with a respective race and the ball bearing set of elements in bearing engagement with another respective race.

3,399,936

BEARING BALL RETAINER

James L. Vannest, New Britain, Conn., assignor to The Fafnir Bearing Company, New Britain, Conn., a corporation of Connecticut
Filed Apr. 8, 1966, Ser. No. 541,243
5 Claims. (Cl. 308—201)

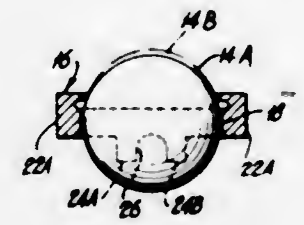
A ball-bearing retainer which includes a ring-like member having a plurality of radial holes for receiving balls fingers between the holes extending radially inwardly from the ring body for restraining the ball from falling radially inwardly out of the retainer, and outer limit ball retention means extending radially beyond the body of the ring, said retention means having substantially line contact engagement with the respective balls to prevent the same from falling radially outwardly out of the retainer.



3,399,937

BEARING RETAINER

James L. Vannest, New Britain, Conn., assignor to The Fafnir Bearing Company, New Britain, Conn., a corporation of Connecticut
Filed Apr. 8, 1966, Ser. No. 541,308
5 Claims. (Cl. 308—201)

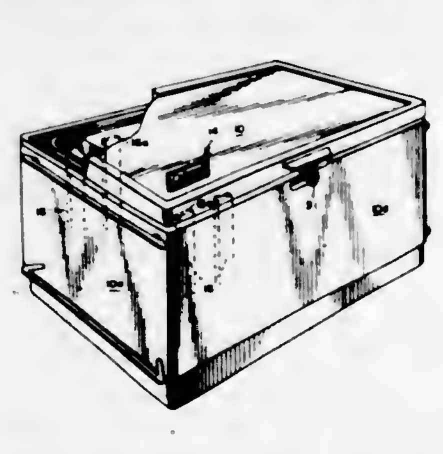


A ball-bearing retainer which includes a ring-like member having a plurality of radial holes for receiving balls, means between the holes extending radially inwardly from the ring body for restraining the balls from falling radially inwardly out of the retainer, and outer limit ball retention means exteding radially beyond the body of the ring, the retention means having substantially point contact engagement with the respective balls to prevent the same from falling radially outwardly out of the retainer.

3,399,938

THREE-WAY CONVERTIBLE COOLER

Joseph D. Wallace, Wichita, Kans., assignor to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas
Filed Feb. 6, 1967, Ser. No. 614,284
10 Claims. (Cl. 312—214)

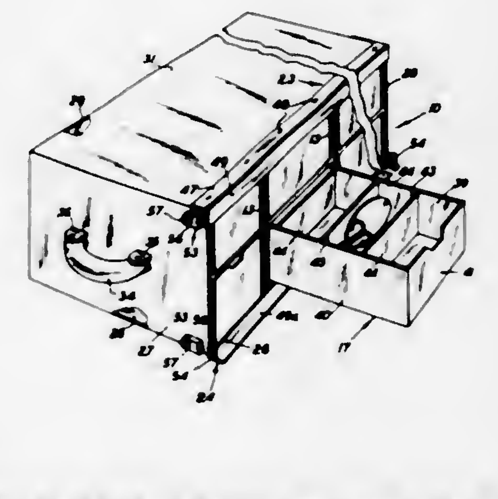


A three-way convertible cooler including elongated shelves or ledges extending along opposite internal walls of the cooler box and parallel to the plane of the arc in which a hinged door swings. The ledges provide support for suspending an ice tub in the upper part of the cooler in either an upright or inverted position for set up as a right- or left-hand opening door. The ledges terminate short of the door thereby defining a third transverse position for receiving and suspending the ice tub whereby the cooler may be set up as a chest. A swivel plate is provided on the outside of the door for assuming positions indicative of how the cooler has been set up.

3,399,939

FISHING TACKLE BOX

Ivar C. Anderson, Rte. 2, Box 12A, Cass Lake, Minn. 56633
Substituted for abandoned application Ser. No. 482,826, Aug. 26, 1965. This application Apr. 5, 1967, Ser. No. 633,345
10 Claims. (Cl. 312—216)

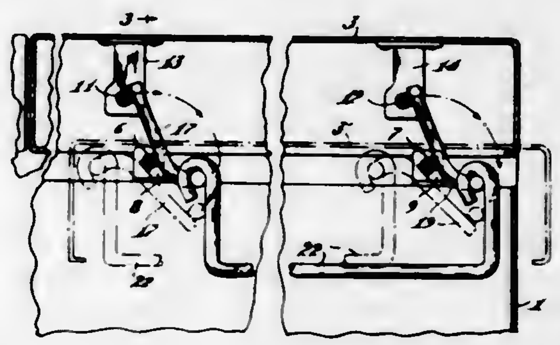


A fishing tackle box having an open side and a handle at one end. A plurality of H-shaped dividers segregates the box into separate upper and lower channels open to the open side of the box. Box trays with separate storage compartments for fishing lures slide into the channel. The trays and dividers are retained in the box by hinged plates extended along the top and the bottom of the box. Releasable locks at the ends of the plates hold the plates adjacent the open end of the box.

3,399,940

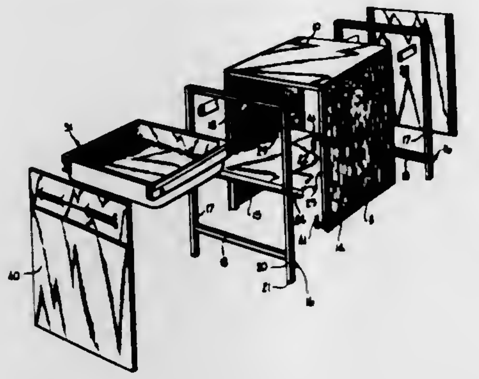
ADJUSTABLE SUPPORT FOR RECORD COPIER

Peter Quay Yang, New York, N.Y., and Kenneth J. White, Framingham, Mass., assignors to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Nov. 4, 1966, Ser. No. 592,171
8 Claims. (Cl. 312—233)



A copier comprising an upwardly facing exposure window, a shelf for supporting one side of an open book with the other side overlapping the window, and means for adjusting the support to accommodate books of different thicknesses.

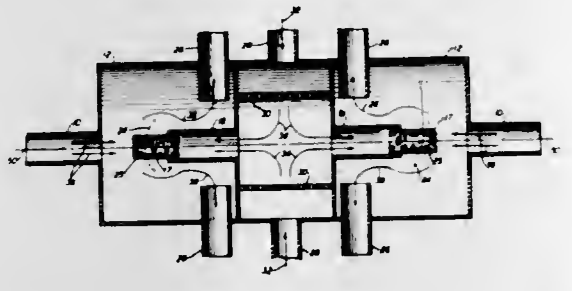
3,399,941
CABINET CONSTRUCTION
Francis W. Hansen and Richard H. Nulf, Lansing, Ill., assignors to Simmons Company, New York, N.Y., a corporation of Delaware
Filed Feb. 27, 1967, Ser. No. 618,868
6 Claims. (Cl. 312—257)



A metal cabinet having integral top and side panels formed of a single sheet of metal, the edges of which, at the front and back edges of the cabinet, are flanged and present opposed, inwardly facing peripheral channels. In each channel is an A-frame, a tubular weldment which reinforces the shell and may provide legs for the cabinet. A floor panel with downwardly turned flanges is interlocked with hemmed lower edges of the side panels and maintains the A-frames in assembled relation with the skin at floor level. Drawer runners secured through the edge flanges to the A-frames serve the purpose at an upper level. A flanged-edge back panel maintained in an assembled relation with the skin and the rear A-frame by sheet metal clips prevents racking of the cabinet out of square.

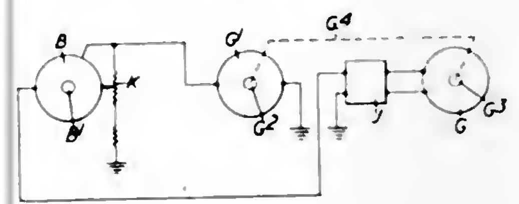
The cabinet may have one or more drawers, or as shown in the drawings, a drawer and door, for use, for example, as a bedside cabinet. The assembly is made without any welding except at four small places in the subassembly of the A-frames.

3,399,942
GAS LENS EMPLOYING TWO OPPOSITELY FLOWING GASES HAVING UNEQUAL REFRACTIVE INDICES
Dwight W. Berreman, Westfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 5, 1964, Ser. No. 372,992
4 Claims. (Cl. 350—179)



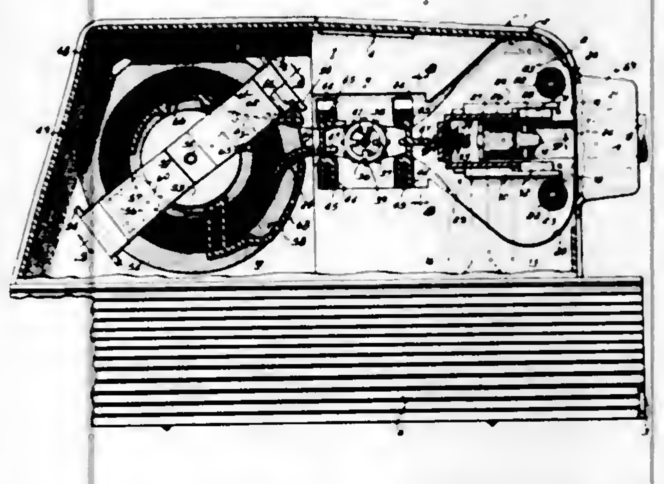
This application describes apparatus and methods for focusing an optical beam by means of flowing gases. In the embodiments described, two transparent gases, having different refractive indices, are caused to flow into an enclosure in opposite directions, thereby establishing a curved interface between them extending along a direction transverse to the direction of beam propagation. The result is to create a transparent gas lens which focuses the beam. A hollow, porous nozzle inserted in one of the ports, increases the curvature of the interface, thereby decreasing the focal length of the lens.

3,399,943
CONTROL DEVICES FOR OPTICAL OBJECTIVES OF VARIABLE EQUIVALENT FOCAL LENGTH
John D. Barr, Oadby, and Dexter R. Plummer, Leicester, England, assignors to Rank Precision Industries Limited, trading as The Rank Organisation Rank Taylor Hobson Division, Leicester, England, a British company
Filed Jan. 16, 1964, Ser. No. 338,147
Claims priority, application Great Britain, Jan. 18, 1963, 2,281/63
10 Claims. (Cl. 350—187)



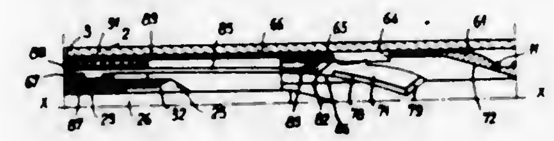
A control device for an objective of the zoom type in which the zoom control element also acts to vary the effective transmission ratio of the transmission between the focussing control element and the movable part of the objective controlled thereby. In a preferred embodiment the transmission is electrical and the output of a generator driven by the focussing control element forms part of the input which drives a motor which drives the movable part of the objective. A voltage proportional to the movement of the motor is fed back as the remainder of said input in opposition to the output of the generator, and the zoom control element is connected to regulate this feedback voltage, thus regulating the net input to the motor.

3,399,944
TOY MOVIE PROJECTOR
James O. Kuhn and Karl B. Rave, Cincinnati, Ohio, assignors to Kenner Products Company, Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 29, 1965, Ser. No. 491,240
9 Claims. (Cl. 352—128)



In a move projector having a projection system, a housing, a pair of film runs positioned in the housing, and a driving sprocket positioned in the housing and disposed between the film runs for simultaneously driving the pair of film runs, the improvement comprising, in preferred form, a door for the housing, and guide means mounted to the door, the door being movable between a closed position whereat the guide means position and maintain the runs in operational engagement with the sprocket and an open position whereat the guide means are removed from operational engagement with the sprocket. This movie projector is particularly adapted for use by children because of its simple and easy threading characteristics.

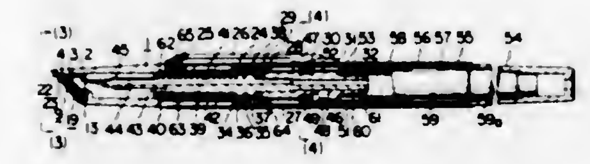
3,399,945
PROPELLING PENCIL WITH AN INCORPORATED SHARPENING DEVICE
Jacques M. Gouget, 3 Rue d'Auteuil, Paris, France
Filed July 28, 1966, Ser. No. 568,619
Claims priority, application France, Aug. 4, 1965, 27,149; June 25, 1966, 66,945
13 Claims. (Cl. 401—50)



A pencil having retractable and extendable lead in a body and a sharpener in the body which can be selectively engaged with the point of the lead to sharpen the same.

The conventional propelling pencil has the disadvantage that, in order to re-sharpen the lead, it must be subjected to the action of the movable sharpening devices, and this action must be carried out with care, since any contact between the propelling pencil and a sharp edge of the said device would have adverse effects on both.

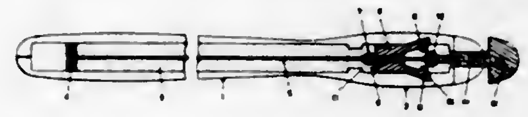
3,399,946
RETRACTABLE-NIB, CAPLESS FOUNTAIN PEN
Sadao Tokorozawa, Hiratsuka-shi, Katsuji Iwasaki, Yokosuka-shi, and Yoshio Aoki, Yokohama-shi, Japan, assignors to Pilot Man-Nen-Hitsu Kabushiki Kaisha, Kyobashi, Tokyo-to, Japan
Filed June 22, 1966, Ser. No. 559,448
Claims priority, application Japan, Feb. 25, 1966, 41/16,351
14 Claims. (Cl. 401—108)



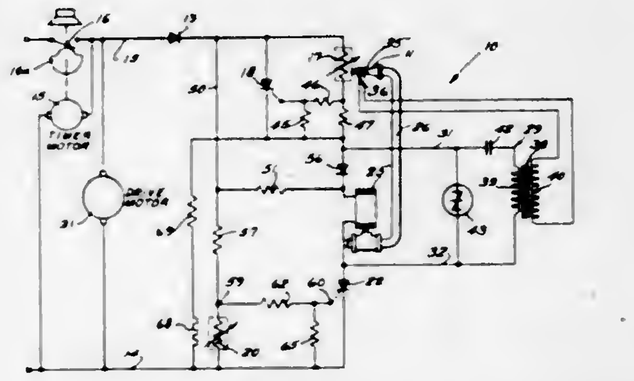
A capless fountain pen. The pen has a barrel with a pen nib retractable into the interior of the barrel through an aperture at the front end thereof. An openable closure device is provided adjacent the aperture for closing it, and is in the form of a closure plate hinged to swing into contact with the flat front surface of the barrel to close the aperture. A spring device urges the closure plate toward the closed position, the closure plate being opened by the pen nib when it is projected forward to overcome the force of the spring device.

3,399,947
TOOTHBRUSH
Mai Fallesen, Hagersten, Sweden, assignor to Maifa Tekniska Aktiebolag, Stockholm, Sweden
Filed Feb. 17, 1966, Ser. No. 537,596
Claims priority, application Sweden, Feb. 17, 1965, 2,020/65
1 Claim. (Cl. 401—173)

A toothbrush has a cavity for dentifrice which is supplied by a passage to the brush head. A piston reciprocating in the cavity is connected by a piston rod to an actuating knob. A valve controlling said passage is slidingly supported on the piston rod; two resilient diverging arms of the valve body are engaged by an inner extension of the knob when the latter is pushed inwardly in the valve closing position and release the knob when it is pulled outwardly to open the passage for the dentifrice pushed out by the piston.



3,399,948
SOLID STATE IGNITION CIRCUIT FOR FUEL BURNERS
George H. Myers, St. Joseph, and Franklin C. Harter, Stevensville, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Continuation of application Ser. No. 406,399, Oct. 26, 1964. This application Apr. 14, 1967, Ser. No. 631,098
11 Claims. (Cl. 431—68)



1. A control system for operation of a fuel burner in a clothes dryer comprising:

electrically controlled valve means for controlling supply of fuel to the burner,

said valve means having a single solenoid,

circuit means comprising an electrically energized igniter system for igniting fuel supplied to the fuel burner,

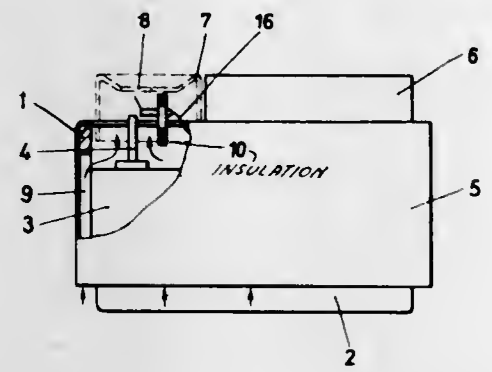
said circuit means connecting said valve means and said igniter system electrically in parallel and to an energizing voltage source, electronic switching means in said circuit means controlling current flow to said valve means and to said igniter system upon initial energization of the control system to cause fuel flow to the fuel burner and ignition thereof at said fuel burner,

and bypass circuit means in parallel with said electronic switching means having voltage dropping resistance means external of said valve means to supply a reduced voltage from said energizing voltage source to said single solenoid of said valve means,

said bypass circuit means being operable to maintain said valve means open when said electronic switching means becomes nonconductive.

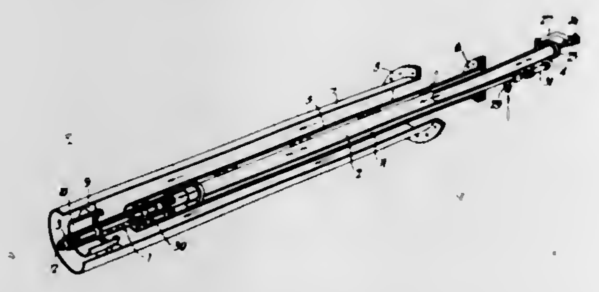
3,399,949
GAS FUELLED CIGARETTE LIGHTER WITH SPARK IGNITION
Peter Rabe, Muhlheim (Main), Germany, assignor to Heinrich Maltner GmbH, Offenbach am Main, Germany
Filed Oct. 22, 1965, Ser. No. 501,677
Claims priority, application Germany, Nov. 18, 1964, M 49,908
11 Claims. (Cl. 431—143)

A gas fuelled cigarette lighter adapted to be ignited by an electric spark to be produced between free ends of a pair of electrodes mounted on a common electrode mounting plate of insulating material. The mounting plate extending in a plane substantially parallel to the burner means of the lighter to provide proper eddy-free guidance of combustion air to the burner means.



3,399,950
BURNER ASSEMBLIES

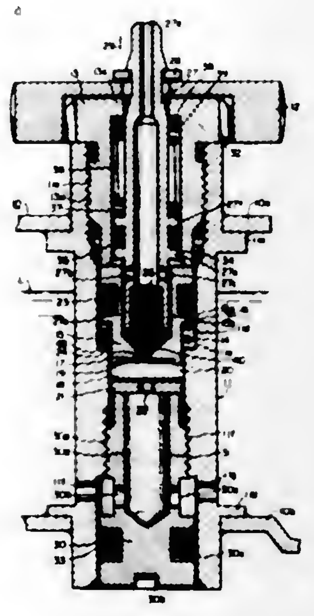
Martin Richard Quirk, Lee-on-Solent, England, assignor to John I. Thornycroft & Company, Limited, Portchester, Hampshire, England, a British company
Filed June 23, 1967, Ser. No. 648,402
Claims priority, application Great Britain, June 30, 1966, 29,350/66
8 Claims. (Cl. 431—153)



A liquid or gaseous fuel burner assembly for industrial applications comprising a shuttle-like burner head movable in guide means from a retracted inoperative position to a forward operative position within a boiler, the burner head being removable from the guide means when in its retracted position for cleaning and maintenance and connectable to a fuel supply pipe only when in its operative position.

3,399,951
FUEL CONTROL MECHANISM IN LIQUEFIED GAS FUELED LIGHTER

Masaru Koizumi, Tokyo, Japan, assignor to Mansei Kogyo Kabushiki Kaisha, Kawaguchi-shi, Saitama-ken, Japan
Filed Mar. 1, 1966, Ser. No. 530,963
Claims priority, application Japan, Mar. 5, 1965, 40/17,394
3 Claims. (Cl. 431—344)



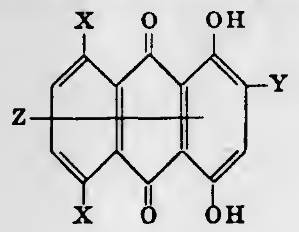
A liquefied gas fueled lighter having a porous mass intermediate the fuel supply and the control valve located in an adjustable pressure member wherein said pressure member is provided with a ring flange adjacent said mass to define an evaporation chamber and further comprising a pair of perforated, flexible, non-liquid absorbing sheets disposed on opposite sides of said porous mass in contact therewith.

CHEMICAL

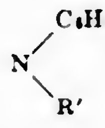
3,399,952
METALLIZED POLYOLEFIN DYEING WITH 1,4-DIHYDROXY- OR 1,4,5,8-TETRAHYDROXY-HALOGENATED ANTHRAQUINONES SUBSTITUTED IN THE 2-POSITION BY PHENOXY, ALKYLIMINO, ANILINO AND N-ALKYLANILINO GROUPS

Yutaka Hosoda, Tokyo, Japan, assignor to Mitsui Kagaku Kogyo Kabushiki Kaisha (Mitsui Chemical Industry Co., Ltd.), Tokyo, Japan
No Drawing. Filed Feb. 21, 1966, Ser. No. 528,778
Claims priority, application Japan, Feb. 26, 1965, 40/11,148
19 Claims. (Cl. 8—31)

This invention concerns a process for dyeing metal-modified dyeable polyolefin fibers which comprises contacting said fibers with an aqueous dispersion of an anthraquinone dye having the following formula



wherein X is a member selected from the class consisting of hydrogen and a hydroxyl group, Y is a member selected from the class consisting of OR, NHR and



$$N\begin{matrix}\diagup C_6H_5\\ \diagdown R'\end{matrix}$$

R is a member selected from the class consisting of alkyl groups of 1 to 12 carbon atoms and phenyl group, which phenyl group may be substituted by a member selected from the class consisting of halogens and alkyl groups of 1 to 9 carbon atoms, R′ is an alkyl group of 1 to 4 carbon atoms and Z is a member selected from the group consisting of hydrogen and halogens, but Z being limited to only the halogens when Y is a member selected from the class consisting of alkoxy groups of 1 to 6 carbon atoms, alkyl amino groups, phenoxy group and phenoxy groups which are substituted by a methyl or ethyl group in the meta or para position.

3,399,953
DYE ASSISTANT FOR POLYAMIDES CONTAINING ALKYLENE POLYAMINES DIAMIDATED WITH FATTY ACIDS, POLYETHYLENE GLYCOL FATTY ACID ESTER AND AN ALKYL QUATERNARY AMMONIUM COMPOUND

Ira Sapers, Newark, and Alton A. Cook, Bloomfield, N.J., assignors to Arkansas Company, Inc., Newark, N.J., a corporation of New York
No Drawing. Filed Oct. 2, 1967, Ser. No. 672,002
5 Claims. (Cl. 8—54)

A low temperature dyeing assistant for polyamide fibers, such as wool, nylon and the like, is shown which is formed of a combination of at least three components. The first component has the generalized formula

$$R—NH(C_2H_4NH)_x—R$$

where R is a fatty acid radical and x has a value of at least 6 and no more than 8. The second component is an ester of a polyethylene glycol and a fatty acid, the third component has a generalized formula F—Q—X, where F is a long chain alkyl radical having at least 10 carbon atoms, Q is a quaternary ammonium radical and X is an acid radical.

3,399,954
SOFTENING LEATHER BY APPLICATION OF AN ACETYLATED MONOGLYCERIDE

Gerard Warren Curtis, Fair Lawn, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Mar. 6, 1964, Ser. No. 350,097
1 Claim. (Cl. 8—94.22)

A process is provided for softening aged leather which involves swabbing said leather with either liquid monoacetyl glycerol dioleate or liquid diacetyl glycerol monooleate.

3,399,955
METHOD FOR STERILIZING CLOTHING AND THE LIKE IN A BAG WITH A STERILIZING FLUID

Merle A. Zimmerman, 3930 Merwin St., Shreveport, La. 71109
No Drawing. Filed July 30, 1964, Ser. No. 386,414
3 Claims. (Cl. 21—58)

A method for sterilizing articles such as shoes or clothing or the like whereby such article is wetted with a sterilizing fluid having a relatively low degree of toxicity and is then sealed in a container from which the air is evacuated for a sufficient period of time to kill the fungi and the spore of such fungi present in the articles in the container.

3,399,956
PROCESS FOR CONVERTING MONOVALENT THALLIUM COMPOUNDS TO TRIVALENT THALLIUM COMPOUNDS

Isao Hirose, Kazutoshi Funahashi, and Takeshi Fujii, Iwakuni-shi, Japan, assignors to Teijin Limited, Kita-ku, Osaka, Japan, a corporation of Japan
No Drawing. Filed Apr. 22, 1965, Ser. No. 450,200
Claims priority, application Japan, May 1, 1964, 39/24,771; Jan. 19, 1965, 40/2,638, 40/2,639
8 Claims. (Cl. 23—23)

A process for converting monovalent thallium compounds to trivalent thallium compounds by contacting the monovalent thallium compound with molecular oxygen in an acidic aqueous medium containing a chloride or bromide ion and an ion of a redox metal. The metal ions are generally selected from: copper, mercury, chromium, manganese, iron, cobalt, and nickel.

3,399,957
MAGNETIC MATERIALS AND PROCESS OF PREPARATION

Merrill W. Shafer, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 374,321, June 11, 1964. This application Jan. 16, 1968, Ser. No. 698,350
4 Claims. (Cl. 23—52)

New divalent europium magnetic materials, having the formula $Eu_xAl_2O_{3+x}$ where $x=1$, 3 or 5, have been prepared. A mixture of divalent europium oxide and aluminum oxide is heated in a nonoxidizing atmosphere and cooled. The compounds are transparent crystalline materials which may be used in magneto-optical devices.

3,399,958
TREATMENT OF AQUEOUS ALKALINE ALUMINATE LIQUORS TO REMOVE CHROMIUM VALUES

William Haddon Brown, Little Rock, Ark., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
No Drawing. Filed June 21, 1965, Ser. No. 465,790
4 Claims. (Cl. 23—52)

Dissolved chromium impurities are removed from aqueous alkali aluminate solutions obtained by the digestion of chromium containing aluminous ore with caustic alkali solution, by precipitation of the chromium with either ferruginous bauxite, or ferrous sulfate, or sodium sulfide.

3,399,959
STABLE GRANULAR SODIUM TRIPOLYPHOSPHATE

James A. Robertson, Levittown, Pa., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 26, 1964, Ser. No. 406,341
7 Claims. (Cl. 23—106)

The spontaneous structural disintegration of a particulate, granular sodium tripolyphosphate product having a size larger than 100 mesh and containing Form I sodium tripolyphosphate is materially reduced by adding an effective amount (up to about 10 mole percent) of a crystal growth inhibitor to the precursor sodium phosphate mixture used in making up said product; the crystal growth inhibtor prevents the growth of crystallites of sodium tripolyphosphate in said product larger than about 35 microns. The effective crystal growth inhibitors are (a) monovalent cations having ionic radii above about 0.95 A. and (b) divalent cations having ionic radii below about 1.00 A. and (c) anions selected from the group consisting of fluorides, sulfates, silicates, and borates.

3,399,960
POTENTIOMETRIC CONTROL OF BLEACHING OF KAOLIN CLAYS

Robert F. Conley, Scotch Plains, and Mary K. Lloyd, Westfield, N.J., assignors to Georgia Kaolin Company, Elizabeth, N.J., a corporation of New Jersey
No Drawing. Filed June 17, 1966, Ser. No. 558,286
3 Claims. (Cl. 23—110)

1. A method of improving the optical properties of kaolin clay, comprising:

mixing said clay with an aqueous dithionite bleaching solution to form a slurry,

inserting in said mixture a saturated calomel cell electrode and a dithionite-conditioned platinum electrode in a manner so as to enable reading the electric potential between said electrodes in said bleaching mixture,

maintaining said bleach mixture, with stirring, while the negative electric potential between the electrodes is becoming more positive and discontinuing the bleaching operation before the said potential drops below a negative value of about —300 millivolts.

3,399,961
METHOD FOR SEPARATING Na_2SO_4 FROM BRINES OR BITTERNS

Oscar B. Waters, Jr., Simpsonville, Md., assignor, by direct and mesne assignments, of one-half each to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut, and to the United States of America as represented by the Secretary of the Interior
Filed Jan. 3, 1967, Ser. No. 607,071
10 Claims. (Cl. 23—121)

A brine or bittern heated to 75°–105° C. is passed countercurrently to a gypsum slurry to react the gypsum with sodium and potassium sulfate and form insoluble $Na_2SO_4 \cdot CaSO_4$ and $K_2SO_4 \cdot 5CaSO_4 \cdot H_2O$. Further countercurrent contact between the brine or bittern and the $K_2SO_4 \cdot 5CaSO_4 \cdot H_2O$ reacts the $K_2SO_4 \cdot 5CaSO_4 \cdot H_2O$ with Na_2SO_4 to form additional $Na_2SO_4 \cdot CaSO_4$.

3,399,962
METHOD OF PREPARING RHOMBOHEDRAL CRYSTALLINE TUNGSTEN DISULFIDE

Meyer S. Silverman, Norristown, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Apr. 21, 1964, Ser. No. 361,597
3 Claims. (Cl. 23—134)

A new form of tungsten disulfide having a rhombohedral crystalline structure is provided. A method of preparation of the tungsten disulfide is the simultaneous application of high temperature and high pressure, i.e., about 2000° C. and about 50 kilobars, to an elemental mixture of tungsten and sulfur or to the known hexagonal crystalline form of WS_2.

3,399,963
PREPARATION OF THIOPHOSPHORIC ACID

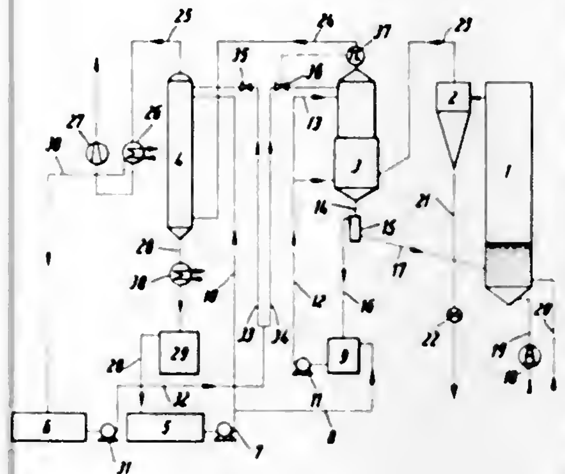
Stanley J. Brois, Matawan, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Mar. 4, 1965, Ser. No. 437,314
21 Claims. (Cl. 23—139)

Thiophosphoric acid (H_3PO_3S) is prepared by the reaction of a sulfide of phosphorus with water in the presence of an oxygen-containing organic compound at moderate temperatures. The preferred phosphorous reagent is phosphorous tetrasulfide. Organic ketones and ethers having from about 3 to 12 carbon atoms are particularly effective organic reagents.

3,399,964
PROCESS FOR REGENERATING USED HYDROCHLORIC ACID CONTAINING PICKLING LIQUORS

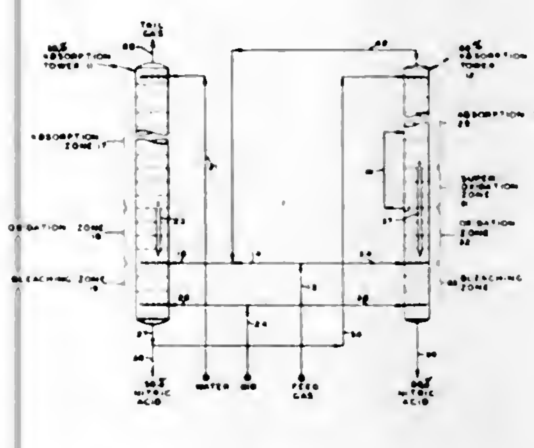
Rudolf Michels, Frankfurt am Main, Heinrich Welling, Essen-Heidhausen, and Dieter Ueberle, Frankfurt am Main, Germany, assignors to Mettallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany
Continuation-in-part of application Ser. No. 511,455, Dec. 3, 1965. This application Mar. 6, 1967, Ser. No. 620,871
Claims priority, application Germany, Jan. 30, 1965, M 63,989; Apr. 17, 1965, M 64,908; Mar. 11, 1966, M 68,734
13 Claims. (Cl. 23—154)

Process for regenerating used hydrochloric acid and iron chloride containing pickling liquors wherein the used liquor is preconcentrated and then evaporated to dryness and the iron chloride therein decomposed with hot oxygen containing gases in a fluidized bed of inert material to produce Fe_2O_3 and gaseous HCl, recovering the Fe_2O_3, contacting the hot gases and vapor mixture leaving the fluidized bed with the used liquor to effect the preconcentration and passing the gases and vapors from the preconcentration step through an absorber supplied with used pickling liquor to absorb the HCl contained therein to strengthen it for reuse. The gases and vapors employed for the preconcentration contain traces of Fe_2O_3 supplying trivalent iron in the preconcentrate supplied to the fluidized bed. Water, preferably, rinse water obtained by washing the pickled ferrous articles to remove adherent pickling components, is preferably supplied to the preconcentration and absorption steps for temperature control.



3,399,965
PRODUCTION OF 68 TO 70% NITRIC ACID

Michael Joseph Kalous, deceased, late of Niagara Falls, Ontario, Canada, by Michael L. Feuer, executor and trustee, Toronto, Ontario, Canada, assignor to Pullman Incorporated, a corporation of Delaware
Filed Sept. 11, 1963, Ser. No. 308,624
5 Claims. (Cl. 23—162)



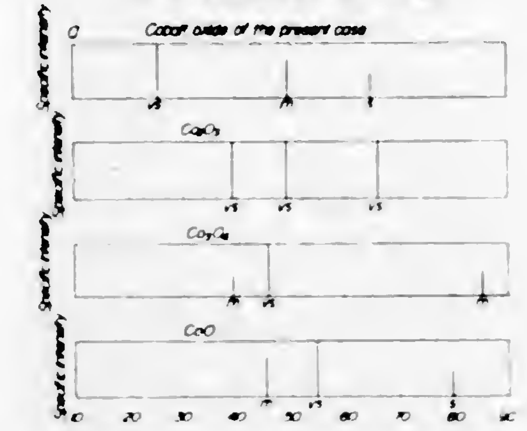
Part of the production of an existing nitric acid plant producing acid of nominal 58% strength is diverted to the production of 68 to 70% nitric acid by contacting part of the cooled burner gas from the existing plant with 68–70% nitric acid under conditions which oxidize nitric oxide in the gas to higher oxides by the reaction

$$NO + 2HNO_3 = 3NO_2 + H_2O$$

to produce a gas at least 99% oxidized. The latter gas is contacted with 58% nitric acid from the existing plant to produce 68–70% nitric acid, some part of which can be used for the oxidation step mentioned.

3,399,966
NOVEL COBALT OXIDE AND AN ELECTRODE HAVING THE COBALT OXIDE COATING

Osamu Suzuki, Masao Takahashi, Tomio Fukunaga, and Jun Kuboyama, Yokohama, Japan, assignors to Trurumi Soda Company Limited, Yokohama, Japan, a corporation of Japan
Filed May 18, 1965, Ser. No. 456,638
Claims priority, application Japan, May 18, 1964, 39/27,642
12 Claims. (Cl. 23—183)



A cobalt oxide having a general formula $CoO_m \cdot nH_2O$ wherein m is from 1.4 to 1.7 and n is from 0.1 to 1. This cobalt oxide is prepared by anodic oxidation of water soluble salts or cobalt. Also electrodes bearing a coating of said cobalt oxide. Such electrodes are insoluble and are useful in electrolysis.

3,399,967
METHOD FOR PRODUCTION OF DEUTERATED METHANES AND HEAVY WATER

Louis A. Pogorski, Toronto, Ontario, Canada, assignor to The British American Oil Company Limited, Toronto, Ontario, Canada, a company
No Drawing. Filed Dec. 13, 1963, Ser. No. 330,246
19 Claims. (Cl. 23—204)

A method for recovering deuterated methane from a mixture of methane and deuterated methanes comprising increasing the separation factor of the mixture by subjecting the mixture to a high pressure and a low temperature to provide a mixture having a vapour phase richer in deuterated methanes than methane, fractionating the mixture and recovering the fraction enriched in deuterated methanes.

3,399,968
PROCESS FOR THE PURIFICATION OF AQUEOUS SOLUTIONS OF HYDROGEN PEROXIDE

Licio Amodeo and Renzo Naldini, Solvay, Rosignano, Italy, assignors to Solvay & Cie, Brussels, Belgium, a Belgian corporation
No Drawing. Filed Feb. 23, 1967, Ser. No. 617,861
Claims priority, application France, Feb. 24, 1966, 50,944
5 Claims. (Cl. 23—207)

The purification of aqueous solutions of hydrogen peroxide by adsorbing organic impurities contained therein on activated charcoal is improved by preliminarily partially deactivating the activated charcoal by adsorbing thereon an organic material (which is inert with respect to hydrogen peroxide.)

3,399,969
DEPOSITION OF MASSIVE PYROLYTIC CARBON

Jack C. Bokros and Jack Chin, San Diego, and Alan S. Schwartz, Del Mar, Calif., assignors, by mesne assignments, to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware
Filed Feb. 10, 1966, Ser. No. 526,603
7 Claims. (Cl. 23—209.1)

1. A process for making massive pyrolytic carbon, which process comprises establishing a bed of particles in a chamber in association with a mandrel in the chamber, flowing a vaporous carbon-containing substance through the chamber while heating the particles and the mandrel to a temperature sufficient to cause thermal decomposition of the substance and deposition of isotropic carbon upon the mandrel and upon the particles, and maintaining said flow of the substance for a length of time sufficient to form a massive isotropic carbon deposit upon the mandrel, the ratio of the total deposition surface area, measured in square centimeters, in the active region of the chamber wherein deposition occurs, to the void volume, measured in cubic centimeters, of said active region is maintained at at least about 5 to 1 and no greater than about 20 to 1.

3,399,970
RECOVERY OF SULFUR FROM SOUR GAS BY THE SPLIT-FLOW PROCESS

Howard Grekel and Lorenz V. Kunkel, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Apr. 22, 1966, Ser. No. 544,430
7 Claims. (Cl. 23—225)

In the split flow process for the recovery of sulfur from a gaseous mixture containing hydrogen sulfide, and where the hydrogen sulfide content is less than 15%, stable combustion is maintained by burning sulfur with the hydrogen sulfide under conditions minimizing sulfur trioxide formation.

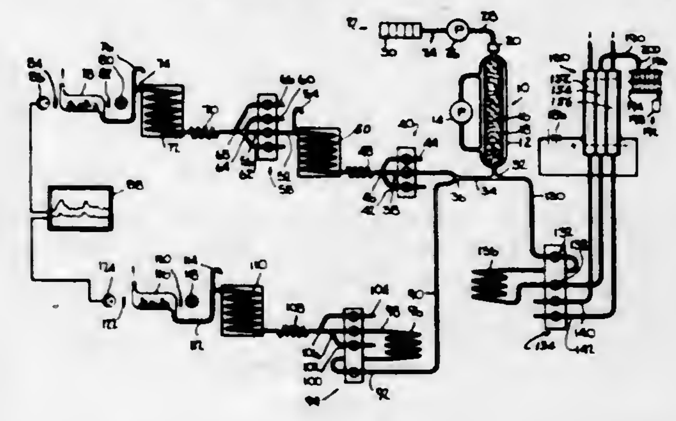
3,399,971
MEDICAL DIAGNOSTIC METHOD

Donald A. Kita, Jackson Heights, N.Y., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed May 13, 1964, Ser. No. 367,250
2 Claims. (Cl. 23—230)

Method for detection of phenylalanine in blood by paper chromatography utilizing as the developing medium about 0.3 to 1.0% of ninhydrin dissolved in the upper layer formed by allowing a butanol-aqueous acetic acid mixture to stand.

3,399,972
CHROMATOGRAPHY ANALYSIS APPARATUS AND METHOD

Leonard T. Skeggs, Kirtland, Ohio, and George N. Catravas, Yonkers, N.Y., assignors to Technicon Corporation, a corporation of New York
Filed Aug. 24, 1964, Ser. No. 391,578
6 Claims. (Cl. 23—230)

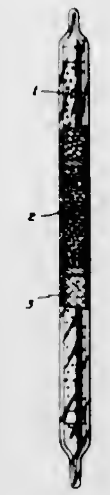


A system is provided for chromatographic analysis of peptides, wherein the effluent from a chromatographic column is divided into two main quotient streams, one of which is analyzed, the other of which passes through a desalting column and thence to a fraction collector. The desalting column includes three coextensive chambers, respectively separated by an anion exchange membrane, and cation exchange membranes, with an electric potential thereacross.

3,399,973

DETECTOR TUBE FOR HYDROGEN

Karl Grosskopf, Bad Schwartau, Germany, assignor to Otto Heinrich Drager, Lubeck, Germany
Filed June 10, 1964, Ser. No. 373,959
Claims priority, application Germany, June 27, 1963, D 41,845
5 Claims. (Cl. 23—254)

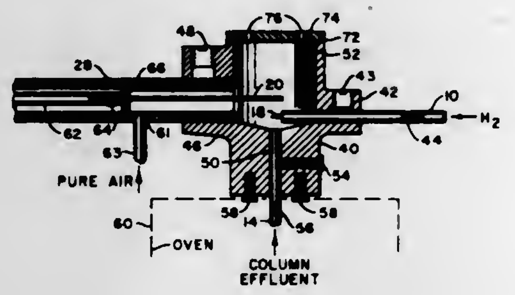


Transparent gas detector tube for colorimetrically indicating the presence of hydrogen in a gas containing oxygen as the gas is drawn through the tube. The transparent tube contains a layer of hopcalite for removing water vapor from the gas, a layer of catalyst to catalyze the oxidation of the hydrogen, and a layer which is capable of changing color in presence of the water vapor formed in the catalyst layer during the oxidation reaction.

3,399,974

GAS ANALYZER

Samuel F. Spencer and Louis Mikkelsen, Wilmington, Del., assignors, by mesne assignments, to Hewlett-Packard Company, Palo Alto, Calif. a corporation of California
Filed Mar. 2, 1965, Ser. No. 436,471
12 Claims. (Cl. 23—254)



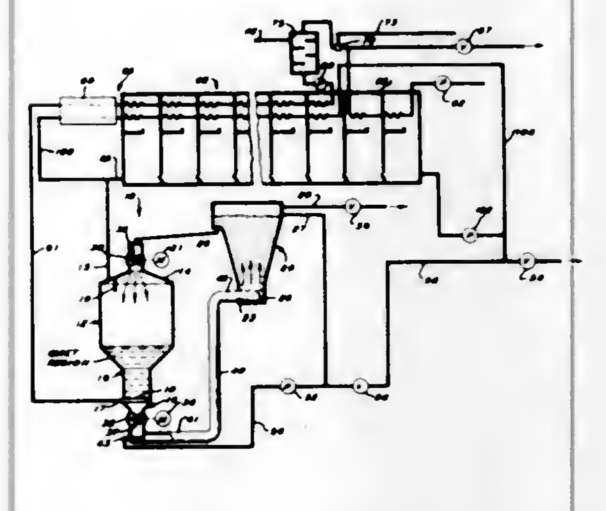
A flame ionization detector employs separate jets for the sample stream and combustible gas stream by directing the jets so that their axes intersect. A detector having an improved response time is obtained.

3,399,975

PRECIPITATION OF $CaSO_4$ ON INERT PARTICLES WITH COLD WATER WASH

Philip S. Otten, Media, Pa., assignor, by mesne assignments, to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Apr. 12, 1965, Ser. No. 447,227
14 Claims. (Cl. 23—301)

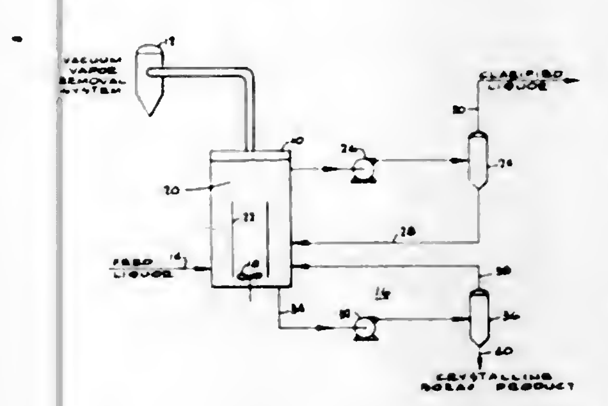
1. A method of treating sea water to remove scaling characteristics thereof, comprising the steps of: heating said sea water to a temperature sufficient to form a solution supersaturated with anhydrous calcium sulfate; settling high gravity water insoluble seed particles through said solution for formation of an anhydrite precipitate thereon; collecting said seed particles and precipitate thereon for removal from said solution; providing water sufficiently cold to redissolve said precipitate; washing said seed particles in said cold water to redissolve said precipitate thereon; and recirculating said washed seed particles to remove the scaling characteristics of more sea water.



3,399,976

PROCESS FOR PRODUCING BORAX DECAHYDRATE CRYSTALS

Alan D. Randolph, Gainesville, Fla., assignor to American Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware
Continuation-in-part of application Ser. No. 438,840, Mar. 11, 1965. This application July 24, 1967, Ser. No. 669,633
5 Claims. (Cl. 23—301)

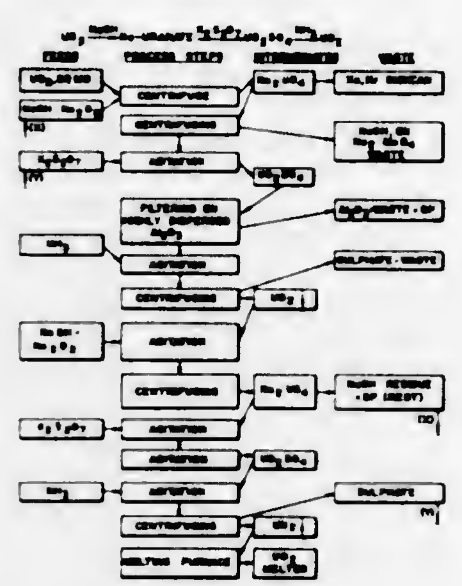


A process for controlling the mean size and size range of borax decahydrate crystals produced from a magma containing solid phase borax and water saturated with borax. The temperature and solids concentration of the magma are controlled to produce two basic crystal size distributions, one having a mean particle size of less than about 45 mesh and the other having a mean particle size of greater than about 45 mesh. Borax crystals of the smaller particle size are crystallized from the magma when the magma is maintained at a temperature of less than 115° F. and a solids concentration of greater than 0.25 gram of solid borax crystals per cubic centimeter of solids-free mother liquor. Borax crystals of the larger particle size are crystallized from the magma when it is maintained at a temperature higher than 115° F. and a solids concentration of less than 0.25 gram per cubic centimeter.

3,399,977

PROCESS FOR PROCESSING IRRADIATED CERAMIC REACTOR FUELS

Joseph Gérard Wurm and Alessandro Avogadro, Varese, Italy, assignors to European Atomic Energy Community—Euratom, Brussels, Belgium
Filed June 4, 1965, Ser. No. 461,342
Claims priority, application Germany, June 10, 1964, E 27,195
8 Claims. (Cl. 23—325)



Irradiated ceramic reactor fuels, having an oxide base, are digested in a molten basic alkali compound such as sodium or potassium hydroxide or mixtures thereof, in the presence of air or an oxygen-releasing agent, at a temperature of 500–700° C. The insoluble alkali uranate precipitate is separated from the melt and after successive treatments with potassium pyrosulfate and ammonia, uranium oxide is recovered. The initial melt containing fissile by-products can be readily converted to insoluble solid materials for ultimate disposal.

3,399,978

PREPARATION OF BORODEUTERIDES

Joseph G. Atkinson and Paul H. Tremaine, Montreal, Quebec, Canada, assignors to Merck, Sharp & Dohme of Canada, Limited, Montreal, Quebec, Canada
No Drawing. Filed July 7, 1965, Ser. No. 470,205
Claims priority, application Canada, May 19, 1965, 931,091
5 Claims. (Cl. 23—363)

A method for the preparation of an alkali metal borodeuteride which comprises treating a trialkylamineborane with deuterio-sulfuric acid in deuterium oxide followed by the reaction of the deuterated trialkylamineborane with an alkali metal alkoxide.

3,399,979

PROCESS FOR PRODUCING METAL NITRIDE FIBERS, TEXTILES AND SHAPES

Bernard H. Hamling, Warwick, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Continuation-in-part of applications Ser. No. 451,326, Apr. 27, 1965, Ser. No. 523,549 and Ser. No. 523,550, Jan. 28, 1966, and Ser. No. 576,840, Sept. 2, 1966, which are continuations-in-part of application Ser. No. 320,843, Nov. 1, 1963. This application Dec. 19, 1966, Ser. No. 602,572
7 Claims. (Cl. 23—347)

A process for producing metal nitride articles is disclosed. The process employs the following steps:

(a) Impregnating a preformed organic polymeric material, such as rayon fiber, with a metal-containing compound, preferably by immersing the polymer in a solution of such compound;

(b) Heating the impregnated polymer to carbonize the polymer to produce a relic; and

(c) Heating said relic in an atmosphere containing a nitrogen-containing compound such as ammonia, to thereby produce the metal nitride.

3,399,980

METALLIC CARBIDES AND A PROCESS OF PRODUCING THE SAME

Romeo G. Bourdeau, Wapping, Conn., assignor, by mesne assignments, to Union Carbide Corporation, a corporation of New York
Continuation-in-part of application Ser. No. 172,973, Feb. 13, 1962. This application Dec. 28, 1965, Ser. No. 516,928
5 Claims. (Cl. 23—345)

1. The process wherein a metallic carbide is produced which comprises inter-reacting a hydrocarbon gas with a metallic halide within a temperature range of 1500° C. to 3000° C. and a pressure range of 1 to 200 mm. of mercury, said metallic halide being selected from the group consisting of the halides of the metals selected from the group consisting of tantalum, hafnium, niobium, titanium, zirconium, silicon, tungsten, molybdenum, thorium and uranium, the ratio of hydrocarbon gas to metallic halide being such as to provide a carbon to metal molar ratio of 0.1 to 20.

3,399,981

TUNGSTEN-RHENIUM ALLOYS

Daniel J. Maykuth, Columbus, Ohio, Elmo P. Bergeron, Baton Rouge, La., and John H. Pearson, Glen Rock, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Apr. 25, 1967, Ser. No. 634,434
10 Claims. (Cl. 29—182.2)

Alloys of tungsten and rhenium in the form of particles having a microstructure consisting essentially of from 0.5 to 25.0% by weight of rhenium are prepared by vapor phase reduction of tungsten hexafluoride and rhenium hexafluoride. The alloys may be worked into products useful, e.g., in rocket components.

3,399,982

DETERGENT GASOLINE CONTAINING STRAIGHT-CHAIN TERTIARY ALKYL ATTACHED PRIMARY AMINES

George J. Kautsky, El Cerrito, Calif., assignor to Chevron Research Company, a corporation of Delaware
No Drawing. Filed June 8, 1964, Ser. No. 373,516
The portion of the term of the patent subsequent to Sept. 19, 1984, has been disclaimed
3 Claims. (Cl. 44—69)

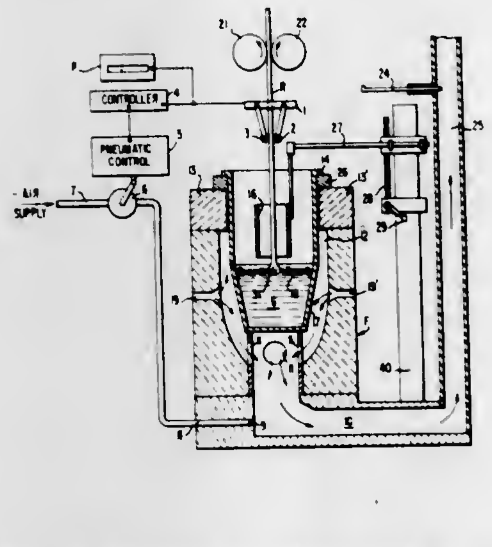
Leaded detergent gasoline composition containing straight-chain tertiary alkyl attached primary amines and alkyl orthophosphates thereof in which the tertiary alkyl group contains 12 to 30 carbon atoms.

3,399,983

APPARATUS FOR CONTROLLING GLASS TUBE AND ROD DIMENSIONS

George C. Chapman, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Continuation-in-part of application Ser. No. 63,589, Oct. 19, 1960. This application Mar. 22, 1965, Ser. No. 441,821
3 Claims. (Cl. 65—188)

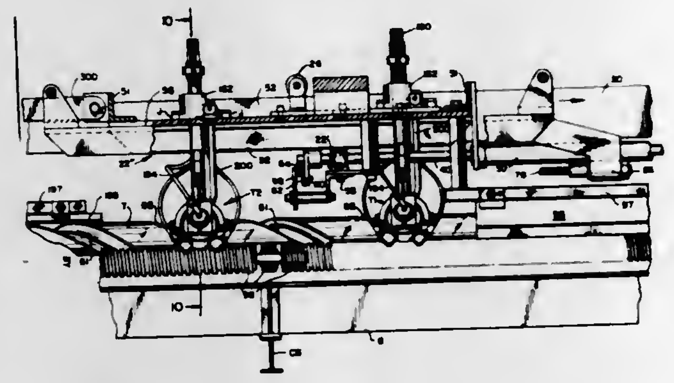
Apparatus for controlling the external dimension of glass tubing or rod which is being drawn upwardly from a container of molten glass, which is surrounded by a heated gaseous atmosphere. A part of said atmosphere is exhausted through an exhaust duct by means of an eduction system in which air under pressure is introduced into the exhaust duct of relatively high velocities so as to produce increased flow of hot gases from around the



container, in response to measurements of the diameter of the glass tubing or rod being formed.

3,399,984
MACHINE FOR FORMING HELICAL GROOVES IN THIN WALL GLASS TUBING

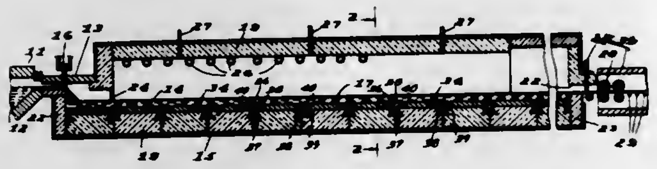
Donald G. Trutner, Chatham, and Andrew H. Olsen, Jersey City, N.J., assignors to Duro-Test Corporation, North Bergen, N.J., a corporation of New York
Filed Sept. 29, 1964, Ser. No. 399,967
20 Claims. (Cl. 65—285)



A machine for forming one or more grooves in the wall of a glass tube in which the tube is automatically transferred to the groove forming station and from the groove forming station.

3,399,985
GLASS MAKING APPARATUS WITH GREATER TRANSVERSE HEAT CONDUCTION

Robert J. Greenler, Nashville, Tenn., and Eugene H. Augustin, Dearborn Heights, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 19, 1965, Ser. No. 497,615
4 Claims. (Cl. 65—374)



A tank for the manufacture of flat glass by the float process has a metal containing cavity therein defined by a plurality of refractory ceramic blocks. Molten metal is received in the cavity. A liner is provided in the metal bath to line the cavity formed by the refractory. The liner is constructed so that it conducts heat across the width of the bath at a greater rate than it conducts heat along the length of the bath.

3,399,986
NOVEL AMMONIUM POLYPHOSPHATES AND METHODS FOR PREPARING THE SAME

Lenore Wiegman, New Brunswick, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Aug. 31, 1965, Ser. No. 484,112
11 Claims. (Cl. 71—47)

An improved ammonium polyphosphate possessing a nonortho P_2O_5 content of at least 70% of the total P_2O_5 content, being nontacky, relatively noncaking, nonhygroscopic, friable and free-flowable as a powder is prepared by admixing ammonium phosphate with a selective adjuvant, such as calcium carbonate and dolomite, and heating the resultant mixture.

3,399,987
2-ALKYLAMINOBENZIMIDAZOLES AS HERBICIDES

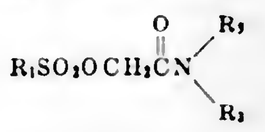
William G. Woods, Fullerton, and Harry Goldsmith and Robert F. Crawford, La Mirada, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada
No Drawing. Filed Aug. 2, 1965, Ser. No. 476,689
9 Claims. (Cl. 71—92)

2-dialkylaminobenzimidazoles having halogen, lower alkyl or halo-lower alkyl substituents on the aromatic ring. The compounds are herbicidal and can be formulated to give herbicidal compositions.

3,399,988
METHOD OF CONTROLLING THE GROWTH OF WEEDS

Stassen Y. C. Soong, Taipei, Taiwan, China, Byron H. Lake, Greenville, Miss., and Don R. Baker, Pinole, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 308,661, Sept. 13, 1963. This application July 15, 1966, Ser. No. 565,418
8 Claims. (Cl. 71—94)

N-alkyl sulfonyl glycolamides useful as effective herbicides corresponding to the formula



$$R_1SO_2OCH_2\overset{\overset{\displaystyle O}{\|}}{C}N\begin{matrix}\diagup R_2\\ \diagdown R_3\end{matrix}$$

in which R_1 is selected from the group consisting of alkyl, alkenyl, haloalkenyl, haloalkyl, haloalkenyl thiophene, phenylalkyl, naphthyl, phenyl, and substituted phenyl wherein the substituents are selected from the group consisting of halogen, alkyl and nitro; and R_2 and R_3 are independently selected from the group consisting of hydrogen, alkyl, alkenyl, cyclic alkyl, cyclic alkenyl, phenyl, phenylalkyl, furfuryl, alkoxyalkyl and cyclic alkyl ethers. Representative compounds are O-benzenesulfonyl-N-isopropyl glycolamide, O-methanesulfonyl-N-n-butyl glycolamide, O-p-bromobenzenesulfonyl-N-n-butyl glycolamide, O-methanesulfonyl-N,N-diallyl glycolamide, O-i-butylsulfonyl-N,N-diallyl glycolamide, O - i - butylsulfonyl-N,N-(2-ethylpentamethylene) glycolamide, O-i-butylsulfonyl N -sec-butyl glycolamide.

3,399,989
HERBICIDAL TROPOLONE ESTERS

Lorraine Guy Donaruma, Potsdam, N.Y., assignor to Research Corporation, New York, N.Y., a nonprofit corporation of New York
No Drawing. Filed Aug. 2, 1965, Ser. No. 476,732
4 Claims. (Cl. 71—111)

Tropolone nitrobenzoate esters are effective as broadleaf herbicides.

3,399,990
METHOD OF CLOSING PLANT STOMATA WITH ALKENYL SUCCINIC ACIDS

Bingham J. Humphrey, 680 Evergreen Ave., and Israel Zelitch, 82 Morse St., both of Hamden, Conn. 06514, and Pieter J. C. Kuiper, 853 Townsend Ave., East Haven, Conn. 06512
Filed Nov. 30, 1964, Ser. No. 416,675
(Filed under Rule 47(a) and 35 U.S.C. 116)
3 Claims. (Cl. 71—113)

Method for treating plants to reduce plant transpiration, increase root permeability, provide frost and drought resistance, which comprises coating a plant with an effective amount of alkenyl succinic acid.

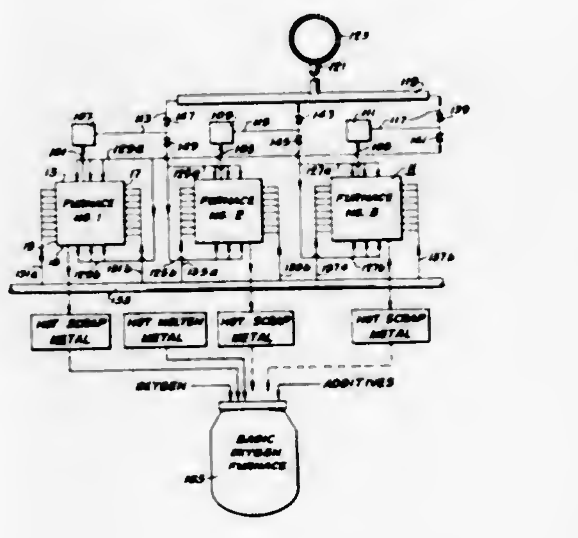
3,399,991
FREEZE-RESISTANT PESTICIDAL COMPOSITION

Clarence A. Littler, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed May 5, 1964, Ser. No. 365,191
4 Claims. (Cl. 71—120)

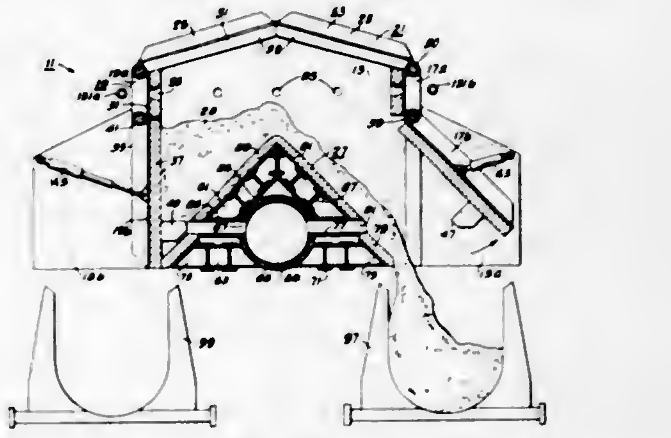
1. A pesticidal composition resistant to claying comprising 20 to 50% by weight of a pulverulent solid carrier-insoluble pesticide; 0.15 to 1.5% by weight of low viscosity methyl cellulose having a viscosity from 15 to 1500 cps. at 2% concentration in water; 0.1 to 2.5% by weight of surfactants selected from the group consisting of polyvinyl alcohol, partially desulfonated lignin sulfonate and polymerized alkylaryl sulfonate; 16 to 36% by weight of a glycol selected from the group consisting of ethylene glycol and propylene glycol; and 18 to 40% by weight of water.

3,399,992
METHOD OF MAKING STEEL IN A BASIC OXYGEN FURNACE UTILIZING PREHEATED SCRAP METAL

Joseph J. Ciochetto, Glenshaw, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Apr. 16, 1965, Ser. No. 448,715
1 Claim. (Cl. 75—43)



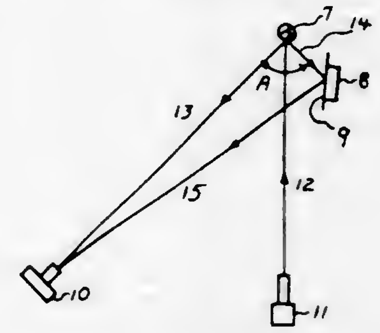
A plurality of scrap metal preheating furnaces are operated in sequence to provide an uninterrupted supply of preheated scrap metal to a basic oxygen furnace. The exhaust gases produced in one preheater are conducted to and partially heat cold scrap metal in another preheat-



er; the remaining heat required being supplied by burning suitable fuel in the preheater under operation during a give . period of time.

3,399,993
PHOTOGRAPHIC REPRODUCTION IN THREE DIMENSIONS

Kenneth Leslie Agnew, Falconbridge, Ontario, Canada
Continuation-in-part of application Ser. No. 108,010, May 5, 1961. This application Jan. 8, 1965, Ser. No. 424,433
4 Claims. (Cl. 96—27)



Method for reproducing three dimensional images in a transparent differentially photosensitive material comprising outlining the object to be reproduced with a plurality of separate vertical light rays and primary lines, recording the images of each primary line as secondary lines at more than one different angle, reprojecting simultaneously one set of secondary lines at a time into the photosensitive material from the same relative angles as the originally projected primary lines were recorded. The foregoing steps are repeated until all of the recorded primary lines are reprojected into the photosensitive material.

3,399,994
PROCESSING OF PRESENSITIZED PHOTOLITHOGRAPHIC PRINTING PLATES

Leonard James Watkinson, Leeds, England, assignor to W. H. Howson Limited, Leeds, Yorkshire, England, a British company
No Drawing. Filed July 26, 1965, Ser. No. 474,936
Claims priority, application Great Britain, July 29, 1964, 30,056/64
10 Claims. (Cl. 96—48)

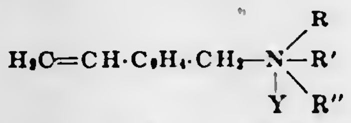
A homogeneous developing solution for an exposed presensitized photolithographic printing plate comprising a desensitizing organic colloid dissolved in an organic solvent medium, said solvent medium being capable of removing the unexposed portions of said coating, such that the area of the plate thereby exposed would be hydrophilic.

3,399,995

ANTISTATIC BACKING LAYERS FOR PHOTOGRAPHIC FILM

Alan M. Winchell, Windsor, N.Y., assignor to GAF Corporation, a corporation of Delaware
No Drawing. Filed May 6, 1965, Ser. No. 453,820
4 Claims. (Cl. 96—87)

1. A light sensitive photographic element comprising a film support carrying a silver halide emulsion layer, said element having an antistatic backing layer comprising a water-dispersible polymer consisting of at least one member of the group consisting of (a) homopolymers of a vinylbenzyl quaternary ammonium compound having the general formula:

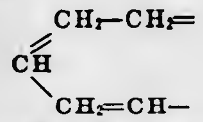


$$H_2O{=}CH\cdot C_6H_4\cdot CH_2-\underset{\displaystyle Y}{N}\begin{array}{l}\diagup R\\ -R'\\ \diagdown R''\end{array}$$

wherein R, R′ and R″ each represents individually a monovalent radical selected from the group consisting of

$$CH_2OH—CH_2,\ CH_3—CHOH—CH_2$$
$$CH_2OH—CHOH—CH_2—$$

and alkyl, aryl, cycloalkyl and aralkyl hydrocarbon radicals, and R, R′ and R″ collectively represent the trivalent radical of the formula:



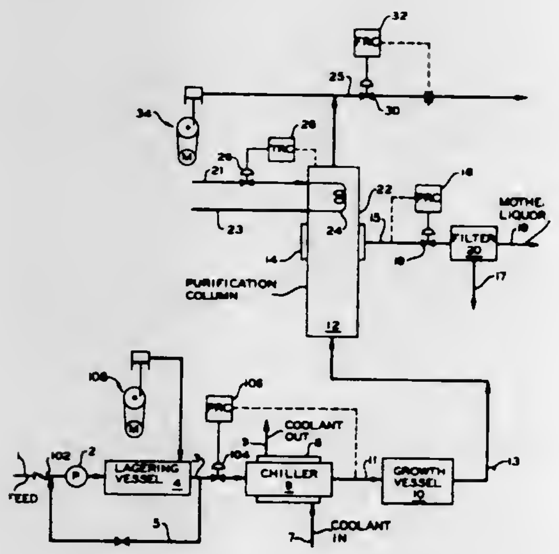
$$CH\begin{array}{l}\diagup\!\!\!\diagup CH_2-CH_2{=}\\ \diagdown CH_2{=}CH-\end{array}$$

wherein the three valences are attached to the nitrogen atom, and Y is an anion, said R groups containing a total of not more than 12 carbon atoms in the substituent radicals, (b) copolymers of at least two of such vinylbenzyl quaternary ammonium compounds, (c) copolymers of at least 65 percent by weight of at least one of such vinylbenzyl quaternary ammonium compounds and not more than 35 percent by weight of acrylamide, and (d) copolymers corresponding to from 95.0 to 99.99 percent by weight of at least one of such vinylbenzyl quaternary ammonium compounds and from 5.0 to 0.01 percent by weight of divinylbenzene.

3,399,996

CONTINUOUSLY LAGERING A FERMENTED BEVERAGE UNDER HIGH PRESSURE

Dwight L. McKay, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 2, 1964, Ser. No. 408,102
6 Claims. (Cl. 99—48)



A fermented beverage is continuously lagered above the freezing point thereof and at a pressure in the range of 100 to 30,000 p.s.i.g. A portion of the lagered beverage is recycled while the remainder is chilled to produce a slurry of ice crystals and concentrated beverage. The concentrated beverage is separated from the ice crystals and filtered.

3,399,997

PROCESS OF PRODUCING SOY MILK FROM SPROUTED SOYBEANS

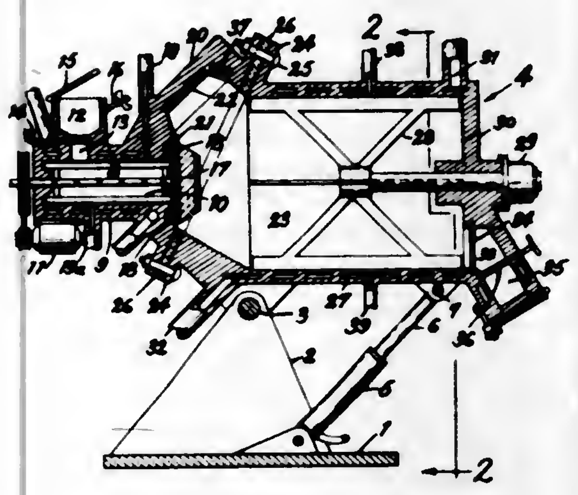
George K. Okumura, 3151 S. Elm Ave. 93706, and Jack E. Wilkinson, 2411 Divisadero 93721, both of Fresno, Calif.
No Drawing. Filed Apr. 5, 1965, Ser. No. 445,695
15 Claims. (Cl. 99—64)

Process of producing soy-base milk wherein soybeans are moistened and sprouted to diminish the soy taste, ground into a slurry while retaining moisture previously absorbed; extracting therefrom a liquor comprising a suspension of fine solids, treating said liquor to precipitate the fine solids therefrom in the form of a curd; comminuting said curd and mixing it with fresh water to develop a milk suspension, followed by the addition of additives to simulate natural milk; and then homogenizing.

3,399,998

METHOD OF RETAINING VOLATILE ESSENCES IN COFFEE DURING ROASTING

Willard L. Morrison, Lake Forest, Ill., assignor to The Union Stock Yard and Transit Company of Chicago, Chicago, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 23,095, Apr. 18, 1960. This application Jan. 7, 1964, Ser. No. 336,153
4 Claims. (Cl. 99—68)

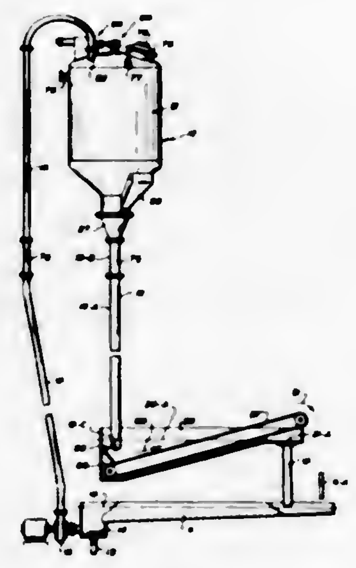


1. The method of treating green coffee beans which consists of the steps of enclosing the green beans in a closed roasting container, sealing the container, raising the temperature within the container to a roasting temperature within the range of 400–700° F. without bleeding off vapors generated within the container, retaining the beans within the container until roasted with a resultant increase in pressure in the container to within the range of 50–350 pounds per square inch, opening the container and discharging the pressurized contents thereof directly into a low pressure sealed recovery container of larger capacity than the roasting container with resultant popping of the roasted beans to produce a porous bean with the escape of moisture vapors therefrom, maintaining the recovery container at a temperature below 100° F. with corresponding condensation of released vapors, churning the contents thereof to bring the popped porous beans into contact with the boundaries of the container until the popped porous beans have absorbed the moisture and vapors condensed on the boundaries, and then opening the recovery container and removing and packing the popped porous coffee beans.

3,399,999

PROCESS AND APPARATUS FOR CONTINUOUS DE-AERATING OF FRUIT AND VEGETABLES

Alec S. Ellett, Vancouver, British Columbia, Canada, assignor to Ellett Copper & Brass Co. Limited, a corporation of British Columbia
Filed Dec. 27, 1966, Ser. No. 605,055
9 Claims. (Cl. 99—154)



1. A method of continuous de-aerating of a sliced food product including the steps of:

first, continuously introducing an admixture of the slices and water to a de-aerating vessel maintained under partial vacuum during all of the steps following;

second, draining the water from the slices whilst they are in the vessel;

third, maintaining the drained slices in the evacuating vessel until air within the pores of the slices has reduced in pressure to approach that within the evacuating vessel;

fourth, continuously discharging the slices from the vessel through a column of water of a discharge line of the vessel, the column of water being held, by atmospheric pressure, at a height within the line according to the partial vacuum aforesaid.

3,400,000

SURFACE MODIFIED ELECTROSTATIC ENAMEL POWDERS AND METHOD

Lewis C. Hoffman, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed May 17, 1965, Ser. No. 456,487
15 Claims. (Cl. 106—49)

1. A powder from the group consisting of lead borosilicate frit powders and enamel powders the particles of which are composites of a lead borosilicate frit and a refractory pigment, said powder having been modified to improve its electrostatic transfer properties by uniformly contacting the powder with such an amount of a hydrocarbyl silicon halide as will theoretically cover 10 to 70% of the powder surface, said hydrocarbyl silicon halide having the formula R_3SiX wherein X is a halogen of the group consisting of chlorine and bromine, and each R, considered individually, is from the group consisting of chlorine, bromine, 1 to 6 carbon aliphatic hydrocarbyl radicals, 6 to 9 carbon aryl hydrocarbyl radicals, and 6 to 9 carbon aralkyl hydrocarbyl radicals, with the proviso that at least one of said R's is a hydrocarbyl radical.

3,400,001

CERAMIC DIELECTRIC FOR TEMPERATURE COMPENSATING ELECTRIC CONDENSERS

Asataro Hasumi, Takasakishi, Gunmaken, and Masato Kogure, Annakashi, Gunmaken, Japan, assignors to Taiyo Yuden Company Limited, Tokyo, Japan, a limited-liability company of Japan
Filed Aug. 30, 1966, Ser. No. 576,029
Claims priority, application Japan, Feb. 8, 1966, 41/7,079
1 Claim. (Cl. 106—39)

Ceramic dielectric for temperature compensating electric condensers, which is composed of:

	Percent by weight
$CaO.xTiO_2$ ($x=1.2$ to 1.8)	20.1–51.5
Mg_2TiO_4	26.0–10.0
La_2O_3	33.0–16.4
Nd_2O_3	1.6–10.6
Bi_2O_3	4.5–9.0
ZnO	8.0–2.0
CeO_2	6.8–0.5
Pr_6O_{11}	
and/or	
Sm_2O_3	

has a temperature coefficient of -260 to $+100\times10^{-6}$/° C., a dielectric constant of 35 to 80, a Q of 5000 to 10,000, and a firing temperature of 1270° to 1340° C.

3,400,002

PROVIDING LOW VISCOSITIES FOR AGED SILICEOUS SLURRIES

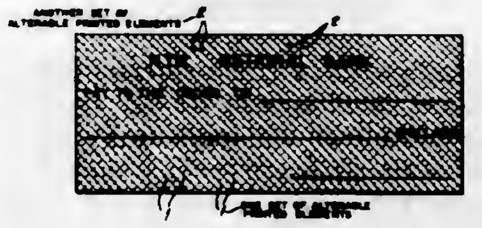
Ralph W. Bauer, Wadsworth, Ohio, assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Apr. 8, 1964, Ser. No. 358,365
8 Claims. (Cl. 106—309)

1. A method of providing low viscosity for a slurry of pigment comprised primarily of silicon dioxide, containing at least 75 percent SiO_2 on an anhydrous basis and characterized by the formula $MO(SiO_2)_x$ wherein MO represents a metal oxide capable of providing multivalent cations to the aqueous phase of said slurry and x is at least 5 which comprises providing to said slurry an effective amount up to 10 percent by weight, based on the oven dry $MO(SiO_2)_x$ pigment, of an electrolyte selected from the group consisting of the water-soluble nitrates, carbonates, sulfates, sulfites, hydrogen sulfates, hydrogen sulfites, and hydrogen carbonates of the constituents selected from the group consisting of hydrogen, ammonium, and the monovalent metals.

3,400,003

SAFETY INKS AND DOCUMENTS

Clifford D. Guertin, River Vale, N.J., assignor to American Bank Note Company, New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 270,105, Apr. 2, 1963. This application Aug. 9, 1966, Ser. No. 571,311
5 Claims. (Cl. 117—1)



A printing ink consisting essentially of coloring matter and a vehicle soluble in water and lower alcohols and lower ketones, said vehicle consisting essentially of glycerine, sorbitol and water, the glycerine being present in an amount in the range 10–30% by weight based on said vehicle, the remaining percentages of sorbitol and water being in the weight ratio 4:1, said coloring matter including a dye soluble in lower alcohols and lower ketones wherein said lower alcohols and said lower ketones contain not more than 8 carbon atoms per molecule, has been found to be especially useful for the preparation of a printed document sensitive to attempted alteration. A printed document, such as a printed security document, printed with a background provided by the above-described printing ink would be sensitive to and would indicate an attempted alteration with respect to any indicia written thereon by means of a typical writing ink, such as a water-soluble and/or bleachable writing ink, or by means of a ball point ink. When indicia on the printed document written by means of a water-soluble ink are altered the printing ink background, since the vehicle from which it is derived is water-soluble, would be disturbed and would indicate, as a result, an attempted alteration. Similarly, when the indicia on the printed document written thereon by means of a ball point ink are subjected to an attempted alteration, such as by means of a lower alcohol or ketone, the printed background material would also be altered or changed, along with the ball point ink, with the result that the attempted alteration would be indicated on the face of the document.

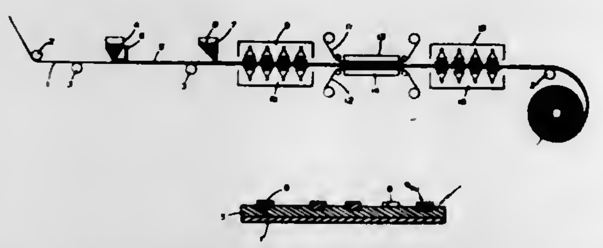
3,400,004
NOVEL COATED AND MOLDED WOVEN FABRICS AND METHOD OF MAKING THE SAME

William A. Corry, Toledo, Ohio, assignor to Interchemical Corporation, New York, N.Y., a corporation of Ohio
No Drawing. Filed Feb. 20, 1963, Ser. No. 260,058
12 Claims. (Cl. 117—7)

10. A method of making a coated fabric article comprising (1) applying with a heat thermoplastic coating composition to a textile substrate comprising a warp of polypropylene yarns and a weft of a yarn selected from the group consisting of stretchable textured nylon yarns, slack mercerized natural cellulose yarns and slack mercerized regenerated cellulose yarns, said warp being maintained under tension during the application of the coating and (2) heat molding said coated substrate to a selected shape.

3,400,005
METHOD OF MAKING A DECORATIVE SURFACE COVERING HAVING AN EMBOSSED EFFECT

Robert P. Desch, East Hempfield Township, Lancaster County, Pa., and James F. Harbison, Lititz, Pa., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Oct. 7, 1963, Ser. No. 314,476
7 Claims. (Cl. 117—9)



Flat preformed pieces of fused thermoplastic polyvinyl resin composition are disposed on an organosol layer, the organosol fused, and the chips and organosol layer consolidated to form a smooth surface sheet in which the chips are embedded. The smooth fused sheet is then heated to stress relax the consolidated organosol, the chips, on the relaxation of the organosol, being allowed to raise above the surface of the sheet to achieve an embossed appearance.

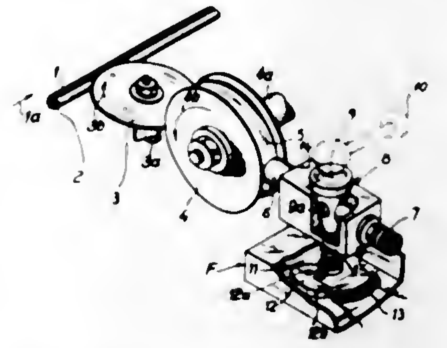
3,400,006
TRANSPARENT ARTICLES COATED WITH GOLD, CHROMIUM, AND GERMANIUM ALLOY FILM

Peter H. Berning, Whitehouse, and Edward A. Small, Jr., Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
No Drawing. Filed July 2, 1965, Ser. No. 469,337
9 Claims. (Cl. 117—33.3)

1. A light transmitting article, comprising a transparent substrate, and a thin transparent light-modifying optical film adhered to at least one surface of said substrate, said film comprising an alloy consisting essentially of from 88 to 98 percent by weight gold, from 1 to 6 percent by weight germanium and from 1 to 6 percent by weight chromium.

3,400,007
METHOD AND APPARATUS FOR FEEDING PASTE IN TOBACCO PROCESSING MACHINES

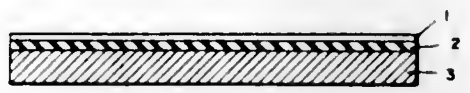
Willy Rudszinat, Hamburg-Lohbrugge, Germany, assignor to Hauni-Werke Körber & Co. KG., Hamburg-Bergedorf, Germany
Filed Mar. 31, 1964, Ser. No. 356,266
Claims priority, application Great Britain, Apr. 1, 1963, 12,795/63; Mar. 2, 1964, 8,642/64
19 Claims. (Cl. 117—44)



Paste is fed to a rotary member in a tobacco processing machine through a supply conduit which can be sealed by a valve located close to its discharge end to prevent further escape of paste. Delivery of paste to the rotary member can be terminated in automatic response to reduction in the rotational speed of the rotary member, by moving the rotary member away from engagement with the material to which it delivers paste, by closing the valve, by placing the discharge end so close to the rotary member that the viscosity of paste suffices to impede escape when the rotary member is idle, or by using a pump which feeds paste only when the rotary member is to receive paste.

3,400,008
PAPER ARTICLE COATED WITH A NOVEL SLIP COMPOSITION

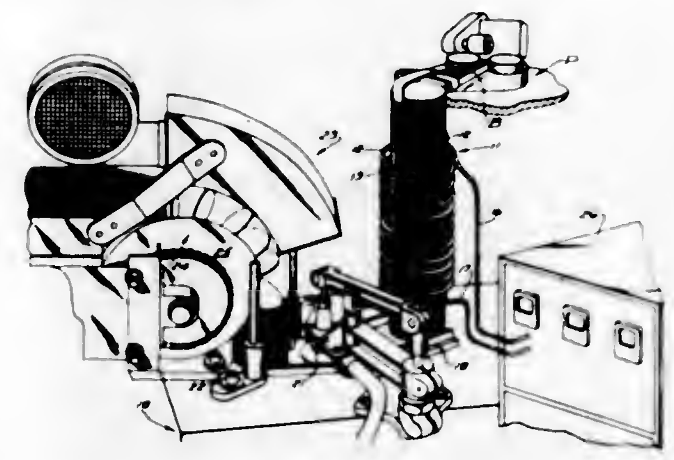
Merrill Bleyle, Waltham, and Charles T. Mitchell, Jr., North Reading, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Filed June 30, 1964, Ser. No. 379,384
7 Claims. (Cl. 117—76)



A paper article coated with a film of vinylidene chloride polymer and having as a slip coating superimposed on the vinylidene chloride polymer coating a dried film of an emulsion of paraffin wax, sodium alkyl sulfate, e.g., sodium lauryl sulfate and an aqueous solution of a binder polymer, e.g., styrene maleic anhydride. The slip coating may further contain polyethylene.

3,400,009
PROCESS AND APPARATUS FOR FORMING GASKETS FOR CONTAINER ELEMENTS

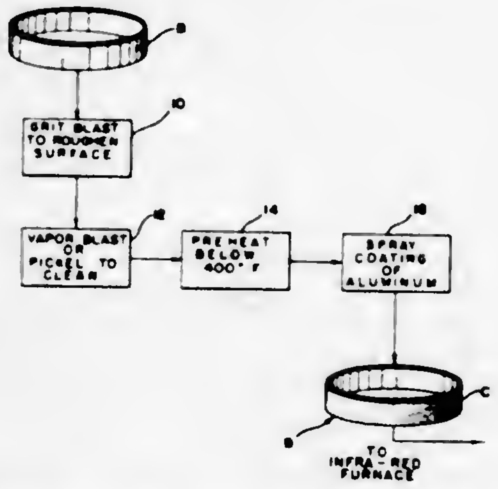
John R. McDermott, Convent Station, N.J., and David O. White, Lexington, and Aurel W. Bourque, Arlington, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Filed Feb. 2, 1965, Ser. No. 429,718
2 Claims. (Cl. 117—93.2)



A container closure lining machine having an induction heating coil surrounding the infeed stack of closures. The coil is maintained sufficiently above the work surface of the machine to prevent significant loss of energy into the work surface, and also to give time for rim temperature equalization to take place, as the closures drop through the distance between the coil and the sequential feeding means, thereby avoiding pits in the lining. Also, the process including the above steps.

3,400,010
METHOD OF MAKING A COMPOSITE METAL ARTICLE

John H. Keating, Cleveland, Ohio, assignor, by mesne assignments, to Standard International Corporation, Andover, Mass., a corporation of Ohio
Filed Sept. 28, 1964, Ser. No. 399,451
3 Claims. (Cl. 117—93.3)


10
GRIT BLAST TO ROUGHEN SURFACE
VAPOR BLAST OR PICKEL TO CLEAN
14
PREHEAT BELOW 400° F
SPRAY COATING OF ALUMINUM
TO INFRA-RED FURNACE

An improvement to the method of making a composite metal article comprising the steps of providing a substrate of a ferrous base metal, spraying a coating of aluminum to completely cover the substrate to a uniform thickness, subjecting the spray coated surface to a direct infra-red radiation of an intensity to raise the temperature at the ferro-aluminum interface to a temperature between 1200° F. and 1400° F., and holding the temperature for a period of time sufficient to form an inter-metallic compound bonding phase having a thickness substantially less than the thickness of said sprayed coating of aluminum. The improvement comprises supplying the direct infra-red radiation in relatively short periodic pulses.

3,400,011
METHOD OF COATING WATER-SOLUBLE PARTICLES

Richard C. Fox, San Rafael, Calif., assignor to Chevron Research Corporation, a corporation of Delaware
No Drawing. Filed Sept. 30, 1964, Ser. No. 400,561
3 Claims. (Cl. 117—100)

A method of coating water soluble particles such as chemical fertilizers by projecting these particles through a vertical curtain of a molten thermoplastic coating material such as various waxes and organic resins. The particles to be coated are from about $\frac{1}{20}$ to $\frac{3}{8}$ inch average diameter.

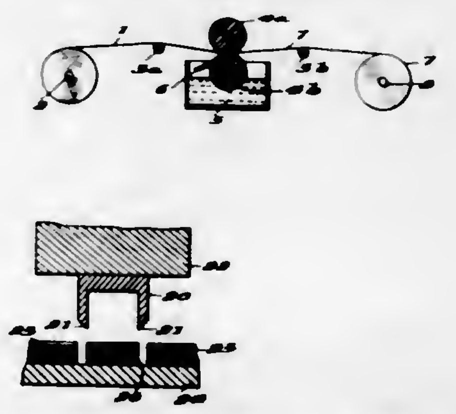
3,400,012
PROCESS OF PLATING METAL OBJECTS

Michael Golben, Maplewood, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed June 10, 1964, Ser. No. 374,151
11 Claims. (Cl. 117—109)

Conductive substrates, especially the surfaces of small ferrous metal parts, are galvanomechanically plated by contacting their exposed surfaces with a free-flowing liquid containing the dissolved salt of a plating metal, together with a driving metal which is less noble than either the substrate or the plating metal. The driving metal is desirably particulate and the process is especially adapted for use in a conventional tumbling barrel.

3,400,013
USE OF SILICONES TO IMPROVE DIE-CLICKING OF BONDED NONWOVEN POLYESTER FIBROUS SHEETS

Gerald L. Harrison, Morrisville, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 22, 1965, Ser. No. 427,249
4 Claims. (Cl. 117—138.8)

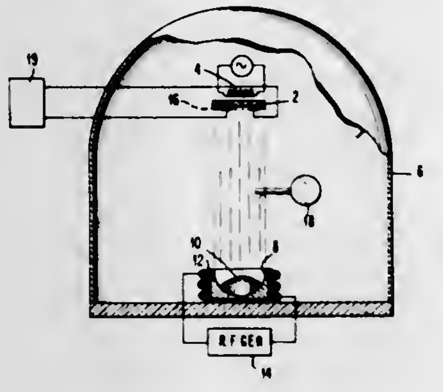


A process for treating nonwoven sheets of polyethylene terephthalate fibers bonded with a copolyester which comprises uniformly applying to such sheets from about 0.01 to 1% by weight of a liquid silicone having a viscosity of 50 to 10,000 centistokes at 25° C., the silicone being in a volatile liquid vehicle, and heating the sheet in a quiescent atmosphere at a temperature above 120° C. but below the melting point of the copolyester for a period of between about 6 and 18 hours. This process improves processability of the sheet.

3,400,014
PROCESS CONTROL OF INDIUM SHEET FILM MEMORIES

Rex H. Blumberg, Hyde Park, Hollis L. Caswell, Mount Kisco, and Charles Chiou, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 15, 1964, Ser. No. 396,604
3 Claims. (Cl. 117—217)

A method of manufacturing a superconductive sheet memory is provided to obtain flux-trapping cells that operate uniformly when used in a large memory array. An insulated substrate is placed in an evacuated chamber whose pressure is less than 5×10^{-6} torr and whose partial pressure of oxygen is less than 5×10^{-8} torr; and deposi-



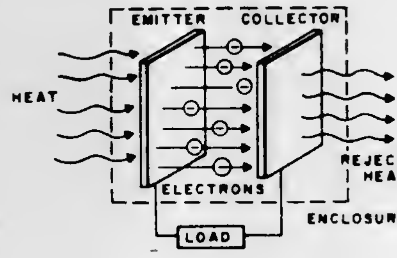
tion of indium takes place onto the substrate at a constant rate of between 40–80 A./sec., the deposition being monitored by measuring the sheet conductance of the deposited layer. Deposition is interrupted when the value of sheet conductance is 0.5 to 1.0 mho/sq.

3,400,015
ENERGY CONVERTER

Richard A. Chapman, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Mar. 22, 1963, Ser. No. 267,179

3 Claims. (Cl. 117—224)



1. A collector for a thermionic converter of the type having an emitter and a collector with cesium vapor disposed in the closed space between the emitter and the collector, said collector consisting essentially of an electrically conductive substrate chemically stable at high temperature coated with a composition of cesium and an element selected from the group consisting of carbon, tin, phosphorus, arsenic, antimony, bismuth, selenium, and tellurium and containing a donor impurity selected from the group consisting of I_A, III_A, IV_A, V_A, and VI_A of the Periodic Table of Elements in an amount sufficient to lower the thermionic work function of said composition.

3,400,016
METHOD OF COATING SUPERCONDUCTING NIOBIUM TIN WITH LATTICE DEFECTS

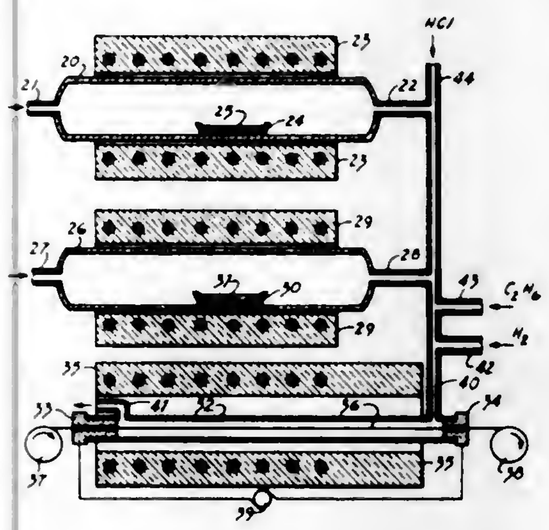
Ronald E. Enstrom, Skillman, Joseph J. Hanak, Trenton, Kurt Strater, Brookside, and Frederick R. Nyman, Somerville, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Nov. 15, 1965, Ser. No. 507,923

9 Claims. (Cl. 117—227)

1. The method of depositing a coating of crystalline niobium tin on a substrate, comprising the steps of:

heating said substate in a gaseous ambient of hydrogen, niobium chloride vapor, tin chloride vapor, and a lattice-defect-inducing gas to reduce a portion of said



chlorides and deposit the metallic fractions thereof on said substrate as crystalline niobium tin.

3,400,017
TURBINE ENGINE CLEANING

George J. Huebner, Jr., Bloomfield Hills, and Dwight Maxwell Teague, Detroit, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 459,121, May 26, 1965. This application Mar. 21, 1967, Ser. No. 624,966

7 Claims. (Cl. 134—7)

1. A method for cleaning the internal components of a turbine engine which comprises the steps of cranking the engine until it becomes self-sustaining, forming a mixture of air and solid abrasive by introducing solid particles of an abrasive into the engine air intake system, said abrasive being selected from the group consisting of ammonium carbonate, ammonium bicarbonate, ammonium chloride, naphthalene, camphor and mixtures of the foregoing, propelling said mixture by means of said engine through a portion of said engine and impinging the abrasive on the internal components of that portion, increasing the temperature of said mixture as it passes through said engine portion by maintaining said engine in a self-sustaining condition, and controlling the particle size of the abrasive introduced into said air intake so that the abrasive is vaporized in said engine after impinging upon said engine portion.

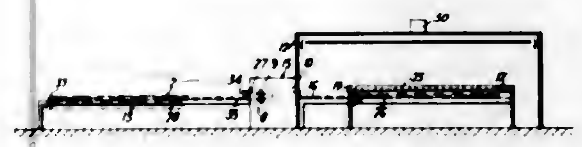
3,400,018
HANDLING LAMINATING PLATES

William S. Morgan and Geoffrey Bland, Newcastle-upon-Tyne, England, assignors to Formica International Limited, London, England, a British company

Filed Mar. 27, 1964, Ser. No. 355,358

Claims priority, application Great Britain, Mar. 29, 1963, 12,476/63

6 Claims. (Cl. 134—42)



A method of preparing press plates and interposed sheet materials comprising the steps of supporting the plates horizontally so that their surfaces are not damaged, feeding them sequentially through a plate-cleaning, dust-removing unit, and a slit-like opening to a first position within an assembly chamber, sliding each plate to an exact second position, lifting each plate from the second position and conveying it through a predetermined distance in its plane or in a plane parallel thereto to a position over laying-up table and depositing the plate upon the table at a predetermined stage of a stack assembly process.

3,400,019
ELECTRODE INCLUDING NON-METALLIC SUBSTRATE

Joseph Adrien M. Le Duc, Short Hills, N.J., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

No Drawing. Original application Dec. 26, 1961, Ser. No. 162,221, now Patent No. 3,235,473, dated Feb. 15, 1966. Divided and this application Mar. 24, 1965, Ser. No. 449,668

1 Claim. (Cl. 136—120)

1. A catalytically active electrode assembly which comprises a layer of a porous inert material having deposited within the pores thereof a catalytic agent, said layer being positioned between two porous electrodes composed of a porous non-metallic substrate having deposited thereon and within the pores thereof an adherent and continuous layer of electroconductive metal and having a current distributing means between said layer and said electrodes.

3,400,020
CARBON-COATED DUPLEX ELECTRODE AND PROCESS FOR MAKING THE SAME

Joseph O. Carpino, Levittown, and Joseph C. Duddy, Trevose, Pa., and Martin H. Johnson, Verona, Wis., assignors to The Electric Storage Battery Company, a corporation of New Jersey

Filed Nov. 1, 1965, Ser. No. 505,938

13 Claims. (Cl. 136—120)

1. A method for preparing a duplex electrode which comprises

(a) thoroughly mixing at an elevated temperature an ethylene/vinyl acetate copolymer, an adhesive polymer selected from the group consisting of polyisobutylene and butyl rubber, and an electrically conductive powder so as to produce a conductive composition containing at least about 60% by weight of conductive powder, about 20 to about 40% by weight of ethylene/vinyl acetate copolymer and from about 1 to about 10% by weight of adhesive polymer, and thereafter, forming this composition into an electrically conductive, impervious film having a thickness ranging from about 2 to about 10 mils;

(b) degreasing a metal sheet selected from the group consisting of zinc, magnesium and aluminum and then etching it on at least one side by contacting it with an aqueous mineral acid solution, after which it is rinsed and dried; and

(c) applying the electrically conductive, impervious film produced in step (a) to the etched metal sheet of step (b) by pressing the film onto an etched surface of the metal sheet.

8. A duplex electrode comprising:

(a) a metal sheet selected from the group consisting of zinc, magnesium and aluminum, the metal sheet having at least one etched surface; and,

(b) an electrically conductive, impervious film adhering to the etched surface of the metal sheet, the film being composed of

  (i) an ethylene/vinyl acetate copolymer,

  (ii) an adhesive polymer selected from the group consisting of polyisobutylene and butyl rubber, and

  (iii) an electrically conductive powder, in which the conductive film contains at least about 60% by weight of conductive powder, about 20% to about 40% by weight of ethylene/vinyl acetate copolymer and from about 1% to about 10% by weight of adhesive polymer, the conductive film having a thickness ranging from about 2 to about 10 mils.

3,400,021
CONVERSION COATING COMPOSITIONS AND METHOD

Edward Heinzelman, Jr., Palisades Park, N.J., assignor to Oakite Products Inc., New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 153,717, Nov. 20, 1961. This application Mar. 15, 1967, Ser. No. 626,913

18 Claims. (Cl. 148—6.1)

This invention embraces water-soluble mixture compositions and water-soluble aqueous concentrates thereof, which contain as their essential ingredients (a) a chromium trioxide-providing substance and (b) a water-soluble lithium salt whose anion is other than fluorine-containing; from which compositions or concentrates there are prepared dilute aqueous conversion or complex coating baths, in which are carried out the method of the invention wherein ferrous and non-ferrous metals subjected to immersion in the baths receive over their immersed surfaces a corrosion resistant reaction conversion coating.

3,400,022
METHOD FOR THE PROTECTION OF INTERNAL SURFACES OF THE TUBES FOR HIGH-TEMPERATURE, HIGH-PRESSURE BOILERS FROM CORROSION

Osamu Asai, Hitachi-shi, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Continuation-in-part of application Ser. No. 307,193, Sept. 6, 1963. This application Feb. 17, 1967, Ser. No. 635,630

Claims priority, application Japan, Sept. 10, 1962, 37/38,518

3 Claims. (Cl. 148—6.14)

A method for the protection of the internal surfaces of tubes in high-temperature, high-pressure boilers from corrosion by passing through these tubes a lithium hydroxide solution after pickling. The LiOH wash promotes formation of a heavy iron oxide film which substantially decreases the corrosion rate of the tubes.

3,400,023
COMPOSITION FOR PRESERVATION OF METALS, PROCESS AND ARTICLE

Louis McDonald, Altadena, Calif., assignor to Kelite Corporation, Los Angeles, Calif., a corporation of California

No Drawing. Filed May 11, 1964, Ser. No. 366,591

22 Claims. (Cl. 148—6.15)

In the phosphatizing of metals, the quality of the phosphatized coating is greatly improved by using a process involving a phosphatizing composition comprising an aqueous bath containing a major portion of a water soluble inorganic phosphorous compound and a minor portion of an ester of an acid of phosphorous.

3,400,024
INHIBITING OZONE DECOMPOSITION WITH SF_6, CCl_2F_2 OR CF_4

Gerald M. Platz, Elmhurst, Ill., assignor, by mesne assignments, to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 15, 1955, Ser. No. 534,878

13 Claims. (Cl. 149—1)

1. A new composition of matter consisting essentially of ozone and containing at least about 5 molar percent of a substance selected from the group consisting of SF_6, CCl_2F_2 and CF_4 as a stabilizer.

3,400,025
FLEXIBLE EXPLOSIVE COMPRISING RDX, HMX OR PETN AND MIXED PLASTICIZER

John D. Hopper, Succasunna, and Franklin B. Wells, Wharton, N.J., assignors to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Apr. 19, 1966, Ser. No. 545,790
14 Claims. (Cl. 149—18)

A flexible explosive of high power made essentially from a high explosive; a plasticizer which includes a liquid organic nitric acid ester, trimethylolethane trinitrate; and a high-viscosity nitrocellulose, and methods for making said flexible explosive.

3,400,026
THICKENED AQUEOUS INORGANIC OXIDIZER SALT EXPLOSIVE COMPOSITION CONTAINING DISSOLVED PROTEINACEOUS MATERIAL

Philip W. Fearnow, Glassboro, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Jan. 16, 1967, Ser. No. 609,329
17 Claims. (Cl. 149—41)

Water-bearing explosive compositions containing inorganic oxidizing salt, fuel, thickener, water and a proteinaceous material which is soluble in the aqueous explosive composition of pH 3 to 10 and, preferably, foamable therein. Procedurely, the aqueous inorganic oxidizing salt can be added to a mixer at a temperature between about 150°–170° F., fuel, proteinaceous material and thickening agents are added thereto and agitated until mixed.

3,400,027
CRYSTALLIZATION RECOVERY OF SPENT HYDROGEN PEROXIDE ETCHANTS

Kenneth J. Radimer, Little Falls, Frank E. Caropreso, Hamilton Square, and Theodore C. F. Munday, Kendall Park, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 451,635, Apr. 28, 1965. This application Feb. 17, 1967, Ser. No. 616,792
11 Claims. (Cl. 156—19)

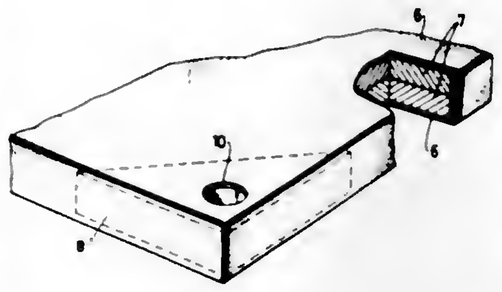
A spent hydrogen peroxide etching solution, containing residual hydrogen peroxide, sulfuric acid, and dissolved copper is reactivated without substantial loss of H_2O_2 values by cooling the solution to precipitate and separate a copper sulfate salt from the solution; the reactivated etching solution thus recovered is used as an etchant per se or is reconstituted with added hydrogen peroxide and sulfuric acid.

Mere cooling of the spent etchant above precipitates a copper sulfate hydrate; cooling of the etchant with added $(NH_4)_2SO_4$ precipitates a double salt of copper sulfate and ammonium sulfate in which the mole ratio of copper to ammonium is 1:2.

3,400,028
METHOD FOR PRODUCING LEAKPROOF CONTAINERS

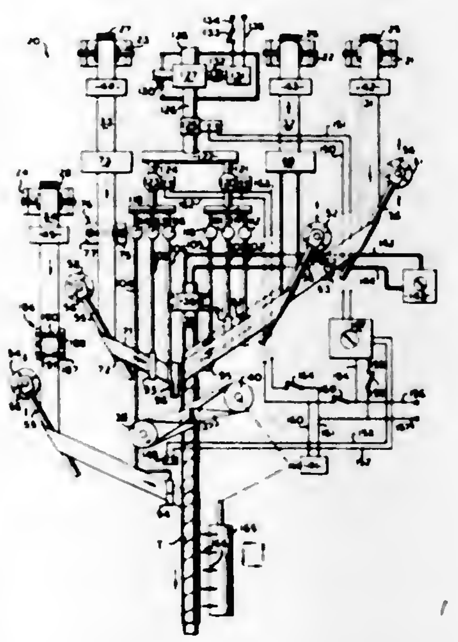
Karl Oskar Wikholm, Kungstensgatan 56, Stockholm, Sweden
Filed Dec. 21, 1965, Ser. No. 515,428
Claims priority, application Sweden, Dec. 23, 1964, 15,664/64
5 Claims. (Cl. 156—64)

Rectangular or cylindrical containers are made by forming the wall elements out of wood, or other fibre material, bound by a binding medium into a firm body and coating the outer surfaces of such bodies with one or more layers of fibre reinforced plastic which are preformed as lamina to which the bodies are applied and the assembly pressed together. The interiors of the bodies are subjected to pressure different from atmospheric to test for leaks. Then the wall elements are secured together along edge faces and opposed wall surfaces by adhesive and pressure.



3,400,029
METHOD OF MAKING SPIRAL WOUND CONTAINER BODIES

Robert B. Mesrobian, Hinsdale, and Richard R. Szatkowski, Western Springs, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 22, 1965, Ser. No. 427,449
11 Claims. (Cl. 156—82)

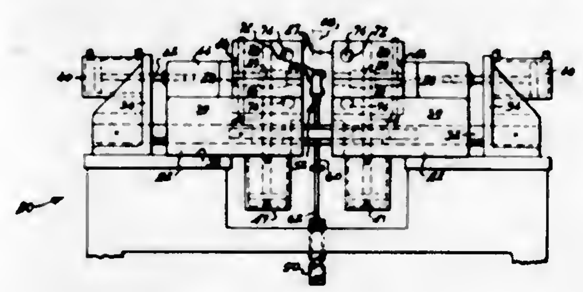


This invention relates to a novel method of and apparatus for manufacturing composite container bodies by spiral winding a plurality of webs or plies of material about a mandrel, and is particularly directed to the formation of composite container bodies from laminated paper-hot melt adhesive webs and/or laminated metallic-hot melt adhesive webs selectively spiral wound under the application of heat and pressure which causes the hot melt adhesive to flow, fill and seal any spaces or minute openings between or in the webs thereby forming composite container bodies which are more reliably liquid tight and are stronger, particularly under axial loads, than conventional composite container bodies.

3,400,030
METHOD AND APPARATUS FOR BUTT-SPLICING ELONGATED ELASTOMERIC ARTICLES

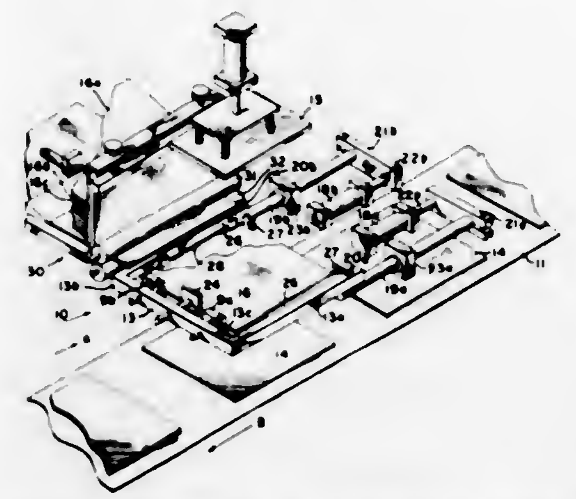
Edwin M. Burger, Walnut Creek, Calif., assignor to Oliver Tire & Rubber Company, Oakland, Calif., a corporation of California
Filed Oct. 23, 1965, Ser. No. 502,858
15 Claims. (Cl. 156—153)

A method and apparatus for butt-splicing vulcanized elastomeric articles in which the end portions of the articles are compressed and deformed and an end portion of each is removed while under stress so that when the end portions are bonded together the gasket will have a joint with residual internal stresses which strengthen the joint.



3,400,031
REGISTRATION APPARATUS

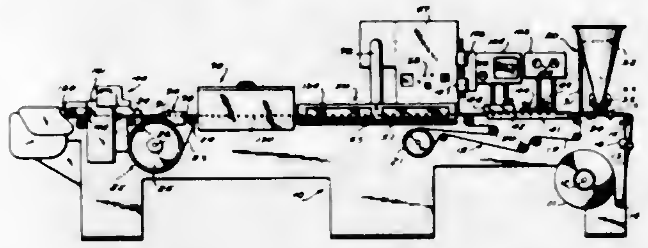
Charles F. H. Crathern III, Gould Hill, Contoocook, N.H. 03229
Filed Aug. 4, 1964, Ser. No. 387,440
12 Claims. (Cl. 156—364)



This invention relates to an apparatus which orients a pair of sheet members, one with respect to the other, in a predetermined relation, and adhesively unites these sheets. One of the sheet members is held stationary while the other is supported thereabove on an articulated frame powered so as to orient itself with respect to the stationary sheet. Photo-cell units carried by this articulated frame coact with power means which activate the frame (and the sheet material carried by it) into proper position.

3,400,032
FILTER ROD MAKING MACHINE

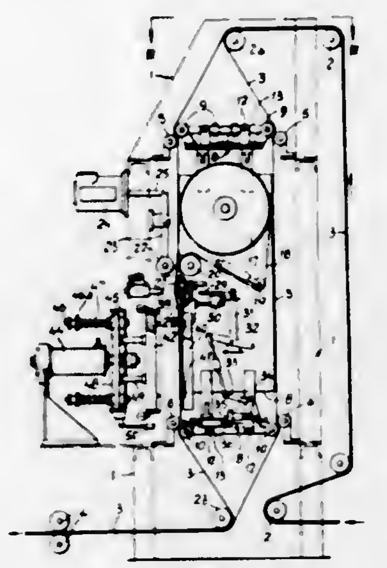
John H. Sexstone, Louisville, and George H. Hilgartner, Jr., Prospect, Ky., assignors to Brown & Williamson Tobacco Corporation, Louisville, Ky., a corporation of Delaware
Filed Feb. 3, 1965, Ser. No. 430,142
6 Claims. (Cl. 156—380)



An apparatus for carrying out the process which produces a bonded particulate filter rod for use with tobacco products. The apparatus includes means for feeding a paper web wrapping material and forming the same thereby to define a channel into which a particulate mixture of filter and bonding is deposited; means for depositing the material to be partially confined by the paper web; a garniture for forming the web and the confined mixture into a rod; electrical heating means into which the rod passes and within which the filter material becomes uniformly bonded together; and a cooling means for partially cooling the bonded filter rod prior to cutting to desired filter segment length.

3,400,033
MACHINE FOR INTERNAL APPLICATIONS AND MACHINING IN AN ENDLESS TUBULAR ARTICLE MADE UP OF A THERMOPLASTIC MATERIAL OR THE LIKE

Gianfranco Galimberti, Via Pancaldo 4, Milan, Italy
Filed Sept. 15, 1965, Ser. No. 487,514
Claims priority, application Italy, Sept. 15, 1964, 20,076/64
13 Claims. (Cl. 156—514)

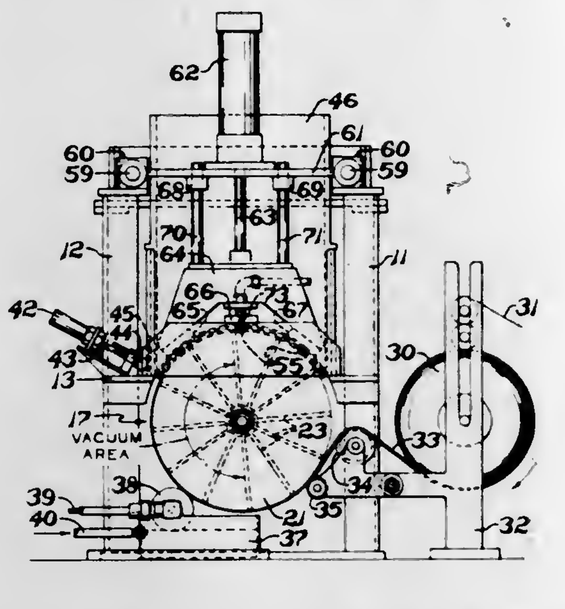


1. A machine for internally processing an open-ended length of flexible tubular material comprising,
an internal structure to be disposed within the tubular material,
an external structure to be disposed outside the tubular material,
first rollers on said internal structure,
second rollers on said external structure, said first and second rollers being arrayed opposite one another to engage the internal and external surfaces of tubular material and thereby support the internal structure within the tubular material whilst permitting the tubular material to be moved longitudinally relative to said structures,
a supply of strip material, in said internal structure, for application to the internal surface of the tubular material,
means for applying said strip material, and
means external to the tubular material and acting through the flexible wall of the tubular material to co-operate with said strip material applying means in applying said material.

3,400,034
BRAKE ADHESIVE TAPE APPLIER

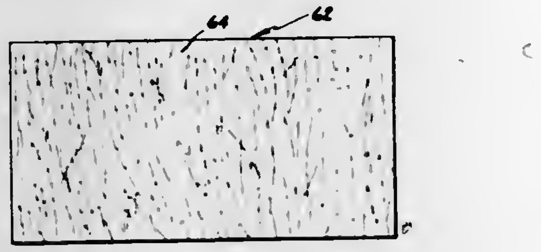
Mathew Kuts, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Oct. 14, 1966, Ser. No. 586,831
8 Claims. (Cl. 156—517)

Apparatus for applying adhesive tape to the inside surface of a brake lining segment, including means to apply adhesive to the tape, means to cut the tape to the required length and means to press the brake lining segment and tape into bonded relationship.



3,400,035
DECORATIVE PLASTIC PANEL AND METHOD OF MANUFACTURE

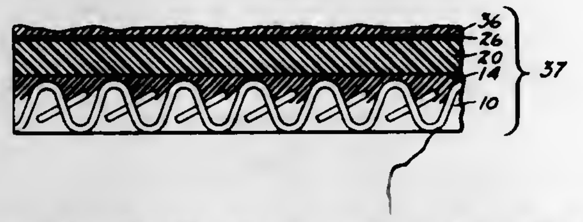
David Robert Pace Haig, South Plainfield, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Dec. 10, 1964, Ser. No. 417,434
15 Claims. (Cl. 161—1)



A thermoset resin panel containing fibrous reinforcement is bowed or flexed to such a degree, without imparting a permanent set to the panel, that the bond between the resin and some of the fibers is broken, providing the panel with a unique decorative appearance.

3,400,036
ARTICLE HAVING IRIDESCENT SURFACE AND METHOD OF MAKING SAME

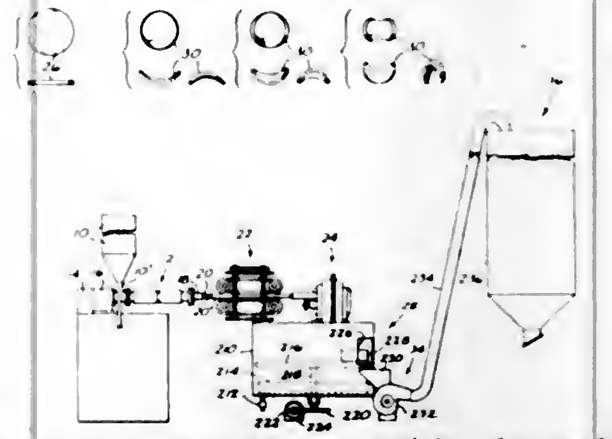
Philip J. Hemrick, Toledo, Richard P. Gremling, Sylvania, and Hugh R. Mason and Merle F. Schreurs, Toledo, Ohio, assignors to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Mar. 16, 1964, Ser. No. 351,916
14 Claims. (Cl. 161—2)



An article is disclosed and a method for making the same, including rubbing a small amount of fine pigment upon the surface of a polished plastic base and applying a transparent film of varying thickness to form a laminate having an iridescent finish of durable construction.

3,400,037
METHOD OF MANUFACTURING CELLULAR PACKING MATERIALS

James R. Sare and Richard L. Roplequet, Portland, and Duncan G. Bergeron, Beaverton, Oreg., assignors to Alta Industries, Inc., Beaverton, Oreg., a corporation of Oregon
Filed Nov. 13, 1964, Ser. No. 411,033
5 Claims. (Cl. 161—42)



1. The method of making an article of extrudable, expandable synthetic plastic material, comprising:
   (a) extruding the material under pressure through a die orifice to an atmosphere of lower pressure to initially expand the extruded filament to rod form of larger cross sectional dimension,
   (b) cutting the expanded rod form transversely into a multiplicity of flat, thin wafers each having a cross sectional thickness substantially less than its peripheral dimensions, and
   (c) subjecting the wafers to the action of steam at elevated temperature for a time sufficient to effect warping of the wafers to a shape having curvilinear top and bottom surfaces and a cross sectional thickness substantially less than their peripheral dimensions.

3. An article of manufacture comprising an expanded synthetic plastic material having a curvilinear top and bottom surfaces and a cross sectional thickness substantially less than its peripheral dimensions.

3,400,038
SEAMING TAPE

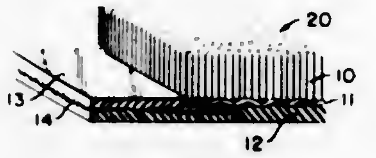
Charles D. Burgess, Macon, Ga., assignor, by mesne assignments, to Giffen-Burgess Corp., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 535,333, Mar. 18, 1966. This application Dec. 6, 1966, Ser. No. 599,414
10 Claims. (Cl. 161—50)

A process is described for the face seaming of strips of carpeting, utilizing a seaming tape comprising a hot-melt adhesive conjointly with a joining web having open areas, and a barrier web which has not. It is essential that at least 0.12 oz. of the adhesive per foot of carpeting to be seamed be provided to accomplish lateral flow of the molten adhesive and to fill the interstices of the joining web and in the backside of the carpeting to be joined. The components of the tape ready for use, can be attached to each other most conveniently by utilizing the adhesive properties of the hot-melt adhesive layer.

3,400,039
COMPOSITE CARPET MATTING AND METHOD OF MAKING THE SAME

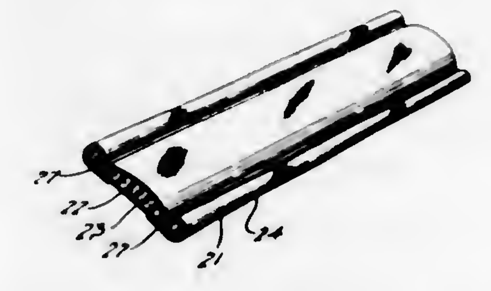
James N. Mason, Winchester, and Marvin M. Kahn, Newton, Mass., assignors to American Biltrite Rubber Co., Inc., Chelsea, Mass., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 496,062
11 Claims. (Cl. 161—63)

1. A composite matting comprising a surface ply of carpet fabric, an edge strip of sheet plastic material bonded to the underside of the carpet ply and extending outwardly from its edge, and a backing ply of plastic material underlying both the carpet ply and the said edge strip and bonded thereto in coextensive union.



3,400,040
TRIM STRIP WITH HEAT SEALED EDGE FOLDS AND METHOD OF MAKING SAME

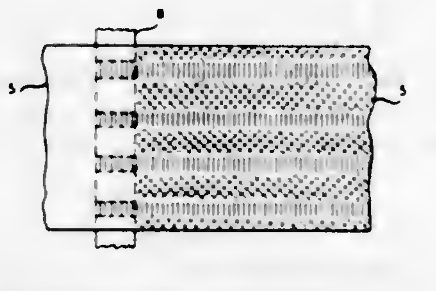
Bradley D. Osgood, 1126 S. Channel, Harsens Island, Mich. 48028
Filed Nov. 30, 1964, Ser. No. 414,701
2 Claims. (Cl. 161—104)



The flexible trim strip of the present invention uses a heat sealable sheet placed upon an open cellular strip with the edges of the sheet bent under the strip. Pressure is applied to areas of the layer and the bent-under edges to compress the cellular strip to a degree which retains the cells open. Heat is applied to the areas to soften the material of the sheet which will pass through the open cells of the cellular strip and retain the layer and bent-under edges in fixed relation to each other when the areas are cooled.

3,400,041
PRE-STRETCHED PLASTIC FILMS

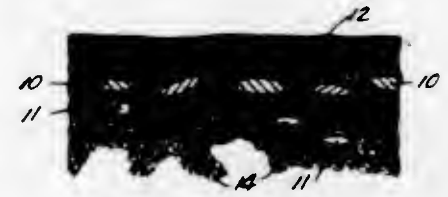
Ole-Bendt Rasmussen, Copenhagen, Denmark, assignor to Phillips Petroleum Company, a corporation of Delaware
Continuation-in-part of application Ser. No. 215,743, Aug. 8, 1962, now Patent No. 3,257,488. This application July 6, 1964, Ser. No. 380,599
Claims priority, application Denmark, Nov. 19, 1963, 5,412/63
3 Claims. (Cl. 161—117)



1. A pre-stretched film of orientable plastic material having regularly spaced across the face thereof in longitudinal strips a pattern of fine transverse shearing lines and between said strips a criss-cross pattern of shearing lines at angles of about 45° to 60° to said transverse lines, said film being uniformly orientable by simple cold stretching in the longitudinal direction.

3,400,042
NON-WOVEN SYNTHETIC LEATHER

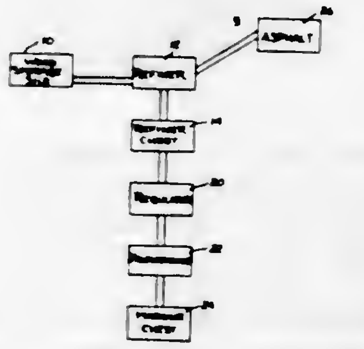
Richard G. Riedesel, Stillwater Township, Washington County, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Feb. 3, 1964, Ser. No. 341,913
2 Claims. (Cl. 162—146)



1. A non-woven, moisture vapor permeable, flexible mat-like structure, having a bulk density less than the solute density of the component materials comprising:
   (a) a uniform mixture of at least two different types of man-made organic, polymeric materials,
   (b) the first such material being in the physical form of ultra fine filaments, each ultra fine filament having a maximum cross-sectional dimension smaller than about 5 microns, and at least 50 weight percent of such ultra fine filaments having maximum cross-sectional dimensions not smaller than about 3 microns and minimum respective length greater than about 600 microns each,
   (c) the second such material being in the physical form of a substantially continuous skeletal structure, and
   (d) said structure having substantially none of said ultra fine filaments fused to one another.

3,400,043
PROCESS OF ADDING BITUMINOUS ADDITIVES TO A FIBROUS MATERIAL IN THE GRINDING ZONE OF A REFINER

Hans K. Nielsen, Jr., Dunellen, David E. Noyes, Somerville, Gilbert Godin, Millington, and Fred C. Norgard, Somerville, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed June 1, 1964, Ser. No. 371,678
8 Claims. (Cl. 162—171)



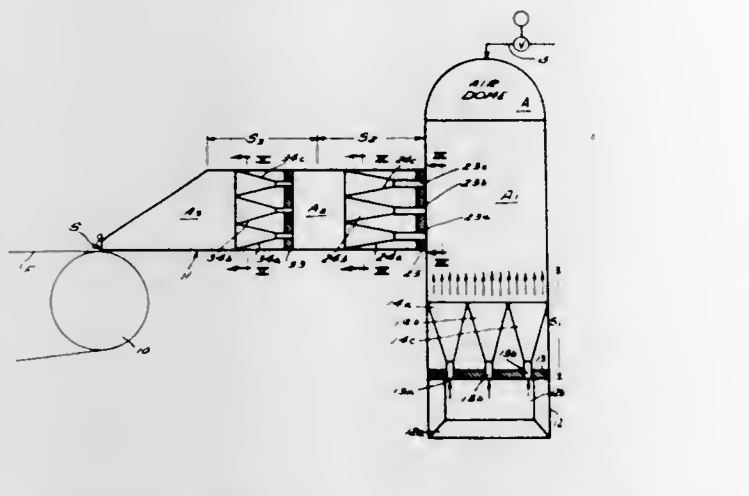
A fibrous aqueous mixture is introduced to the grinding zone of a refiner, and fluid bituminous material, e.g., asphalt, having a melting point higher than the temperature of the mixture, is introduced into the mixture in the grinding zone and cooled and solidified and intimately mixed with the mixture, without clogging of the refiner.

This invention relates to the manufacture of lignocellulosic fiber and to products containing such fiber. More particularly, the invention relates to a process for introducing molten additives to fibrous material as it is being ground an refined in preparation for manufacture of fibrous products.

3,400,044

HEADBOX FLOW CONTROL APPARATUS

Edgar J. Justus, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed May 27, 1965, Ser. No. 459,331
4 Claims. (Cl. 162—343)

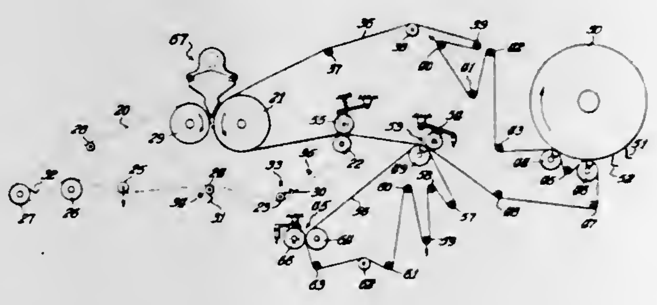


This invention relates to a paper making machine headbox wherein certain flow control devices are included in the headbox. These flow control devices comprise a transversely extending bank of diffuser nozzles mounted with the large end downstream and the smaller intake end secured to an upstream stock flow barrier, in order to effect an abrupt pressure loss with generation of generally parallel velocity components in the stock flowing to the slice.

3,400,045

PRESSURE FORMING APPARATUS FOR MAKING PAPER

John B. Graham, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Dec. 21, 1964, Ser. No. 419,765
5 Claims. (Cl. 162—317)



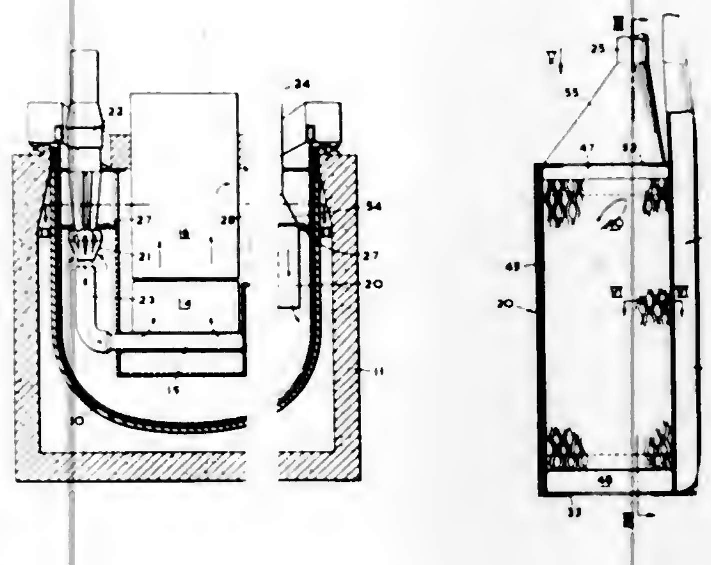
A papermaking machine comprising an endless foraminous forming fabric and an endless felt both movably supported by means of a plurality of rolls including a slice roll around which the fabric and felt travel for at least 90° with the fabric being outermost, with the machine including another roll which is substantially spaced from the slice roll to which the felt travels in a straight pass.

3,400,046

HEAT EXCHANGE MEANS IN A LIQUID-METAL COOLED NUCLEAR REACTOR

Allen Barker, Whetstone, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Feb. 4, 1966, Ser. No. 525,265
Claims priority, application Great Britain, Feb. 5, 1965, 5,215/65
1 Claim. (Cl. 176—40)

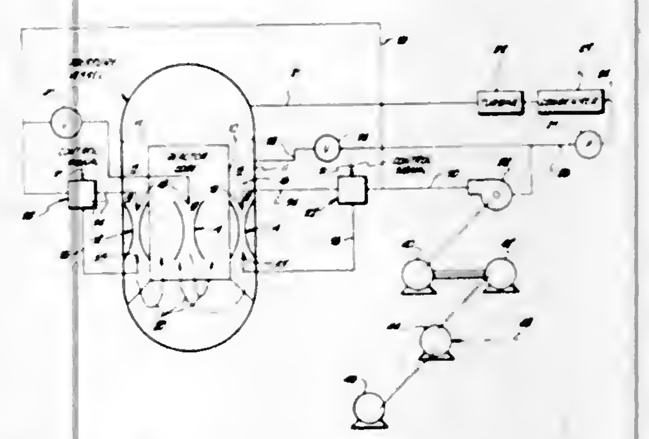
In a liquid-metal cooled nuclear reactor in which the core and the primary heat exchangers are arranged in a reactor tank containing the reactor coolant, the heat exchangers are of a plate type in which the plates are in a continuously undulating form both transversely and longitudinally so as to consist of alternate concave and convex dimples and are so arranged as to permit parallel flow, the spaces between the plates for flow of reactor coolant therethrough being of constant width.



3,400,047

JET PUMPING SYSTEM FOR A NUCLEAR REACTOR

Charles L. Howard, San Jose, Calif., assignor to General Electric Company, New York, N.Y., a corporation of New York
Original application July 30, 1965, Ser. No. 476,108, now Patent No. 3,373,688, dated Mar. 19, 1968. Divided and this application Feb. 21, 1967, Ser. No. 630,166
8 Claims. (Cl. 176—56)



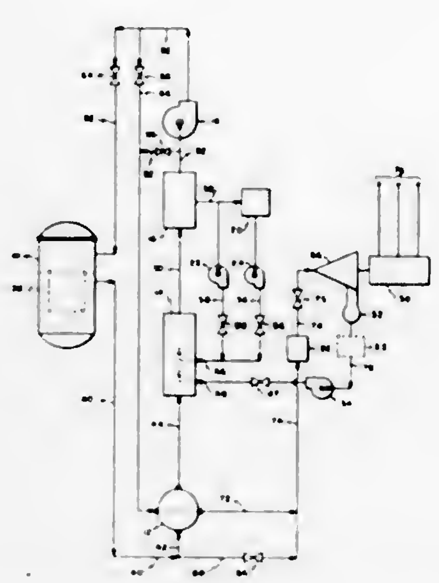
This describes an improved jet pump capable of controllable reverse flow for controlling the coolant flow in a reactor vessel through the nuclear reactor core. The pump body is provided with at least one auxiliary driving fluid jet adapted to permit a controllable flow through the pump in the reverse direction from normal flow.

3,400,048

STEAM COOLED NUCLEAR REACTOR POWER SYSTEM WITH STEAM DECONTAMINATION TREATMENT

Charles E. Boardman, San Jose, Henry J. Schneider, Sunol, Bernard F. Shoopak, Mountain View, and Bertram Wolfe, San Jose, Calif., assignors to General Electric Company, a corporation of New York
Filed Jan. 11, 1967, Ser. No. 608,547
12 Claims. (Cl. 176—60)

This invention relates to the conversion of mass to thermal energy in a steam cooled chain nuclear fission reactor utilized as a heat source in a nuclear power plant and in particular relates to such a power plant having an improved system for steam generation and purification.

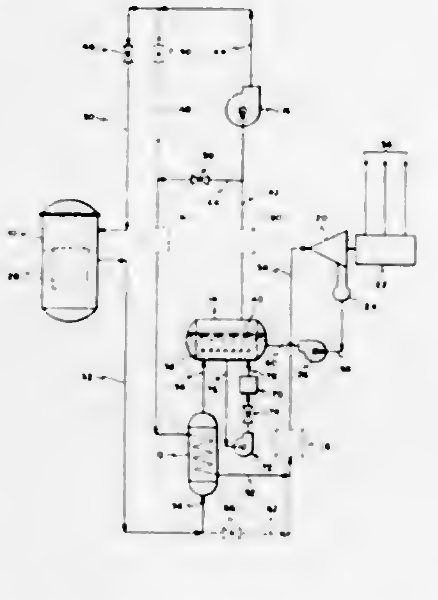


Superheated steam contaminants are removed from wet saturated steam. The saturated steam is introduced into the nuclear reactor where it is superheated.

3,400,049

STEAM COOLED NUCLEAR REACTOR POWER SYSTEM

Bertram Wolfe, San Jose, Calif., assignor to General Electric Company, a corporation of New York
Filed Jan. 11, 1967, Ser. No. 608,548
12 Claims. (Cl. 176—60)



This invention relates to the conversion of mass to thermal energy in a chain nuclear fission reactor. In particular, it relates to a steam cooled nuclear reactor utilized as a heat source in an improved superheated steam power plant system in which highly superheated possibly contaminated steam from the reactor is cooled by indirect heat exchange with purified saturated steam to produce purified superheated steam and moderated by superheated contaminated steam which is purified by direct contact with water to produce the purified saturated steam.

3,400,050

PREPARATION AND ISOLATION OF TETRACYCLINES WITH THE AID OF TETRACYCLINE COMPLEXES

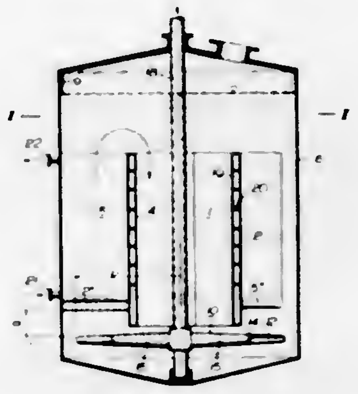
Joao Villax, Lisbon, Portugal, assignor to International Rectifier Corporation, Los Angeles, Calif., a corporation of California
No Drawing. Continuation-in-part of application Ser. No. 353,235, Mar. 19, 1964. This application Oct. 17, 1966, Ser. No. 586,940
Claims priority, application Portugal, Mar. 28, 1963, 40,718
7 Claims. (Cl. 195—80)

The present invention provides an improvement in the process of preparation and isolation of various microbiologically produced tetracyclines. In a process for the production of a compound selected from the group chlortetracycline, tetracycline, oxytetracycline and demethylchlortetracycline by aerobic fermentation of an aqueous fermentation medium, containing alkaline earth metal ions, with a tetracycline-producing microorganism of the genus *Streptomyces*, the improvement is provided wherein a small amount of N,N'-dibenzylideneethylenediamine is added to the medium to form an alkaline earth metal complex of the said tetracycline. Subsequently the said complex is isolated and the free tetracycline base is isolated therefrom.

3,400,051

PROCESSES FOR TREATING FLUIDS WITH GASES IN A VESSEL

Josef Hofschneider, Gramatneusiedl, Lower Austria, Austria, assignor to Patentauswertung Vogelbusch Gesellschaft m.b.H., Vienna, Austria, an Austrian company
Filed Apr. 19, 1965, Ser. No. 449,258
Claims priority, application Austria, May 8, 1964, A 4,029/64
7 Claims. (Cl. 195—142)



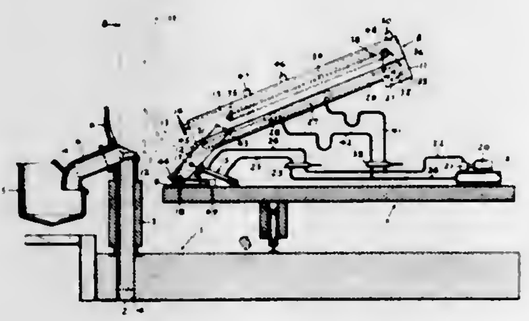
The treatment of fluids with gases in which a rotatable gas injector is located within a vessel and at least three vertically mounted baffles are connected to the vessel wall for preventing the fluid from rotating with the injector. One vertical edge of each baffle is connected to one side of one of two adjacent baffles and the other vertical edge to the vessel's inner wall. The injector and central area defined by the inner walls of the baffles are in the vessel's central portion and the injector is located below the baffles and rotatable about a vertical axis.

3,400,052

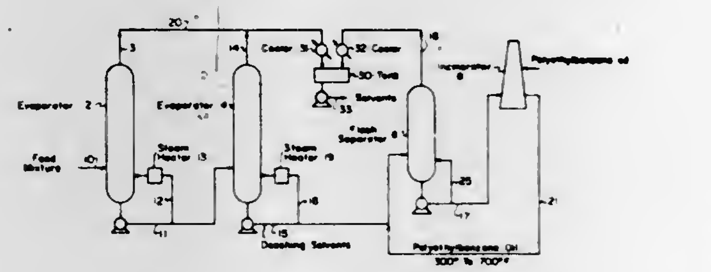
COKE OVEN STANDPIPE AND ELBOW CLEANING APPARATUS

Samson Olsen, Brooklyn, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Aug. 27, 1964, Ser. No. 392,552
1 Claim. (Cl. 202—241)

A coke oven standpipe and elbow cleaner having an extensible arm equipped with a cleaning head mounted in a hinged housing which is positioned by means of a hydraulic cylinder so as to either clean the vertical leg or elbow leg of the standpipe.



3,400,053
SOLVENT RECOVERY METHOD
Lloyd T. McBeth, Odessa, Tex., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Apr. 15, 1965, Ser. No. 448,390
12 Claims. (Cl. 203—69)



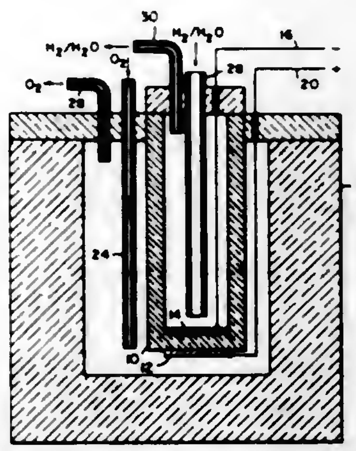
The method for recovering deashing solvent from a mixture of the solvent and contaminating impurities is improved by admixing a concentrated mixture of the solvent with a polyethylbenzene oil and heating the new mixture to volatilize the solvent and then separating the solvent from the polyethylbenzene oil containing the impurities.

3,400,054
ELECTROCHEMICAL METHOD FOR SEPARATING O_2 FROM A GAS; GENERATING ELECTRICITY; MEASURING O_2 PARTIAL PRESSURE; AND FUEL CELL
Roswell J. Ruka, Pittsburgh, Pa., and Joseph Weissbart, Palo Alto, Calif., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 126,098, July 24, 1961. This application Mar. 15, 1966, Ser. No. 534,322
14 Claims. (Cl. 204—1)

1. A fuel cell comprising: a solid partition of a solid electrolyte consisting essentially of a solid solution of oxides having a high degree of oxygen ion conductivity compared with either electronic conductivity or cation conductivity, said solid electrolyte having the formula

$$(MO_2)_{1-x}(R_yO_z)_x$$

where M represents at least one tetravalent element forming an oxide highly stable at temperatures of about 500° C. to about 1200° C. selected from the group consisting of zirconium, thorium and hafnium, R represents at least one element from the group consisting of elements of Groups II–A and III–B of the Periodic Table which form cations with stable +2 and +3 valences in the oxide, x represents a number having a value from about 0.05 to about 0.3 and y and z represent numbers having values necessary to make (R_yO_z) electrically neutral; a first porous electrode consisting of lanthanum nickel oxide applied to a first face of said partition; a second porous electrode consisting of a mixture of nickel and plantinum applied to the opposite face of said partition; said electrodes being stable at temperatures of about 500° C. to about 1200° C.; means for supplying a gas containing oxygen to said first electrode; means for supplying a fuel capable of reacting with oxygen on the opposite side of said partition near to said second electrode; means for heating said partition and said electrodes to an elevated temperature of about 500° C. to 1200° C. whereby oxygen forms ions at said first electrode which migrate through said partition upon placing it in a closed circuit and react with said fuel at the second electrode, said electrodes thereby developing a potential difference; and means for withdrawing the reaction products from near said second electrode.



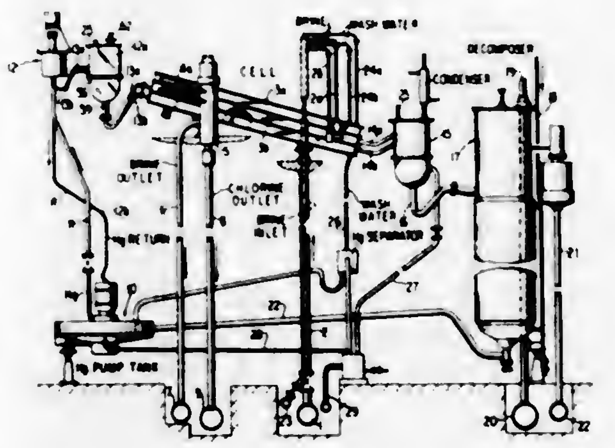
4. A method for separating oxygen from a gas containing oxygen or for producing substantially pure oxygen comprising: supplying a gas containing oxygen to a first electrically conductive porous electrode of an electrochemical cell comprising a solid electrolyte consisting essentially of a solid solution of oxides having a high degree of oxygen ion conductivity compared with either electronic conductivity or cation conductivity, said solid electrolyte having the formula $(MO_2)_{1-x}(R_yO_z)_x$ where M represents at least one tetravalent element from the group consisting of zirconium, thorium and hafnium, R represents at least one element from the group consisting of elements of Groups II–A and III–B of the Periodic Table which form cations with stable +2 and +3 valences in the oxide, x represents a number having a value of from about 0.05 to about 0.3 and y and z represent numbers having values sufficient to make R_yO_z electrically neutral; said first electrically conductive porous electrode and a second electrically conductive porous electrode being disposed on opposite surfaces of said solid electrolyte; heating said electrolyte and electrodes, while supplying said gas, to a temperature within the range of from about 500° C. to 1200° C.; applying, while supplying said gas and heating said electrolyte and electrodes, a DC potential difference across said electrodes of a polarity such that said first electrode is negative with respect to said second electrode so that substantially pure oxygen is produced at said second electrode.

8. A method for generating electrical energy comprising: establishing unequal oxygen partial pressures at first and second electrically conductive porous electrodes of an electrochemical cell comprising said electrodes on opposite surfaces of a solid electrolyte consisting essentially of a solid solution of oxides having a high degree of oxygen ion conductivity compared with either electronic conductivity or cation conductivity; said solid electrolyte having the formula $(MO_2)_{1-x}(R_yO_z)_x$ where

M represents at least one tetravalent element from the group consisting of zirconium, thorium and hafnium, R represents at least one element from the group consisting of elements of Groups II–A and III–B of the Periodic Table which form cations with stable +2 and +3 valences in the oxide, x represents a number having a value of from about 0.05 to about 0.3 and y and z represent numbers having values sufficient to make R_yO_z electrically neutral; said electrodes being electrically connected across a load in an external circuit; excluding oxidizable fuel from said electrodes to develop electrical power across said load by reason of said unequal oxygen partial pressures at said electrodes.

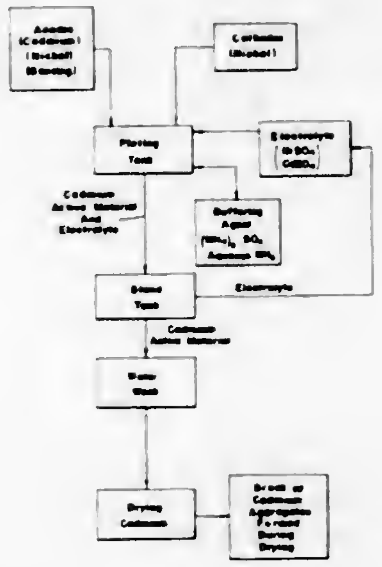
12. A method for the measurement of oxygen pressure comprising: establishing and maintaining an oxygen partial pressure of known value at a first electrically conductive porous electrode of an electrochemical cell including a solid electrolyte consisting essentially of a solid solution of oxides having a high degree of oxygen ion conductivity compared with either electronic conductivity or cation conductivity, said solid electrolyte has the formula $(MO_2)_{1-x}(R_yO_z)_x$ where M represents at least one tetravalent element from the group consisting of zirconium, thorium, and hafnium, R represents at least one element from the group consisting of elements of Groups II–A and III–B of the Periodic Table which form cations with stable +2 and +3 valences in the oxide, x represents a number having a value of from about 0.05 to about 0.3 and y and z represent numbers having values sufficient to make R_yO_z electrically neutral, said first electrically conductive porous electrode and a second electrically conductive porous electrode being disposed on opposite surfaces of said solid electrolyte; supplying a gas containing an unknown oxygen partial pressure to said second electrode; measuring an electrical output across said electrodes as a measure of said unknown oxygen partial pressure.

3,400,055
METHOD AND APPARATUS FOR BREAKING ELECTRIC CURRENT IN FLUENT CONDUCTORS
Georg Messner, Milan, Italy, assignor to Oronzio de Nora Impianti Elettrochimici, Milan, Italy, a corporation of Italy
Continuation-in-part of application Ser. No. 227,907, Oct. 2, 1962. This application May 20, 1966, Ser. No. 551,734
10 Claims. (Cl. 204—1)



Describes a method of feeding mercury into and discharging amalgam from a multiple tier bi-polar electrolysis cell in which each tier operates at a different potential and in which the mercury feed and amalgam discharge streams are divided into electrically separated increments to prevent short circuits between the separate tiers and the feed streams.

3,400,056
ELECTROLYTIC PROCESS FOR PREPARING ELECTROCHEMICALLY ACTIVE CADMIUM
Stanley Hills, Cherry Hill, N.J., assignor to The Electric Storage Battery Company, a corporation of New Jersey
Filed Aug. 26, 1964, Ser. No. 392,229
3 Claims. (Cl. 204—10)



Electrochemically active cadmium suitable for use in storage batteries is prepared. A loose and powderable cadmium deposit is prepared in an aqueous sulfate electrolyte containing cadmium sulfate, nickel sulfate, and a buffering agent. Three anodes are used, one being active cadmium, another being active nickel, and the third being an inactive gassing anode. Cadmium is electroplated onto the cathode at a current density of from 1 to 2 amps/square inch for a time corresponding to about 0.25 amphours/square inch; the pH of the electrolyte is from about 5 to about 8. The cadmium deposit is removed from the cathode, washed, dried, and recovered.

3,400,057
ALLOY AND FINISHING SYSTEM
Harold Jefferson Coates and Bennie Ray Ward, Jr., Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed June 3, 1964, Ser. No. 372,200
9 Claims. (Cl. 204—33)

A panel of high silicon aluminum alloy suitable for architectural panelling and for blackboard and writing slates, and having a sparkling appearance, is prepared by homogenizing a high silicon aluminum alloy ingot in the as-cast condition at about 1000° to 1100° F., hot rolling to form a plate, preferentially etching with alkali to expose particles of silicon protruding above the surrounding alloy surface, thereby enriching the surface in silicon, and then anodizing to produce an anodic coating having exposed silicon particles embedded therein.

3,400,058
ELECTROCHEMICAL PROCESS FOR ANODIC COATING OF METAL SURFACES
Edward C. Ross and Bryce Chambers, Seattle, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
No Drawing. Filed Sept. 21, 1965, Ser. No. 489,040
6 Claims. (Cl. 204—56)

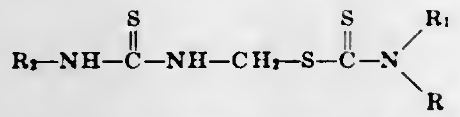
2. A method of forming a protective coating on a metal surface of metals from the group consisting of titanium, zirconium, hafnium and thorium which comprises subjecting as anode an article having a metal surface characteristic of said group to electrolysis in an aqueous solution consisting essentially of two to eight percent by weight

of an alkali metal hydroxide and one to three percent by weight of a water soluble salt of gluconic acid.

3,400,059
ACIDIC COPPER ELECTROPLATING BATHS AND METHOD

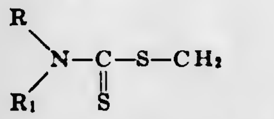
Gregor Michael, Dusseldorf, and Wolf-Dieter Willmund, Dusseldorf-Holthausen, Germany, assignors to Dehydag Deutsche Hydrierwerke G.m.b.H., Dusseldorf, Germany, a corporation of Germany
No Drawing. Filed Jan. 6, 1965, Ser. No. 423,822
Claims priority, application Germany, Mar. 7, 1964, D 43,821
22 Claims. (Cl. 204—52)

Method and electrolyte for copper plating in which the leveling agent in the electrolyte is a compound of the formula



$$R_2-NH-\overset{S}{\overset{\|}{C}}-NH-CH_2-S-\overset{S}{\overset{\|}{C}}-N\begin{matrix}R_1\\R\end{matrix}$$

wherein R and R_1 are selected from the group consisting of hydrogen, alkyl, cycloaliphatic, aromatic and together with N an aromatic heterocyclic residue, and R_2 is selected from the group consisting of hydrogen, alkyl, cycloaliphatic aromatic and the group

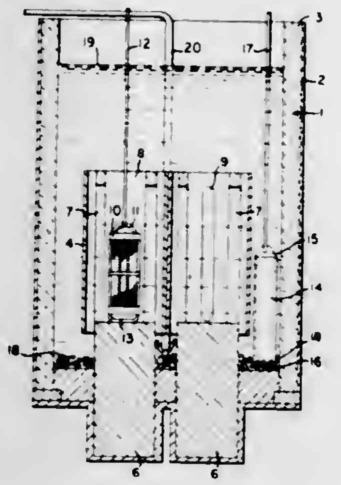


$$\begin{matrix}R\\R_1\end{matrix}N-\underset{S}{\underset{\|}{C}}-S-CH_2$$

as above defined. The said electrolytes have more than 60 mg./liter of chloride ions.

3,400,060
METHOD FOR REMOVING SOLID PARTICULATE MATERIALS FROM FUSED ELECTROLYTES

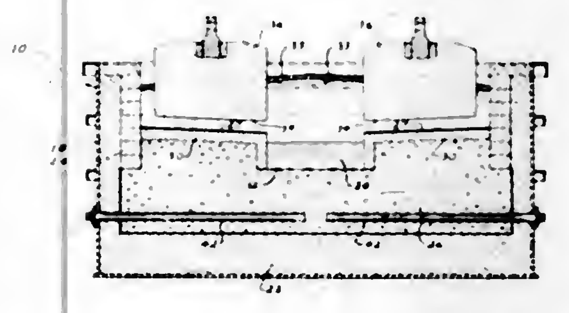
Clyde T. Gallinger, Niagara Falls, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 29, 1964, Ser. No. 421,901
3 Claims. (Cl. 204—60)



1. In a process for electrolyzing a fused metal halide electrolyte contained within a cell having a protective refractory lining exposed to said electrolyte, which lining spalls during operation of said cell to produce particulate refractory solid materials which accumulate and settle in said electrolyte with resultant reduction in the nautral circulation of electrolyte in the cell and reduction in the cell efficiency, the improvement comprising removing said accumulation of said solid material by positioning at least one open-top filter basket within said electrolyte, said filter basket being adapted to retain therein said solid material while permitting said fused electrolyte to flow therethrough, entraining said solid material in a stream of said electrolyte and causing said stream with said entrained solid material to flow over the top of said filter basket, whereby said solid material settles into said filter basket, and withdrawing said filter basket with said solid material retained therein vertically from said electrolyte and the cell, said electrolyte being maintained in a fused state during the aforesaid operations.

3,400,061
ELECTROLYTIC CELL FOR PRODUCTION OF ALUMINUM AND METHOD OF MAKING THE SAME

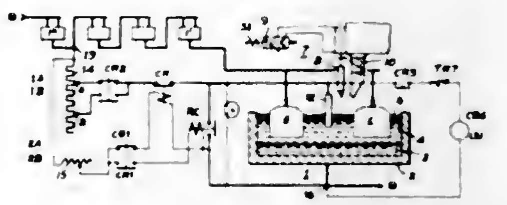
Robert A. Lewis, Los Altos, and Richard D. Hildebrandt, Cupertino, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Nov. 21, 1963, Ser. No. 325,228
20 Claims. (Cl. 204—67)



This disclosure relates to replacing the substantially flat carbon-lined bottom of a conventional electrolytic cell with at least one drained cathodic structure wettable by molten aluminum. The upper portion or molten constituent contacting surface of the cathodic structure comprises a mixture of refractory-hard metal and at least about 5 percent carbon. The composite cathodic material is characterized by being wettable by molten aluminum and having a high degree of dimensional stability.

3,400,062
METHOD OF CONTROLLING ALUMINA CONTENT DURING ALUMINUM ELECTROLYSIS

Guy D. Bruno and Neal Cheldelin, Wenatchee, Wash., and Nathaniel Wells, Whittier, Calif., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 28, 1965, Ser. No. 459,601
16 Claims. (Cl. 204—67)



1. In the art of producing molten metal by electrolysis of a metallic compound dissolved as a solute in a molten electrolyte wherein anode effect is encountered upon depletion of said compound to a critical percentage level, the method of maintaining said compound at a percentage level greater than said critical percentage level, comprising the steps of:

(a) Feeding ore constituting said compound into said electrolyte during a preselected time period at a rate selected from a fast and a slow feed rate respectively calculated to feed more and less ore than can be consumed by electrolysis during said period;
(b) Continuously maintaining a pilot anode which dips into said electrolyte to a given immersion depth on anode effect during said period;
(c) Eliminating the anode effect on said anode at the end of said period;
(d) Utilizing said anode with a given current density thereon to sense the percentage level of said compound at a value exceeding said critical percentage level by whether or not an anode effect occurs thereon during sensing:
(e) Selecting said fast feed rate responsively to the occurrence of an anode effect on said anode at sensing for feeding the ore throughout a new one of said time periods which immediately follows sensing, and
(f) Maintaining the anode effect on said anode during said following period.

3,400,063
TWO-STAGE ELECTROLYTIC PROCESS FOR PREPARING HIGH-CONCENTRATION SODIUM CHLORATE SOLUTIONS

Gabriel Boutillon, Sainte-Foy-les-Lyon, France, assignor to Societe d'Electro-Chimie, d'Electro-Metallurgie et des Acieries Electriques d'Ugine, Paris, France, a corporation of France
No Drawing. Filed Dec. 20, 1963, Ser. No. 332,254
Claims priority, application France, Dec. 22, 1962, 919,581
7 Claims. (Cl. 204—95)

A two-stage electrolytic process for preparing a sodium chlorate solution suitable for use in the sulfur dioxide manufacture of chlorine dioxide. Sodium chloride is electrolyzed in two stages. A sodium chloride solution having a concentration of at least 280 g./l. is electrolyzed to a concentration of 170 to 120 g./l. using an anode of magnetite or graphite. In the second stage the solution is electrolyzed to a concentration of 3 to 10% sodium chlorate using an anode of platinum or platinized metal. No between-stage crystallizations are necessary and no HCl is used. The resulting sodium chlorate solution is of a high sodium chlorate concentration and a low sodium chloride concentration and is therefore especially useful for manufacturing chlorine dioxide since very little chlorine is then produced in the manufacturing process.

3,400,064
PROCESS FOR PREPARING AMIDES USING HIGH ENERGY IONIZING RADIATION

Donald R. Stevens, Pittsburgh, and Philip R. Templin, Oakmont, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Dec. 22, 1964, Ser. No. 420,444
20 Claims. (Cl. 204—158)

1. A process for preparing an amide which comprises subjecting a compound selected from the group consisting of urea and thiourea and a hydrocarbon to high energy radiation.

3,400,065
MIXTURES OF POLYARYLENE POLYETHERS AND VINYLIDENE FLUORIDE-HEXAFLUOROPROPENE COPOLYMERS

Bruce P. Barth, Somerville, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Aug. 23, 1965, Ser. No. 481,962
17 Claims. (Cl. 204—159.2)

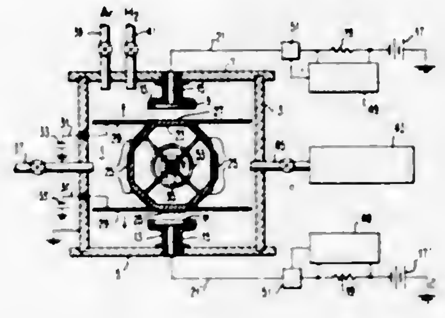
Polymeric mixtures of improved strength and resistance to thermal stress embrittlement comprising from about 0.1 to 30 parts of a vinylidene fluoride-hexafluoropropene copolymer and a linear thermoplastic polyarylene polyether composed of recurring units having the formula

$$(—O—E—O—E'—)$$

wherein E is the residuum of a dihydric phenol and E' is the residuum of a benzenoid compound having an inert electron withdrawing group having a sigma* value above about 0.7 in at least one of the positions ortho and para to the valence bonds.

3,400,066
SPUTTERING PROCESSES FOR DEPOSITING THIN FILMS OF CONTROLLED THICKNESS

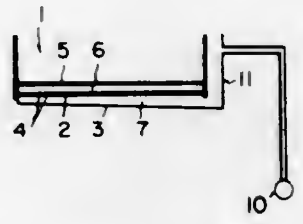
Hollis L. Caswell and Emanuel Stern, Mount Kisco, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Nov. 15, 1965, Ser. No. 507,729
21 Claims. (Cl. 204—192)



1. A process for depositing a thin layer of a first material comprising the steps of
positioning a target of said first material and a substrate within a chamber,
providing and maintaining a gaseous sputtering atmosphere within said chamber having a known sputtering rate per incident ion on said target when a glow discharge is struck to said target,
striking a glow discharge to said target whereby said target is sputtered and said first material is deposited on said substrate,
measuring the integrated ion charge to said target to determine the thickness of said first material deposited on said substrate and interrupting the deposition of said first material on said substrate when a predetermined integrated ion charge to said target is measured.

3,400,067
MERCURY-CATHODE CHLORINE CELL AND MERCURY FEEDING MEANS

Hiroshi Shibata, Nakoso-shi, Japan, assignor to Kureha Kagaku Kogyo Kabushiki Kaisha, Tokyo-to, Japan
Filed Mar. 11, 1966, Ser. No. 533,585
Claims priority, application Japan, Mar. 18, 1965, 40/15,796
3 Claims. (Cl. 204—219)

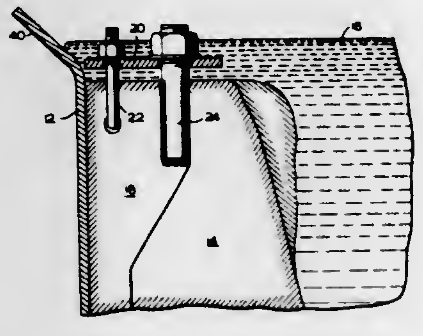


1. In a mercury-cathode chlorine cell wherein mercury is caused to flow from a mercury circuit channel provided below an electrolytic chamber perpendicularly to the mercury flow direction along the bottom plate of the electrolytic chamber, through mercury flow guide means provided along a side wall of the electrolytic chamber, and into the electrolytic chamber to flow horizontally or down a slight incline along the upper surface of the bottom plate, mercury supply means to place the mercury

flowing from the mercury circuit channel under a static head pressure and a mercury flow guide slit constituting said mercury flow guide means, said cell being characterized in that said mercury flow guide slit comprises, in combination, a large number of small holes formed through the bottom plate of the electrolytic chamber above and in the direction of the mercury circuit channel and a gap formed between the bottom plate of the electrolytic chamber and a flow guide plate fixed parallel to the bottom plate and forming a ceiling covering the outlets of said small holes.

3,400,068
POT SHELL FOR FUSED BATH ELECTROLYSIS

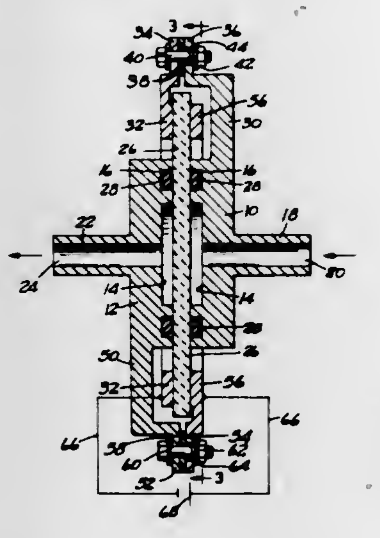
Dwight P. Keller, Corpus Christi, Tex., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed June 28, 1965, Ser. No. 467,216
2 Claims. (Cl. 204—243)



1. An electrolytic cell for the production of aluminum, comprising a pot shell and interior lining to contain the molten bath, a plurality of support brackets spaced along the length of the cell inside said pot shell, a horizontal deck plate supported by said brackets, said pot shell having an angular flange extending upwardly and outwardly at the top thereof, to provide a bath lip projecting above the deck plate.

3,400,069
APPARATUS FOR CONTINUOUSLY DRYING GAS

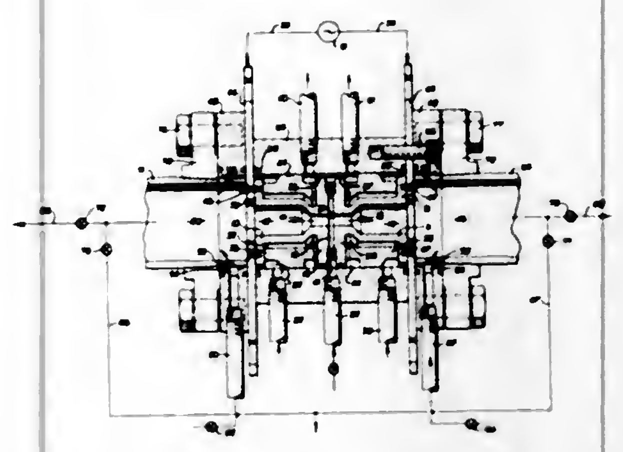
Hubert Dreckmann, Michigan City, Ind., assignor to The Hays Corporation, a corporation of Indiana
Filed Dec. 9, 1966, Ser. No. 600,446
6 Claims. (Cl. 204—278)



A continuous, gas drying apparatus wherein a gas is passed through a gas-pervious hygroscopic filter spanning a gas flow path, said filter having a marginal portion exposed to the action of means to dry it.

3,400,070
HIGH EFFICIENCY PLASMA PROCESSING HEAD INCLUDING A DIFFUSER HAVING AN EXPANDING DIAMETER

John Tom Naff, Costa Mesa, Calif., assignor, by mesne assignments, to Hercules Incorporated, New Castle County, Del., a corporation of Delaware
Filed June 14, 1965, Ser. No. 463,799
17 Claims. (Cl. 204—311)

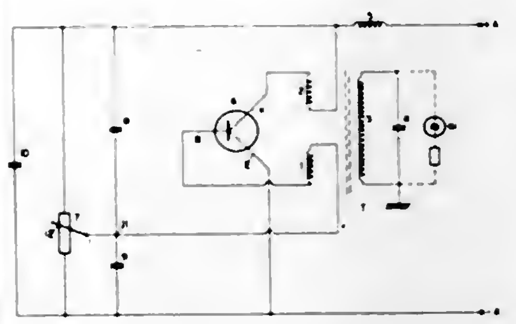


1. In plasma processing apparatus, structure including electrode elements each forming a passage for passing the flow of gas therethrough and for reception of an arc discharge pattern penetrating said element passages in the path of said flow, said passages having opposed entrances and exits downstream of said entrances and means to conduct electrical current to said elements to create said arc discharge pattern, said passage in at least one element including a relatively reduced cross section throat region directly downstream of the entrance of the element passage, and a relatively increased cross section diffuser region directly downstream of the throat, the arc having loci of attachment to at least one element at said diffuser region.

16. The combination of claim 1 in which the arc has loci of attachment to the anode and cathode elements, and including magnetic means to effect rotation of at least one of said attachment loci.

3,400,071
OZONIZING APPARATUS FOR AIR

Otto F. Zwoboda, Vienna, Austria, assignor to Arethusa Establishment, Vaduz, Liechtenstein
Filed Sept. 8, 1965, Ser. No. 485,710
3 Claims. (Cl. 204—317)



The invention relates to apparatus for producing ozone including a pair of electrodes, a transformer having a secondary winding connected to the electrodes, and an electrical oscillator. In one embodiment, the oscillator includes a transistor with a first primary winding connected to the base and a second to the collector and a variable resistance connected between the other ends of the two primary windings so that when a source of energy is applied to the oscillator a changing electrical current is produced in the two primary windings.

3,400,072
PROCESS FOR REDUCING THE POUR POINT OF CRUDE OIL AND THE LIKE

Shao E. Tung and Edward McIninch, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Mar. 24, 1965, Ser. No. 442,259
15 Claims. (Cl. 208—120)

1. A process for reducing the pour point of crude petroleum and the like, said pour point reduction being effected without the production of substantial gas due to cracking, and to recover at least 90 weight percent of the charge material as liquid product, said process comprising contacting in the absence of added hydrogen gas said mixture at a temperature in the range of from about 350° F. to about 850° F. with a catalyst comprising an aluminosilicate material of predominantly crystalline structure in which the crystalline structure is a three-dimensional framework containing cation sites and SiO_4 and AlO_4 tetrahedra bonded to each other through oxygen in regular orientation and forming a uniform intracrystalline pore system having a pore size of from about 6 A. to about 14 A., the silicon to aluminum ratio in said aluminosilicate material being from about 1:1 to about 4:1, and said crystalline structure being further characterized by the absence of monovalent cations from some of the available cation sites in said three-dimensional structure and by the absence of Groups VI and VIII metal cations or free metal from all of said available cation sites.

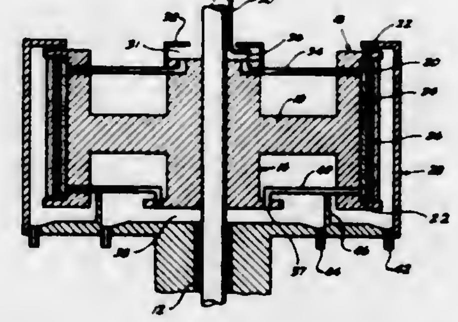
3,400,073
REGENERATION OF PLATINUM AND PALLADIUM REFORMING CATALYSTS

Eugene F. Schwarzenbek, Montclair, and John Turkevich, Princeton, N.J., assignors to Pullman Incorporated, a corporation of Delaware
No Drawing. Filed June 20, 1952, Ser. No. 294,707
The portion of the term of the patent subsequent to Aug. 11, 1981, has been disclaimed
8 Claims. (Cl. 208—140)

1. The method of restoring activity of a platinum alumina hydroforming catalyst which has become partially deactivated and contaminated with carbon, which method comprises removing readily combustible carbon from and treating the partially deactivated catalyst under oxidizing conditions, said treating being with an oxygen-containing gas having an oxygen partial pressure of at least about 5 p.s.i.a., at a temperature about 900° F. for a period of at least 10 minutes, and then treating the catalyst with a hydrogen-containing gas, the period of time for which said treating with an oxygen-containing gas continues being sufficient to restore substantially the hydroforming properties of the catalyst as freshly prepared.

3,400,074
CENTRIFUGAL REVERSE OSMOSIS FOR DESALINATION

Carl A. Grenci, 4791 Losa Place, Yorba Linda, Calif. 92686
Filed Sept. 15, 1965, Ser. No. 487,531
19 Claims. (Cl. 210—23)

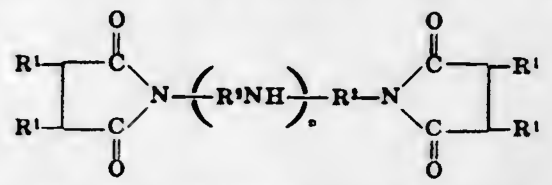


An apparatus and process for desalination wherein salt water is introduced inside a rotating cylindrical semipermeable membrane so that pure water passes through the membrane under centrifugal force.

3,400,075
LUBRICATING COMPOSITIONS INCLUDING A POLYMER WHICH CONTAINS A SALT OR AMIDE OF A DIIMIDE

Donald C. Grimm, Cuyahoga Falls, Ohio, and Leonard Pierce, Jr., St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Nov. 15, 1966, Ser. No. 594,406
3 Claims. (Cl. 252—34)

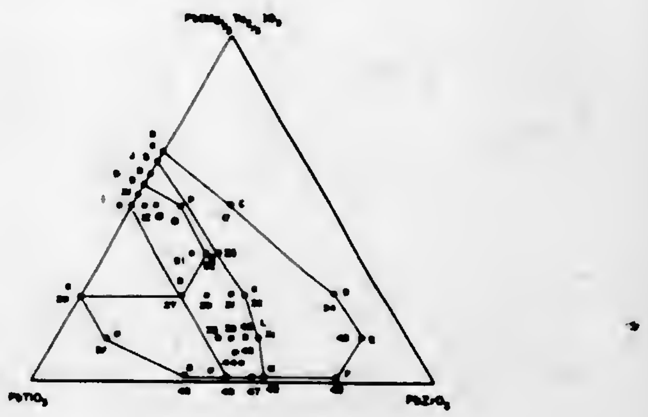
1. A lubricating composition which comprises a major amount of hydrocarbon oil of lubricating viscosity and a minor amount, sufficient to enhance the detergent characteristics of said oil, of a copolymer of (a) an oil-solubilizing proportion of a long chain alkyl acrylate or methacrylate, said long chain alkyl containing from about 8 to about 20 carbon atoms and (b) an acrylic or methacrylic salt or amide of a diimide of the formula:



wherein each R^1 individually represents hydrogen, alkyl or alkenyl of up to 20 carbon atoms, or two R^1 groups taken together to form a cycloalkyl, cycloalkenyl, cycloalkadienyl, or an aryl group, wherein R^2 represents ethylene or propylene, and wherein *n* represents a number having a value of at least 1.

3,400,076
PIEZOELECTRIC CERAMIC COMPOSITIONS

Hiromu Ouchi, Toyonaka-shi, Osaka-fu, and Masamitsu Nishida, Osaka-shi, Osaka-fu, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan
Filed Dec. 8, 1965, Ser. No. 512,323
7 Claims. (Cl. 252—62.9)



1. As a novel composition of matter, a solid solution consisting essentially of a material selected from those defined by and included within polygonal area

ABCDEFGH

of the triangular composition diagram in FIG. 2, wherein ABCDEFGH have the following compositions in molar ratio:

	$Pb(Mg_{1/3}Ta_{2/3})O_3$	$PbTiO_3$	$PbZrO_3$
A	0.250	0.750	0.000
B	0.655	0.345	0.000
C	0.500	0.250	0.250
D	0.250	0.125	0.625
E	0.125	0.125	0.750
F	0.010	0.240	0.750
G	0.010	0.615	0.375
H	0.125	0.750	0.125

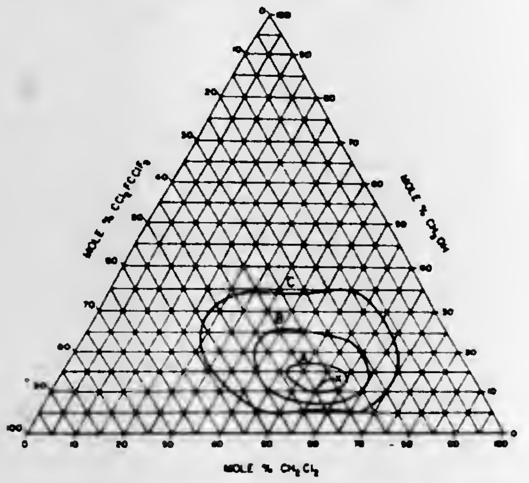
3,400,077

FLUORINATED HYDROCARBON CONTAINING COMPOSITIONS

Sabatino R. Orfeo, Morris Plains, and Kevin P. Murphy, Bernardsville, N.J., and Cary A. Begun, Mentor, Ohio, assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 515,737, Dec. 22, 1965. This application June 1, 1967, Ser. No. 642,843

4 Claims. (Cl. 252—171)



Certain ternary mixtures of 1,1,2-trichlorotrifluoroethane, methylene chloride and methanol are useful as solvents to remove rosin fluxes from printed circuit boards containing the same. These mixtures are useful not only because of their high solvency characteristics but also because they exhibit essentially the constant boiling characteristics of a ternary azeotrope which is formed between these components, thereby facilitating handling and purification of the solvent mixtures without significantly altering their compositions. The ternary mixtures disclosed herein exhibit substantially higher solvency characteristics for rosin fluxes than the known binary azeotropic systems containing 1,1,2-trichlorotrifluoroethane and methylene chloride or methanol.

3,400,078

SCALE INHIBITOR COMPOSITION AND METHOD

Loyd W. Jones, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

No Drawing. Filed Nov. 8, 1965, Ser. No. 506,865

9 Claims. (Cl. 252—180)

A liquid inhibitor for sulfate and carbonate scale is made up of water, potassium hydroxide, carboxymethyl cellulose, which has been oxidized in the presence of the potassium hydroxide, and potassium pyrophosphate. A method of preparing the liquid compositions involves oxidizing the carboxymethyl cellulose in the presence of strong potassium hydroxide solution.

3,400,079

FORMALDEHYDE ABSORBENT COMPOSITION

Alfred T. Clifford, Ware Shoals, and Kenneth C. Hokanson, Greenwood, S.C., assignors to Riegel Textile Corporation, Ware Shoals, S.C.

No Drawing. Continuation-in-part of application Ser. No. 337,174, Jan. 13, 1964. This application Dec. 12, 1966, Ser. No. 600,790

9 Claims. (Cl. 252—184)

A solid cohesive composition for removing formaldehyde odors from the air comprising an intimate mixture of a water-soluble salt of sulfurous acid selected from the group consisting of the alkali metal salts and ammonium salts of sulfurous acid, a humectant in sufficient amount to insure the presence of water in the composition to maintain the salt partially in solution, and a solid hydrophilic binder to maintain the intimate mixture cohesive.

3,400,080

GENERATION OF LIGHT BY THE REACTION OF OXALIC-TYPE AMIDES WITH HYDROPEROXIDES IN THE PRESENCE OF A FLUORESCENT COMPOUND

Donald Roy Maulding, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 12, 1966, Ser. No. 520,044

10 Claims. (Cl. 252—188.3)

Compositions and method for producing chemiluminescent light by the reaction of oxalic-type amides with hydroperoxides in a diluent and in the presence of a fluorescer.

3,400,081

RARE EARTH SILICATE PHOSPHOR COMPOSITION

Lothar H. Brixner, Brandywine Hills, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Feb. 1, 1965, Ser. No. 429,497

3 Claims. (Cl. 252—301.4)

Luminescent materials of generic formula

$$AB_{1-x}Eu_xSiO_4$$

where A is lithium, sodium, or potassium; B is yttrium, gadolinium, lanthanum, or lutetium, and x has a value of from 0.05 to 0.4 inclusive are prepared by mixing silicates of each of the component metals and firing for from 10 to 14 hours, first at 800° to 1000° C., then at 1000° C. to 1200° C.

3,400,082

SMOKE GENERATING COMPOSITIONS AND METHOD OF USE THEREOF

Martin E. Gluckstein, Farmington, Ellis B. Rifkin, Southfield, and Harold A. Beatty, Grosse Pointe Farms, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed July 19, 1965, Ser. No. 473,224

12 Claims. (Cl. 252—305)

A smoke agent consisting essentially of an aluminum alkyl, an aromatic substance having 2 to 3 fused carbocyclic aromatic six-membered rings and from 10 to 20 carbon atoms, said aromatic substance being composed solely of carbon and hydrogen, and a petroleum oil. Smoke is produced by exposing the smoke agent to the atmosphere. An ether having 2 to 3 ether oxygen atoms, up to 20 carbon atoms, and no carbon to carbon unsaturation is preferably included as a flame suppressant.

3,400,083

LUBRICATING FILMS

Harvey J. Schugar, New York, N.Y., and Michael J. Furey, Berkeley Heights, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed July 10, 1964, Ser. No. 381,898

7 Claims. (Cl. 252—42.7)

1. An improved hydrocarbon composition comprising a major proportion of a middle distillate boiling in the range between about 50° and 750° F. and from about 0.01 to 1.0% by weight of an additive composition selected from the group consisting of mixtures of $P(OR)_n$ and polyamines; of $Si(OR)_n$ and polyols; of $Si(OR)_n$ and polyamines; of $B(OR)_n$ and polyols and of $Ti(OR)_n$ and polyamines and reaction products of each of said mixtures; wherein R represents a monovalent alkyl group containing from 1 to 12 carbon atoms; wherein n corresponds to the valence of the first recited element of each formula and wherein said polyamine and polyol contain between about 2 and about 50 carbon atoms.

3,400,084

CATALYST COMPOSITION FOR POLYMERIZING ALPHA-OLEFINS

Osamu Fukumoto and Yuji Atarashi, Ohtsu-shi, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Apr. 2, 1964, Ser. No. 356,952

Claims priority, application Japan, Apr. 8, 1963, 38/17,392

2 Claims. (Cl. 252—429)

1. A catalyst composition for polymerization of alphaolefins, which is characterized in that said composition contains the three components of an aluminum sesquihalide having the formula $R_3Al_2X_3$, wherein R is a hydrocarbon radical having 1–15 carbon atoms and X is a halogen, a halide of a transition metal of Groups IV*a*–VI*a* of the Periodic Table, and an alkali metal salt of an oxyacid selected from the group consisting of nitric acid, nitrous acid, sulfuric acid, sulfurous acid, hydrosulfurous acid, thiosulfuric acid, boric acid, phosphoric acid, phosphorous acid, hypophosphorus acid, silicic acid, chloric acid, arsenic acid, arsenious acid, antimonic acid, chromic acid, manganic acid, selenic acid, selenious acid, carbolic acid, cyanic acid, tungstinic acid, molybdenic acid, metavanadic acid, metastannic acid, aluminic acid and titanic acid in a molar ratio of 1:0.1–4:0.05–5.

3,400,085

HIGH DENSITY POLYURETHANE FOAMS

Francis M. Kujawa, Tonawanda, and Blaine O. Schoepfle, Snyder, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 348,776, Mar. 2, 1964. This application May 18, 1966, Ser. No. 550,917

17 Claims. (Cl. 260—2.5)

A composition suitable for use in preparing a polyurethane foam having a density of at least 4 pounds per cubic foot is prepared by mixing a hydroxyl-containing polymer having a hydroxyl number between about 25 to 900, and a secondary phophonate that is non-reactive in the urethane reaction. Such compositions are reacted with a polyarylpolyisocyanate, in the presence of a foaming agent to produce a polyurethane foam having a uniform cell structure.

3,400,086

RUBBER BLEND

Robert James Orr, Sarnia, Ontario, Canada, assignor to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate and politic

No Drawing. Filed Oct. 18, 1965, Ser. No. 497,517

Claims priority, application Canada, June 21, 1965, 933,822

3 Claims. (Cl. 260—5)

Improved gum or lightly filled vulcanizate, suitable for the production of elastic thread, is prepared from a blend of a major proportion of a copolymer of isoprene and acrylonitrile with a minor proportion of a hydrocarbon rubber such as natural rubber or cis-1,4 polybutadiene.

3,400,087

FINELY DIVIDED CALCITE IN COMBINATION WITH A FATTY ALCOHOL AS NUCLEATING AGENTS FOR NYLON POLYAMIDES

Howard E. Robb, George D. Newman, Jr., and Duoyne L. McCullough, Henderson, Ky., assignors to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Sept. 20, 1965, Ser. No. 488,717

13 Claims. (Cl. 260—18)

The rate of crystal growth without substantial increase in percent of total crystallization of polyamide melts is obtained by incorporating therein finely divided calcite particles and a fatty alcohol.

3,400,088

POLYVINYL CHLORIDE STABILIZED WITH MIXTURES OF A PCl_3-BIS PHENOL REACTION PRODUCT, EPOXY RESIN AND HEAVY METAL SALT

Yolande Bourgan, Neuville, and Jacques Fritz, Lyon, France, assignors to Societe Progil, Paris, France

No Drawing. Filed Feb. 9, 1965, Ser. No. 431,456

Claims priority, application France, Feb. 10, 1964, 963,164

7 Claims. (Cl. 260—23)

Stabilizer additive for polyvinyl chloride resin, comprising the substance obtained by reacting one mole of phosphorus trichloride with two to four moles of 4,4′-dihydroxydiphenyl-dimethyl-methane, an epoxy resin and heavy metal salts, and process for preparation of the said stabilizer.

3,400,089

PROCESS FOR PREPARING BRIGHT DRYING POLYETHYLENE DISPERSIONS USING A POTASSIUM SALT AS THE EMULSIFYING AGENT

Herbert Bestian, Frankfurt am Main, and Helmut Korbanka, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 10, 1965, Ser. No. 454,679

Claims priority, application Germany, May 16, 1964, F 42,905

6 Claims. (Cl. 260—23)

A process has been provided for the production of bright drying polyethylene dispersions. These dispersions are produced when ethylene is polymerized at a temperature of 110° to 150° C. at a pressure of 400 to 700 atmospheres, when using potassium salts of fatty acids having more than 9 carbon atoms in the carboxylic acid group as an anionic emulsifier, and when using as a catalyst a water soluble persulfate. The specified emulsifier system produces aqueous polyethylene dispersions having a solids content of at least 35% by weight when the polymerization is carried out under conditions specified above and in a one stage process.

3,400,090

SEALING COMPOSITIONS COMPRISING HALOGENATED BUTYL RUBBER, DRYING OIL AND LIQUID POLYISOBUTYLENE

Philip H. Maslow, Brooklyn, N.Y., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

No Drawing. Filed Nov. 9, 1964, Ser. No. 409,957

4 Claims. (Cl. 260—23.7)

A caulking composition which is composed of a halogenated rubbery copolymer of a major amount of isobutylene and a minor amount of a diolefin, such as isoprene, a drying oil, such as linseed oil, and liquid polyisobutylene. The composition may be modified by the inclusion of various additives to impart certain properties, such as fillers and pigments.

3,400,091

SEALING COMPOSITIONS COMPRISING CIS 1,4-POLYBUTADIENE, PLASTICIZER AND CURATIVE SYSTEM

Nelson A. Stumpe, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Continuation of application Ser. No. 386,070, July 29, 1964. This application Oct. 18, 1967, Ser. No. 676,364

6 Claims. (Cl. 260—23.7)

Improved calking compositions comprise polybutadiene, a curative system and a filler comprising the predominants of the calking compositions and an amount of plasticizer sufficient to provide a Mooney viscosity (212° F.) of less than 10 prior to curing.

3,400,092
COATING COMPOSITIONS CONTAINING PARAFFIN WAX, ETHYLENE-VINYL ACETATE COPOLYMER, AND FISCHER-TROPSCH WAX

Richard C. Fox, San Rafael, Calif., assignor to Chevron Research Corporation, a corporation of Delaware
No Drawing. Filed Dec. 11, 1964, Ser. No. 417,814
3 Claims. (Cl. 260—28.5)

Coating composition having improved gloss retention and resistance to blocking and picking consisting essentially of from 45 to 89.9% by weight of a petroleum wax, from 5 to 50% by weight of a copolymer of ethylene and vinyl acetate, and from 0.1 to 15% by weight of a Fischer-Tropsch wax having an average molecular weight between about 750 and 1,000.

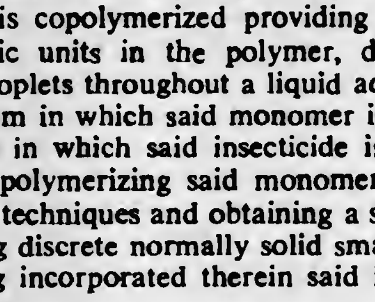
3,400,093
PROCESS FOR PREPARING A STABLE POLYMER LATEX CONTAINING AN INSECTICIDE

Irving Feinberg, 107 E. Crystal View Drive,
Sanford, Fla. 32771
No Drawing. Continuation-in-part of application Ser. No. 386,066, July 29, 1964. This application Mar. 11, 1966, Ser. No. 533,417
12 Claims. (Cl. 260—29.6)

1. A process for making an insecticide-containing polymer which comprises dissolving at least one organic insecticide in at least one polymerizable vinyl-type monomer, said monomer and any other vinyl-type monomer with which it is copolymerized providing the predominant monomeric units in the polymer, dispersing said monomer as droplets throughout a liquid aqueous polymerization medium in which said monomer is substantially immiscible and in which said insecticide is substantially insoluble, and polymerizing said monomer by emulsion polymerization techniques and obtaining a stable polymer latex containing discrete normally solid small particles of polymer having incorporated therein said insecticide.

3,400,094
GASKET-FORMING COMPOSITIONS CONTAINING A MIXTURE OF UNSATURATED FATTY ACID AMIDES AS A TORQUE CONTROL AGENT

Anthony J. Testa, Westwood, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Filed Dec. 22, 1965, Ser. No. 515,585
6 Claims. (Cl. 260—32.6)



A gasket-forming composition for container closure elements composed of a vinyl resin plastisol which includes a torque control additive consisting essentially of a mixture of 80% erucyl amide, 12% gadoleyl amide and 8% oleyl amide.

3,400,095
HIGH SOLIDS CONTENT ELASTOMER-BASED AEROSOL SPRAY ADHESIVE

Leon V. Kremer, Cottage Grove Township, Washington County, and George M. Rambosek, Maplewood Village, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Continuation-in-part of application Ser. No. 453,825, May 6, 1965. This application Mar. 17, 1967, Ser. No. 623,986
4 Claims. (Cl. 260—32.8)

Aerosol packaged spray adhesives including a 10–35% by weight dispersion of crosslinked dispersed insoluble high strength milled rubbery polymer in organic liquid together with tackifier resin and a small amount of soluble elastomer which sprays without forming rubbery strings or nonadherent mist.

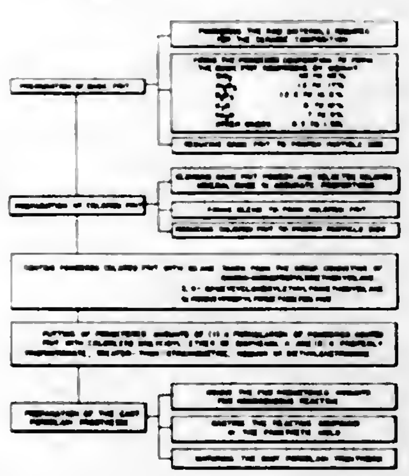
3,400,096
PROCESS OF MAKING COMPOSITIONS USEFUL FOR HARD RUBBER PRODUCTS

Richard M. Bateman, Erie, Pa., and Michael K. Parrent, Welland, Ontario, Canada, assignors to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 759,164, Sept. 5, 1958. This application Dec. 30, 1963, Ser. No. 337,700
9 Claims. (Cl. 260—33.6)

1. A process for making a composition having a minimum heat history and suitable for forming rigid articles such as battery boxes and the like comprising gradually adding an aqueous dispersion of a rubbery binder to relatively dry solid compounding agents comprising a filler selected from the group consisting of china clay, talc, diatomaceous earth, anthracite coal and semi-anthracite coal while said solid compounding agents are agitated to expose new surfaces to contact with said aqueous dispersion, the amount of said aqueous dispersion being insufficient to prevent formation of a granular product and the rubbery binder content thereof being from about 5 to 25% of the weight of the solids content of the latex treated solids, drying the resulting mixture while subjecting it to agitation in a stream of a heated gas, the temperature of the mixture being less than about 130° F. for at least three-fourths of the drying period, to a moisture content of less than 2% and removing the mixture from contact with the heated gas promptly before the temperature of the mixture reaches about 250° F. to avoid scorching said rubbery binder, said rubbery binder being essentially the only organic polymeric binder in said mixture and being a vulcanizable copolymer of butadiene-1,3 and styrene.

3,400,097
CAST PORCELAIN PROSTHESIS AND METHOD OF MAKING THE SAME

Abraham B. Weinstein, 28 Ralsey Road S., Stamford, Conn. 06902; Stanley Erdman, 1580 E. 102nd St., Brooklyn, N.Y. 11236; and John Weber, 175 W. 92nd St., New York, N.Y. 10025
Filed Jan. 2, 1964, Ser. No. 335,305
9 Claims. (Cl. 260—37)



1. A cast colored porcelain dental prosthesis made of substantially homogeneous material, having two areas, one a smooth surface for moving contact with oral tissue in the mouth and another area conforming to the supporting surface to which it is to be fixed in position, said prosthesis comprising a chemically bound combination of a powdered colored porcelain frit, wherein the basic frit comprises approximately, by weight:

	Percent
SiO_2	48–58
Al_2O_3	13–17
B_2O_3	12.5–15.5
K_2O	8–10
Na_2O	7–9
Other oxides	0.5–1.5

said frit having a particle size of from 200 to 325 mesh coated with a silane taken from the group:

gamma-aminopropyltriethoxysilane
3,4-epoxycyclohexyltrimethoxysilane
glycidoxypropyltrimethoxysilane

a colorless diglycidyl ether of bisphenol A and colorless diethylenetriamine, said prosthesis characterized by exact dimensional conformation to a replica of the supporting surface for exact fitting thereto.

3,400,098
COMPOSITION CONTAINING 2,2-BIS(2,3-EPOXYPROPOXYPHENYL)PROPANE AND TRIMELLITIC ANHYDRIDE

Harvey L. Parry, Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 48,856, Aug. 11, 1960. This application June 22, 1964, Ser. No. 377,115
3 Claims. (Cl. 260—37)

Novel, particulate compositions of diepoxide and curing agents therefore, characterized, i.a., by long shelf life, by high epoxy content and by low viscosity of and relatively long pot life of the melt, comprise free-flowing crystals of 2,2-bis(2,3 - epoxypropoxyphenyl)propane, a curing amount of a stable organic acid anhydride type curing agent which is a solid at 100° F., e.g., trimellitic anhydride, and preferably also a cure accelerator.

3,400,099
STEREOLINEAR BUTADIENE STABILIZED WITH A COMBINATION OF STABILIZERS

Wendell S. Cook, Canal Fulton, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed Oct. 18, 1963, Ser. No. 317,132
21 Claims. (Cl. 260—45.85)

Stereolinear polybutadiene prepared by polymerization with a lithium-based catalyst is stabilized by a 2-component stabilizer mixture. One component is thiodipropionic amides, dialkyl amides, nitriles or esters. The other component is any one of various phenols (including N-acyl-p-aminophenols, bisphenols and trisphenols) and di-t-alkyl diphenylamines.

3,400,100
PROCESS FOR THE PREPARATION OF POLYPHENYLENE ETHERS

Hein M. van Dort, Ede, and Cornelis R. H. I. de Jonge, Dieren, Netherlands, assignors to N.V. Onderzoekingsinstituut Research Arnhem, Netherlands, a corporation of the Netherlands
No Drawing. Filed Mar. 8, 1966, Ser. No. 532,583
Claims priority, application Netherlands, Feb. 21, 1966, 6503568
5 Claims. (Cl. 260—47)

A process for the formation of polyphenylene ethers by oxidative coupling of phenols having substituents in at least 2 positions ortho to the oxygen ether atom using lead dioxide as the oxidizing agent in the presence of a small quantity of a compound soluble in the reaction medium and possessing a free electron pair. The process is distinguishable by the presence of the compound containing the free electron pair which promotes formation of polymers of substantially increased molecular weight.

3,400,101
ALKOXYALKYLIDENECYCLOBUTANONES

Edward U. Elam and James C. Martin, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Apr. 21, 1966, Ser. No. 544,102
8 Claims. (Cl. 260—63)

Alkoxyalkylidenecyclobutanones are prepared by the condensation of aliphatic and aromatic aldehydes with a 3-alkoxycyclobutanone. The alkoxyalkylidenecyclobutanones are useful chemicals, for example, as dyes and chemical intermediates.

3,400,102
PROCESS FOR PREPARING A PHOSPHONATED POLYESTER RESIN

Ralph S. Ludington, Niagara Falls, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Mar. 29, 1965, Ser. No. 443,656
10 Claims. (Cl. 260—75)

1. A process for preparing a phosphonated polyester resin by reacting at an elevated temperature an ethylenically unsaturated polyester resin and a monocarboxylic acid free of ethylenic unsaturation and containing from 1 to about 18 carbon atoms, with a phosphorus compound having the formula

$$(RO)_xP(R')_y$$

wherein R and R′ contain from 1 to 12 carbon atoms and are independently selected from the group consisting of alkyl, alkylene, aralkyl and aryl, and halogenated derivatives thereof, provided that at least one R is alkyl, aralkyl or alkylene; x is from 1 to 3, y is from 0 to 2 and the sum of x and y is 3.

3,400,103
LATENTLY CROSSLINKABLE PRESSURE-SENSITIVE ADHESIVE POLYMERS

Carlos M. Samour, Wellesley Hills, Mass., and Donatas Satas, Palatine, Ill., assignors to The Kendall Company, Boston, Mass., a corporation of Massachusetts
No Drawing. Filed Jan. 14, 1965, Ser. No. 425,618
19 Claims. (Cl. 260—78)

Solutions in an organic solvent of latently crosslinkable pressure-sensitive adhesive polymers containing recurring units in the polymer having pendent active hydrogen groupings and recurring units having pendent ethylenic groupings. Monomers polymerizable to per se pressure-sensitive adhesive polymers are copolymerized with certain polyethylenic comonomers and, if not provided by the other monomers, comonomers having certain active hydrogen groupings under controlled conditions to yield a polymer soluble in an organic solvent. The adhesive polymer spread as a coating from the solution and dried at elevated temperatures converts to a crosslinked polymer as evidenced by gel content and swelling index.

3,400,104
PROCESS FOR PREPARING ORGANIC DISULFIDES

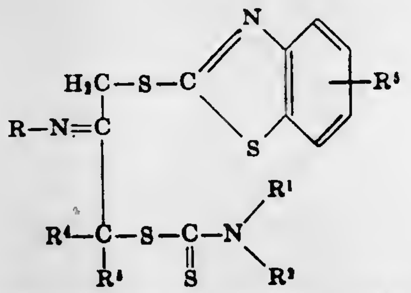
Robert W. Liggett, Birmingham, Ala., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Original application Mar. 2, 1965, Ser. No. 436,687, now Patent No. 3,367,975, dated Feb. 6, 1968. Divided and this application Oct. 26, 1967, Ser. No. 688,642
3 Claims. (Cl. 260—79)

A process for preparing a polymeric organic disulfide by the reaction of an alkali metal tetrathiocarbonate with an organic halide. The polymers are useful in coating, impregnating, sealing and caulking compositions.

3,400,105
RUBBER ACCELERATORS

Albert F. Hardman, Bath, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed Dec. 31, 1964, Ser. No. 422,530
10 Claims. (Cl. 260—79.5)

1. A compound conforming to the following structural formula:



wherein R is selected from the group consisting of hydrogen, furfuryl radicals, alkyl radicals containing from 1 to 10 carbon atoms, cycloalkyl radicals containing from 5 to 6 carbon atoms, aryl radicals containing from 6 to 10 carbon atoms and aralkyl radicals containing from 7 to 10 carbon atoms, R^1 and R^2 are selected from the group consisting of hydrogen and alkyl radicals containing from 1 to 10 carbon atoms and radicals in which R^1 and R^2 together with the nitrogen atom form a heterocyclic ring; R^3 is selected from the group consisting of hydrogen and alkyl radicals containing from 1 to 10 carbon atoms; and R^4 and R^5 are selected from the group consisting of hydrogen and alkyl radicals containing from 1 to 6 carbon atoms.

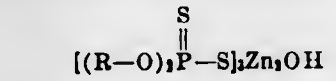
6. A sulfur curable rubber composition containing from 0.05 to 5.0 parts by weight per 100 parts by weight of rubber of a compound in accordance with claim 1.

3,400,106
BASIC ZINC DOUBLE SALTS OF O,O-DIALKYL PHOSPHORODITHIOIC ACIDS AS VULCANIZATION ACCELERATORS FOR RUBBER

Eiichi Morita, St. Albans, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Sept. 28, 1966, Ser. No. 582,520
14 Claims. (Cl. 260—79.5)

1. A method of vulcanizing a sulfur-vulcanizable rubber which comprises:

mixing the rubber with a sulfur-containing vulcanizing agent and an accelerating amount of a solid consisting essentially of a basic zinc double salt of O,O-dialkyl phosphorodithioic acid of the formula



$$[(R-O)_2\overset{S}{\overset{\|}{P}}-S]_3Zn_2OH$$

where R is a primary or secondary alkyl radical containing less than 19 carbon atoms; and

heating the mixture at a vulcanizing temperature.

3,400,107
CARBOHYDRATE DERIVED POLYMERS

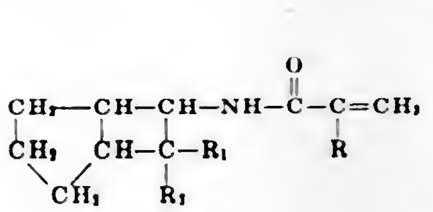
William A. P. Black, Falkirk, Eric T. Dewar, Dalkeith, and David Rutherford, Edinburgh, Scotland, assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Original application Sept. 20, 1962, Ser. No. 225,168, now Patent No. 3,225,012, dated Dec. 21, 1965. Divided and this application June 16, 1965, Ser. No. 527,998
13 Claims. (Cl. 260—80)

The invention describes the synthesis of novel monomeric isopropylidene-protected methacrylates containing reactive hexitol residues and the formation of the corresponding water soluble polymers that are readily deacetonated to give metal ion sequestering sugar acid containing polymethacrylates.

3,400,108
POLYMERS OF N-(7,7-DIALKYL-BICYCLO[3.2.0.]HEPT-6-YL) ACRYLAMIDES AND METHACRYLAMIDES

John R. Caldwell and Edward H. Hill, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 168,819, Jan. 25, 1962. This application Jan. 22, 1965, Ser. No. 427,496
13 Claims. (Cl. 260—82.1)

1. A resinous polymer of an acrylic amide having the general structure:



wherein R represents a member selected from the group consisting of a hydrogen atom and methyl group, and each of R_1 and R_2 represents an alkyl group of from 1–4 carbon atoms.

3,400,109
RUBBER POLYMER TREATMENT PROCESS

Clyde H. Mathis, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Oct. 17, 1963, Ser. No. 317,080
7 Claims. (Cl. 260—85.1)

1. In a process wherein a latex produced by an emulsion polymerization process is coagulated, the emulsifying agent used in the polymerization process being selected from the group consisting of fatty acid soaps, resin acid soaps, and mixtures thereof, an improvement which comprises employing sulfamic acid as the coagulating acid.

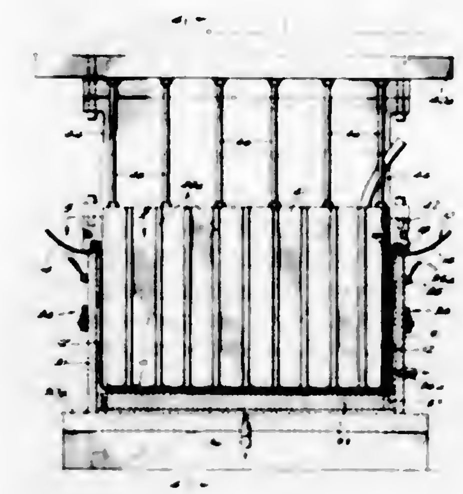
3,400,110
POLYMERIZATION OF OLEFINS IN THE PRESENCE OF A CATALYST COMPRISING AN ORGANOMETALLIC COMPOUND AND THE REACTION PRODUCT OF A TRANSITION METAL COMPOUND AND A HYDROXYCHLORIDE OF A BIVALENT METAL

Pierre Dassesse, Jemeppe-sur-Sambre, and Roger Dechenne, Strombeek, Belgium, assignors to Solvay & Cie, Brussels, Belgium
No Drawing. Filed June 24, 1964, Ser. No. 377,476
Claims priority, application France, Aug. 1, 1963, 943,488; Mar. 3, 1964, 965,828
10 Claims. (Cl. 260—88.2)

1. In a process for the polymerization and copolymerization of olefins, the improvement comprising effecting the reaction in the presence of a catalyst obtained by activating with an organic derivative of a metal selected from the group consisting of the elements of Groups I, II, III–A and IV–A of the Periodic Table the reaction product of compounds selected from the group consisting of halides, haloalkoxides, and alkoxides of transition metals selected from the group consisting of the elements of Groups IV–B, V–B and VI–B with a solid catalyst support comprising an hydroxychloride of a metel selected from the group consisting of magnesium, calcium, cadmium, zinc and iron.

3,400,111
METHOD FOR MAKING INTEGRAL CONTAINERS HAVING PRECISELY PARALLEL VERTICAL WALLS

Jacob L. Schwartz, Covina, Calif., assignor, by mesne assignments, to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Oct. 18, 1963, Ser. No. 317,355
2 Claims. (Cl. 264—89)



1. A method of forming, from thermoplastic material characterized by shrinkage which continues during the cooling and setting process, an integral container having precisely parallel vertical walls comprising the steps of:

selecting a sheet of thermoplastic material;

preheating at least a portion of said sheet of material;

preheating a female die;

heating a male die to a preselected temperature and thereafter maintaining the male die at said temperature;

moving the preheated material and female die relative to one another to bring the material into contact with the periphery of the female die;

vacuum drawing the material into the female die;

lowering the male die into the female die to press the material between the male and female dies about the periphery of the female die to thereby form a container rim of increased thickness and density;

fluid pressure forming the material within the female die about the male die;

delivering cooling fluid to the interior of the female die to cool exposed portions of the material which are in contact with the male die, the material in the region of the container rim being protected from the cooling fluid by being compressed between the heated male and the female dies, the material in the region of the container rim thereby remaining in an expanded and softened condition; and

stripping the thus formed container from the male die and allowing the rim region thereof to set.

3,400,112
POLYMERIZATION CATALYSTS AND PROCESS

John Boor, Jr., El Cerrito, and Edward A. Youngman, Lafayette, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 2, 1964, Ser. No. 408,319
12 Claims. (Cl. 260—93.7)

A process is disclosed for polymerizing alphamonoolefins in the presence of hydrogen at an increased rate of polymerization. The process comprises contacting the monoolefin in a liquid reaction mixture which is saturated with hydrogen with a catalyst consisting of the reaction product of a catalytically active titanium trichloride and a catalytically effective amount of an amine or phosphine which has a pK_a value greater than −4 and a molecular volume in the range from that of triethyl amine to that of tridodecyl-amine said reaction product being free of metal organic compounds.

3,400,113
MOLECULAR WEIGHT CONTROL OF POLYDIOLEFINS

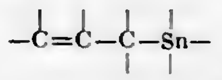
Hermann Winter and Heinrich Weber, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Germany
No Drawing. Filed Dec. 23, 1963, Ser. No. 332,892
Claims priority, application Germany, Jan. 16, 1963, C 28,914, C 28,915
8 Claims. (Cl. 260—94.3)

For obtaining polydiolefins of controlled reduced molecular weights, the process of polymerizing a conjugated diolefin of 4–6 carbon atoms with a Ziegler catalyst, particularly one based on cobalt, and added thereto a nitrile, particularly an azo-bis-carboxylic acid nitrile, the more nitrile added to the catalyst composition, the lower the molecular weight of the polymer.

3,400,114
TIN MODIFIED LITHIUM AROMATIC CATALYST AND PROCESS FOR POLYMERIZING BUTADIENE

William J. Trepka, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed May 7, 1964, Ser. No. 365,824
16 Claims. (Cl. 260—94.3)

1. A method of polymerizing butadiene which comprises bringing together in a hydrocarbon diluent under polymerizing conditions 1,3-butadiene, an initiator which is a sparingly soluble lithium derivative of a halogenated mercapto-aromatic compound and an organotin modifier in which a single tetravalent tin is bonded to at least one allylic-type organic radical with any remaining valences satisfied with aromatic radicals, said allylic-type organic radical being an unsaturated radical in which a double bond is one carbon removed from the tin atom, as represented by the formula



$$-\overset{|}{C}=\overset{|}{C}-\underset{|}{\overset{|}{C}}-\underset{|}{\overset{|}{Sn}}-$$

wherein the unsatisfied valences on the carbon atoms are bonds to hydrogen or hydrocarbon radicals or the carbons of the double bond can be joined in a ring structure.

3,400,115
PROCESS FOR THE POLYMERIZATION OF DIOLEFINS AND CATALYST THEREFOR

Francois Dawans, Brussels, Belgium, and Philippe Teyssie, Colombes, and Emmanuel Goldenberg, Poissy, France, assignors to Institut Francais du Petrole, des Carburants et Lubrifiants, Rueil-Malmaison, France
No Drawing. Filed Feb. 18, 1966, Ser. No. 528,362
Claims priority, application France, Feb. 18, 1965, 6,176; July 3, 1965, 23,417
13 Claims. (Cl. 260—94.3)

1. A catalyst composition comprising:

(a) a halide of a metal selected from the group consisting of Groups IV, V, VI, VII, and VIII of the Periodic Table of the Elements, and

(b) a hydrocarbon coordination compound of nickel and a cyclopolyolefin having at least 6 carbon atoms per ring.

10. A process for the polymerization of a conjugated diolefin, said process comprising the step of polymerizing said conjugated diolefin in intimate contact with a catalyst as defined by claim 1.

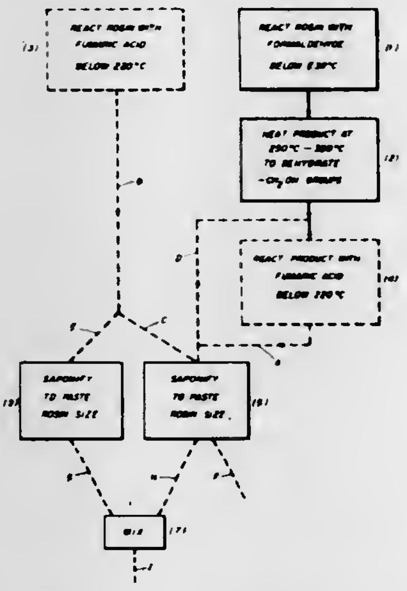
3,400,116
TREATING POLYMER COMPOSITIONS AND PRODUCT RESULTING THEREFROM

Paul J. Boeke, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 300,082, Aug. 5, 1963. This application Mar. 22, 1965, Ser. No. 441,887
4 Claims. (Cl. 260—94.9)

Debilitative action to surface of plastic articles is reduced by impregnating the surface of the article with an antidebilitative agent. The agent is applied to the plastic article by precoating the molding means therewith prior to formation of the desired article.

3,400,117
PROCESS FOR THE PREPARATION OF FUMARATED ROSIN SIZE OF LOW CRYSTALLIZING AND LOW FOAM-PRODUCING PROPERTIES

Michael Joseph D'Errico and Russell Joseph Kulick, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Continuation-in-part of application Ser. No. 328,427, Dec. 5, 1963. This application Mar. 3, 1966, Ser. No. 536,538
3 Claims. (Cl. 260—97.5)


REACT ROSIN WITH FUMARIC ACID BELOW 220°C
(3)
REACT ROSIN WITH FORMALDEHYDE
(1)
HEAT PRODUCT AT 250°C – 300°C TO DEHYDRATE –CH2OH GROUPS
(2)
REACT PRODUCT WITH FUMARIC ACID BELOW 220°C
(4)
SAPONIFY TO PASTE ROSIN SIZE
SAPONIFY TO PASTE ROSIN SIZE
SIZE
(7)

A fumarated methylolated rosin size is prepared by reacting at a temperature below 220° C. one portion of rosin with fumaric acid as fortifying agent, reacting a second portion of rosin with formaldehyde as anticrystallizing agent and heating the latter rosin at 250° C.–300° C. thereby dehydrating the methylol groups introduced into the rosin by the formaldehyde, mixing said portions of rosin and saponifying the mixture to form rosin size; the amounts of formaldehyde and fumaric acid being predetermined so that in the mixture of rosins which is saponified there is $\frac{1}{10}$ to $\frac{1}{3}$ mol of reacted formaldehyde and $\frac{1}{20}$ to $\frac{1}{6}$ mole of reacted fumaric acid per mol of free and reacted rosin present. The process permits a rosin size of superior brightness and sizing efficiency to be produced in compact apparatus with less expenditure of heating.

3,400,118
INTERMEDIATES IN THE PREPARATION OF SECRETIN

Miklos Bodanszky, Princeton, Miguel A. Ondetti, Highland Park, Malcolm H. Von Saltza, Millstone, and Venkatachala L. Narayanan and Seymour D. Levine, North Brunswick, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed May 27, 1966, Ser. No. 553,290
12 Claims. (Cl. 260—112.5)

This invention relates to intermediates and their salts useful in the preparation of the gastrointestinal hormone, secretin. The intermediates of this invention comprise partial sequences of amino acids which, when combined, form the secretin molecule. The novel protective peptides corresponding to these partial sequences are:

(1) Protected L - histidyl - L - seryl-L-aspartylglycine; (amino acids 1 to 4);

(2) Protected L-threonyl-L-phenylalanyl-L-threonyl-L-serine hydrazide; (amino acids 5 to 8);

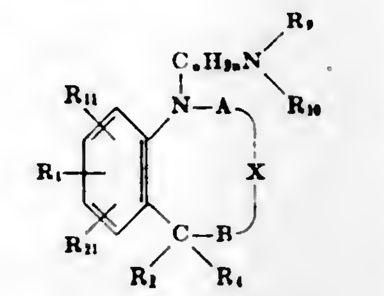
(3) Protected L - glutamyl-L-leucyl-L-seryl-L-arginyl-L-leucine hydrazide; (amino acids 9 to 13); and

(4) Protected L - arginyl-L-aspartyl-L-seryl-L-alanyl-L - arginyl - L - leucyl - L - glutaminyl - L - arginyl - L-leucyl - L - leucyl - L - glutaminylglycyl - L - leucyl - L-valinamide; (amino acids 14 to 27).

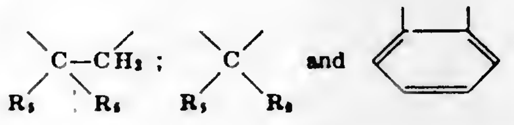
3,400,119
NOVEL 4,1-BENZOTHIAZEPIN-2 (1H)-ONES AND 4,1-BENZOTHIAZEPINES

Wilhelm Wenner, Upper Montclair, and Milan Radoje Uskokovic, Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 445,264, Apr. 2, 1965. This application Mar. 21, 1966, Ser. No. 535,722
22 Claims. (Cl. 260—239.3)

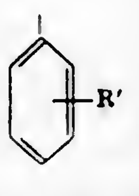
1. A compound selected from the group consisting of compounds of the formula



and acid addition salts thereof with pharmaceutically acceptable acids wherein X is selected from the group consisting of



R_1, R_{11}, and R_{21} are each selected from the group consisting of hydrogen, halogen, lower alkyl and lower alkoxy; R_2 is selected from the group consisting of hydrogen and lower alkyl; R_4 is selected from the group consisting of hydrogen, lower alkyl and

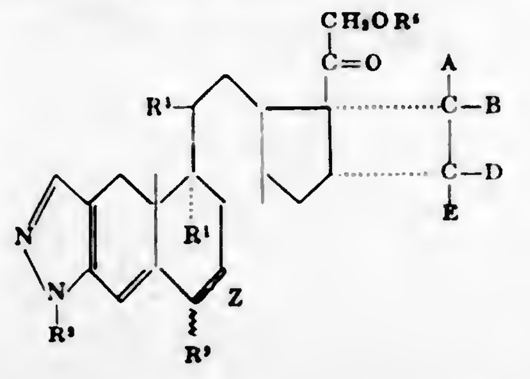


wherein R′ is selected from the group consisting of hydrogen and halogen; A is selected from the group consisting of carbonyl and methylene; B is selected from the group consisting of thio, sulfinyl and sulfonyl; R_5 is selected from the group consisting of hydrogen, phenyl, lower alkyl and carboxy lower alkyl; R_6 is selected from the group consisting of hydrogen, lower alkyl and lower alkanoyloxy, *n* is a whole integer from 2–7; R_9 and R_{10} are selected from the group consisting of, individually, hydrogen, lower alkyl and benzyl; and when taken together with the nitrogen atom, N-lower alkyl-piperazinyl, N-hydroxy-lower alkyl-piperazinyl, pyrrolidinyl, piperazinyl, morpholinyl and piperidyl, at least one of R_9 and R_{10} being other than hydrogen.

3,400,120
16α,17α-ETHYLENE-4-PREGNENO PYRAZOLES

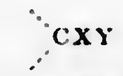
John H. Fried, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed Feb. 1, 1966, Ser. No. 523,900
18 Claims. (Cl. 260—239.5)

1. A compound of the formula



wherein

Z is a carbon-carbon single bond, a carbon-carbon double bond, or the group



bridging the C-6 and C-7 carbon atoms, each of X and Y being hydrogen, chloro or fluoro;

R^1 is hydrogen, fluoro or chloro;

R^2 is hydrogen, chloro, fluoro or methyl;

R^3 is hydrogen, phenyl, fluorophenyl, nitrophenyl or methoxyphenyl;

R^4 is hydrogen, phosphono, tetrahydropyranyl, or a hydrocarbon carboxylic acyl group containing less than 12 carbon atoms;

R^5 is hydroxy or chloro, R^1 being chloro when R^5 is chloro;

each of A and B is hydrogen, chloro, fluoro or an alkyl group of from 1 to 4 carbon atoms;

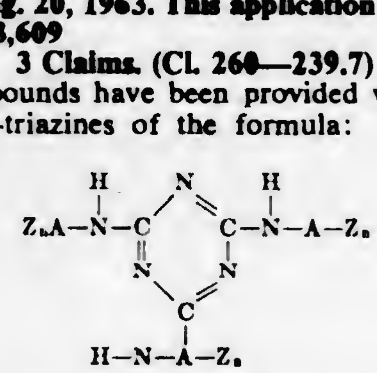
each of D and E is hydrogen, chloro, fluoro, phenyl, an alkyl group of from 1 to 4 carbon atoms, an alkoxy group of from 1 to 4 carbon atoms, or a haloalkyl group of from 1 to 4 carbon atoms; and

A and B or D and E taken together are methylene or difluoromethylene.

3,400,121
2,4,6-TRI-(1-AMINO-SUBSTITUTED AROMATIC)-s-TRIAZINES

Gerhard Weckler and Siegfried Schiessler, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Continuation-in-part of application Ser. No. 303,425, Aug. 20, 1963. This application Mar. 30, 1966, Ser. No. 538,609
3 Claims. (Cl. 260—239.7)

Novel compounds have been provided which are symmetrical 2,4,6-triazines of the formula:



in which A is lower alkylene, phenylene or naphthylene, Z is $—SO_3Y$, $—OSO_3Y$, $—COOY$ or

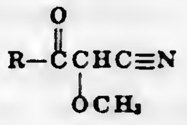
$$—SO_2CH_2CH_2OSO_3Y$$

Y is hydrogen or a salt-forming cation, and *n* is an integer from 1 to 3, provided that when Z is $—SO_3Y$ and $—COOY$, *n* is an integer from 2 to 3.

3,400,122
SULFONAMIDES AND PROCESSES

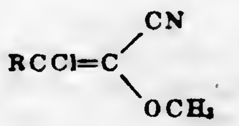
Harry Allen Albrecht, Nutley, and John Thomas Piati, Rutherford, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Apr. 6, 1965, Ser. No. 446,068
6 Claims. (Cl. 260—239.9)

Novel, antibacterial N^1 - (4 - methoxy - 3 - alkyl 5 - isoxazolyl) sulfanilamides, N^1 - (4 - methoxy - 5-alkyl - 3 - isoxazolyl)sulfanilamides and their base addition salts with pharmaceutically acceptable bases are described. The N^1 - (4 - methoxy - 3 - alkyl - 5 - isoxazolyl) sulfanilamides are prepared from the sequential intermediates 4-methyl-5-alkylisoxazole



$$R—\overset{O}{\overset{\|}{C}}\underset{OCH_3}{\underset{|}{C}}HC{\equiv}N$$

wherein R is hydrogen or lower alkyl, and 5 - amino-4 - methoxy - 3 - alkylisoxazole. The N^1 - (4 - methoxy-5 - alkyl - 3 - isoxazolyl)sulfanilamides are prepared from the sequential intermediates



$$RCCl{=}C\begin{matrix}CN\\OCH_3\end{matrix}$$

wherein R is hydrogen or lower alkyl, and 3 - amino-4 - methoxy - 5 - alkylisoxazole.

3,400,123
PROCESS FOR PREPARING 8β-METHYL-11β-HYDROXYSTEROIDS

Wataru Nagata, Nishinomiya-shi, Tetsuo Tomita, Kyoto-shi, and Hiroshi Itazaki, Nishinomiya-shi, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan
No Drawing. Continuation of application Ser. No. 529,673, Feb. 24, 1966. This application Aug. 15, 1967, Ser. No. 661,763
Claims priority, application Japan, Aug. 24, 1962, 37/36,531, 37/36,532, 37/36,533, 37/36,534
26 Claims. (Cl. 260—239.55)

A generally applicable process is provided for the preparation of 8β-methyl-11β-hydroxysteroid from 8β-cyano-11β-hydroxysteroid. The latter is first lactonized, the resulting carboimidic acid lactone is then acylated, the resultant N-acyl-carboimidic acid lactone is subjected to reductive fission of the lactone linkage, the obtained 8β-iminomethyl-11β-hydroxysteroid is hydrolyzed to the 8β-formyl-11β-hydroxysteroid, and the latter is reduced to the objective 8β-methyl-11β-hydroxysteroid. A number of novel intermediates are obtained. The novel final products, such e.g. as 8-methyl-17β-hydroxy-4-androsten-3-one, are useful as anabolic agents.

3,400,124
OPTICAL BRIGHTENING AND NEW COMPOSITIONS OF MATTER

Ichiro Okubo and Michihiro Tsujimoto, Tokyo, Japan, assignors to Mitsui Kagaku Kogyo Kabushiki Kaisha, Chuo-ku, Tokyo, Japan
No Drawing. Continuation-in-part of application Ser. No. 220,904, Aug. 31, 1962. This application May 18, 1966, Ser. No. 550,957
Claims priority, application Japan, Sept. 12, 1961, 36/33,302; July 18, 1962, 37/29,641
8 Claims. (Cl. 260—240)

The invention described in this specification is concerned with new compounds having highly outstanding optical properties which render them useful in a variety of environments as optical brighteners. The new compounds are chemically defined as styrylnaphthoxazoles, especially outstanding members of the groups being those which contain substituents on the styryl grouping, for example, halogen, cyano, or both. The optical activity may be employed to advantage in a wide variety of different uses; however, they are especially useful in the brightening of fabrics.

3,400,125
UNSYMMETRICAL 6-PURINYL DISULFIDES

Frank J. Stiefel, Princeton Junction, Bernard J. Ludwig, North Brunswick, and Frank M. Berger, Princeton, N.J., assignors to Carter-Wallace, Inc., New York, N.Y., a corporation of Maryland

No Drawing. Continuation-in-part of application Ser. No. 264,770, Mar. 13, 1963. This application Feb. 4, 1966, Ser. No. 525,131

12 Claims. (Cl. 260—247.1)

A class of unsymmetrical 6-purinyl disulfide compounds which have antineoplastic activity in laboratory animals. Representative compounds include methyl-6-purinyl disulfide, (4-morpholino)-6-purinyl disulfide, phenyl-6-purinyl disulfide, and (1-piperidino)-6-purinyl disulfide.

3,400,126
2-(4-PYRIDYL)ETHANOL DERIVATIVES

Bernard Brust, Parsippany, Troy Hills, Rodney Ian Fryer, North Caldwell, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 395,302, Sept. 9, 1964. This application June 21, 1965, Ser. No. 465,718

14 Claims. (Cl. 260—247.5)

2(4-pyridyl)ethanol derivatives are prepared by reacting a 4 picolyl compound with a ketone. The products so obtained have useful anti-convulstant properties and also diminish Tremorine induced tremors and alter the activity of liver microsomal enzyme systems.

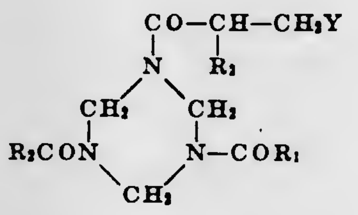
3,400,127
TRIAZINE COMPOUNDS FOR MODIFYING POLYMERS

Giuliana C. Tesoro, Dobbs Ferry, N.Y., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 22, 1963, Ser. No. 303,911

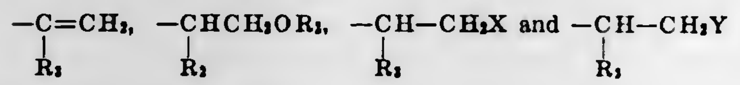
8 Claims. (Cl. 260—248)

1. A compound corresponding to the formula



wherein:

- R_3 is selected from the group consisting of hydrogen and methyl,
- Y is an anion of a strong acid having an ionization constant greater than 10^{-5}, selected from the group consisting of $—OSO_3M$, $—SSO_3M$, $—OCOH$, $OCOCH_3$, and $—OCOC_2H_5$, where M is a member selected from the group consisting of alkali metal and ammonium,
- R_1 and R_2 are selected from the group consisting of



$$-\underset{\substack{|\\R_3}}{C}=CH_2,\quad -\underset{\substack{|\\R_3}}{C}HCH_2OR_3,\quad -\underset{\substack{|\\R_3}}{C}H-CH_2X \text{ and } -\underset{\substack{|\\R_3}}{C}H-CH_2Y$$

wherein: X is halogen.

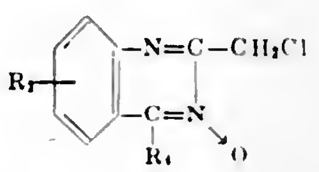
3,400,128
HETEROCYCLIC INTERMEDIATES

Leo Berger, Montclair, Arthur Stempel, Teaneck, Leo Henryk Sternbach, Upper Montclair, and Edward Wenis, Leonia, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Original application June 20, 1961, Ser. No. 118,243. Divided and this application Nov. 27, 1963, Ser. No. 326,338

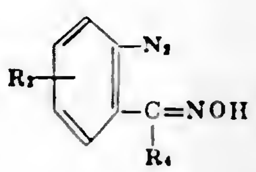
4 Claims. (Cl. 260—256.4)

1. A compound of the formula



wherein R_2 is selected from the group consisting of hydrogen, halogen, nitro and lower alkoxy; and R_4 is selected from the group consisting of pyrryl and furyl.

2. A compound of the formula



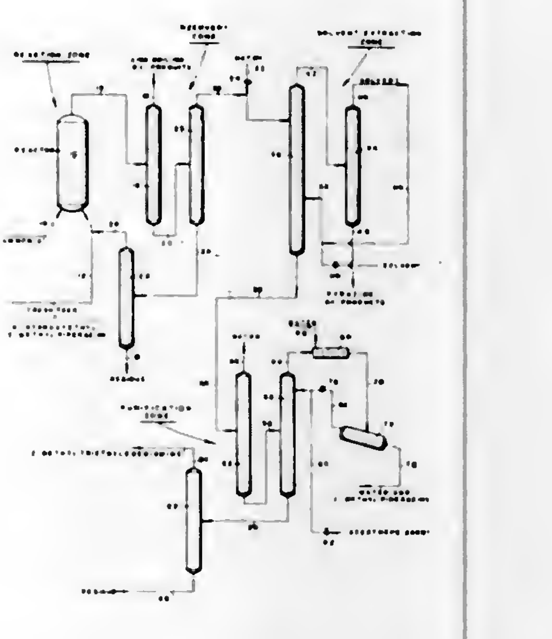
wherein R_2 is selected from the group consisting of hydrogen, halogen, nitro and lower alkoxy, and R_4 is selected from the group consisting of pyrryl and furyl.

3,400,129
PURIFICATION OF 2-METHYLTRIETHYLENEDIAMINE BY SOLVENT EXTRACTION AND AZEOTROPIC DISTILLATION

Thomas H. Cour and Walter H. Brader, Jr., Austin, Tex., assignors to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware

Filed Oct. 15, 1965, Ser. No. 496,529

6 Claims. (Cl. 260—268)



Crude 2-methyltriethylenediamine can be purified in a process which incorporates a two-solvent extraction step with one of the solvents being water and the other an organic solvent for pyrazines, an azeotropic distillation step where 2-methylpiperazine is azeotropically distilled and a step where the purified 2-methyltriethylenediamine is recovered.

3,400,130
SUBSTITUTED Δ⁸-OCTAHYDROQUINOLINE-2,7-DIONES AND THEIR 7-ALKYLENE THIOKETALS

Arvin P. Shroff, Piscataway, N.J., assignor to Ortho Pharmaceutical Corporation, a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 467,102, June 25, 1965. This application May 25, 1967, Ser. No. 641,130

8 Claims. (Cl. 260—289)

Δ^8-octahydroquinoline-2,7-diones and their 7-alkylene thioketals are central nervous system stimulating agents.

3,400,131
1,3-DI(4-PYRIDYL)-2-PROPANOL DERIVATIVES

Bernard Brust, Parsippany, Troy Hills, Rodney Ian Fryer, North Caldwell, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 349,771, Mar. 5, 1964. This application June 21, 1965, Ser. No. 465,754

6 Claims. (Cl. 260—294.8)

1,3-di(4-pyridyl)-2-propanol derivatives are prepared by reacting a picolyl metal compound with a halide of a heterocyclic carboxylic acid. The compounds exhibit among other pharmocological properties, the ability to diminish Tremorine induced tremors and to inhibit enzymatic oxidative reactions of the liver microsomal drug metabolizing enzymes.

3,400,132
TERTIARY 2,6-DIHALO-ISONICOTINAMIDE DERIVATIVES

Bruce Wayne Horrom, Waukegan, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed May 31, 1966, Ser. No. 553,693

9 Claims. (Cl. 260—294.9)

Tertiary 2,6-dihaloisonicotinamides carrying specific short-chain alkyl, chloroalkyl, cyanoalkyl or hydroxyalkyl substituents on the amido nitrogen are highly effective as tranquilizers in warm-blooded animals at very low oral or intraperitoneal dosages. In larger dosages, the new compounds act as sedatives.

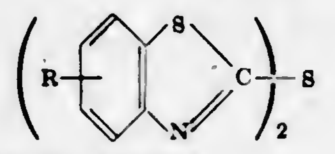
3,400,133
METHOD OF REARRANGING THIOETHERS TO THIONES

Sidney T. Webster, Nitro, and John J. D'Amico, Dunbar, W. Va., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

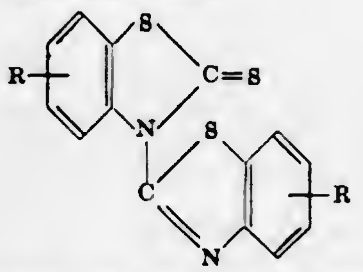
No Drawing. Filed Oct. 16, 1964, Ser. No. 404,516

6 Claims. (Cl. 260—305)

1. The method of rearranging a thioether having the formula



to a thione having the formula



where R is selected from the group consisting of hydrogen, Cl, NO_2, phenyl, lower alkoxy and lower alkyl which comprises heating a composition consisting essentially of said thioether with a compound selected from the group consisting of mercaptans, salts of mercaptans, trifluoroacetic acid, paratoluene sulfonic acid, concentrated sulfuric acid and mixtures thereof.

3,400,134
PREPARATION OF TETRACYANO-1,4-DITHIIN

Howard E. Simmons, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Oct. 1, 1958, Ser. No. 764,516. Divided and this application May 5, 1966, Ser. No. 547,781

1 Claim. (Cl. 260—327)

Tetracyano-1,4-dithiin can be made by reacting 1,2-disodiothioethylene with perchloryl fluoride in an anhydrous liquid medium. Tetracyano-1,4-dithiin is useful as a chemical intermediate for the production of dyestuffs by reaction with aromatic or heterocyclic amines or azomethines, as an insecticide and for the production of tetracyanothiophene which is formed by pyrolysis of the dithiin.

3,400,135
OXETANE COMPOUNDS

Roger J. Polak, Mount Carmel, and John A. Wojtowicz, East Haven, Conn., and Joel A. Zaslowsky, Baltimore, Md., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Sept. 28, 1964, Ser. No. 399,847

3 Claims. (Cl. 260—333)

Oxetanes are prepared in a two stage reaction in which in the first stage a halogen is reacted with an ethylenic alcohol and a monohydric alcohol to form an unsymmetrical ether. In the second stage the ether is dehydrohalogenated to yield oxetane compounds such as 3-methoxy oxetane, 3-ethoxy oxetane, 3-cyclohexoxy oxetane, 3-dodecoxyoxetane etc.

3,400,136
METHOD FOR PREPARING 6,6-ETHYLENE STEROIDS

Kenneth G. Holden, Stratford, N.J., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 24, 1965, Ser. No. 509,623

10 Claims. (Cl. 260—397.4)

1. The method of preparing 6,6-ethylene-3-keto-$\Delta^{4,5}$-steroids comprising reacting a 3-methoxy or ethoxy-3,5-diene steroid with β-acetoxy-ethylmercuric acetate in the presence of an excess of a Lewis acid catalyst.

7. The method of claim 1 characterized in that the 3-methoxy-3,5-diene steroid is 3-methoxy-17β-acetoxy-19-nor-androsta-3,5-diene and the product is 6,6-ethylene-19-nor-testosterone acetate.

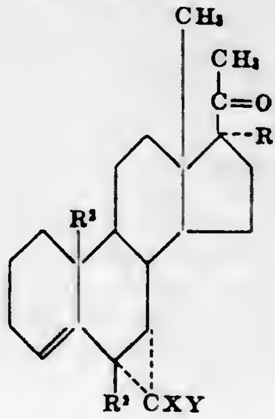
3,400,137
3-DESOXY-PREGNENES AND -19-NOR-PREGNENES AND THEIR PREPARATION

Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Feb. 17, 1966, Ser. No. 528,099

7 Claims. (Cl. 260—397.4)

1. Steroids of the formula:

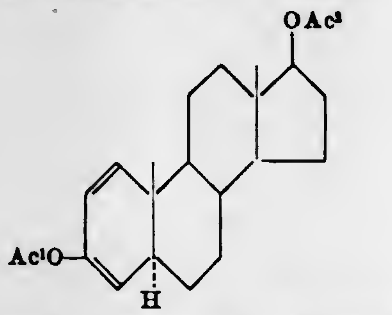


wherein R^1 is hydrogen, hydroxy, or a hydrocarbon carboxylic acyloxy group; R^2 is hydrogen, methyl, chloro, or fluoro; R^3 is hydrogen or methyl; and each of X and Y is chloro or fluoro.

3,400,138
$\Delta^{1,3}$-5α-ANDROSTADIEN-3,17β-DIOL-3,17-DIESTERS

Rudolf Wiechert, Berlin, Germany, assignor to Schering AG., Berlin, Germany
No Drawing. Filed June 3, 1965, Ser. No. 461,177
Claims priority, application Germany, July 1, 1964, Sch 35,410
5 Claims. (Cl. 260—397.5)

Androstadiens of the formula



wherein Ac^1 and Ac^2 are lower carboxylic acid acyl groups are disclosed. The compounds have exceptionally strong anabolic activity at small dosages.

3,400,139
SULFIDES OF HIGHER FATTY ACIDS

George M. Calhoun, Cleveland, Ohio, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Original application July 3, 1959, Ser. No. 824,796, now Patent No. 3,189,547, dated June 15, 1965. Divided and this application Feb. 3, 1965, Ser. No. 430,197
8 Claims. (Cl. 260—399)

Novel oil soluble dithioethers of an ester of a diol, such as polyethylene glycol and 2,2′-thiodiethanol, and a fatty acid such as oleic acid are excellent lubricating oil additives.

3,400,140
SULFURIZED OXYMOLYBDENUM ORGANOPHOSPHORODITHIOATES AND PROCESS THEREFOR

Eugene V. Rowan, Rowayton, and Homer H. Farmer, Westport, Conn., assignors to R. T. Vanderbilt Company, Inc., New York, N.Y., a corporation of New York
No Drawing. Filed Oct. 28, 1965, Ser. No. 505,451
11 Claims. (Cl. 260—429)

1. A molybdenum-containing compound having the generic structure:

$$[(RO)_2PS—S]_2Mo_2S_2O_2$$

wherein R is an alkyl, cycloalkyl, aryl or alkaryl having 1 to 30 carbon atoms; said compound having antiwear and extreme pressure properties.

3,400,141
METHOD OF PREPARING ALIPHATIC TIN HALIDES

Peter Albert Theodore Hoye, Kinver, Stourbridge, and Philip Sunderland, Wollescote, Stourbridge, England, assignors to Albright & Wilson (Mfg.) Limited, Oldbury, near Birmingham, Warwickshire, England, a British company
No Drawing. Filed Mar. 23, 1965, Ser. No. 442,204
17 Claims. (Cl. 260—429.7)

1. The process of producing aliphatic tin halide which comprises reacting stannous halide with aliphatic halide wherein each halide has an atomic number of at least 17, in the presence of a catalyst containing a divalent chalcogen of atomic number 16–34 thereby forming aliphatic tin halide.

3,400,142
PREPARATION OF EQUILIBRATED TETRAALKYL LEAD MIXTURES

Shinichi Imura and Yoshikazu Tamai, Tokyo, Japan, assignors to Echiru Kagaku Kogyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Feb. 1, 1965, Ser. No. 429,670
Claims priority, application Japan, Feb. 11, 1964, 39/6,866; Dec. 29, 1964, 39/74,328
3 Claims. (Cl. 260—437)

A process for preparing equilibrated tetraalkyl lead mixtures by redistribution of alkyl radicals which comprises affecting such redistribution in the presence of a trialkyl lead salt of a cation exchange resin, represented by the formula RE—SO_3H, wherein RE represents the resin portion.

3,400,143
PROCESS FOR MAKING TETRAMETHYL LEAD

Charles Anthony Sandy, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed May 17, 1965, Ser. No. 456,478
10 Claims. (Cl. 260—437)

Preparation of tetramethyl lead by reaction of monosodium lead alloy with methyl chloride in the presence of ethylenediamine and/or 2-methoxyethylamine as the catalyst. Water and monohydric organic compounds are optional ingredients of the reaction system.

3,400,144
BASIC COPPER-(II)-SALTS OF ALKYLSULFURIC ACIDS

Otto Scherer, Bad Soden, Taunus, and Konrad Albrecht, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed July 7, 1965, Ser. No. 470,222
Claims priority, application Germany, July 23, 1964, F 43,531, F 43,532
2 Claims. (Cl. 260—438.1)

Fungicides of the general formula

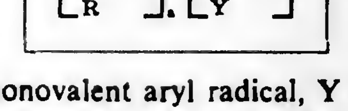
$$(R—OSO_3)_2Cu.3Cu(OH)_2$$

in which R stands for a straight chain or branched alkyl radical with 8 to 18 carbon atoms have been disclosed. Representative examples are basic copper-(II)-n-dodecyl sulfate and basic copper-(II)-n-octadecyl sulfate.

3,400,145
CYCLOPOLYSILOXANES

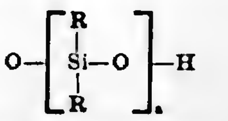
Tse C. Wu, Waterford, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Apr. 12, 1965, Ser. No. 447,541
11 Claims. (Cl. 260—448.2)

Cyclotrisiloxanes and cyclotetrasiloxanes which can be incorporated into a polysiloxane while still retaining the cyclic structure are encompassed by the formula:



$$\left[-\overset{R}{\underset{R}{Si}}-O-\right]_a\left[-\overset{Y}{\underset{Y}{Si}}-O-\right]$$

where R is a monovalent aryl radical, Y is selected from the group consisting of hydroxyl radicals and hydrolyzable radicals, and *a* has a value of 2 or 3. Compounds within the scope of the present invention can be prepared by the reaction of:



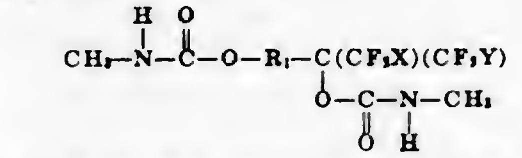
$$HO-\left[\overset{R}{\underset{R}{Si}}-O\right]_a-H$$

with $SiCl_4$. The cyclotrisiloxanes and cyclotetrasiloxanes of the present disclosure are useful in the manufacture of capacitors.

3,400,146
DI(N-METHYLCARBAMATES) OF FLUOROKETONE DERIVATIVES

Everett E. Gilbert, Morris Township, Morris County, and Julian A. Otto, Stockholm, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed May 5, 1964, Ser. No. 365,149
4 Claims. (Cl. 260—479)

1. A di(N-methylcarbamate) of a fluoroketone derivative having the general formula:

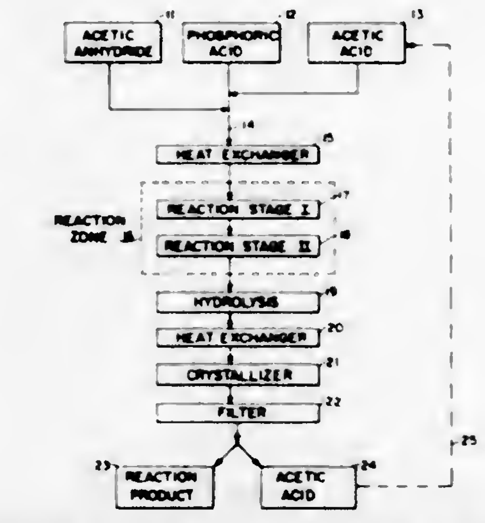


$$CH_3-\overset{H}{\overset{|}{N}}-\overset{O}{\overset{\|}{C}}-O-R_1-\underset{O-\underset{O}{\underset{\|}{C}}-\underset{H}{\underset{|}{N}}-CH_3}{\underset{|}{C}}(CF_2X)(CF_2Y)$$

wherein R_1 is an aryl radical selected from the group consisting of phenyl, naphthyl and alkyl-substituted, cycloalkyl-substituted, alkylmercapto-substituted, halo-substituted and phenyl-substituted phenyl radicals which is connected to the adjacent carbon atom by one of an ortho- and para-position and X and Y are members of the group consisting of fluorine and chlorine.

3,400,147
PROCESS FOR PREPARATION OF ORGANOPHOSPHOROUS COMPOUNDS

Lawrence Rogovin, Denis P. Brawn, and John N. Kalberg, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 30, 1965, Ser. No. 443,844
7 Claims. (Cl. 260—502.4)

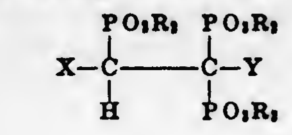


A continuous process for preparation of ethane-1-hydroxy-1,1-diphosphonic acid which employs an acetic acid solvent for a reaction between phosphorous acid and acetic anhydride, the reaction temperature being in the range 150° F.–350° F.; said process including the steps of continuously preparing a reaction solution, continuously metering at least a sufficient amount of water into a stream of the reaction solution to hydrolyze substantially all of the acetyl-containing compounds in the reaction solution and recovering free ethane-1-hydroxy-1,1-diphosphonic acid.

3,400,148
PHOSPHONATE COMPOUNDS

Oscar T. Quimby, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 23, 1965, Ser. No. 489,637
20 Claims. (Cl. 260—502.4)

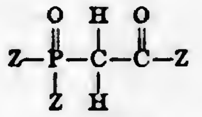
1. Compounds having the formula:



$$X-\overset{PO_3R_2}{\underset{H}{C}}-\overset{PO_3R_2}{\underset{PO_3R_2}{C}}-Y$$

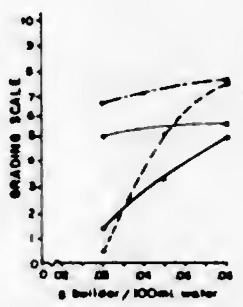
wherein X and Y are each H or OH so that when X is H, Y is OH; and when Y is H, X is OH; and wherein each R is H, alkali metal, or lower alkyl radicals having from 1 to about 6 carbon atoms.

6. A process of preparing ethane-1-hydroxy-1,1,2-triphosphonic acid which comprises reacting a compound having a formula:



$$Z-\underset{Z}{\overset{O}{\overset{\|}{P}}}-\overset{H}{\underset{H}{C}}-\overset{O}{\overset{\|}{C}}-Z$$

wherein Z represents a hydroxyl group, chlorine or bromine, with at least one inorganic phosphorus-containing compound selected from the group consisting of phosphorus acids, phosphorous acid anhydrides, phosphorous acid chlorides and phosphorous acids bromides, such that the reactants are present in a proportion which provides an atomic carbon-to-phosphorus ratio of about 2:3 and an anhydrizing power of from about 1 to about 4 units for each mole of said ethane-1-hydroxy-1,1,2-triphosphonic acid molecule formed by the reaction at a temperature in the range of from about 50° C. to about 160° C. and in the presence of polar inert organic solvent selected from the group consisting of di-n-propyl sulfone, tetramethylene sulfone, dibutyl oxide, diphenyl oxide, bis-2-methoxyethyl ether, nitrobenzene, 1,1,2,2-tetrachloroethane, tetrahydrofuran, di-n-propyl ether, and dioxane.



19. A process for preparing ethane-2-hydroxy-1,1,2-triphosphonic acid which comprises the steps of reacting tetraalkyl ethene-2-alkoxy-1,1-diphosphonate, the alkyl radical containing less than 7 carbon atoms, with hydrogen dialkylphosphite, the alkyl radical containing less than 7 carbon atoms, in the presence of a strong base catalyst selected from sodium, potassium, lithium, and hydrides of these metals at a temperature in the range of from about 20° C. to about 100° C. for a period of from about 1 to about 3 hours to form a reaction product, hydrolyzing said reaction product by adding an excess of an aqueous hydrogen halide and heating to a temperature of from about 105° C. to about 110° C. for a period of from about 2 to 8 hours.

3,400,149
PROCESS FOR PREPARING ORGANO-PHOSPHOROUS COMPOUNDS USING PHOSPHOROUS ACID ANHYDRIDES

Oscar T. Quimby, Colerain Township, Ohio, and James B. Prentice, Batesville, Ind., assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Continuation-in-part of application Ser. No. 444,033, Mar. 30, 1965. This application May 31, 1966, Ser. No. 553,648
9 Claims. (Cl. 260—502.4)

1. A process for preparing ethane-1-hydroxy-1,1-diphosphonic acid which comprises the steps of adding P_4O_6 to acetic acid in the presence of an organic solvent, the molar ratio of P_4O_6 to acetic acid being in the range of from about 1:1.5 to about 1:50, respectively, thereby

forming a reaction mixture containing phosphite intermediate compounds, heating said reaction mixture to a temperature in the range of from about 90° C. to about 150° C. for a minimum period of time of about 3 minutes, thereby converting said phosphite intermediate compounds to phosphonate compounds containing carbon atoms bonded directly to phosphorus atoms and, thereafter, adding water to said heated reaction mixture to hydrolyze said phosphonate compounds containing carbon atoms bonded directly to phosphorus atoms to form a hydrolyzed solution containing free ethane-1-hydroxy-1, 1-diphosphonic acid and free acetic acid, the amount of water being added in excess of the theoretical amount necessary to convert the anhydride of phosphorous acid to free phosphonic acid, the temperature during the hydrolysis being in the range of from about 90° C. to about 170° C.

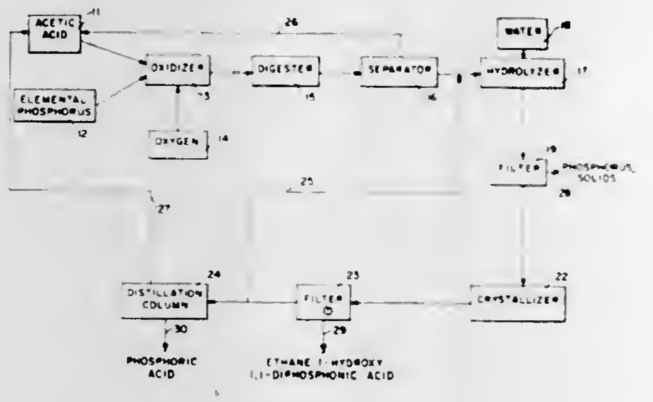
3,400,150

PROCESS FOR PREPARING HYDROXYDIPHOSPHONIC ACIDS FROM ELEMENTAL PHOSPHOROUS, OXYGEN AND CARBOXYLIC ACIDS

David D. Whyte, Wyoming, and Phillip F. Pflaumer and Jimmie K. Dyer, Colerain Township, Hamilton County, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Continuation-in-part of application Ser. No. 475,887, July 29, 1965. This application May 31, 1966, Ser. No. 554,134

13 Claims. (Cl. 260—502.4)



1. A process for preparing a hydroxydiphosphonic acid which comprises the steps of

(a) preparing a dispersion of white (yellow) phosphorus in an organic medium comprising an aliphatic carboxylic acid having from 2 to about 30 carbon atoms,

(b) introducing an oxygen containing gas into said dispersion with vigorous mixing at a temperature of about 20° C. to about 140° C. for a period of from about 1 minute to about 6 hours,

(c) and thereafter hydrolyzing the reaction mixture with water to obtain the hydroxydiphosphonic acid.

9. A process for preparing ethane-1-hydroxy-1,1-diphosphonic acid which comprises the steps of

(a) preparing a dispersion of white (yellow) phosphorus in acetic acid,

(b) introducing an oxygen containing gas into said dispersion with vigorous mixing while the dispersion has a temperature in the range of from about 20° C. to about 140° C. for a period of from about 1 minute to about 6 hours,

(c) digesting the reaction mixture at a temperature in the range of from about 70° C. to about 170° C. for a period of from about 1 minute to about 4 hours,

(d) and, thereafter, hydrolyzing the digested reaction mixture with water.

3,400,151

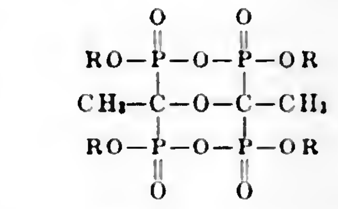
BICYCLIC DIMER OF ETHANE-1-HYDROXY-1,1-DIPHOSPHONIC ACID AND SALTS THEREOF

Oscar T. Quimby, Colerain Township, Hamilton, Ohio, and James B. Prentice, Batesville, Ind., assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 28, 1967, Ser. No. 694,112

2 Claims. (Cl. 260—502.4)

Compounds having a formula:



$$\begin{array}{ccccc} & \mathrm{O} & & \mathrm{O} & \\ & \| & & \| & \\ \mathrm{RO-} & \mathrm{P} & \mathrm{-O-} & \mathrm{P} & \mathrm{-OR} \\ & | & & | & \\ \mathrm{CH_3-} & \mathrm{C} & \mathrm{-O-} & \mathrm{C} & \mathrm{-CH_3} \\ & | & & | & \\ \mathrm{RO-} & \mathrm{P} & \mathrm{-O-} & \mathrm{P} & \mathrm{-OR} \\ & \| & & \| & \\ & \mathrm{O} & & \mathrm{O} & \end{array}$$

in which R is hydrogen, sodium, potassium, lithium, or ammonium. The compounds are of the class of bicyclic dimers of ethane-1-hydroxy-1,1-diphosphonic acid, useful as sequestering agents and detergency builders.

3,400,152

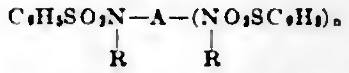
SULFONAMIDES AND SULFONIMIDES

Dale G. Block, Cleveland, Raymond E. Bailey, Mentor, and Jack L. Towle, East Cleveland, Ohio, assignors, by mesne assignments, to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware

No Drawing. Filed June 25, 1964, Ser. No. 378,048

19 Claims. (Cl. 260—556)

This invention comprises new sulfoamide and sulfonimide compounds having at least one alkynyl radical attached to the nitrogen of benzenesulfonamide or benzenesulfonimide or derivative thereof. These compounds are represented by the formula



$$\mathrm{C_6H_5SO_2\underset{\displaystyle R}{\underset{|}{N}}-A-(\underset{\displaystyle R}{\underset{|}{N}}O_2SC_6H_5)_n}$$

wherein *n* is 0 or 1. When *n* is 0 , A represents various monovalent radicals as defined hereinafter, and when *n* represents 1, A represents a divalent radical as defined hereinafter. These compounds have an alkynyl radical in either the R or A group, and are useful as plasticizers or brighteners in nickel electroplating baths. Typical compounds of this invention are N-propargylbenzenesulfonamide, N,N-bis(1-(4-hydroxybutyne-2))benzenesulfonamide, etc.

3,400,153

NITROALKYL CARBAMOYLOXIMES

Linwood K. Payne, Jr., Charleston, W. Va., and Mathias H. J. Weiden, Raleigh, N.C., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 23, 1964, Ser. No. 398,744

4 Claims. (Cl. 260—566)

2-nitro or cyano alkanaldoxime carbamates are usable as pesticides especially as broad spectrum insecticides and miticides.

3,400,154

ALKYLIDENE BIS(α,α′-DIAMINO-2,6-XYLENOLS)

Thomas J. Hairston, Angleton, and Jerry M. Hawkins and Stephen P. Edwards, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 26, 1965, Ser. No. 474,973

8 Claims. (Cl. 260—570)

Alkylidenebisphenols are reacted with formaldehyde and ammonia or a primary alkyl amine of 1–4 carbon atoms or an alkenyl amine of 3–4 carbon atoms to make the corresponding tetra(aminomethyl), tetra(alkylaminomethyl), or tetra(alkenylaminomethyl) bisphenols. These bisphenol tetramines are reactive curing agents for epoxy resins, producing cured resins having high heat distortion values.

3,400,155

N-[1-PHENYL-PROPYL-(2)]-N-AMINOETHYL-(2′)-DIPHENYLAMINES AND THE SALTS THEREOF

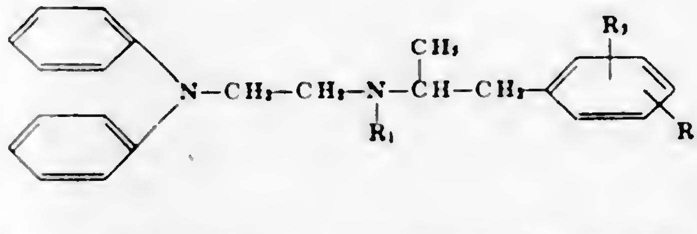
Gustav Ehrhart, Bad Soden, Taunus, Ernst Lindner, Frankfurt am Main, and Heinrich Ott, Eppstein, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Original application Feb. 25, 1964, Ser. No. 347,109, now Patent No. 3,345,361, dated Oct. 3, 1967. Divided and this application Apr. 25, 1967, Ser. No. 647,271

Claims priority, application Germany, Mar. 1, 1963, F 39,147

5 Claims. (Cl. 260—570.5)

Diphenylamines and physiologically tolerable acid addition salts thereof capable of dilating the coronary vessels and having the formula



in which R_1 is hydrogen or methyl and R_2 and R_3 are hydrogen or methoxy.

3,400,156

TRIAMINOTRIPHENYLAMINIUM SALTS

Jerry Peter Millionis, Franklin Township, Somerset County, and Peter Vincent Susi, Middlesex, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 215,791, Aug. 9, 1962. This application Jan. 27, 1966, Ser. No. 523,243

4 Claims. (Cl. 260—576)

A class of triarylaminium salts, including tris(p-dialkylaminophenyl)aminium salts, are useful as infrared absorbers, particularly in organic plastic substrates.

3,400,157

PRODUCTION OF BIS[BETA(N,N-DIMETHYLAMINO)ALKYL]ETHERS

Fedor Poppelsdorf, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Nov. 27, 1964, Ser. No. 414,454

6 Claims. (Cl. 260—584)

Bis[beta(N,N - dimethylamino)alkyl]ethers are produced from bis(beta-haloalkyl)ethers by reaction with trimethylamine to form the bis-methohalide of bis[beta (N,N - dimethylamino)alkyl]ether and subsequently reacting the latter compound with dimethylamine to form the desired ether product. The bis[beta(N,N-dimethylamino)alkyl]ethers are useful as catalysts for the reaction of organic isocyanates with water and with alcohols.

3,400,158

4-(1-HYDROXY-2,6,6-TRIMETHYL-2-CYCLOHEXEN-1-YL)-3-BUTENE-2-ONE

Donald L. Roberts, Winston-Salem, N.C., assignor to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey

No Drawing. Filed Nov. 2, 1966, Ser. No. 591,429

1 Claim. (Cl. 260—587)

The novel compound, 4-(1-hydroxy-2,6,6-trimethyl-2-cyclohexen - 1 - yl) - 3 - butene-2-one, is prepared from β-ionone by epoxidation and hydrolysis. Said compound has utility as an intermediate in the production 1-hydroxy-4-keto-α-ionone which in turn may be used to produce the plant abscission accelerating hormone abscisin II.

3,400,159

NOVEL MUSK-LIKE SUBSTITUTED ACENAPHTHENES AND PROCESS

Ernst T. Theimer, Rumson, and Jack H. Blumenthal, Oakhurst, N.J., assignors to International Flavors & Fragrances Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 14, 1963, Ser. No. 323,593

10 Claims. (Cl. 260—592)

Novel acenaphthenes and tetrahydronaphthalenes having a musk-like odor and intermediates for producing same, including 7 - acetyl - 2a,3,4,5 - tetrahydro - 1,1,5,5-tetramethylacenaphthene, and process for producing such materials.

3,400,160

PROCESS FOR THE PRODUCTION OF SATURATED CARBONYL COMPOUNDS FROM UNSATURATED HYDROCARBONS

Sumi Masaki, Fujisawa-shi, Tadashi Ohmori, Kawasaki-shi, Takeshi Hoshino, Meguro-ku, Tokyo, and Yasuo Fujiwara, Suginami-ku, Tokyo, Japan, assignors to Nippon Oil Company, Limited, Tokyo, Japan, a corporation of Japan

No Drawing. Filed May 11, 1964, Ser. No. 366,593

Claims priority, application Japan, May 25, 1963, 38/27,153

4 Claims. (Cl. 260—597)

1. A process which comprises reacting at least one aliphatic ethylenically unsaturated hydrocarbon with an oxidizing agent consisting of a nitric acid solution of mercuric nitrate to form a mercuric nitrate-hydrocarbon complex, decomposing said complex in the presence of nitrous acid at a temperature in the range of from about 0° C. to about 100° C., said nitrous acid being present in an amount sufficient to form the corresponding member of the group consisting of saturated aldehydes and saturated ketones, and recovering the thus formed saturated compounds.

3,400,161

PURIFICATION OF ALPHA-METHYLIDENE ALKENALS

Walter August Gleich, John Hart La Rochelle, and Gregor Hans Riesser, Pasadena, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 27, 1965, Ser. No. 428,571

2 Claims. (Cl. 260—601)

Alpha-methylidene alkenals, particularly those of 3 to 4 carbon atoms, such as acrolein and methacrolein, containing minor amounts of corresponding saturated aldehydes as impurities, are purified by reacting with a nontertiary alcohol, particularly a secondary alcohol of 4 to 10 carbon atoms per molecule, as reducing agent, in the presence of a corresponding aluminum alcoholate, at −30° to 70° C. for about 5 to about 210 minutes, preferably 10 to 20 minutes. The nontertiary alcohol is used in an amount stoichiometrically greater than the saturated aldehyde but less than the alkenal, and the reaction is terminated after conversion of at least 80% of the saturated aldehyde impurity and between 5 and 55%, preferably 35 to 50%, of the alkenal has been converted to corresponding alcohol, by contacting the mixture with sufficient water to destroy the aluminum alcoholate catalyst. The reaction mixture is then distilled to recover an alkenal.

3,400,162

PREPARATION OF MYRCENE HYDROBROMIDES

Muus G. J. Beets and Wilhelmina Meerburg, Hilversum, Netherlands, assignors to International Flavors & Fragrances I.F.F. Netherlands N.V., Zaandam, Provincialeweg, Netherlands, a corporation of the Netherlands

No Drawing. Filed Mar. 31, 1965, Ser. No. 444,419

9 Claims. (Cl. 260—601)

A process for the hydrobromination of myrcene to selectively direct the hydrobromide addition to the conjugated double bonds of the myrcene molecule rather than the isolated double bond characterized by conducting the reaction at a temperature of from about 60° C. to about 120° C. and preferably at from about 75° C. to about 105° C.

3,400,163
BICYCLIC HETEROCYCLIC SEC- AND TERT-PHOSPHINES

Ronald F. Mason, Mill Valley, and John L. Van Winkle, San Lorenzo, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 30, 1965, Ser. No. 468,572

20 Claims. (Cl. 260—606.5)

Hydrocarbyl-substituted or unsubstituted monophosphabicycloalkanes of 8 to 9 atoms in which the smallest phosphorus-containing ring contains at least 5 atoms and the phosphorus atom therein is a member of a bridge linkage but is not a bridgehead atom, and the process of producing them by reacting in substantially equimolecular amounts cyclic hydrocarbon of 7 to 8 ring carbon atoms containing two non-conjugated and non-homoconjugative double bonds with a phosphine of the formula QPH_2 in which Q represents hydrogen or a hydrocarbyl group in the presence of a free radical-generating catalyst and in the absence of substantial amounts of oxygen. The said monophosphabicycloalkanes are useful as phosphine ligands for organometallic complex catalysts.

3,400,164
SELECTIVE HYDROGENATION OF CYCLODODECATRIENE TO CYCLODODECENE

Charles G. McAlister, Lake Charles, La., assignor to Columbian Carbon Company, New York, N.Y., a corporation of Delaware

Filed July 5, 1966, Ser. No. 562,780

7 Claims. (Cl. 260—666)

In the selective hydrogenation of cyclododecatrienes and substituted cyclododecatrienes to the corresponding cyclomonoolefin, many problems arise which are not encountered in hydrogenating other unsaturated or cyclic compounds. As many as 43 different isomers, derivatives, and degradation products may appear during the selective hydrogenation of cyclododecatriene-1,5,9. The many dependent variables and problems such as hydrogen pressure, amount of hydrogen consumed, variations in hydrogen pressure, catalyst concentration and identity, and side reactions such as isomerization and ring collapse, create difficulties which have not been solved by the prior art. The present process involves critical conditions and procedures, including maintaining the hydrogen pressure at between about 30 p.s.i.g. and about 100 p.s.i.g. until from about 50% to about 90% of the stochiometric amount of hydrogen to obtain the monoolefin is reacted, then continuing the hydrogenation at a lower pressure. The temperature is also critical. A new isomer, cis,cis,cis-cyclododecatriene-1,5,9 is disclosed.

3,400,165
SELECTIVE HYDROGENATION OF CYCLODODECATRIENE

Ralph Levine, Lake Charles, La., assignor to Columbian Carbon Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 562,525, July 5, 1966. This application Dec. 20, 1966, Ser. No. 603,164

9 Claims. (Cl. 260—666)

Processes are described for minimizing the production of aromatic by-products during the hydrogenation of cyclododecatrienes by maintaining a reaction temperature of less than 160° C. and a hydrogen pressure of from about 20 p.s.i.a. to about 45 p.s.i.a. during the initial stages of the reaction and then continuing the hydrogenation at an increased temperature of up to about 300° C. under a hydrogen pressure of less than about 20 p.s.i.a. Illustrations show the production of high yields of cyclododecene in processes in which the aforementioned temperature and pressure changes are effected after from about 0.75 mole to about 1.8 moles of hydrogen per mole of cyclododecatriene have reacted.

3,400,166
SELECTIVE HYDROGENATION OF CYCLODODECATRIENE

Charles G. McAlister, Lake Charles, La., assignor to Columbian Carbon Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 21, 1966, Ser. No. 603,462

14 Claims. (Cl. 260—666)

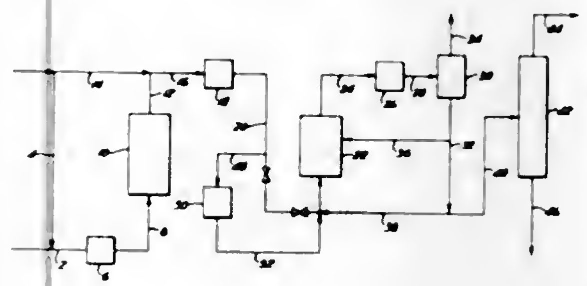
Processes are described for minimizing the production of aromatic byproducts during the hydrogenation of cyclododecatrienes by maintaining a reaction temperature of less than 160° C. during the initial stages of the reaction and then continuing the reaction at an increased temperature of up to about 300° C. Illustrations show such hydrogenation reactions conducted under both constant hydrogen pressure and gradually decreasing pressures in which the initial low temperature is maintained until from about 0.75 mole to about 1.85 moles of hydrogen per mole of cyclododecatriene have reacted.

3,400,167
HYDROGENATION OF A DEALKYLATED AROMATIC COMPOUND

Alfred M. Henke, Springdale, William C. Offutt, Pittsburgh, and Raynor T. Sebulsky, Verona, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Feb. 10, 1966, Ser. No. 526,497

2 Claims. (Cl. 260—667)



A process for treating the effluent from a hydrodealkylation reactor containing a dealkylated aromatic and sulfur which involves contacting such effluent with a metal capable of being converted to the corresponding metal sulfide, for example, nickel, and thereafter subjecting the resulting effluent to hydrogenation to convert the dealkylated aromatic to the corresponding cycloparaffin, for example, cyclohexane.

3,400,168
PRODUCTION OF HIGH-PURITY BENZENE FROM CRACKED PETROLEUM RESIDUES

Junichi Fukuda, Shinobu Masamune, Yasuo Suzuki, Mitsuo Sagara, and Yoshio Okabe, Yokkaichi-shi, Mie-ken, Japan, assignors to Mitsubishi Petrochemical Co., Ltd., Tokyo, Japan

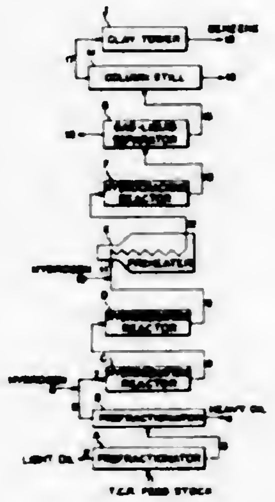
Filed May 26, 1966, Ser. No. 553,136

Claims priority, application Japan, June 2, 1965, 40/32,263

4 Claims. (Cl. 260—672)

The residual fraction from the preparation of gaseous olefins by steam cracking of certain petroleum cuts is utilized as a feed stock for the production of high-purity benzene. This feed stock is subjected to a first stage

hydrogenation in the presence of a solid hydrogenation catalysts such as cobalt-molybdenum or palladium, at a hydrogen-feed molar ratio of 0.2–2:0:1, at temperatures up to 250° C. and pressures of from 10 to 80 kg./cm. guage to convert diolefins, feeding the first stage product in a second stage hydrogenation in the presence of a solid hydrogenation catalyst at a temperature of from 300°–450° C., and a pressure of at least 10 kg./cm.² guage but preferably not in excess of 80 kg./cm.² guage to convert olefins.



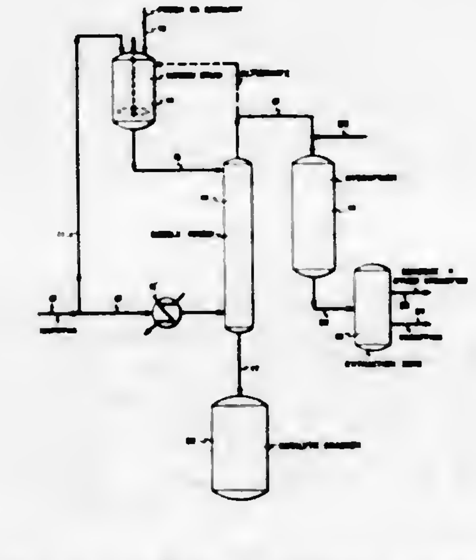
The thus-hydrogenated fraction is subjected to hydrodealkylation in the third stage of the process at a temperature within the range 500°–800° C., a pressure of at least 10 kg./cm.² guage, a liquid hourly space velocity of 1–6 and a hydrogen-stock molar ratio of 2–10:1, preferably without a catalyst. The effluent from this third stage treatment is then separated into gaseous and liquid fractions and the latter is fractionally distilled to recover high-purity benzene therefrom.

3,400,169
PREPARATION OF STEAM CRACKED NAPHTHA FOR BENZENE RECOVERY

Jackson Eng and Sydney H. J. Greenwood, Sarnia, Ontario, Canada, assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Jan. 20, 1964, Ser. No. 338,692

4 Claims. (Cl. 260—674)



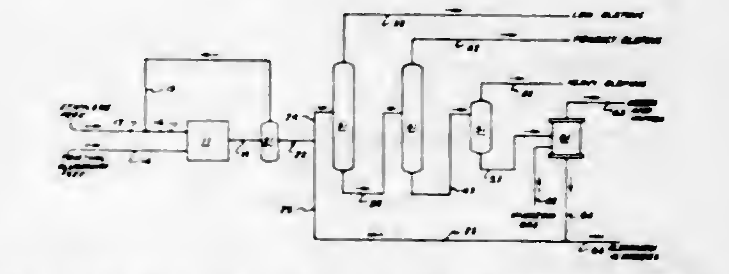
1. Process for treating a benzene containing steam cracked naphtha feedstock, the said steam cracked naphtha containing monoolefins, diolefins and thiophenes which comprises introducing said steam cracked naphtha into one end of a tower zone, the said tower zone having two ends, introducing a slurry of said steam cracked naphtha and a silica alumina catalytic cracking catalyst into the other end of said tower zone, countercurrently contacting the said steam cracked naphtha and the said slurry thereby polymerizing substantially all of the said diolefins and at least a portion of the said monoolefins, removing the contacted naphtha from one end of the said tower zone, removing silica alumina catalyst and polymer from the other end of said tower zone, passing said polymer and silica alumina catalyst into a catalytic cracking zone, said catalyst serving as makeup catalyst in said cracking zone, passing said contacted naphtha to a catalytic hydrofining zone whereby the said contacted naphtha is hydrofined and the said thiophenes converted to butane, passing the said hydrofined naphtha to a solvent extraction zone whereby a high percentage of said benzene is recovered.

3,400,170
PROCESS FOR RECOVERING OLEFINS FROM MIXTURES WITH ALUMINUM ALKYLS

John K. Presswood and Walter E. Foster, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

Continuation-in-part of application Ser. No. 198,113, May 28, 1962. This application Mar. 16, 1967, Ser. No. 634,015

7 Claims. (Cl. 260—677)



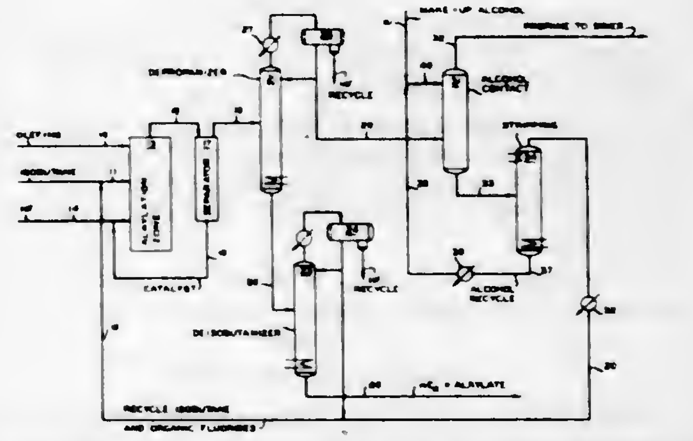
The separation of olefin materials from trialkyl aluminum materials is enhanced by reacting with di- or tri-alkoxy aluminum alkyl species to convert all trialkyl aluminum molecules to at least a mono alkoxy aluminum species and separating. Enhanced separation is obtained and isomerization, dimerization and other reactions catalyzed by trialkyl aluminum materials are minimized. The olefin materials and trialkyl aluminum materials can be in liquid or vapor phases or combinations. Generally speaking, the olefins are then recovered as a vapor and the aluminum materials as liquid.

3,400,171
RECOVERY OF ORGANIC FLUORIDES

Joe Van Pool, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Jan. 6, 1966, Ser. No. 519,049

9 Claims. (Cl. 260—683.42)



Removal of organic fluorides from hydrocarbon streams containing same by extraction with an alcohol immiscible with hydrocarbons. Alcohols which can be used for this purpose include methyl, ethyl, isopropyl and normal propyl alcohol. The organic fluorides may be separated from the alcohol and recycled to the alkylation reaction as an alkylating agent.

3,400,172

COATING COMPOSITIONS COMPRISING A MIXTURE OF: (1) A PHENOL-FORMALDEHYDE RESIN, (2) A MELAMINE-ALDEHYDE RESIN, (3) A POLYISOCYANATE AND, (4) A BLEND OF HIGH AND LOW MOLECULAR WEIGHT POLYVINYL FORMAL RESINS

Lionel J. Payette, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Apr. 30, 1965, Ser. No. 452,346

8 Claims. (Cl. 260—839)

Higher wire coating speeds and curing temperatures are possible with polyvinyl formal resin base coating compositions when blends of high and low molecular weight polyvinyl formal resins are used.

3,400,173

URETHANE POLYMERS CONTAINING GRAFT COPOLYMER OF VINYL CHLORIDE OR SAPONIFIED ETHYLENE-VINYL ESTER COPOLYMER

Artur Reischl, Leverkusen, Dietrich Hardt, Bonn, Bruno Zorn, Cologne-Flittard, Herbert Bartl, Cologne-Stammheim, and Wolfgang Speicher, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Dec. 13, 1965, Ser. No. 513,531

Claims priority, application Germany, Dec. 12, 1964, F 44,689

8 Claims. (Cl. 260—859)

Polyurethane articles including coatings, sheets, and leather substitutes are prepared from (a) a polyaddition product of an organic compound containing active hydrogen atoms that are reactive with NCO groups and having a molecular weight of from about 600 to about 10,000 and an organic polyisocyanate, the polyaddition product being substantially free of NCO groups; (b) from about 1 to about 200% by weight based on the polyaddition product (a) of a polyisocyanate having a molecular weight up to 20,000 and (c) a graft copolymer of (i) from about 10 to about 70% by weight of an ethylene-vinyl ester copolymer, said ethylene-vinyl ester copolymer having from about 25 to about 75% vinyl ester units, said ethylene-vinyl ester copolymer being saponified to an extent of from about 10 to about 70% by weight, and (ii) from about 30 to about 90% by weight of a vinyl monomer, at least 60% of which is selected from the group consisting of vinyl chloride, vinylidene chloride, and mixtures thereof.

3,400,174

FLAME RESISTANT UNSATURATED POLYESTER RESINS CONTAINING A VINYL ETHER OF A BROMINATED PHENOL

Klaus Heidel and Anton Schick, Marl, Herbert Jenkner, Cologne-Deutz, and Hans-Eberhard Praetzel, Bensberg-Frankenfort, Germany, assignors to Chemische Werke Hüls Aktiengesellschaft, Marl, Germany, a corporation of Germany

No Drawing. Filed Aug. 8, 1966, Ser. No. 570,775

Claims priority, application Germany, Sept. 3, 1965, C 36,804

3 Claims. (Cl. 260—869)

Flame retardant polyesters are prepared by polymerizing an unsaturated polyester in the presence of a copolymerizable vinyl ether of a brominated univalent phenol having from 2 to 5 bromine atoms per phenyl group.

3,400,175

TRANSPARENT IMPACT POLYSTYRENE COMPOSITIONS CONTAINING A DIOLEFIN RUBBER

Arnold B. Finestone and Richard C. Westphal, Leominster, Mass., assignors to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 127,900, July 31, 1961. This application July 1, 1965, Ser. No. 468,995

14 Claims. (Cl. 260—880)

Substantially transparent thermoplastic compositions formed by polymerizing monomeric materials which include: (1) at least one monoalkyl aromatic hydrocarbon monomer; (2) at least one of methacrylic acid esters, itaconic acid esters, and acrylonitrile; and (3) at least one vinyl ester of a saturated organic acid; in the presence of a rubbery polymeric material, the polymerizable monomeric materials being present in amounts such that, if polymerized alone, a polymer having a refractive index within 0.005 unit of the refractive index of the rubbery polymeric material would be produced.

3,400,176

PROPANEPOLYPHOSPHONATE COMPOUNDS

Oscar T. Quimby, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Nov. 15, 1965, Ser. No. 507,662

9 Claims. (Cl. 260—932)

1. A compound selected from the group consisting of propane - 1,1,2,3 - tetraphosphonic acid, propane-1,2,2,3-tetraphosphonic acid, propane-1,1,3,3-tetraphosphonic acid, water soluble salts thereof and lower alkyl esters thereof.

7. A process for preparing an ester of propane-1,1,3,3-tetraphosphonic acid which comprises reacting an alkali metal carbanion of a tetraloweralkyl methylenediphosphonate with dihalomethane in the presence of an organic solvent having no active hydrogen atoms selected from the group consisting of toluene and benzene wherein said carbanion and said dihalomethane are employed respectively in a molar ratio of from about 1:0.55 to about 1:10 at a temperature in the range of from about 30° C. to about 125° C. for a time period of from about 10 hours to about 100 hours.

3,400,177

PHOSPHINYLOXY CROTONYL MIDDLE HALIDES

Loyal F. Ward, Jr., and Juan G. Morales, Modesto, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 22, 1965, Ser. No. 441,861

6 Claims. (Cl. 260—941)

Neutral phosphinyloxy crotonyl middle halides such as 3-(dimethoxyphosphinyloxy) crotonyl chloride, which can be reacted with various organic compounds to form the corresponding acyl derivatives, some of which are insecticidal.

3,400,178

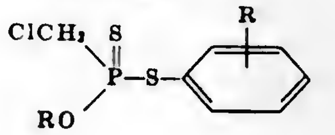
O-ISOPROPYL-S-(p-TOLYL) CHLOROMETHYLPHOSPHONODITHIOATE

Ralph B. Fearing, Hammond, Ind., Edward N. Walsh, Chicago Heights, Ill., and John Bruce McBain, Campbell, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 172,851, Feb. 13, 1962. This application Nov. 5, 1964, Ser. No. 409,286

1 Claim. (Cl. 260—961)

Compounds of the formula:

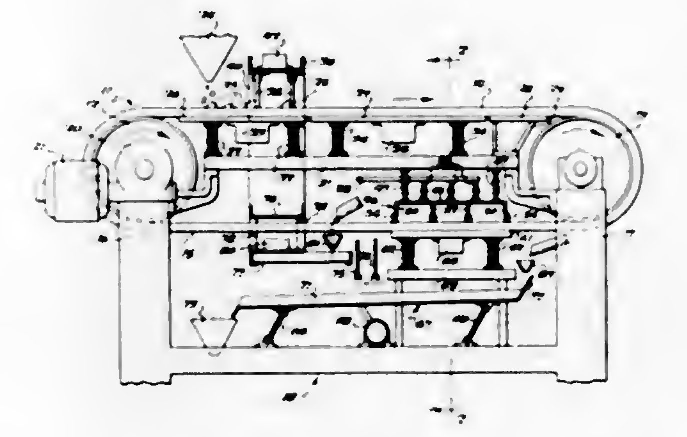


wherein R is n-propyl or isopropyl, and R^1 is hydrogen or lower alkyl of one to four carbons.

3,400,179

PELLET MANUFACTURE

Fritz O. Wienert, Lewiston, N.Y.
(394 Roosevelt Ave., Niagara Falls, N.Y. 14305)
Filed Apr. 2, 1965, Ser. No. 445,051
10 Claims. (Cl. 264—15)



Method of preparing rounded pellets of uniform size, shape and strength from finely divided materials, such as iron ore, by mixing such materials with a liquid which may serve as a binder and depositing the mixture into molds on a moving belt. Vibration then densifies the mixture into plastic bodies, which upon removal from the belt molds, are rolled on a moving surface and coated with a dry particulate material to form the bodies into finished rounded pellets.

3,400,180

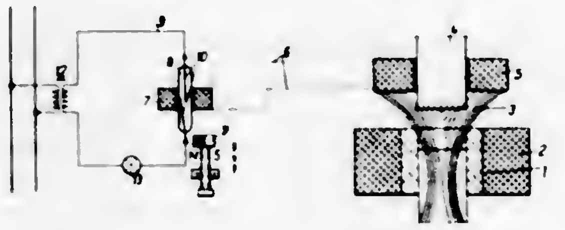
METHOD AND APPARATUS FOR COMPACTING MAGNETIC POWDER

Karl Büttner, Dortmund-Wambel, Henning Richter, Dortmund, and Heinz Völler, Dortmund-Berghofen, Germany, assignors to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, Germany

Filed Feb. 15, 1965, Ser. No. 432,605

Claims priority, application Germany, Feb. 14, 1964, D 43,628

9 Claims. (Cl. 264—24)



The invention relates to a method and an apparatus for pressing powder into a magnetic blank whereby a magnetic field is produced in the region of a die so that powder is sucked into the die and oriented therein and a pressing punch is moved through the field to press the powder into a blank. A coil is wound about the punch, which then acts as a core, with the result that current is induced in the coil as the punch moves through the field, the magnitude of the current induced being a function of the strength of the magnetic field. The coil is then connected to signal producing means which produce a signal, indicating the strength of the field so that blanks pressed when the field is less than a given value can be discarded.

3,400,181

METHOD OF PREPARING CARBONIZED SHAPED CELLULOSE CRYSTALLITE AGGREGATES

Orlando A. Battista, Yardley, and James A. Robertson, Levittown, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Feb. 26, 1965, Ser. No. 435,712

11 Claims. (Cl. 264—29)

A method of making a shaped carbon article by mixing cellulose crystallite aggregates and a liquid; forming a shape from the mixture, then drying and heating the shape to a carbonization temperature.

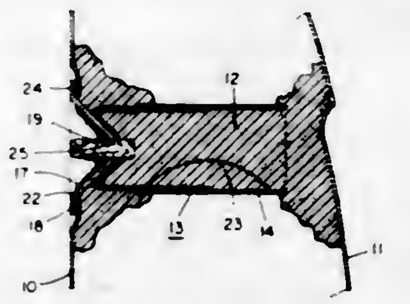
3,400,182

METHOD OF INTERCONNECTING SPACED PANELS AND MEANS FOR USE THEREIN

Erwin B. Kolt, Birmingham, Mich., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Aug. 3, 1965, Ser. No. 476,905

9 Claims. (Cl. 264—45)



A method and apparatus for supporting intermediate portions of panels having their edges joined and their mid-sections in spaced relationship to each other. The method consisting of placing a container supporting foamable adhesive material between the panels through an opening in one of the panels and using a portion of the container to close the opening and prevent escape of the foaming adhesive. Then as the adhesive foams and bridges a portion of the space between the panels and adheres to each panel, the set foamed adhesive provides support for the mid-sections of the panels.

3,400,183

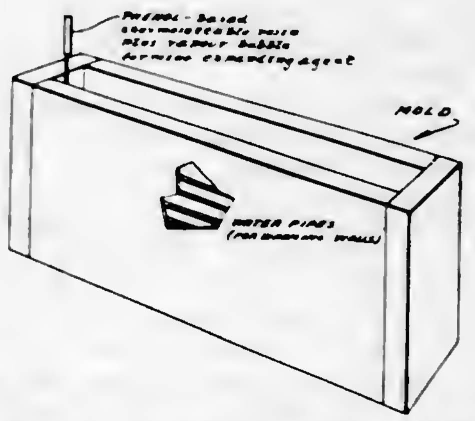
METHOD OF PRODUCING CELLULAR ELEMENTS

Paul I. Vidal, Villepinte, France, assignor to Rocma Anstalt, Vaduz, Liechtenstein, a corporation of Liechtenstein

Filed Aug. 30, 1963, Ser. No. 305,858

Claims priority, application France, Sept. 6, 1962, 908,755

2 Claims. (Cl. 264—53)

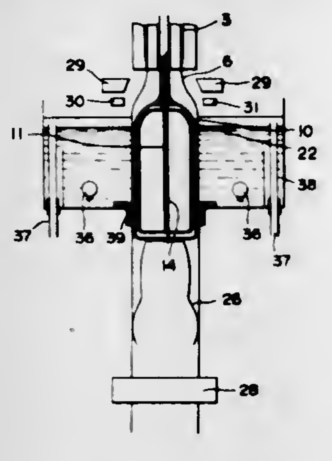


Slab or panel-like molded elements of lightweight cellular phenolic-based thermoset resin having two major (length and width) dimensions and one minor (thickness) dimension, are produced in a mold cavity having a bottom and side walls and an open top, so dimensioned and arranged that the dimensions of the mold cavity corresponding to said major dimensions of the molding extend in a generally vertical plane while the dimension of the mold cavity corresponding to said minor dimension of the molding extends in a horizontal transverse direction, and the moldable composition containing an expanding agent is introduced into the bottom of the mold.

ERRATUM

For Class 264—89 see:
Patent No. 3,400,111

3,400,184
PROCESS AND APPARATUS FOR PREPARING FILM FROM THERMOPLASTIC RESINS
Ryota Matsuo, Tomoyuki Matsugu, and Teruchika Kanoh, Yoshiwara-shi, Japan, assignors to Esso Research and Engineering Company, a corporation of Delaware
Continuation-in-part of application Ser. No. 436,203, Mar. 1, 1965. This application June 30, 1966, Ser. No. 564,491
Claims priority, application Japan, Sept. 21, 1964, 39/54,158
24 Claims. (Cl. 264—89)

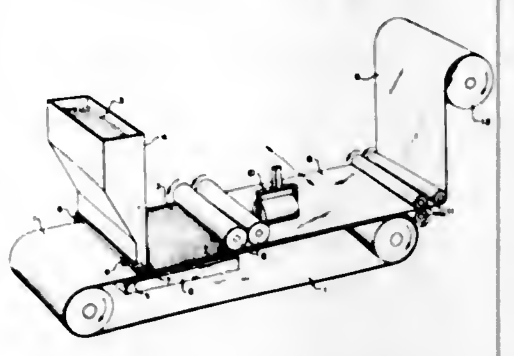


Tubular thermoplastic resin film is formed by (a) extruding downwardly a thermoplastic resin in the form of a tubular film body; (b) preliminarily cooling the film body; (c) passing the film body to a cooling mandrel that is positioned within a cell containing a cooling liquid; (d) expanding the film body and drawing the same over the outer surface of the mandrel whereby the inner surface of the film is cooled through contact with the mandrel and the outer surface of the film is cooled upon contact with the cooling liquid; and (e) thereafter recovering the film.

3,400,185
AGGLOMERATION OF SMALLER PHARMACEUTICAL PARTICLES INTO LARGER MICROSPHERULES AND ENTERIC-COATING THEREOF
Kenneth J. Kohnle, Warson Woods, and Raymond L. Auer and Daniel M. Green, St. Louis, Mo., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware
Filed Apr. 8, 1965, Ser. No. 446,636
9 Claims. (Cl. 264—117)

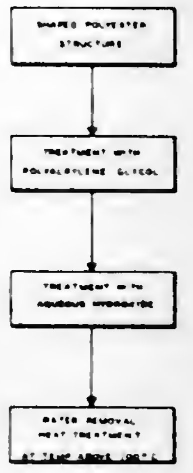
Forms microspherule pellets of a pharmaceutically active solid material (e.g., aspirin) which are useful in preparing sustained-release dosage forms having uniform time release characteristics by mixing said pharmaceutically active material and a binder solution in a composite mixing zone comprising a peripheral relatively slow speed mixing section and a central relatively high speed mixing section.

3,400,186
MAKING PLASTIC FILM FROM PARTICLES
Fred E. Wiley, Longmeadow, Mass., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 18, 1964, Ser. No. 412,045
8 Claims. (Cl. 264—126)



Plastic film and sheet may be produced from particles of polymer by depositing a layer of particles on a hot polished surface, allowing sufficient time for them to reach the fusion temperature and then compacting the layer.

3,400,187
METHOD OF TREATING POLYESTER STRUCTURES WITH POLYALKYLENE GLYCOL AND A METAL HYDROXIDE
Gerald Farrow, Kings Mountain, N.C., assignor to Fiber Industries, Inc., a corporation of Delaware
Filed Feb. 25, 1964, Ser. No. 347,107
9 Claims. (Cl. 264—137)

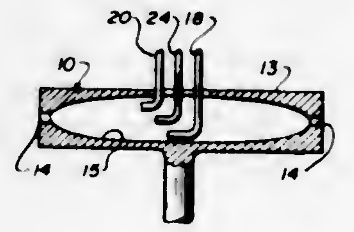

SHAPED POLYESTER STRUCTURE
TREATMENT WITH POLYALKYLENE GLYCOL
TREATMENT WITH AQUEOUS HYDROXIDE
WATER REMOVAL HEAT TREATMENT AT TEMP ABOVE 100° C

A process for improving the surface characteristics of shaped polyester structures comprising the steps of applying to said polyester structure a polyalkylene glycol having a molecular weight in excess of about 200, applying an aqueous metal hydroxide solution and then heating the thus treated polyester structure at temperatures of at least about 100° C. for a time sufficient to remove substantially all of the water.

3,400,188
METHOD FOR PRODUCING RETICULATED FILM
Arthur R. Olson, Walpole, Mass., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 617,719, Feb. 21, 1967, which is a division of application Ser. No. 415,338, Dec. 2, 1964. This application Aug. 31, 1966, Ser. No. 589,785
1 Claim. (Cl. 264—156)

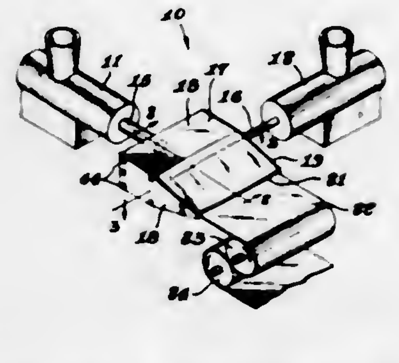
A heat-retractable polymeric thermoplastic film is pierced to form a number of apertures, as by a needling operation. The pierced film is subsequently heated under conditions of restraint, so that any substantial area shrinkage of the film is prevented. In this process the apertures enlarge and become fewer in number, forming a reticulated network of interconnected irregular filaments of film substance.

3,400,189
PROCESS FOR CENTRIFUGALLY SPINNING HOLLOW OR FILLED FILAMENTS
Kenneth F. Nacke, Berea, Ohio, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Sept. 14, 1964, Ser. No. 396,142
5 Claims. (Cl. 264—167)



Method for making novel hollow filaments with nodules thereon. The orifices of the spinneret are starve-fed to effect the hollow aspect while the rate of feed of molten plastic is varied to accomplish the nodule aspect of the filament.

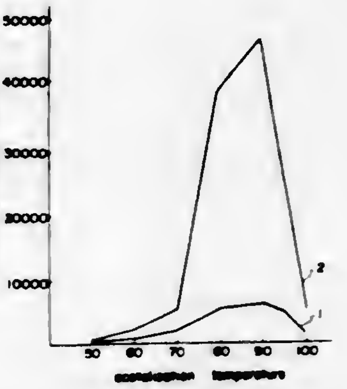
3,400,190
METHOD AND APPARATUS FOR THE EXTRUSION OF MULTI-LAYER FILM AND SHEET
Harold Jack Donald, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed July 28, 1965, Ser. No. 475,410
13 Claims. (Cl. 264—171)



Three layer sheet is simultaneously extruded by inserting into a conventional sheeting die a tube having a slot therein narrower than the width of the slot of the sheeting die and extruding a sheet within the sheeting die which in turn is encapsulated by a major stream of resin. When discharged from the sheeting die, the inner stream and outer stream are generally coextensive.

3,400,191
METHOD OF MANUFACTURING SYNTHETIC FIBERS OF POLYVINYL ALCOHOL HAVING HIGH ABRASION RESISTANCE
Yutaka Koyano, Kurashiki, Japan, assignor to Kurashiki Rayon Co., Ltd., Kurashiki, Japan
Filed Feb. 1, 1965, Ser. No. 429,309
Claims priority, application Japan, Feb. 11, 1964, 39/6,808
7 Claims. (Cl. 264—210)

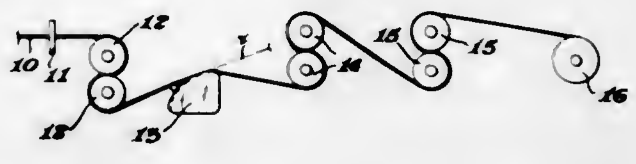
The abrasion resistance of polyvinyl alcohol fiber or of articles made from such fiber is substantially improved by treating polyvinyl alcohol fiber obtained by a conventional spinning, drawing and heat treatment, or fiber articles made therefrom with an aqueous solution containing formaldehyde of a concentration of from 50–200 g./liter, sulfuric acid of a concentration of from 1–50 g./liter and Glauber's salt in a concentration of from 50–300 g./liter.



3,400,192
PROCESS FOR PRODUCING HIGHLY SHRINKABLE LINEAR POLYESTER STRUCTURES
Adolf Hartmann, Gessertshausen, near Augsburg, and Gert Büttner, Bobingen, near Augsburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed July 31, 1964, Ser. No. 386,766
Claims priority, application Germany, Aug. 2, 1963, F 40,399
7 Claims. (Cl. 264—288)

The preparation of high-shrinking structures of linear aromatic polyesters by drawing undrawn structures of linear aromatic polyesters in several stages in one direction, the drawing in the first stage amounting to at least 30% and at most 70% of the total drawing, which total drawing amounts to at least 60% of the highest possible value that can be obtained by a single drawing operation, the temperature in the first drawing stage being equal to or higher than the temperature in the second stage or the next stages, respectively.

3,400,193
PROCESS FOR PREPARING FILAMENTARY MICROTAPES OF LABYRINTHIAN CROSS SECTION
Lloyd E. Lefevre, Bay City, Robert J. Mathieson, Rhodes, and Floyd E. Romesberg, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Continuation-in-part of abandoned application Ser. No. 420,761, Dec. 23, 1964. This application July 15, 1965, Ser. No. 472,185
10 Claims. (Cl. 264—288)



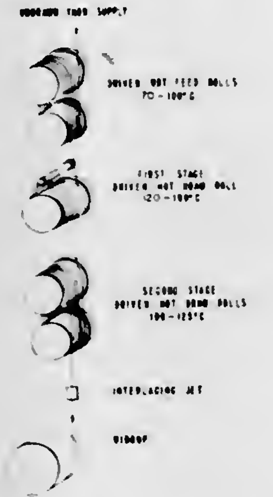
This application discloses and claims a process for forming filamentary microtapes of labyrinthian cross section comprising the passage of an unoriented, flat ribbon of an organic, thermoplastic, resinous material through stationary restricting means of narrower width than said ribbon withdrawing the so formed microtape downwardly from the restricting means at an angle of at least 15 degrees followed by orienting the microtape.

3,400,194
PROCESS FOR MAKING HIGH-TENACITY, LOW ELONGATION INDUSTRIAL YARN

John Douglas Boone, Donelson, Tenn., and Daniel Vernon Knight, Seaford, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Nov. 4, 1963, Ser. No. 321,260

5 Claims. (Cl. 264—290)



A high-speed two-stage process for drawing polyester filaments using a feed roll (70–100° C.), first draw roll (120–160° C.) and second draw roll (100–125° C.) consisting of drawing in the first stage to a ratio of about 4:1, in the second stage to a total ratio of 5.5:1 to 6.5:1 and winding up under tension sufficient to prevent shrinkage which results in a high tenacity, low elongation product useful for rope and cordage.

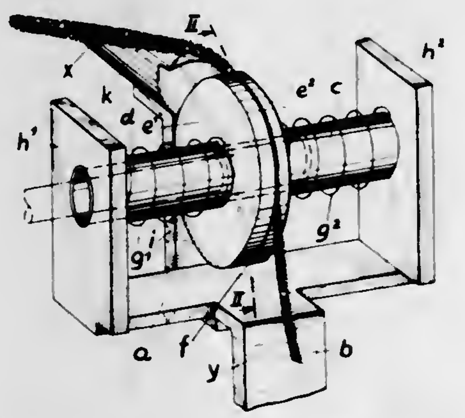
3,400,195
METHOD AND APPARATUS FOR RE-SHAPING A GARLAND

Karl Weinberger, Roth, Bavaria, Germany, assignor to Riffelmacher & Weinberger, Roth, Bavaria, Germany, a firm

Filed Apr. 7, 1964, Ser. No. 358,004

Claims priority, application Germany, Sept. 11, 1963, R 36,092

3 Claims. (Cl. 264—320)



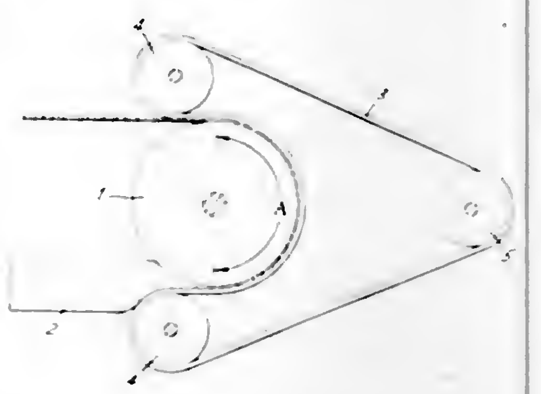
Method and apparatus are disclosed for reshaping the cross-section of a plastic garland. The garland is passed between a pair of disc-shaped die members providing a peripheral groove, mounted upon a hollow shaft having heating means disposed therein. The die members are biased toward radial engagement with each other to cause the fibers of the garland to re-orient from their original orientation to an angle providing a different cross-section.

3,400,196
METHOD FOR THE PERMANENT COMPRESSION OF A SHEET OF FLEXIBLE POLYURETHANE FOAM

Gene LeRoy, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

Filed June 30, 1964, Ser. No. 379,268

9 Claims. (Cl. 264—321)



The process is for the continuous permanent compression of flexible polyurethane foam using a rotated heated cylindrical drum and an endless moving belt to effect the compression.

3,400,197
COMPRESSIBLE SUSTAINED RELEASE PHARMACEUTICAL TABLET LIPID-COLLOIDAL SILICA GEL MATRIX FRAGMENT GRANULES

Irwin Lippmann, Bon Air-Midlothian, Va., assignor to A. H. Robins Company, Inc., Richmond, Va., a corporation of Virginia

No Drawing. Filed Jan. 26, 1965, Ser. No. 428,210

7 Claims. (Cl. 424—21)

Composition for internal administration to a living animal body which when administered provides sustained release of the pharmaceutically active agent contained therein, the composition comprising the pharmaceutically active agent dispersed in a solid matrix comprising a pharmaceutically acceptable lipid and colloidal silica, the ratio by weight of lipid to silica being about 3:1 to 8:1, and such compositions in the form of tablets having a core as described with a coating comprising the pharmaceutically active agent in a pharmaceutically acceptable carrier providing rapid release of the pharmaceutically active agent.

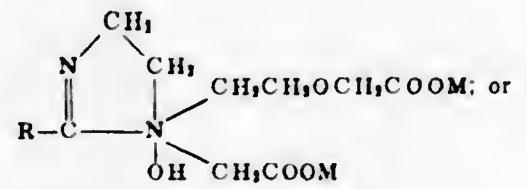
3,400,198
WAVE SET RETENTION SHAMPOO CONTAINING POLYETHYLENIMINE POLYMERS

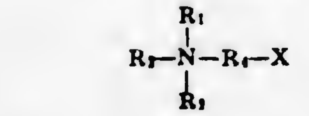
Edward W. Lang, Wyoming, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 305,204, Aug. 28, 1963. This application Oct. 12, 1966, Ser. No. 586,013

19 Claims. (Cl. 424—71)

1. A shampoo composition adapted to promote wave set retention and hair manageability comprising (a) from about 0.1% to about 4.0% of a water-soluble polyethylenimine polymer having a viscosity in 1% aqueous solution of from about 1.0 to about 3.0 centipoises at 100° F.; (b) from about 4% to about 20% of a water-soluble salt of a member selected from the group consisting of higher fatty acids, anionic organic sulfuric reaction products having in their molecular structure an alkyl containing from about 8 to about 20 carbon atoms and a sulfonic acid or sulfuric acid ester group, and acyl sarcosinates wherein the acyl group is from fatty acids containing about 10 to 18 carbon atoms; (c) from about 4% to about 20% of a detergent selected from the group consisting of open-chain aliphatic amine oxides, open-chain aliphatic phosphine oxides, amphoteric compounds having the structural formula $RN(C_2H_4COOM)_2$; $RN(H)C_2H_4COOM$;





$$R_2-\overset{\displaystyle R_1}{\underset{\displaystyle R_3}{N}}-R_4-X$$

wherein R is an acyclic hydrophobic group containing from about 8 to about 18 carbon atoms, R_1 is an alkyl having from about 10 to about 18 carbon atoms, R_2 and R_3 are each alkyl having from about 1 to about 3 carbon atoms, R_4 is alkylene or hydroxyalkylene having from 1 to 4 carbon atoms, M is a cation to neutralize the charge of the anion, and X is $SO_3^=$ or $COO^=$, and mixtures of said detergents; and the balance substantially (d) water, the ratio of (b) to (c) ranging from about 2:1 to about 1:2, said composition having a pH between about 7 and about 10.

3,400,199
WOUND-HEALING CARTILAGE POWDER

Leslie L. Balassa, Creighton Lane, Scarborough, N.Y. 10582

No Drawing. Continuation-in-part of application Ser. No. 176,443, Feb. 28, 1962. This application Feb. 26, 1965, Ser. No. 435,693

13 Claims. (Cl. 424—95)

The invention pertains to wound-healing compositions comprising finely divided animal cartilage which is free of an interposition effect and which is characterized as having a substantially average maximum particle size of about 70 microns and an average particle size of between about 1 micron and about 40 microns. The invention also relates to methods of use of such material in a wound-healing method.

3,400,200
METHANONAPHTHALENE COMPOSITIONS AND METHODS OF USING THE SAME

Hsing Yun Fan and William E. Rader, Modesto, Calif., Marvin Legator, Rockville, Md., and Linda C. Larrick, Modesto, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of abandoned application Ser. No. 87,991, Feb. 9, 1961. This application Nov. 18, 1963, Ser. No. 324,223

14 Claims. (Cl. 424—283)

Methods and compositions for controlling microorganisms and molluscs by contacting them with a 2,3,4a,8a-diepoxy-polyhydronaphthalene-5,8-dione such as 6,7-dichloro - exo - 2,3 - endo - 4a,8a - diepoxy - 1,2,3,4,4a,8a-hexahydro-exo-1,4-methanonaphthalene-5,8-dione.

3,400,201
FUNGICIDAL COMPOSITION CONTAINING PENTACHLOROPHENOL AND AN ORGANOTIN COMPOUND

Jacques Mocotte, Champagne-au-Mont-d'Or, France, assignor to Progil, Paris, France, a corporation of France

No Drawing. Filed Oct. 23, 1963, Ser. No. 318,182

Claims priority, application France, Oct. 29, 1962, 913,758

6 Claims. (Cl. 424—288)

This invention relates to a fungicidal mixture and, more particularly, to a composition containing polychlorophenols such as di-, tri-, tetra-, pentachlorophenols and tin organic derivatives such as oxides, halides, acetate, sulfate, phosphate of triethyl-, propyl-, pentyl-, hexyl, phenyl-tin.

3,400,202
INSECT CONTROL WITH HEXAMETHYLDITIN

Herbert Q. Smith, King of Prussia, and Edward Everett Ivy, Devon, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 31, 1966, Ser. No. 538,991

6 Claims. (Cl. 424—288)

Method for controlling insects with hexamethylditin.

3,400,203
TREATMENT OF PARKINSONISM IN HUMANS WITH N,N - DIPHENYL CARBAMATES OF ALKYLAMINOALKANOLS

Gunther Stille, Bern, and Theodor J. Wagner-Jauregg, Zofingen, Switzerland, assignors to Siegfried Aktiengesellschaft, Zofingen, Switzerland, a corporation of Switzerland

No Drawing. Continuation-in-part of application Ser. No. 183,356, Mar. 29, 1962. This application May 18, 1965, Ser. No. 456,808

Claims priority, application Switzerland, Mar. 29, 1961, 3,709/61

5 Claims. (Cl. 424—300)

The treatment of Parkinsonism in humans with N,N-diphenyl carbamates of alkylaminoalkanols.

ELECTRICAL

3,400,204
METHOD OF MELTING AND SUPPLYING GLASS ALONG A FEEDER DUCT

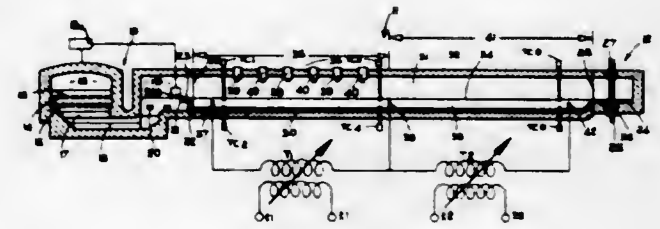
Philip Anthony Maunsell Gell, Kinver, near Stourbridge, England, assignor to Element Limited, Bilston, England, a British company

Filed June 9, 1964, Ser. No. 373,613

Claims priority, application Great Britain, Feb. 29, 1964, 8,595/64

10 Claims. (Cl. 13—6)

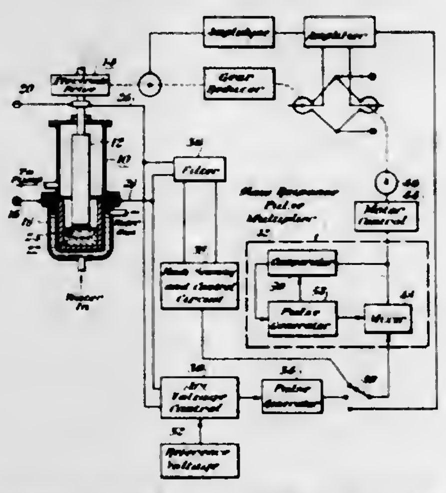
The temperature of a stream of glass flowing from a furnace through a long duct to a feeding chamber is made uniform over the cross-section of the stream by electric current flowing between U-shaped electrode assemblies spaced lengthwise of the duct near the bottom wall of the same and by cooling gas directed against the stream surface near the furnace. The current in two longitudinally consecutive sections of the duct is independently controlled by automatic devices in response to temperature and current sensing elements.



3,400,205
CONSUMABLE ELECTRODE CONTROL SYSTEM TO OVERCOME TEMPORARY ABNORMAL CONDITIONS

Peter A. Lajoie and Samuel S. Harbaugh, Natrona Heights, Pa., assignors to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania

Filed Oct. 17, 1966, Ser. No. 587,167
10 Claims. (Cl. 13—13)



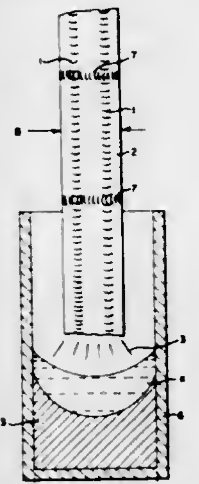
1. In a system in which a pulsed output is produced proportional to a variable of the system to control the system and in which temporary abnormal cessations of the variable occur, the combination of:

(a) means for sensing the pulse rate of the output signal;
(b) means responsive to said output signal to generate pulses increasing in rate for a predetermined time period until the generated pulse rate is proportional to the pulse rate of said output signal;
(c) mixing means for adding said generated pulses to said output signal pulses;
(d) means for controlling said variable in response to the total pulses from said mixing means; and
(e) means for controlling said system by said generated pulses after the cessation of said output signal, the rate of said generated pulses decreasing over said predetermined time period to thereby maintain control of said system for the duration of the temporary abnormal cessation of the variable.

3,400,206
CONSUMABLE ELECTRODE STABILIZED AGAINST WARPING, FORMED FROM COMPACTED REFRACTORY METAL PARTICLES

Walter J. Barth, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 9, 1965, Ser. No. 446,899
9 Claims. (Cl. 13—18)

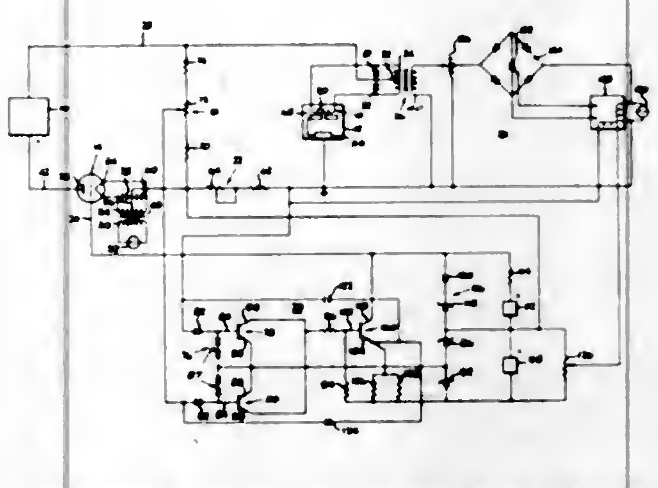


A process for arc-melting, and a consumable electrode for use in electric arc-melting prepared by compacting particles of a refractory metal within a foil container of the said metal, wherein the electrode has at least one metallic strip of lower electrical resistance than that of the electrode welded along substantially the entire length of the periphery of the electrode to provide stability against warpage of the electrode during use.

3,400,207
APPARATUS FOR REGULATING POWER APPLIED TO AN ELECTRON GUN EMPLOYED IN AN ELECTRON BEAM FURNACE

Emmett R. Anderson, Berkeley, Calif., assignor to Temescal Metallurgical Corporation, Berkeley, Calif., a corporation of California

Filed Sept. 28, 1964, Ser. No. 399,761
7 Claims. (Cl. 13—31)



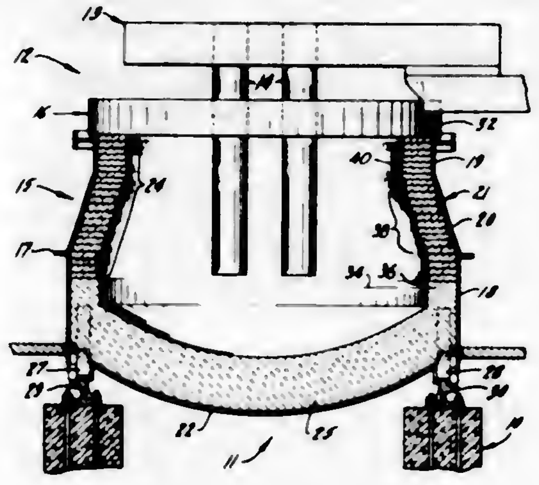
A power supply for an electron gun in an electron furnace is provided which power supply limits the voltage supply to the electron gun by employing a current control device as a series regulator to control the output of high voltage D.C. power supply. The voltage signal developed across the electron gun is sensed by a voltage responsive means and output thereof is applied to a comparison means which amplifies the portion of the voltage signal which is greater than a predetermined reference voltage. The current passing through the electron gun is sensed by a current responsive means, the output of which is coupled to the comparison means. The comparison means amplifies the portion of the current signal which exceeds the predetermined reference voltage. The current signal and the voltage signal are adjusted so that during normal operation of the electron beam gun, the amplitude of the current signal is less than the reference voltage and the voltage signal is larger than the reference voltage. During normal operation, the comparison means only amplifies a signal related to the voltage signal. If the beam current signal exceeds the reference voltage, which normally results from arcing in the electrostatic field of the electron gun, the comparison means amplifies the signal related to the current signal. The voltage signal during the maximum current operation is not amplified by the comparison means. The output signal of the comparison means is applied to a control element which controls the current passing through the current control device in an inverse relation to the signal controlling the comparison means.

3,400,208
TAPERED SHELL ELECTRIC FURNACE

Erwin F. Franzen, 3718 176th Place, Lansing, Ill. 60438

Filed Sept. 2, 1964, Ser. No. 393,871
3 Claims. (Cl. 13—35)

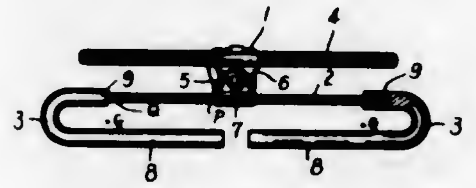
An electric furnace of the type having an arc which operates under substantially atmospheric environmental conditions in which interior wall configuration tapers inwardly in an upward direction from the sill level at which the maximum internal dimension occurs, whereby lining erosion due to refractory drippings is minimized, and the furnace capacity is maximized for a given sized cover.



3,400,209
AEOLIAN VIBRATION DAMPER

Toshikazu Minyu, Jun Kato, and Takahisa Koguchi, Nikko, and Ryoichi Kobayashi, Imaichi, Japan, assignors to Furukawa Electric Company Limited, Tokyo, Japan

Filed Apr. 3, 1967, Ser. No. 628,123
Claims priority, application Japan, Apr. 6, 1966, 41/21,683
10 Claims. (Cl. 174—42)



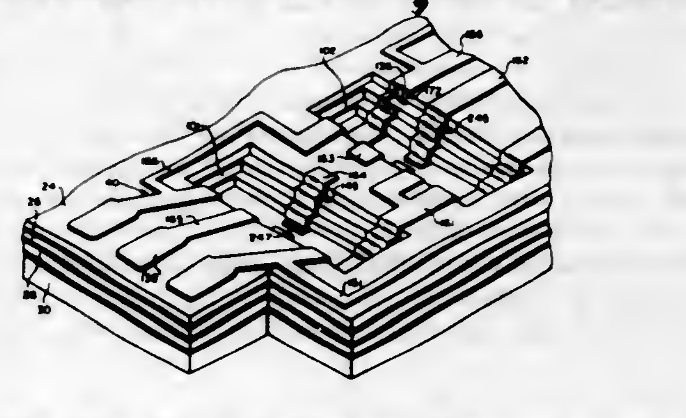
This invention relates to an improved aeolian vibration damper to be used for preventing aeolian vibration of overhead transmission cables. The damper according to the invention is provided a pair of J-shaped weight members made of round metal rod or pipe, secured, by compression, to both ends of a resilient member made of stranded steel wire. The damper of the invention has an excellent vibration dissipating effect over a wide frequency range of the vibration of overhead transmission cable and has especially a remarkable feature of simple construction which may afford a great advantage of simple practice of manufacture and accordingly a low manufacturing cost.

3,400,210
INTERLAYER CONNECTION TECHNIQUE FOR MULTILAYER PRINTED WIRING BOARDS

William A. Reimer, Wheaton, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Apr. 26, 1966, Ser. No. 545,414
1 Claim. (Cl. 174—69.5)

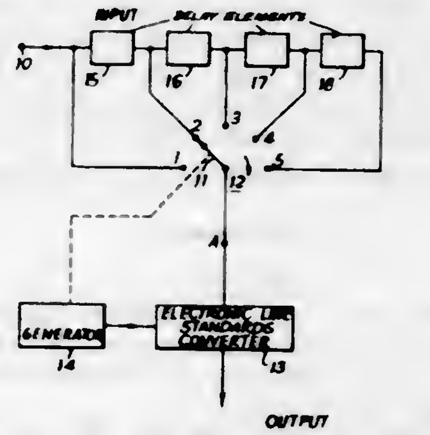
A plurality of stepped recesses formed in the upper surface of a multilayer printed wiring board expose the ends of conductors disposed on the inner layers of the board, and the exposed conductor ends are interconnected by a plurality of conductive strips plated on the stepped walls of each recess by a method which involves the use of collimated light and photo-resist techniques. The plated strips, which extend from top to bottom of the recess interconnecting the conductor ends exposed on the stepped recess walls between the top and bottom upper board surfaces, are wider than the conductor ends so that the portion of a strip contacting one of the ends can be removed without interrupting the continuity of the strip.



3,400,211
TELEVISION STANDARDS CONVERSION

Peter Rainger, Pinner, Middlesex, and Robin Evan Davies, Horley, Surrey, England, assignors to The Marconi Company Limited, and Standard Telephones & Cables Limited, both of London, England, both British companies

Filed Nov. 16, 1964, Ser. No. 411,398
Claims priority, application Great Britain, Nov. 18, 1963, 45,506/63; Dec. 6, 1963, 48,370/63
26 Claims. (Cl. 178—6.8)



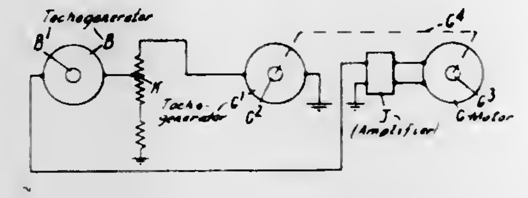
Apparatus for generating from an input television signal an output television signal having a different line or field repetition frequency, in which the input signal is fed to a variable delay circuit, the delay of which is progressively varied from one extreme value (maximum or minimum) to the other during a time interval substantially equal to a small integral multiple of the period of the beat frequency between the input and output line or field frequencies, as the case may be, and then returned directly to the first said extreme value, the difference between the two extreme values of the delay being such that at the end of the said time interval, either a small number of input lines or fields are discarded from the input signal or a small number of lines or fields are repeated in the output signal.

3,400,212
CONTROL MECHANISMS FOR AN OPTICAL OBJECTIVE HAVING A ZOOM CONTROL ELEMENT

Dexter R. Plummer, Leicester, England, assignor to Rank Precision Industries Limited, trading as The Rank Organisation Rank Taylor Hobson Division, Leicester, England, a British company

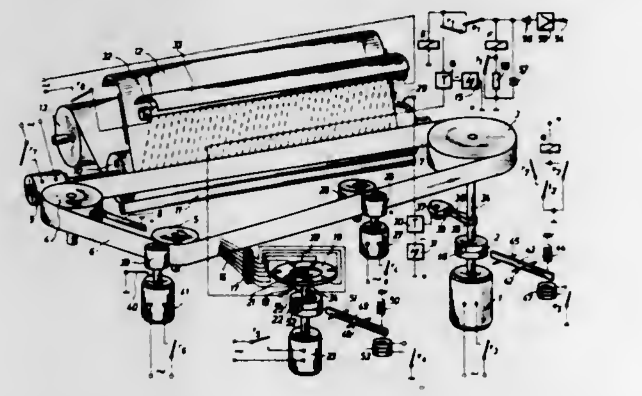
Continuation of application Ser. No. 338,073, Jan. 16, 1964. This application Aug. 28, 1967, Ser. No. 663,902
Claims priority, application Great Britain, Jan. 18, 1963, 2,282/63
4 Claims. (Cl. 178—7.92)

Control mechanism for an optical objective of the zoom type comprising means for effecting movement of a movable optical member of said system in accordance with the movement of a first control element, said mechanism comprising an electrically energized prime mover for driving said movable member and having an output drive whose speed is dependent on a controlling voltage input to such prime mover, a tachogenerator having an output voltage approximately proportional to the speed at which it is driven, a transmission mechanism interposed between said first control element and such tachogenerator whereby the tachogenerator is driven at a speed greater than and approximately proportional to the speed of movement of said first control element, amplifying means whose output constitutes the said controlling voltage input to the prime mover, means for supplying an input to the amplifying means which is dependent on the output voltage of the tachogenerator and comprises sensitivity adjustment means for varying the relationship between the speed of movement of the driven member and that of said first control element, a second control element controlling the movement of a second movable member of said optical system, and means connecting said second control element with said sensitivity adjustment means, so that the proportional relationship between the speed of movement of the driven member and that of the first control member is dependent on the position of said second control element.



3,400,213
ELECTROSTATIC TELEGRAPHIC PRINTER

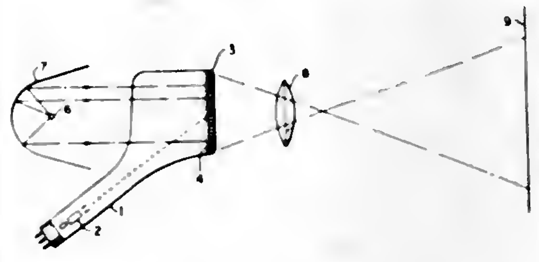
Rudolf Hell, Kiel, Germany, assignor to Dr. Ing. Rudolf Hell Kommanditgesellschaft, Kiel-Dietrichsdorf, Germany, a company of Germany
Filed July 16, 1964, Ser. No. 383,137
Claims priority, application Germany, July 20, 1963, H 49,786
4 Claims. (Cl. 178—15)



A printing and recording system and apparatus which receives pulse sequences indicative of intelligence and which initially records the intelligence on an endless tape capable of holding an electric charge and which is then dusted with a suitable powder for producing an electric image which is transferred line by line to a paper moving at right angles to the tape in response to an electrical pulse. The electrical charge is then removed from the tape so that new recording may be made on the tape for subsequent transfer to the paper.

3,400,214
DATA HANDLING SYSTEM WITH SCREEN MADE OF FIBER OPTIC LIGHT PIPES CONTAINING PHOTOCHROMIC MATERIAL

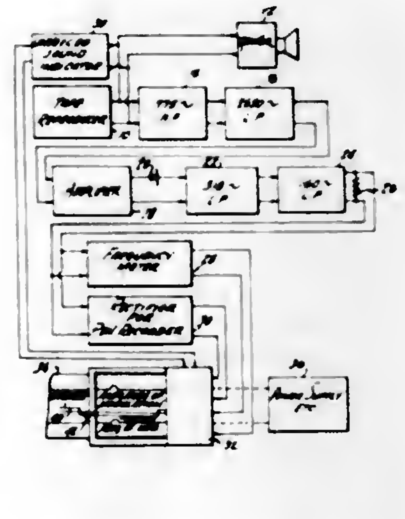
Omer F. Hamann, La Jolla, Calif., assignor by mesne assignments, to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Filed Aug. 26, 1964, Ser. No. 392,251
13 Claims. (Cl. 178—7.87)



A screen for an electron discharge device wherein a target formed of a plurality of fiber optic light pipes is made of a composition including a photochromic material and is selectively subjected to ultraviolet or similar radiation so as to prevent passage of visible light through certain light pipes.

3,400,215
VOICED SOUND FUNDAMENTAL FREQUENCY DETECTOR

Harry F. Olson, Princeton, and Herbert Belar, Burlington, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Nov. 27, 1964, Ser. No. 414,347
5 Claims. (Cl. 179—1)



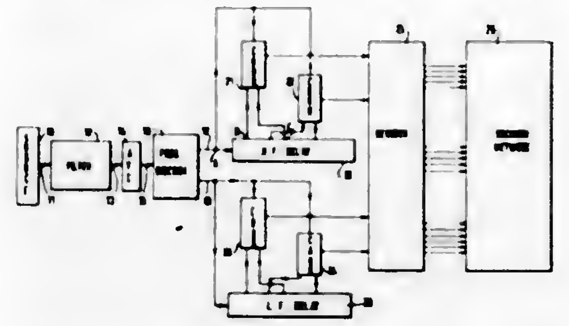
Means are provided to determine the fundamental frequency of a complicated wave by passing waves through a filter that passes waves of frequencies higher than the fundamental frequency, amplitude detecting the passed wave and applying the detected wave to a frequency meter. If the wave is an unvoiced speech wave, the indication by the frequency meter may be incorrect. Means are also provided to indicate that the wave is, or is not, a voiced wave.

3,400,216
SPEECH RECOGNITION APPARATUS

Edward Arthur Newman, Teddington, England, assignor to National Research Development Corporation, London, England, a British company
Filed Feb. 1, 1965, Ser. No. 429,500
Claims priority, application Great Britain, Jan. 31, 1964, 4,266/64
18 Claims. (Cl. 179—1)

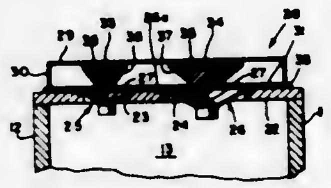
A speech recognition system uses correlation techniques and delay lines to translate a speech waveform into visi-

ble information characteristic of the waveform. The output from the correlation network is independent of the input speech waveform amplitude. Logic circuits are used to effect the final translation into visible information.



3,400,217
METHOD OF AND MEANS FOR LOUDSPEAKER SOUND WAVE DISTRIBUTION

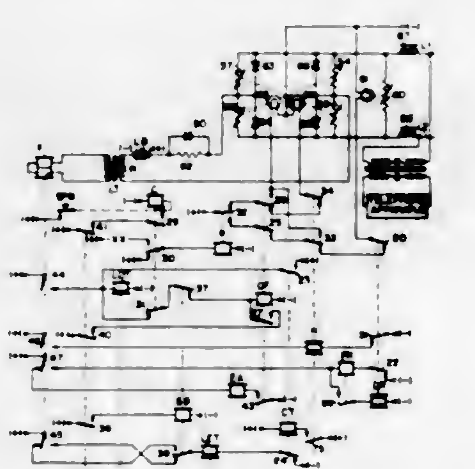
Oscar E. Kraut, 455 Franklin D. Roosevelt Drive, New York, N.Y. 10002
Filed Feb. 8, 1965, Ser. No. 431,132
5 Claims. (Cl. 179—1)



Flush mounted, vertically oriented loudspeakers are front-loaded by cones of solid material which diffuse and reflect the sound in a 360 degree angle. The cones have an angle of taper sharper than that of their respective speakers, a sharp angle where the base meets the side, and are spaced from the supporting grill.

3,400,218
LINE CIRCUIT FOR CODE COMMUNICATION SYSTEMS WITH PHOTORESISTIVE PULSE PRODUCER

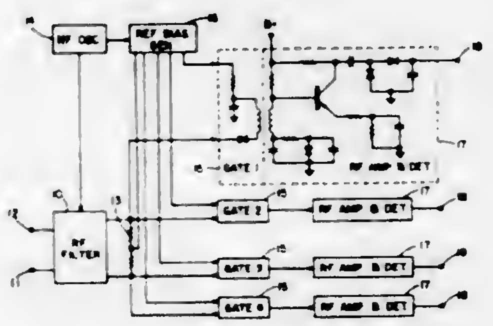
Henry C. Sibley, Spencerport, N.Y., assignor to General Signal Corporation, a corporation of New York
Filed May 6, 1964, Ser. No. 365,451
6 Claims. (Cl. 179—2)



A communication system is shown having pulses of opposite polarity applied through photo-resistors connected in a bridge and in series with a direct current source of energy. The polarity of the pulses is determined by the selective illumination of such photo-resistors. Another photo-resistor is connected in shunt across the line circuit both for reducing inductive energies stored therein and for cooperating with said other photo-resistors to produce pulses of uniform shape and having characteristics ineffective to produce unwanted transients in a telephone system also connected to the same line wires. The photoresistor in shunt across the line circuit is illuminated between successive illuminations of the other photo-resistors.

3,400,219
REMOTE STATION APPARATUS FOR REMOTE CONTROL SYSTEM VIA TELEPHONE LINE

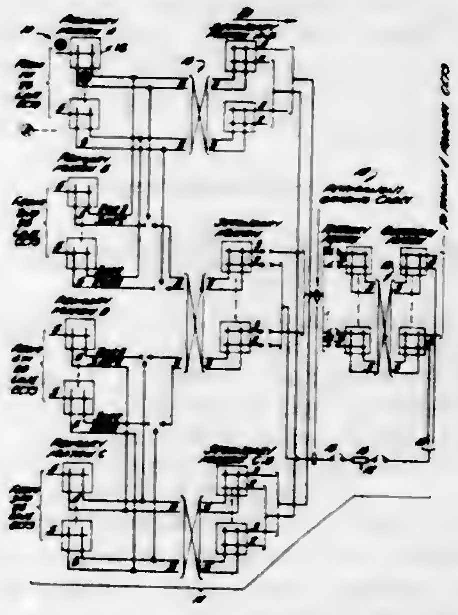
Kenneth V. Jahns, West Chicago, and Richard C. Buetow, Mount Prospect, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed June 23, 1965, Ser. No. 466,309
6 Claims. (Cl. 179—2)



Remote control system responsive to direct current potentials of different amplitudes and polarities on wire line, and including a plurality of control devices responsive to alternating current signals. An oscillator provides alternating current signals to diode gates which selectively apply the signals to the control devices. The potential on the wire line is applied to the gates to overcome the reverse bias thereon so that the alternating current signals actuate the control devices.

3,400,220
SWITCHING NETWORK EMPLOYING A HOMOGENEOUS MATRIX

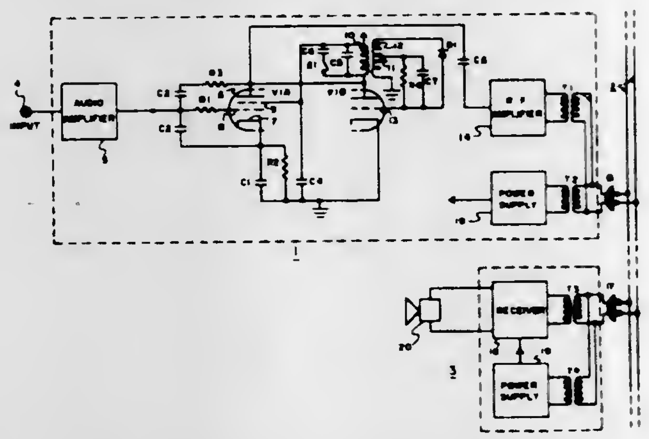
Theron L. Bowers, Western Springs, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware
Filed July 24, 1964, Ser. No. 384,909
11 Claims. (Cl. 179—18)



A small 5 x 5 switching matrix is provided for converting non-homogeneous input traffic into a homogeneous output traffic flow. Homogeneous traffic flow is attained by connecting the switching matrix in such a way that each input line has equal access through crosspoints to outgoing lines. In this way, very efficient traffic handling is made possible into a variety of secondary stages. The invention has best utility in systems where crosspoint matrices are not fixed by geometry of switches (e.g. electronic switching, glass reed switching, etc.).

3,400,221
MUSIC DISTRIBUTION SYSTEM USING FM TRANSMISSION OVER HOUSE WIRING

Gerard C. Wolters, Decatur, Ill., assignor to General Electric Company, a corporation of New York
Filed June 14, 1963, Ser. No. 287,807
2 Claims. (Cl. 179—2.5)

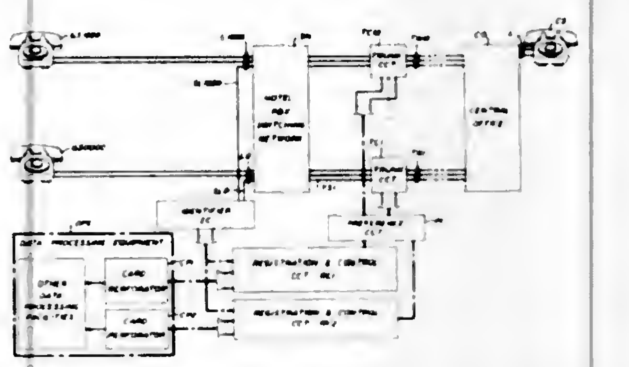


1. For use in a frequency modulated carrier system employing house wiring as a communications medium, an improved transmitter for converting an audio input into a frequency modulated carrier, and applying said carrier to said wiring, said transmitter comprising:
- (A) an oscillator including an amplifying tube and an oscillator coil,
  - (1) said oscillator coil having a primary and first and second secondary windings,
  - (2) said primary winding being connected in the plate circuit of said amplifying tube and having at least one capacitance connected in shunt therewith,
  - (3) said first secondary winding being connected to the grid of said amplifying tube to develop a regenerative feedback signal on said grid,
  - (4) said second secondary winding being connected to said grid through a unilateral conducting device so as to develop a negative bias voltage on the grid of said amplifying tube, and
  - (5) said bias voltage having an amplitude substantially greater than said feedback signal, thereby to provide class A operation of said oscillator.

3,400,222
MESSAGE UNIT CHARGING AND BILLING EQUIPMENT

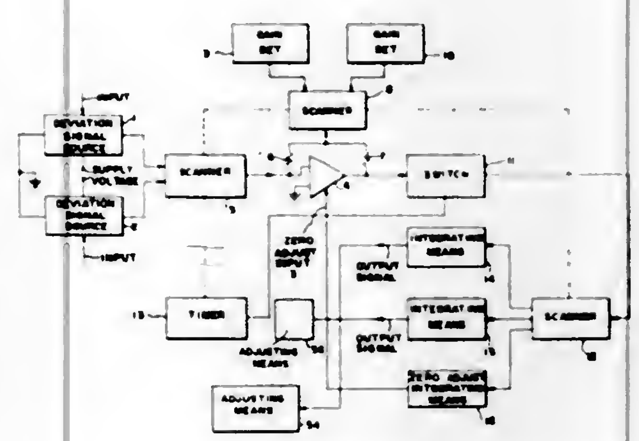
John G. Nightingale, Fair Lawn, N.J., John M. Repholz, New York, N.Y., John C. Sieglinger, Short Hills, N.J., and Stanley Zak, Port Chester, N.Y., assignors to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York
Filed Apr. 23, 1963, Ser. No. 275,008
19 Claims. (Cl. 179—7.1)

A private branch exchange telephone system is disclosed having message unit charging and billing equipment. This equipment includes trunk circuit facilities for counting individual message units and surcharges for calls. Circuitry is also provided for automatically identifying the calling telephone number upon the completion of each call. Registration and control circuits register the identified telephone number and counted message units on each completed call and control the perforation of records therefor which are supplied to a data processor for automatically producing a bill for the calling number.



3,400,223
MULTIPLE INPUT CONTROL SYSTEM WITH SINGLE AMPLIFIER

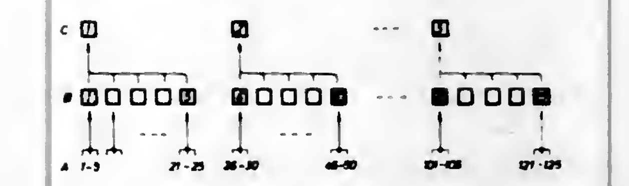
Donald G. Pedrotti, Cupertino, and David F. Anderson, Santa Clara, Calif., assignors to RCK, Incorporated, Sunnyvale, Calif., a corporation of California
Filed Dec. 10, 1964, Ser. No. 417,363
6 Claims. (Cl. 179—15)



A multiple input control system, for use in furnaces and the like, having a plurality of input terminals, one for receiving each controlled signal and comparing it with a reference signal. A deviation signal is generated from each input signal and passed through a selector into an amplifier. The amplified deviation signal is then integrated and the integrated value used to adjust the apparatus, such as a furnace, through a control.

3,400,224
TIME SCAN NETWORK SEARCH

Herbert Heitmann, Stuttgart-Feuerbach, Germany, assignor to International Standard Electric Corporation, a corporation of Delaware
Filed July 8, 1965, Ser. No. 470,354
Claims priority, application Germany, July 17, 1964, St 22,424
7 Claims. (Cl. 179—18)

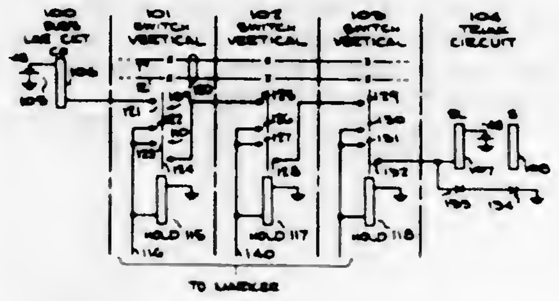


A network including a plurality of cascaded switching stages is scanned under the control of clock pulses. Each switch in a stage has a different timing cycle response

characteristic so that every path is explored in sequence. When a path is completed, a feed back signal locks up the switch selected during the scan and blocks all competing paths.

3,400,225
MAGNETIC LATCHING SWITCH HAVING RESIDUAL MAGNETISM FOR CROSS-POINT HOLD MEANS

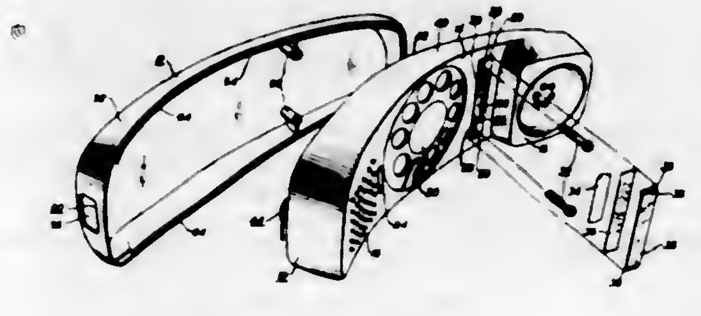
Edson L. Erwin, Towaco, N.J., assignor to International Telephone & Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed July 13, 1965, Ser. No. 471,574
7 Claims. (Cl. 179—22)



A telecommunication crossbar switching system in which the hold magnet core is driven to saturation by a pulse from a common control device and in which the hold magnet core remains actuated by residual core flux. Thus, a continuous hold current is unnecessary. At the end of the call a release potential of opposite polarity is applied across the core winding and the crosspoint is opened.

3,400,226
HAND TELEPHONE SET

Charles L. Krumreich and Eugene A. Mills, Indianapolis, Ind., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 27, 1965, Ser. No. 505,376
6 Claims. (Cl. 179—100)



1. A handset comprising:

a first housing member having an upturned rim including a mating edge, the first housing member further having a catch at one end thereof, a portion of the catch extending from the housing member in a direction generally normal to the rim;

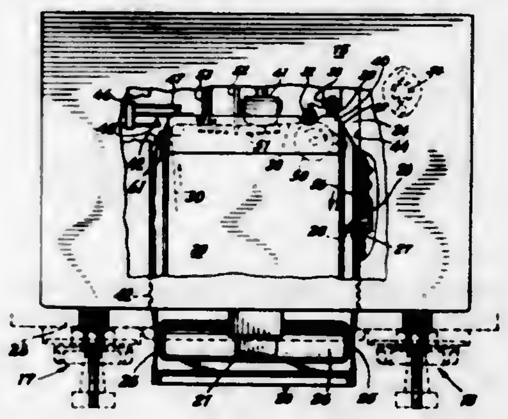
a second housing member having a downturned rim including a mating edge adapted to join with the mating edge of the first housing member to form a closure between the housing members, the second housing member further having a catch at one end thereof, the catch being adapted to engage the catch of the first housing member to secure the two housing members together at the one end thereof;

means for fastening the first and second housing members together in the vicinity of the other end thereof; and

fulcrum means protruding from one of the housing members in the same general direction as the rim thereof, the fulcrum means being located intermediate the securing portion of the housing and the housing and the fastening portion of the housing, the fulcrum means engaging the other housing member when the two housing members are fastened together and acting to deflect the secured ends of the housing members into tight engagement.

3,400,227
COMBINED RADIO AND MAGNETIC TAPE PLAYER

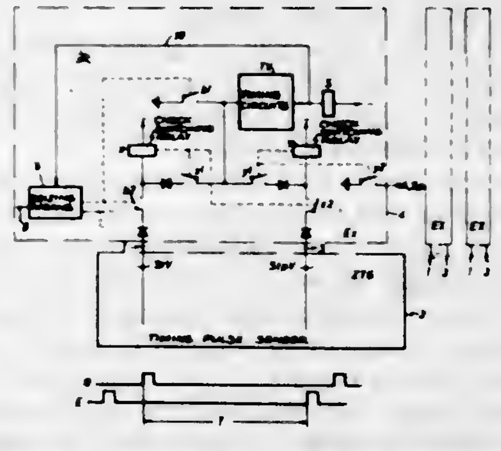
William P. Lear, Wichita, Kans., and Samuel H. Auld, Bloomfield Hills, Mich., assignors to Lear Jet Industries, Inc., a corporation of Delaware
Original application Aug. 26, 1964, Ser. No. 392,212. Divided and this application Oct. 11, 1965, Ser. No. 494,647
5 Claims. (Cl. 179—100.11)



The player accommodates cartridges with their tape in self-contained array. The tape is exposed for direct coaction with the tape drive capstan and the transducer. The cartridge is insertable in an opening of the player for such tape play relation. A radio tuner circuit is associated with the player. A circuit switch is arranged for abutment with the cartridge to energize the tape drive to transport the tape in play. The radio tuner is connected into circuit play relation by the switch when the cartridge is withdrawn, which deenergizes the tape drive at the same time.

3,400,228
METHOD AND CIRCUIT ARRANGEMENT FOR CENTRAL SUPERVISION OF TIME MEASURING CIRCUITS OF SEVERAL FUNCTIONAL UNITS IN TELECOMMUNICATIONS, PARTICULARLY TELEPHONE EXCHANGE SYSTEMS

Heinz Bubber, Munchingen, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed June 7, 1965, Ser. No. 461,813
Claims priority, application Germany, June 20, 1964, St 22,284
7 Claims. (Cl. 179—175.2)



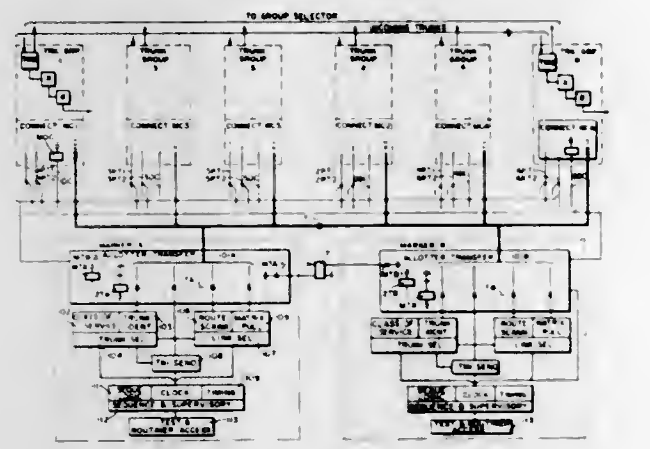
Supervision of a functional unit is maintained by providing checking pulses at the beginning and at the end of a specified time period. If the functional unit is in operation at both times, failure is evident and a trouble signal is provided.

3,400,229
MAINTENANCE PROVISIONS FOR PULSE SEQUENCED EQUIPMENT

John R. Vande Wege, Glen Ellyn, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed July 30, 1965, Ser. No. 476,077

10 Claims. (Cl. 179—175.2)



1. An arrangement for normally supplying interlaced trains of repetitive pulses on two output leads with provisions for blocking the normal repetitive pulses from the output leads and for manually controlling the supply of a single pulse to either output lead upon each operation of a manual control corresponding to the particular output lead;

said arrangement comprising a source of cyclically recurring clock pulses on first and second input leads, the pulses on each lead occurring during the interpulse interval of the other lead and having the same cycle time, said input leads being coupled via first and second input pulse gates to first and second intermediate leads respectively, and said intermediate leads being coupled via first and second output pulse gates to first and second output leads respectively, each of said pulse gates having direct current control means normally enabled to cause the gates to pass all of the pulses on the respective leads;

manually controlled stop means coupled to the said direct current control means operated to block all four of said pulse gates;

a source of cyclically recurring timing pulses having a cycle time equal to several of said clock pulse cycles, each timing pulse having a duration at least equal to one pulse cycle;

said source of timing pulses being coupled to the direct current control means of said input pulse gates to enable them to pass only one pulse to each said intermediate lead during each timing pulse cycle;

first and second bistable devices;

first and second manually controlled switch means for selectively controlling the supply of only one pulse to the corresponding output lead upon each operation of one of these switch means;

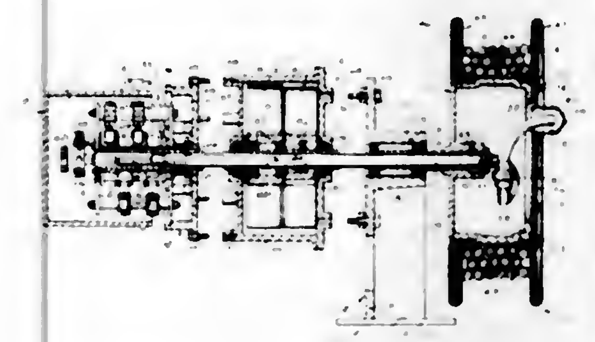
said switch means and said intermediate means being coupled to said bistable devices to set the one of the bistable devices corresponding to an operated one of the switch means upon the occurrence of a pulse on the opposite intermediate lead, the outputs of said bistable devices being coupled to said direct current control means of said output pulse gates to respond to one of the bistable devices being in the set condition while the other is in the reset condition to enable the pulse gate corresponding to the bistable device in the set condition to pass the next pulse occurring on the corresponding intermediate lead to the corresponding output lead, a connection from the output of each bistable device to the input of the opposite bistable device to set said opposite bistable device upon the next occurrence of a pulse on said opposite intermediate lead to thereby block said output pulse gates responsive to the bistable devices being both in the same condition, and means responsive to restoration to normal of said switch means upon the occurrence of a pulse on a given one of said intermediate leads to reset both of said bistable devices, whereby further pulses to said output leads are blocked.

3,400,230
ELECTRIC CABLE REEL

Roger T. Becker, Kalamazoo, and William K. Becker, Ross Township, Kalamazoo County, Mich., assignors to Aero-Motive Manufacturing Company, Kalamazoo, Mich., a corporation of Michigan

Filed Aug. 25, 1966, Ser. No. 575,107

7 Claims. (Cl. 191—12.2)



A reel construction comprising a plurality of components capable of quick and easy assembly or disassembly for replacement, such components including a base, a pair of telescoped shafts, a spool, a spring motor and a collector ring assembly.

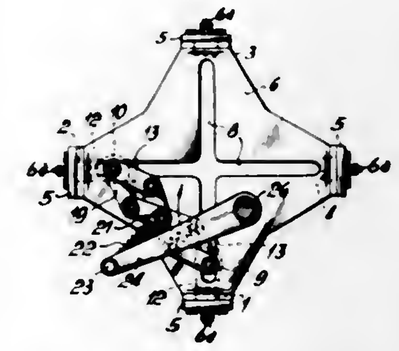
3,400,231
TRANSFER SWITCH FOR TAP-CHANGING TRANSFORMERS HAVING CONTACTS MOVABLE ALONG ORTHOGONAL DIAMETERS OF A CIRCLE

Alexander Bleibtreu, Regensburg, Germany, assignor to Maschinenfabrik Reinhausen Gebruder Scheubeck K.G., Regensburg, Germany

Filed Jan. 25, 1966, Ser. No. 522,908

Claims priority, application Germany, Feb. 23, 1965, M 64,282

9 Claims. (Cl. 200—11)



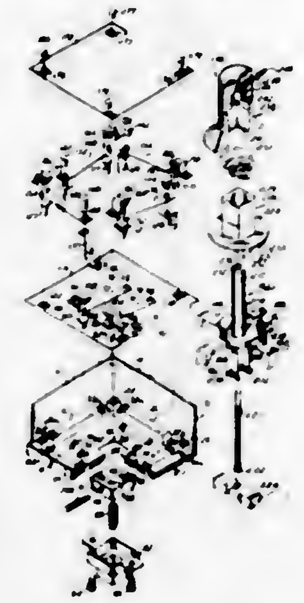
Disclosed below is a transfer switch for effecting tap-changing operations allowing a relative increase of the stroke of its movable contacts and a relative decrease of its bulk. This is achieved by contact means having trajectories which are orthogonal diameters of a circle, and by operating means capable of moving the contact means along these trajectories in any desired sequence.

3,400,232
MULTIPLE FUNCTION CIRCUIT CONTROLLER AND CIRCUIT

Charles J. Mathey, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Sept. 30, 1966, Ser. No. 583,249

13 Claims. (Cl. 200—18)



This circuit controller serves efficiently as a master switch for the power windows of a motor vehicle. Primary switches for operating the window motors are located around the inside periphery of a switch housing and secondary switches for reversing the polarity at the primary switches are located on the floor of the housing. A wand projecting from the housing pivots a cross shaped member to move arms into touch with individual primary switches or any two adjacent primary switches, thereby actuating motors controlled by the switches to raise the associated windows. Depressing a knob on the wand simultaneously with the above pivoting actuates the secondary switches to reverse the polarity at the primary switches and thereby lower the appropriate window. Cams on a member rotatable by rotation of the knob in one direction actuate all primary switches concomitantly to raise all the windows and, with depression of the knob described above, to lower all the windows. A pin actuated by rotation of the knob in the opposite direction acts on one of the secondary switches to disconnect the primary switches from the power source, thereby preventing accidental actuation of the master switch and, with the disclosed circuitry, also preventing unauthorized actuation of switches mounted for use by the occupant of the seat near each window.

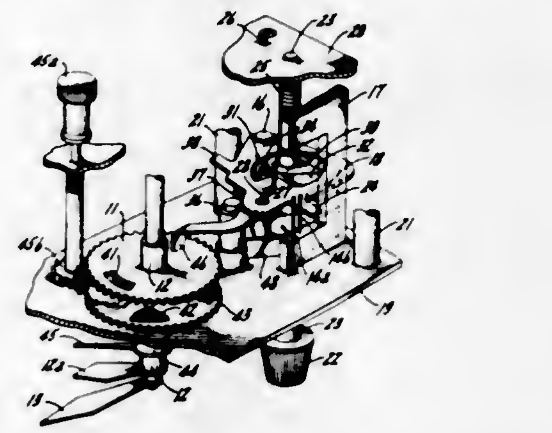
3,400,233
MECHANISM TO PROVIDE A ONE BUTTON BATTERY OPERATED CLOCK RADIO TIMER

Thomas F. Ring, Bowling Green, Ky., assignor to General Time Corporation, Stamford, Conn., a corporation of Connecticut

Filed Sept. 21, 1966, Ser. No. 580,953

3 Claims. (Cl. 200—38)

1. A switch controlling timer comprising the combination of a frame member, a pair of switch contacts anchored relative to said frame member, a switch operator spaced away from said frame member and mounted for movement along a first path to open and close said contacts and along a second path toward and away from said frame member, biasing means for urging said operator both toward said frame member and toward one end of said first path, means for latching said operator when the latter is urged toward the frame member at the other end of said first path, clock controlled means for shifting said operator away from said frame member at a preselected time so as to unlatch the operator, and a unitary control member mounted for angular movement in the space between said frame member and said operator to provide three alternate positions, said operator having a cut-out for receiving said control member with the cut-out forming cam surfaces cooperating with said control



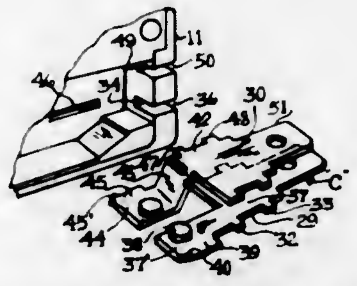
member, said cam surfaces formed by said cut-out cooperating with said control member in one position of the latter to hold the operator in said other end of said first path, said cam surfaces formed by said cut-out cooperating with said control member in a second position of the latter to shift the operator away from said frame member so as to unlatch the operator.

3,400,234
SNAP-ACTION SWITCH

Eric L. Long, Highland Park, Ill., assignor to Cherry Electrical Products Corporation, Highland Park, Ill., a corporation of Illinois

Filed Jan. 16, 1967, Ser. No. 609,590

2 Claims. (Cl. 200—67)



A switch of the snap action character wherein a free end of a switch blade is moved into contact with independent fixed terminals that provide within the switch housing spaced apart horizontally aligned contact bearing head portions. The fixed terminals have a construction that permits a maximum current conductivity therethrough, and one which requires the placement of the contact bearing head portions in a common horizontal plane within the switch housing and with the connector ends of the terminals retaining their full size and lying in a spaced apart horizontally disposed vertically aligned arrangement.

3,400,235
CURRENT LIMITING FUSE

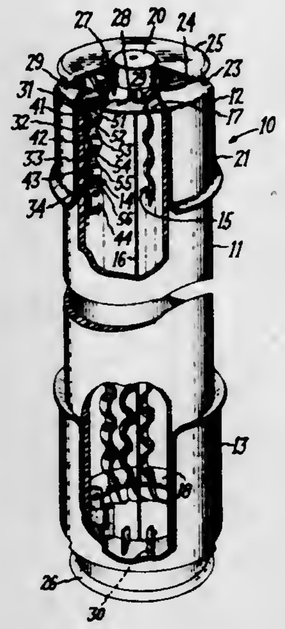
John F. Howard and Henry J. Lynch, Peterborough, Ontario, Canada, assignors to Canadian General Electric Company, Limited, Toronto, Ontario, Canada, a corporation of Canada

Filed Aug. 21, 1967, Ser. No. 661,884

Claims priority, application Canada, Dec. 28, 1966, 979,048

5 Claims. (Cl. 337—229)

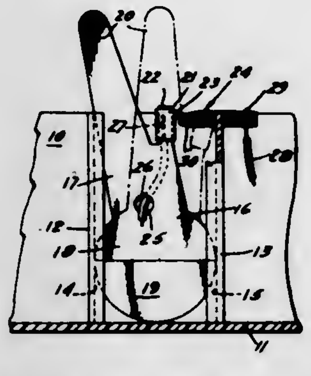
A current limiting fuse whose fusible element is a strip of silver having along its length alternate straight portions and semi-circular bowed portions standing on the same side of the strip, the bowed portions each containing two relatively large apertures located on the longitudinal axis of the strip near the adjoining straight portions, the elements being under light tension and embedded throughout its length in granular arc extinguishing material.



3,400,236

ELECTRIC SWITCH WITH COIL SPRING CONTACT

Leonard H. McRoskey, Los Angeles, Calif., assignor, by direct and mesne assignments, to Republic Tool & Manufacturing Corp., a corporation of California
Continuation-in-part of application Ser. No. 488,431, Sept. 20, 1965. This application Sept. 26, 1966, Ser. No. 582,103
5 Claims. (Cl. 200—153)



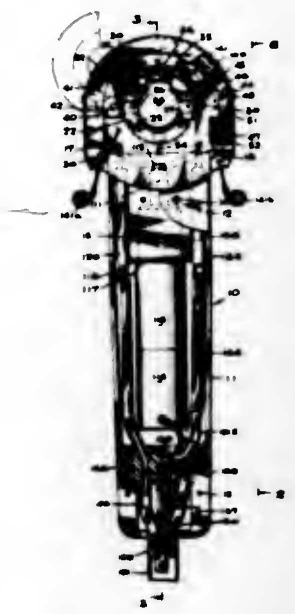
An electric switch, especially for controlling circuits in toy devices, having a pair of contacts in which one of the contacts has a freely deflectable portion normally spring urged into a closed position of engagement with a fixed contact which may comprise a terminal of an electrical device, and a camming barrier of nonconducting material selectively movable into and out of a position between and separating the contacts, movement of the barrier being operable on the deflectable portion and acting to move it with respect to the fixed contact.

3,400,237

WELDING HEAD

Gasparas Kazlauskas, 4804 Gaviota Ave., Encino, Calif. 91316
Filed Dec. 1, 1964, Ser. No. 415,058
13 Claims. (Cl. 219—60)

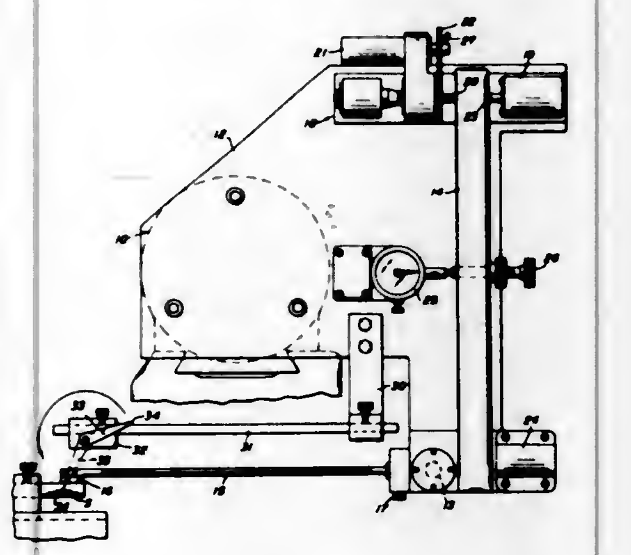
A welding head for tubes and the like having a handle rotatably mounting a driven external ring gear containing an annular gas cup through which a tube to be welded is axially inserted and held in centered position by a combined tube gripping and grounding clamp on the handle. The ring gear carries an electrode which extends radially through the cup and rotates about the tube to produce a weld when the gear is driven in rotation with a welding voltage impressed across the tube clamp and electrode. An inert gas flows through the cup directly to the exterior of the handle through a flow space defined between the cup and tube to prevent oxidation and cool the gear.



3,400,238

METHOD AND DEVICE FOR MEASURING SIMULATED FLAWS IN STANDARD SPECIMENS

William L. Zemberry, Swissvale, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed May 14, 1965, Ser. No. 455,858
6 Claims. (Cl. 219—69)

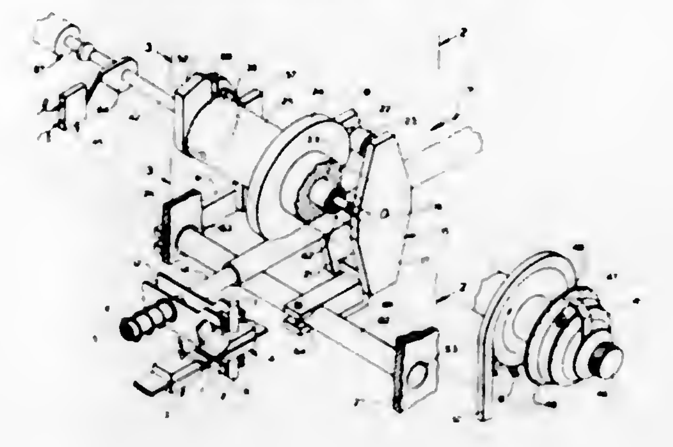


A method and apparatus for measuring the depth of a simulated flaw cut in a metal body to be used as a standard in calibrating flaw-detection equipment. Invention is used with a known machine which includes a thin metal electrode, which penetrates the body to cut the flaw, and means to indicate the distance the electrode travels. Invention includes a gauge wire placed over the flaw when the electrode is withdrawn. Electrode then moved into contact with gauge wire. Depth of cut equals difference between micrometer readings when electrode is at bottom of flaw and when contacting gauge wire, minus diameter of wire.

3,400,239

FLASH WELDER CONTROL

Wolfgang B. Fahrenbach, Oakland, Calif., assignor to Stryco Manufacturing Co., San Francisco, Calif., a corporation of California
Filed Aug. 7, 1964, Ser. No. 388,157
5 Claims. (Cl. 219—97)

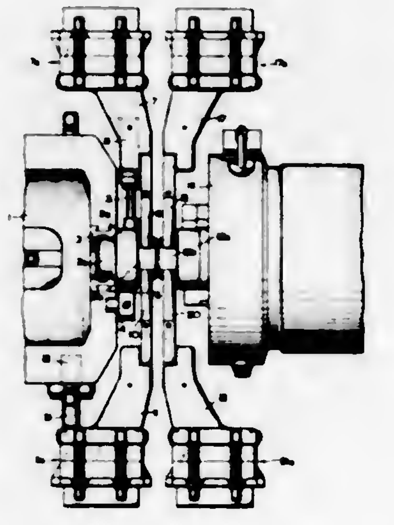


An apparatus for flash welding includes a control for determining the flashing distance and upset point of the workpieces. The control consists of two phaseable, concentrically arranged shafts fixed to respective cams and pointer indexing means for indicating the positions of the shafts. A first cam allowing accelerated movement serves to control the speed at which the workpieces move together by the engagement of the cam with a spring biased workpiece holder. A second eccentrically fixed cam serves to trip the engagement of the first cam with the workpiece holder for establishing the upset.

3,400,240

METHOD AND APPARATUS FOR CHUCKING WORKPIECES FOR ELECTRIC RESISTANCE WELDING EMPLOYING CONSTANT PRESSURE CONTACT JAWS

Eberhard Rietsch, Burscheid, Germany, assignor to Theodor Wuppermann Gesellschaft mit beschrankter Haftung, Leverkusen, Germany
Filed Dec. 30, 1964, Ser. No. 422,224
Claims priority, application Germany, Jan. 10, 1964, W 35,949
14 Claims. (Cl. 219—97)

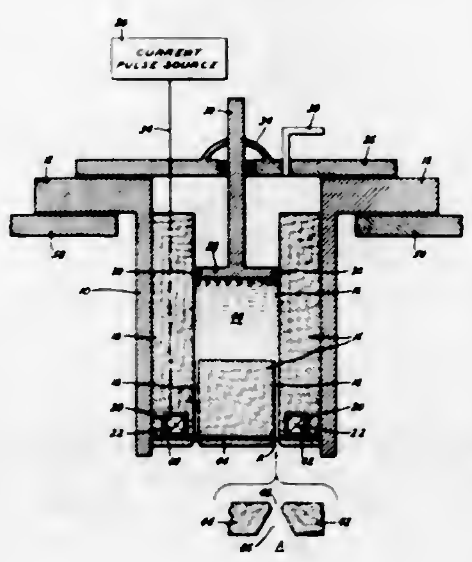


A method and apparatus for chucking crankshaft sections to be flash welded involving engaging a web of a crankshaft section through the action of a fixed and a movable mechanical clamp and engaging a pin of the crankshaft section with a pair of welding current contact jaws. The pressure of the jaws on the pin is equalized by providing a pair of fluid pressure actuator stop means connected to a common source. Each stop means includes a cylinder and a piston. One of the stop means moves with a contact jaw and contains the movable clamp, the other stop means is mounted on the chucking means with its cylinder projecting into the path of the opposite actuator.

3,400,241

INDUCTIVE METAL VAPORIZER

Per Gloersen, Levittown, Bernard Gorowitz, Cheltenham, and Thomas W. Karras, Devon, Pa., assignors to General Electric Company, a corporation of New York
Filed Mar. 8, 1966, Ser. No. 532,701
4 Claims. (Cl. 219—10.65)

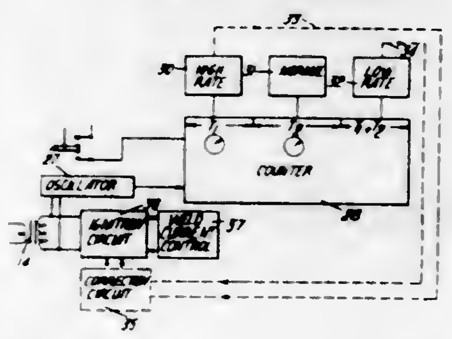


Store of liquid metal under pressure is connected by capillary channels to ring-shaped metering chamber provided with capillary nozzles too small to pass liquid, but passable by metal vapor. Inductor is coupled to metal-filled ring chamber, pulsed to vaporize only quantity of metal in metering chamber, generating puff of vapor out of nozzles.

3,400,242

RESISTANCE WELDING

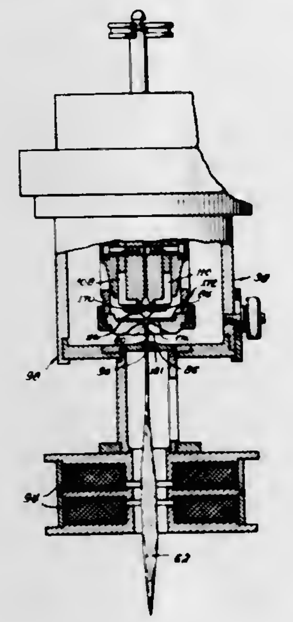
David N. Waller, London, England, assignor to British Welding Research Association
Filed July 7, 1964, Ser. No. 380,760
Claims priority, application Great Britain, July 11, 1963, 27,566/63
13 Claims. (Cl. 219—110)



To permit prediction of splashed and underheated welds in resistance welding, the rate of expansion of the workpieces between the electrodes during an initial portion of the welding operation is measured. The rate signal indicates the quality of the final weld and may be used to modify the heat input immediately after this initial portion so as to correct a weld which would otherwise be splashed or underheated.

3,400,243
ELECTRON BEAM WELDING MACHINE

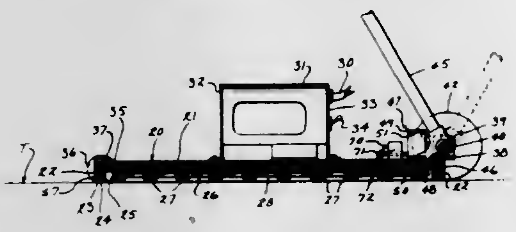
Louis A. McNabb, Glen Ellyn, Ill., assignor to Mech-Tronics Corporation, Melrose Park, Ill., a corporation of Illinois
Filed Aug. 10, 1964, Ser. No. 388,480
7 Claims. (Cl. 219—121)



A high precision beam welding machine in which a welding beam of electrons emitted by an electrically heated emitter is focused onto a workpiece with great precision by virtue of the path of the beam being rendered effectively free of beam deflecting magnetomotive influences incident to electrical heating of the emitter. This end is advantageously achieved by most economical structural expedients which harmlessly collect and effectively isolate from the beam path or which work an effective self-neutralization of the magnetomotive influences incident to emitter heating current. In conjunction with these most economical and effective expedients or as an alternative, the emitter is heated electrically by electron bombardment, thus effectively avoiding generation beam deflecting magnetomotive forces incident to electrical heating of the emitter.

3,400,244
MACHINE FOR ELECTRICALLY HEATING FLOOR TILE PRIOR TO REMOVAL

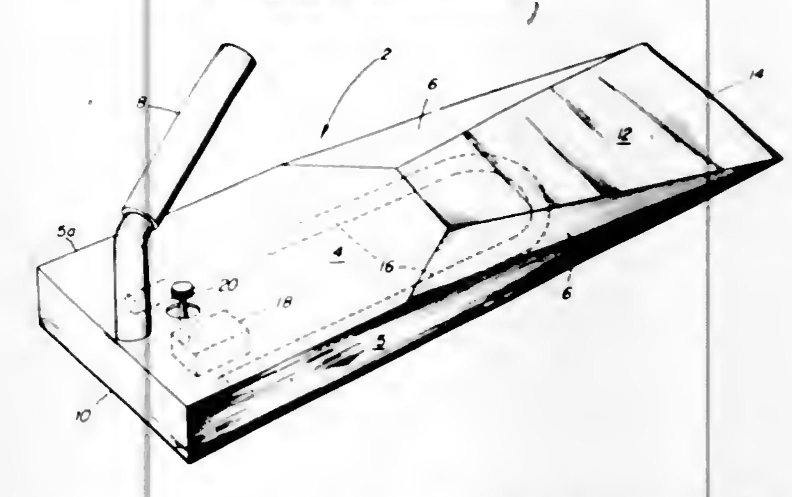
Henry E. Meltzer, 1745 Flett St., Racine, Wis. 53403
Filed May 3, 1965, Ser. No. 452,706
3 Claims. (Cl. 219—228)



A device for heating floor tiles prior to removal has a square frame constructed of nested inverted pans defining an open bottom insulated chamber enclosing an exposed electric heating coil. In one version, the frame is of such size as to simultaneously heat a plurality of tiles and includes rollers adjustably mounted so as to lie even with the lower frame periphery in the heating position, but which raise the frame when it is desired to roll the device across the floor. Another version, provided with a stand-cover for selectably closing the bottom of the chamber, is designed to heat a single tile.

3,400,245
SADIRON

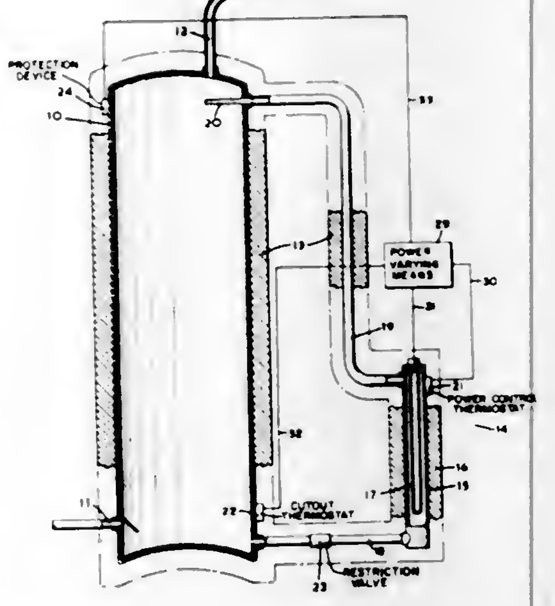
Charles D. Burgess, Macon, Ga., assignor, by mesne assignments to Giffen-Burgess Corp., a corporation of Delaware
Filed Sept. 15, 1967, Ser. No. 668,145
5 Claims. (Cl. 219—245)



A sadiron which has an elongated body with parallel side margins and a lower flat sole plate surface. The top surface of the body has an afterportion which slopes in the direction of the sole plate and which is at least in part a planar surface extending to and terminating in common co-extensive juncture with a transverse trailing edge of the body. Additionally, the body may be provided with side walls of a contoured character and which extend inwardly from the side margins of the body and merge with the sloping afterportion of the body top surface, the side walls being themselves flat surfaces which diminsh in width in the direction of the trailing edge of the body.

3,400,246
DUAL-INPUT ELECTRIC SIDE-ARM WATER HEATER

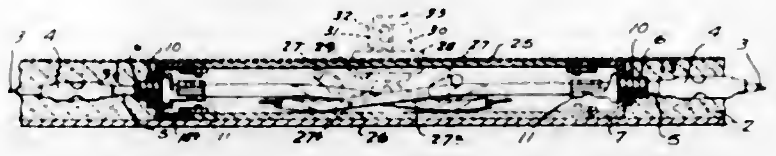
Almos Peter Zob, 8 Oakwood Ave. N., Port Credit, Ontario, Canada
Filed Oct. 18, 1965, Ser. No. 497,364
6 Claims. (Cl. 219—297)



A side-arm water heater has a single electric heating element located in the side-arm. A thermostat responsive to water temperature at the downstream end of the side arm, controls the power supply to the heating element at two different power levels having a ratio to each other of between about 3:1 and about 4:1 through a power varying device. The power can be varied by changing the input voltage or by changing the resistance of the heating element. Another thermostat located at the bottom of the tank adjacent the inlet to the side-arm, de-energizes the heating element when the water has reached a desired temperature.

3,400,247
ELECTRICAL RADIANT HEATING PANELS

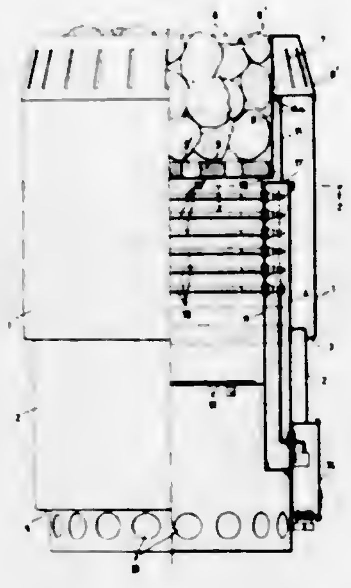
George P. Deacon, 158 Poplar St., Wheeling, W. Va. 26003
Filed Oct. 12, 1965, Ser. No. 495,093
3 Claims. (Cl. 219—345)



A plaster board having a plaster core, a layer of sheet material on each side of the core and an electric heating wire distributed through the core forms a heating panel. Positioned flush in the core is a junction box having removable top and bottom access plates covered over by the layers. A readily detectable but normally invisible indicating coating is provided on one layer at the location of the removable plate so that the box can be easily located even when the panel is installed. The heating wires are connected to a source of power by means of the wires extending through the other access plate of the box.

3,400,248
ELECTRIC STEAM BATH STOVE

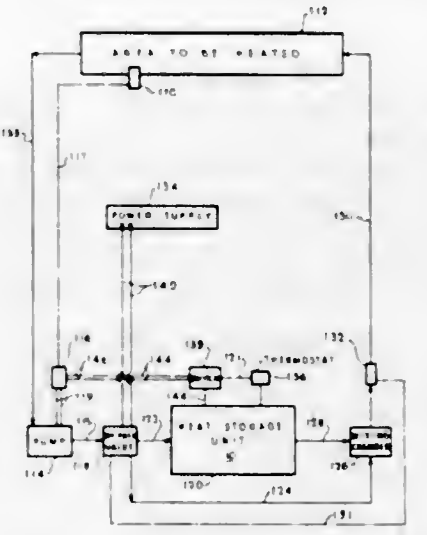
Erik Isomaa, Kadetintie 9, Munkkiniemi, Helsinki, Finland
Filed Feb. 7, 1966, Ser. No. 525,471
Claims priority, application Finland, Dec. 8, 1965, 2,950/65
6 Claims. (Cl. 219—367)



Thermostatically controlled heating elements are positioned in the inner jacket of a sauna stove below the perforated bottom of an open-topped stove-filled compartment at the upper end of the jacket. An outer jacket surrounds the inner jacket and compartment to define a passage through which room air flows thereby maintaining the temperature of the outer jacket at a safe level. Room air also flows upwardly through the inner jacket over the elements and through the stove compartment. Some of the heated air from the inner jacket is diverted into the upper end of the passage to accelerate the flow of room air therethrough.

3,400,249
HEATING SYSTEM

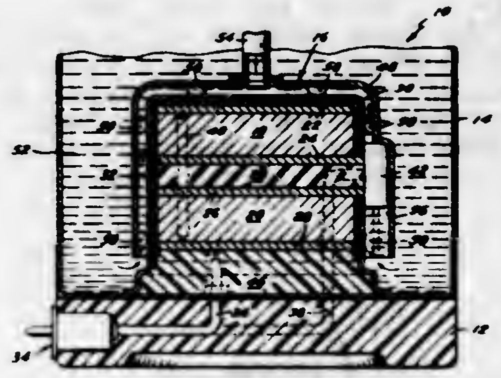
Matthew Mekjean and James S. Sconce, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Continuation of application Ser. No. 368,590, May 19, 1964. This application Oct. 26, 1966, Ser. No. 589,764
8 Claims. (Cl. 219—378)



A heating system comprising means for conducting a heat transfer medium to a heat storage unit, a heat storage unit comprising a substantially anhydrous heat storage medium comprised of a major proportion of an alkali metal hydroxide and a minor proportion of a non-reducing agent and a corrosion inhibitor, said heat storage unit having heating means within said heat storage medium for heating said heat storage medium to a temperature above the fusion point of the heat storage medium, means for bringing said heat transfer medium into thermal contact with said heat storage unit, means for conducting said heat transfer medium from said heat transfer unit and means for withdrawing heat therefrom to cool said heat storage medium below its fusion point.

3,400,250
HEATING APPARATUS

Francis P. Bulting, Plainville, and Joseph W. Waseleski, Jr., Mansfield, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 518,255
9 Claims. (Cl. 219—441)



1. A two stage fluid heater which has a temperature regulating character comprising:

(a) a base of electrically insulating material;
(b) a first pill of PTC material mounted on the base;
(c) electrically conductive layers attached to two opposite faces of the first pill;
(d) a second pill of PTC material adjacent to and electrically separated from the first pill;
(e) electrically conductive layers attached to two opposite faces of the second pill;

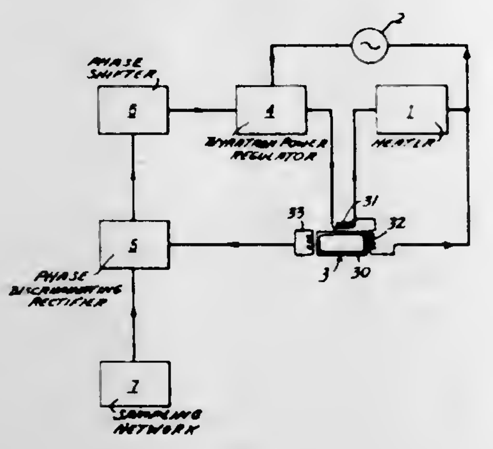
(f) electrical conductors connected to each of the layers;

(g) switch means mounted in the base and adapted in one position to electrically connect the first pill to a power source and in a second position to electrically connect the second pill to the power source; and

(h) a fluid channel forming member positioned over the PTC pills and adapted to direct fluid flow in contiguous heat relation thereto.

3,400,251
ELECTRIC CONTROL CIRCUITS

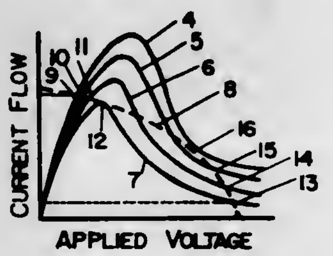
Peter Augustine Coyle, Ilford, Albert George Michael Reeves, Wanstead, London, and David Charles Sanders, Romford, England, assignors to The Plessey Company Limited, Ilford, England, a British company
Filed July 27, 1965, Ser. No. 475,144
Claims priority, application Great Britain, July 27, 1964, 17,317/64
7 Claims. (Cl. 219—503)



In a control system for an A.-C. energized electrical resistance heater, the D.C. output of a phase-discriminating rectifier to which an A.-C. voltage differentially indicative of the heater current and the voltage across the heater is fed, are applied through a phase-shift network to a thyratron-type power regulator, the rectifier being arranged to pass current only in a part-period of each half cycle in which heating current is allowed to flow irrespective of the heater temperature.

3,400,252
ELECTRICAL HEATING DEVICE

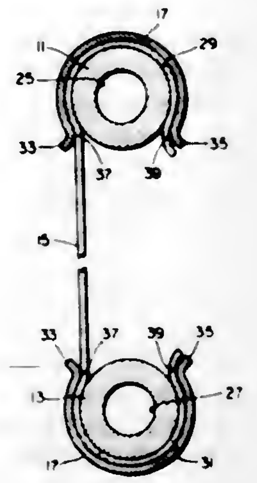
Shigeru Hayakawa, Hirakata-shi, Osaka-fu, Takashi Iguchi, Kyoto-shi, Kyoto-fu, and Yukio Kasahara, Kadoma-shi, Osaka-fu, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan
Filed Oct. 20, 1965, Ser. No. 498,548
1 Claim. (Cl. 219—504)



A temperature responsive resistance device which is responsive to change the flow of current therethrough at the ends of the range of temperatures, so that it can be used as a self controlled heating device, as part of a temperature control system, or as a temperature-current switch. The device has a thermistor which has a positive temperature coefficient of electrical resistance connected in series of an external impedance, the series connected elements being adapted to be coupled to a source of current and having a combined temperature-resistance characteristic which causes the current therethrough to drop abruptly when the temperature of the thermistor rises above the upper limit of the temperature range and to increase abruptly when the temperature of the thermistor drops below the lower limit of the temperature range.

3,400,253
GRAPHITE CLOTH HEATING ELEMENT CLAMPED ON BUS BARS

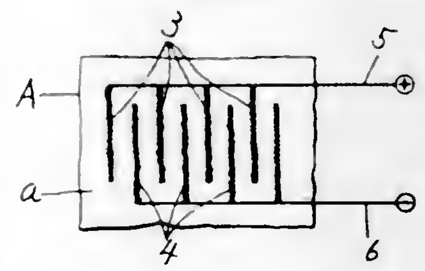
Roy C. Marker, Orinda, Calif., assignor to Air Reduction Company, Incorporated, a corporation of New York
Filed Jan. 7, 1966, Ser. No. 519,321
5 Claims. (Cl. 219—541)



A heating element in which a flexible graphite cloth resistance element extends between a pair of spaced cylindrical bus bars. Resilient clips secure the cloth resistance element to the bus bars. The bus bars are connected by suitable conductors to an electric power supply.

3,400,254
ELECTRIC HEATING DEVICE FOR MOUNTING INSIDE A FABRIC COVERING

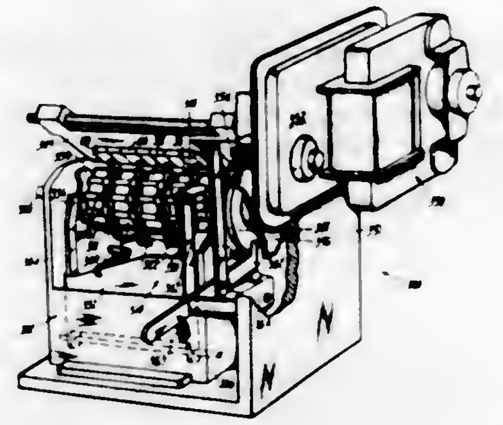
Hiroshi Takemori, 112 Higashiyama-cho, Ashiya, Hyogo Prefecture, Japan
Filed July 18, 1966, Ser. No. 565,826
6 Claims. (Cl. 219—549)



A heating means for mounting inside a fabric covering. It consists of a base cloth of a material which is electrically insulating and also heatproof. A layer of conductive and flexible polymer is provided thereon which has from 45 to 55 parts of graphite having a particle size less than 10 microns, and 100 parts of a polymer forming material. Positive and negative wires are fixed to the conductive cloth at regular intervals, and common leads are connected to the respective wires. When current is supplied to the leads, the conductive layer develops heat due to the electric resistance thereof.

3,400,255
COUNT TRANSFER SYSTEM

Harold B. Vroom, deceased, late of Simsbury, Conn., by Robert Lepak, executor, Springfield, Mass., assignor to Veeder Industries Inc., a corporation of Connecticut
Filed Jan. 5, 1965, Ser. No. 423,611
23 Claims. (Cl. 235—92)



A fuel dispensing system having a plurality of fuel pumps, a storage counter for each of the fuel pumps having a plurality of rotatable storage elements for storing the cost or volume of the fuel dispensed, and a single printing register having a plurality of rotatable printing wheels corresponding to the plurality of rotatable storage elements respectively and connected to be individually indexed by stepping motors as a selected storage counter is reset to an initial or zero angular position. Each one of the rotatable storage elements has a plurality of cam lobes and an associated switch adapted to be actuated by the cam lobes as the storage element is reset in the counting direction to zero, and the number of electrical pulses thereby generated provides for stepping the corresponding printing wheel in the subtracting direction a number of times which is proportional to the resetting angular displacement of the storage element. Selecting means is provided for individually resetting the storage counters and for thereby transferring the count of the selected storage counter to the printing registers, and sequencing or interlock means is provided for maintaining the associated fuel pump inoperative for delivering fuel until after the associated storage counter is reset.

3,400,256
COUNTING DEVICE

Rudolf Scheidig, Stuttgart-Feuerbach, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed June 15, 1965, Ser. No. 464,182
Claims priority, application Germany, July 3, 1964, St 22,349
11 Claims. (Cl. 235—92)

1. A counting device incorporating

a chain circuit with bistable magnetic elements in which the advance of different switching conditions from one stage to the following is performed by contacts controlled by magnetic elements,

said device comprising a plurality of bistable magnetic elements,

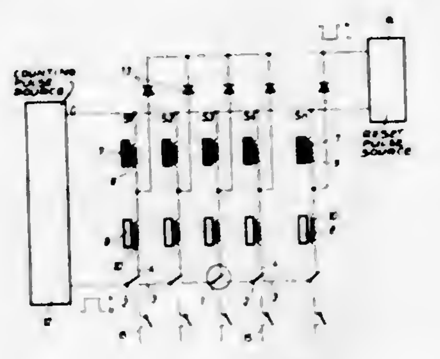
said elements including a hard-magnetic body and a soft-magnetic body,

means connecting said bodies in series in a magnetic circuit,

said magnetic circuit including two excitation windings effective in the same sense but connected mutually in the opposite sense,

an armature contact including at least one operating air gap,

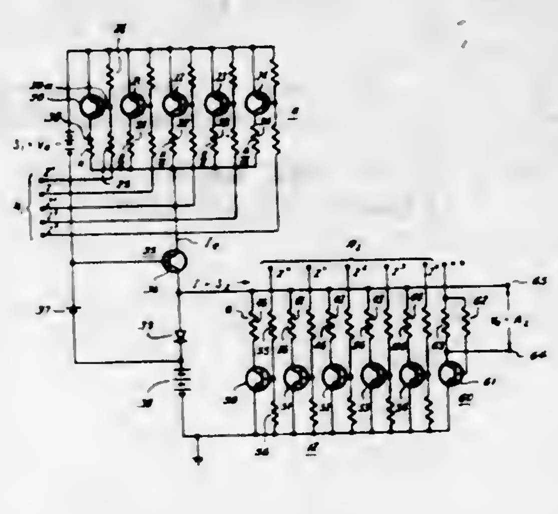
said excitation windings being arranged in such a way that the magnetic effect on the armature contact is ineffective during a pulse,



said soft magnetic core losing its magnetism between pulses, and the hard-magnetic core retaining its magnetism to keep the contacts actuated during pulse intervals.

3,400,257
ARITHMETIC OPERATIONS USING TWO OR MORE DIGITAL-TO-ANALOG CONVERTERS

John S. Smith, Ridgefield, Conn., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Oct. 5, 1964, Ser. No. 401,599
2 Claims. (Cl. 235—150.52)

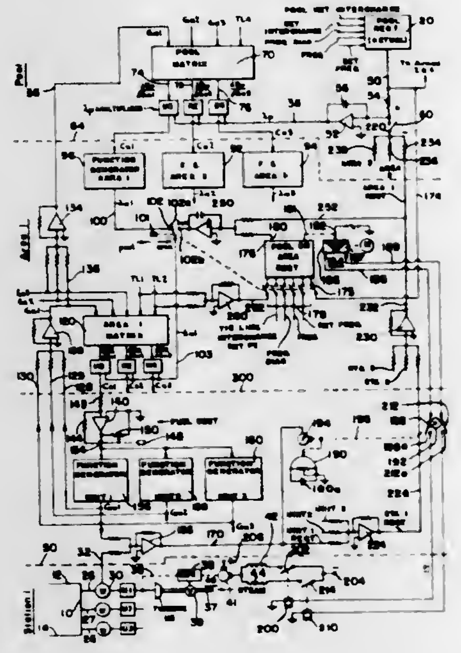


A typical embodiment of the invention performs arithmetic operations during digital-to-analog signal conversion. A first digital-to-analog converter produces an output signal in response to a binary input. This output signal, however, is supplied to the source terminals of a second digital-to-analog converter. The combination of variable source signal and second digital input provides still another output signal that corresponds to the arithmetic function of the two digital inputs.

3,400,258
ECONOMIC CONTROL OF POWER POOLS

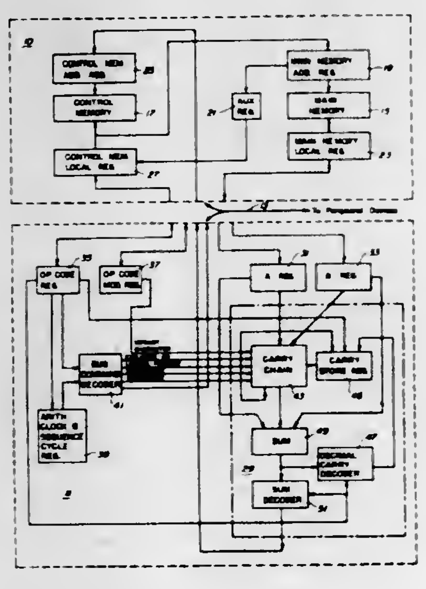
Walter O. Stadlin, Eagleville, Pa., assignor to Leeds & Northrup Company, a corporation of Pennsylvania
Filed Nov. 29, 1963, Ser. No. 326,662
10 Claims. (Cl. 235—151.21)

Arrangements for computing and/or controlling the allocation of generation among sources in a plurality of areas interconnected to form a power pool. The incremental cost of power delivered to a load center of the pool is multiplied by the percent of power delivered by the areas to such load center to give an incremental cost of delivered power at a bus of each area. Each incremental bus cost of delivered power is converted to an incremental cost of delivered power at the associated area's load center which, in turn, is utilized to determine the desired source-generations.



3,400,259
MULTIFUNCTION ADDER INCLUDING MULTI-STAGE CARRY CHAIN REGISTER WITH CONDITIONING MEANS

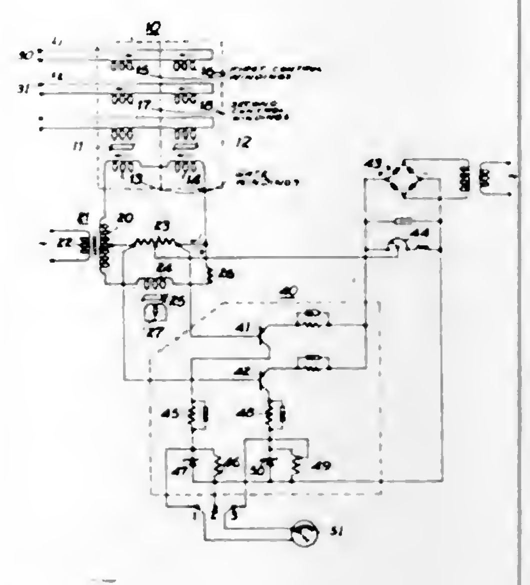
William J. Maczko and Walter R. Lethin, Canton, Mass., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed June 19, 1964, Ser. No. 376,348
13 Claims. (Cl. 235—156)



1. An information handling apparatus for manipulating a plurality of operands each of which is comprised of a plurality of mutually exclusive information bits, a first-level gating circuit having a plurality of inputs connected thereto, said plurality of inputs connected to said first level gating circuit including signals representative of corresponding bits of said plurality of operands, a second-level gating circuit having a plurality of inputs connected thereto, means connecting the output of said first-level gating circuit together with said signals representing said corresponding bits of said plurality of operands as inputs to said second-level gating circuit, a third-level gating circuit, and means connecting the output of said first and second level gating circuits together with said signals representing said corresponding bits of said plurality of operands as inputs to said third-level gating circuit, said plurality of inputs connected to said first- and second-level gating circuit further including a plurality of logical control signals, and means for selectively activating said plurality of logical control signal inputs to said first- and second-level gating circuits to thereby enable said information handling apparatus to satisfy any one of a plurality of both logical and arithmetic operations.

3,400,260
TRANSDUCTOR PULSE-TIME CONTROL AND DIVIDER SYSTEM

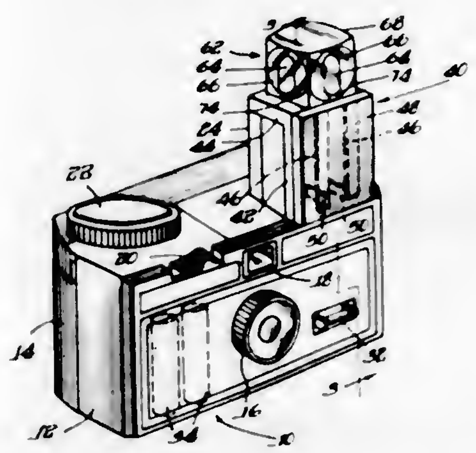
Max J. Kramer, Parma, Ohio, assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 30, 1964, Ser. No. 386,167
11 Claims. (Cl. 235—196)



1. A magnetic A.C. pulse-time control system comprising:
(a) a series transductor having two saturable magnetic cores, each provided with an alternating current gate winding, said gate windings being series connected;
(b) an A.C. gate circuit connected across said gate windings;
(c) series connected first and series connected second control windings on each of said cores;
(d) first and second control circuits for receiving first and second control direct currents;
(e) said first control circuit connected across said first control windings to apply the first control current thereto and said second circuit connected across said second control windings to apply the second control current thereto;
(f) said control windings on one of said cores being in subtractive current relationship, and said control windings on the other of said cores being in additive current relationship, whereby said cores are differentially magnetized in accordance with the difference and the sum, respectively, of said control currents thereby causing the alternating square wave form of output current in said gate circuit to be asymmetrical in crest heights and time-widths and related to each other in accordance with the difference and the sum, respectively, of said control currents;
(g) electrical means connected to said gate circuit and responsive to said asymmetrical square wave current for producing square wave output pulses with uniform and constant heights and of pulse-time equality with said asymmetrical square wave current.

3,400,261
ADAPTER FOR CAMERA

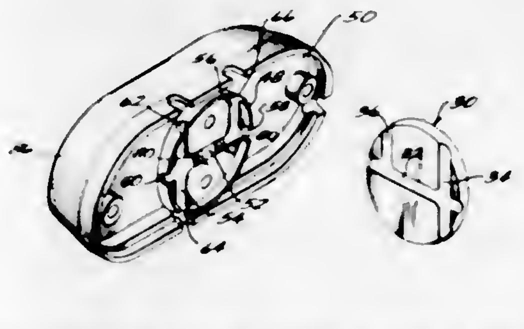
Norman B. Jacob, 7509 Palma Lane, Morton Grove, Ill. 60053
Filed Oct. 18, 1965, Ser. No. 497,123
6 Claims. (Cl. 240—1.3)



An adapter for a flash camera which is removably mechanically associated with the flash reflector of the camera, and which enables a multilamp flash unit to be used with the camera in place of a single flash lamp normally employed with the camera. In its preferred form, the adapter comprises a body member having two pairs of contacts, one pair being adapted to engage the flash lamp receiving and energizing contacts of the camera, and the other pair being adapted successively to engage the contacts of the multilamp flash unit.

3,400,262
VEHICLE LAMP MOUNTING AND WIRING FIXTURE

Charles J. Newman, Madison, Ind., and Elbert J. Lucas, Andalusia, Ala., assignors to The Grote Manufacturing Company, Inc., Madison, Ind., a corporation of Kentucky
Filed Dec. 14, 1966, Ser. No. 601,630
7 Claims. (Cl. 240—8.2)

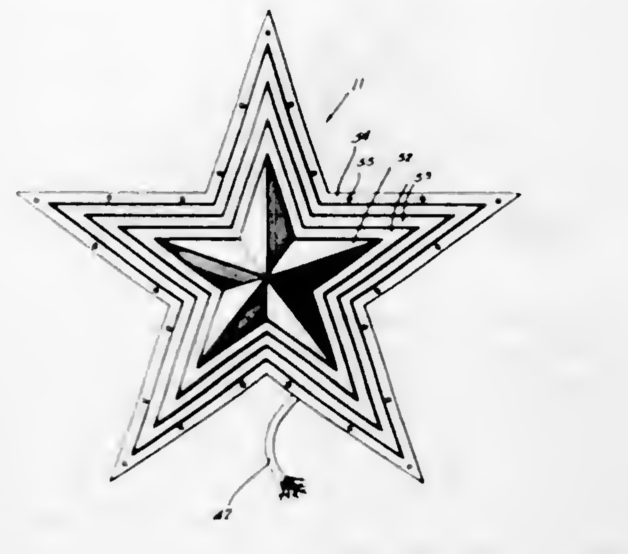


A lamp base-positioning plate having a back face with adhesive for mounting the plate on a vehicle. The front face of the plate is provided with a channel. A lamp base having a bulb socket mounted thereon is telescopically engaged with the positioning plate. The bulb socket is provided with prongs for penetrating the insulation of an electrical conductor located in the channel. A bolt is used to mount the lamp base on the vehicle and also functions as an independent ground connection. A translucent shell is mounted on the lamp base and covers the lamp socket.

3,400,263
ORNAMENTAL ILLUMINATED COLOR STAR LIGHT

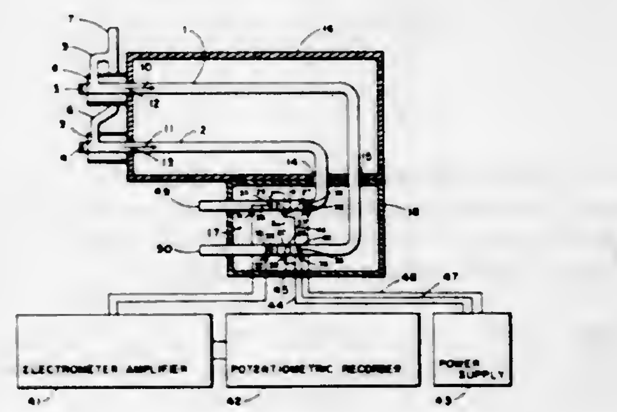
Charles Yakim, 612½ Soles St., McKeesport, Pa. 15132
Filed Dec. 23, 1966, Ser. No. 604,240
5 Claims. (Cl. 240—10)

An illuminated star consisting of an intermediate flat rigid star-shaped frame with a center in the form of an open pentagon and open triangular points on the sides of the pentagon. Each point has a straight intermediate cross arm parallel to the associated pentagon side. Different colored outwardly projecting lamps are mounted in the points and on the midportions of the respective sides of the pentagon in radial alinement. Additional inwardly projecting colored lamps are mounted on the corners of the pentagon and on the midportions of the pentagon sides, forming an inner pentagon concentric with the frame pentagon. A pair of outwardly convex star-shaped translucent covers are secured to the opposite side surfaces of the frame. The lamps are wired so that groups of lamps of common color may be simultaneously energized, and so that the respective groups may be sequentially energized.



3,400,264
DUAL COLUMN GAS CHROMATOGRAPHY APPARATUS

Hugh L. Ball, 9939 Estacado, Dallas, Tex. 75228
Filed Sept. 1, 1964, Ser. No. 393,613
8 Claims. (Cl. 250—43.5)



A gas chromatograph with an alpha source detector wherein direct ionization measurement is obtained. Electrodes are maintained at a positive voltage between 100 and 300 volts D.C. to accelerate the positive ions resulting from ionization by the alpha source toward collector electrodes which are maintained at a negative voltage between 100 and 300 volts D.C. Electrodes maintain the alpha source at a positive voltage between 20 and 50 volts D.C. to attract electrons to the alpha source to assure ionization of the sample and to replace the charge of the alpha particles that emanate from the alpha source.

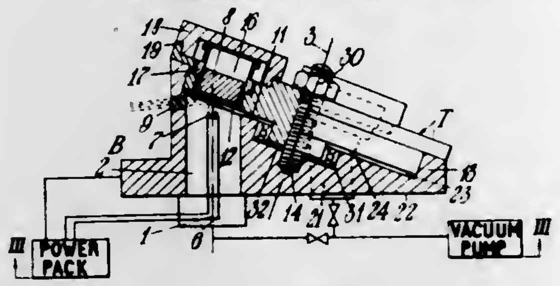
3,400,265
X-RAY SPECTROMETRY APPARATUS HAVING BOTH INTERCHANGEABLE SPECIMENS AND RADIATION SOURCES

Yvan Houbart, Liege, Belgium, assignor to Centre National de Recherches Metallurgiques, Brussels, Belgium, a Belgian corporation

Filed Mar. 30, 1965, Ser. No. 443,822

Claims priority, application Belgium, Apr. 1, 1964, 646,014

6 Claims. (Cl. 250—49.5)



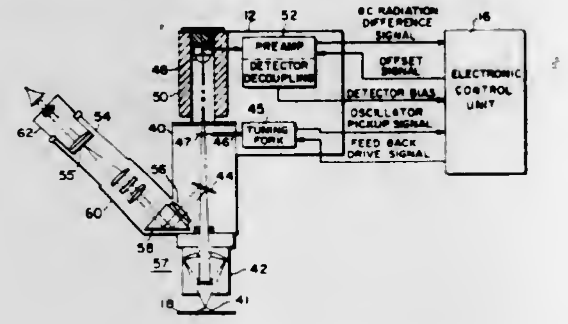
An apparatus is described for examining a specimen by bombardment with radiation, which apparatus includes a stationary base plate with an aperture therein for accommodating a radiation source and a rotatable turret mounted over the base plate, with at least two specimen holders therein, and means for evacuating the aperture, in which the aperture has an open upper end and a closed lower end, provision being made for at least one source of radiation to be introduced into the said aperture through the side walls thereof.

3,400,266
INFRARED RADIOMETRIC MICROSCOPE

John R. Yoder, Westport, Conn., Richard F. Leftwich, Pound Ridge, N.Y., and Donald W. Fisher, Norwalk, Conn., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware

Filed Dec. 2, 1964, Ser. No. 415,433

2 Claims. (Cl. 250—83.3)



Non-contact temperature measurements of small areas are provided by focusing an objective on a sample whose temperature is to be measured and applying the radiation through a beam splitter and a chopper to an infrared detector. A visual channel having an eyepiece and which includes means for reducing the magnification of the sample in the visual channel is in optical alignment with the beam splitter for allowing simultaneous viewing of the area whose temperature is being measured. The signals derived from the detector are processed by electronic means including an emissivity control means which provides direct temperature readings of the sample.

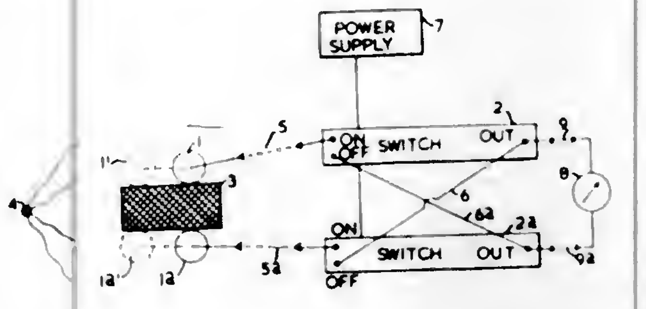
3,400,267
METHOD AND APPARATUS FOR RADIATION DIRECTION FINDING

Ronald W. Tolmie, Ottawa, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada

Continuation of application Ser. No. 296,229, July 19, 1963. This application Apr. 18, 1966, Ser. No. 543,434

5 Claims. (Cl. 250—83.3)

There is disclosed in the drawings and hereinafter specification a method and apparatus for determining the direction of emission of radiation from a radioactive body in such a way as to be independent of the intensity of the radiation therefrom. According to the method and the particular apparatus disclosed radiation is detected in at least two zones and signals are thereby generated that are representative of the radiation in each zone. The ratio of the signals is determined, and a resultant signal is produced. The resultant signal is utilized to drive an indicator having a pointer which indicator uses the resultant signal to cause the pointer to point at the source of radiation.



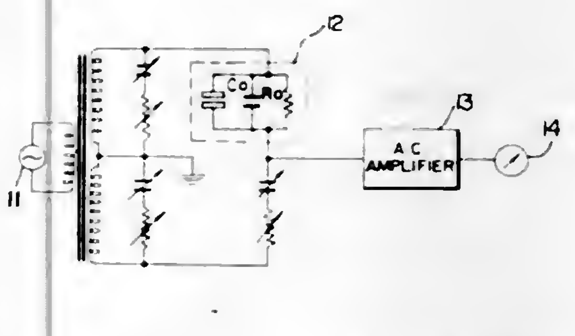
3,400,268
SYSTEM FOR A.C. OPERATION OF AN IONIZATION CHAMBER

Noboru Amano, Mito-shi, Japan, assignor to Japan Atomic Energy Research Institute, Minato-ku, Tokyo, Japan

Filed Dec. 17, 1964, Ser. No. 419,180

Claims priority, application Japan, Dec. 23, 1963, 38/68,995

1 Claim. (Cl. 250—83.6)



An ionization chamber operated by an A.C. source of frequency *fo* and a stable A.C. amplifier at the output of the chamber. A high pass or band pass filter in the output circuit passes only the odd harmonics of the frequency *fo* contained in the signal current but not the fundamental frequency *fo* of the leakage current.

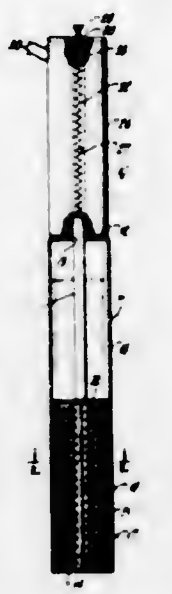
3,400,269
VARIABLE INTENSITY NEUTRON GENERATOR COMPRISING INTERMESHING WEBS OF BERYLLIUM FOIL AND RADIUM IMPREGNATED GOLD FOIL

Warren M. Holm, Baldwin, N.Y., assignor to Radium Chemical Company, Inc., New York, N.Y., a corporation of New York

Filed Mar. 17, 1965, Ser. No. 440,518

8 Claims. (Cl. 250—84.5)

A variable intensity neutron generator includes a pair of helically wound intermeshing webs of beryllium foil and gold foil having radium dispersed therein, housed in a casing, one of the helical webs being stationary and the other web being connected to an armature registering with the axial bore of a solenoid and spring urged outwardly to urge the helical webs into maximum registry. The neutron intensity may be adjusted by controlling the current to the solenoid and hence the degree of registry of the webs.

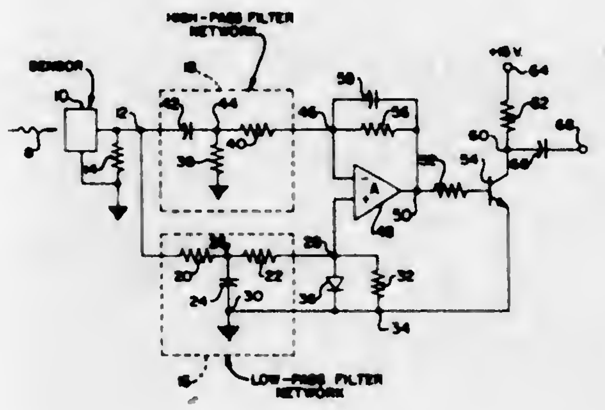


3,400,270
FLASH DETECTION MEANS

Richard F. Durig, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed May 10, 1965, Ser. No. 454,273

4 Claims. (Cl. 250—206)



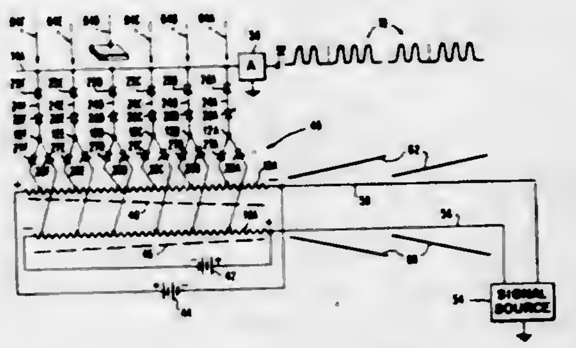
A system for detection of flash illumination in the presence of varying levels of ambient illumination. A change in voltage output from a sensor is produced in response to a flash, and is applied to a signal-separating means for separating frequency components of the signal, which may take the form of parallel "low-pass" and "high-pass" filters. The outputs of the filters are applied to the inputs of a difference amplifier, the output of which may be applied to a level detector, or directly to a utilizing device. The gain of the two channels of the difference amplifier can be changed by altering the circuit components to produce a desired output signal in response to a desired proportion of flash illumination to ambient illumination. A diode is added to the circuit to reduce the proportion of flash illumination to ambient illumination which is required to produce a change in the output of the level detector, as the level of ambient illumination increases.

3,400,271
SCANNER EMPLOYING UNILATERALLY CONDUCTING ELEMENTS AND INCLUDING A CIRCUIT FOR GENERATING A POINTED VOLTAGE DISTRIBUTION

Herbert Dym, Mahopac, John W. Horton, New York, and Robert J. Lynch, Lake Peekskill, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 1, 1965, Ser. No. 460,233

29 Claims. (Cl. 250—211)



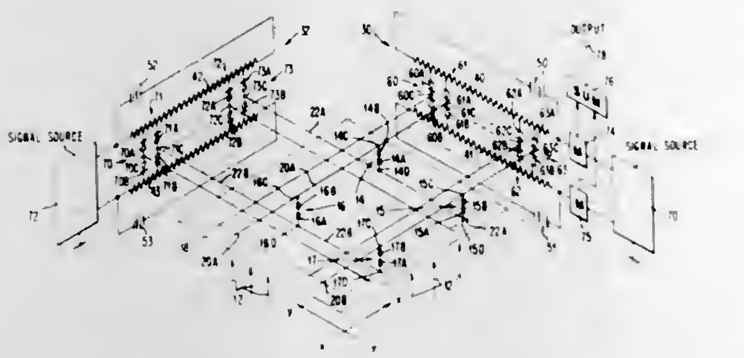
1. A scanner comprising:
a plurality of circuit groups each including a first, a second, a third, and a fourth element, each said element having a first and a second end, and one of said third and said fourth elements having radiation converting properties and the remaining elements having unilateral conducting properties, and means for joining the first ends of said first, second, and third elements together and for joining the second ends of said third and fourth elements together;
voltage gradient means for providing an ascending series of voltage levels and a descending series of voltage levels, each level of said ascending series being applied to a different one of the second ends of said first elements, and each level of said descending series being applied to a different one of the second ends of said second elements; and
means connected to the first ends of said fourth elements for providing a reference potential at a voltage level included within the series of said ascending and descending levels, and for monitoring the amount of current flowing through said third and fourth elements.

19. A circuit for generating a pointed voltage distribution comprising:
a plurality of circuit groups each including a first, and a second unilaterally conducting element, each said element having a first and a second end, and means for joining the first ends of said first and second elements together;
a first and a second resistive means for attenuating signals applied thereacross, said first resistive means having each one of the second ends of said first elements connected thereto at different locations, and said second resistive means having each one of the second ends of said second element connected thereto at different locations; and
signal generating means for applying signals to said first and second resistive means to produce a series of voltage levels on said first elements which progressively increase from left to right through said sequentially located circuit groups, and to produce a series of voltage levels on said second elements which progressively decrease from left to right through said sequentially located circuit groups, whereby a voltage distribution having a pointed shape is produced at the joints between the first and second elements.

3,400,272
TWO DIMENSIONAL SCANNER HAVING BACK-TO-BACK PHOTODIODES

Herbert Dym, Mahopac, and Robert J. Lynch, Lake Peekskill, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 1, 1965, Ser. No. 460,081
7 Claims. (Cl. 250—211)



A two dimensional scanner responsive to radiant energy is disclosed having a matrix array of elements arranged in row and column configurations. The matrix elements consist of series connected back-to-back diodes, one diode of each pair being photosensitive. The pairs of diodes are connected on one side to conductors arranged in rows and on the other side to conductors arranged in columns. The row conductors are terminated at one end in a circuit referred to as a row driver which applies a peak voltage gradient to the row conductors. A column driver applies a voltage grating having a dip therein to the column conductors. The row to which the peak voltage gradient of the matrix array is applied is controlled by a signal source associated with the row driver. The column conductor to which the dip in the voltage gradient is applied is controlled by a signal source connected to the column driver. The column driver and the row driver bias the diode pairs in the non-conducting state with the exception of the diode pair connected between the row conductor having the peak voltage gradient applied thereto and the column conductor having the dip voltage gradient applied thereto. If radiant energy is impinging on the photodiode of the non-biased pair, photocurrent will flow and be detected by an output circuit. By proper adjustment of the signal sources applied to the row and column drivers, different ones of the diode pairs can be placed in the conducting state.

3,400,273
TWO DIMENSIONAL RADIATION SCANNER LOCATING POSITION BY THE TIME IT TAKES A GROUP OF MINORITY CARRIERS TO REACH A TERMINAL OF THE DEVICE

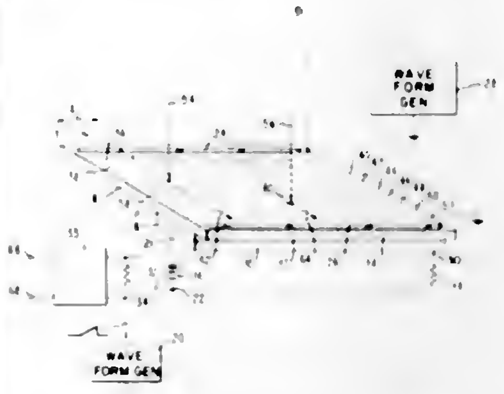
John W. Horton, New York, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Sept. 2, 1964, Ser. No. 393,995
17 Claims. (Cl. 250—211)

A two dimensional radiation scanner is disclosed which is responsive to patterns of radiant energy and produces electrical signals representative of the radiant energy. The device consists of a square or rectangular slab of semiconductor material, for example, semiconductor material of the N type. An ohmic contact is located along each of two opposite ends of the slab. A waveform generator is connected across the ohmic contacts.

When radiant energy is directed to one or more points on the slab, packets of minority carriers are produced. The waveform generator connected across the ohmic contacts produces a sequence of pulses which cause the packets of minority carriers to be driven through the slab of semiconductor material to one of the ohmic contacts at the end of the slab. The minority carriers will arrive at the ohmic contact at a time representative to the distance between the ohmic contact and the point at which the radiant energy impinged on the slab.

The minority carriers are detected at the end of the slab and the timed relationship within which the minority carriers are detected produces electrical signals representative of the positional information of the radiant energy on the slab. The minority carriers are detected by a scanning circuit consisting of a relatively narrow slab of P type semiconductor material joined to the N type slab along one end of the slab beneath the ohmic contact. Another relatively narrow slab of N type semiconductor material is joined to the aforesaid P type forming at the region of the slab proximate to the ohmic contact an NPN junction.

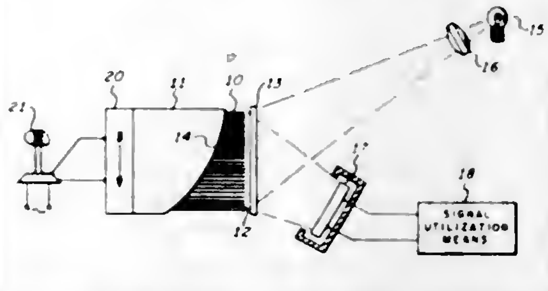


A battery is connected across the NPN junction to provide a voltage gradient across the junction which is maximum at one end and minimum at the other end of the junction. The voltage gradient back-biases the junction. A ramp signal is also connected across the NPN junction which forward biases the junction in sequence from one end to the other. As the junction is forward biased, the minority carriers are detected and produce an output signal.

3,400,274
PHOTOSENSITIVE FREQUENCY RESPONSIVE APPARATUS UTILIZING FREELY VIBRATING ELEMENTS

Robert D. Hawkins, Greenlawn, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Mar. 29, 1965, Ser. No. 443,589
4 Claims. (Cl. 250—230)

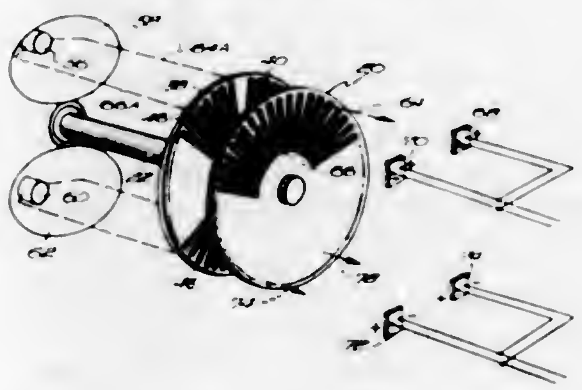


2. Frequency responsive apparatus comprising,
(a) means including a plurality of metallic energy reflecting elements supported to extend from mounting means at unequal free lengths whereby said elements vibrate at individual preselected frequencies associated with their respective resonant frequencies in response to a plurality of frequencies which define a frequency spectrum,
(b) means for providing radiant energy to said elements,
(c) reflecting means on said elements for transmitting said energy,
(d) means for receiving said energy,
(e) masking means disposed between said elements and said receiving means and programmed for passing said energy as a function of the relative motion between said elements and said masking means,
(f) transducer means responsive to an input signal for providing relative vibratory motion between said elements and said masking means as a function of said input signal whereby certain of said elements vibrate and others remain stationary, and
(g) means responsive to said receiving means for providing an output representative of the energy received thereby.

3,400,275
OPTICAL ENCODER HAVING A COMMON LIGHT SOURCE LOCATED IN A ROTATABLE SHUTTERED HOUSING

Dennis H. Trump, Billerica, Mass., assignor to Trump-Ross Industrial Controls, Inc., Billerica, Mass., a corporation of Massachusetts

Filed July 22, 1965, Ser. No. 474,071
10 Claims. (Cl. 250—231)

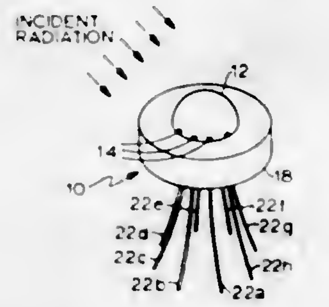


A photoelectric encoder having a rotatable, radially segmented disc, and using photocell pairs in push-pull, each cooperating pair of photocells lying wholly to one side of the disc axis of rotation. Both photocells are illuminated by light derived from a common light source lying within a paraboloidal reflector, so that the collimation of the light and the balance of light intensities falling on the two photocells are adjustable respectively by axial and rotational movement of the light source with respect to the axis of the reflector.

3,400,276
DIRECTIONAL RADIATION SENSOR COMPRISING A THREE-DIMENSIONAL PHOTOSENSITIVE SURFACE

Alfred W. Zinn, Monsey, N.Y., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed Dec. 29, 1965, Ser. No. 517,372
11 Claims. (Cl. 250—211)

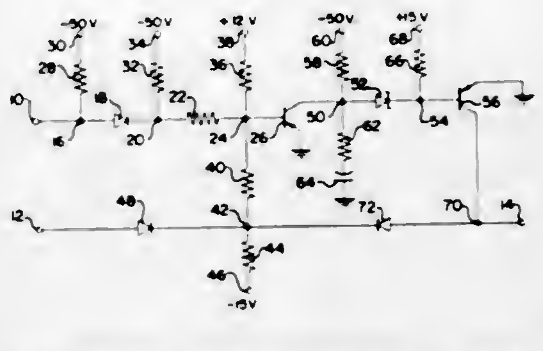


1. A radiation sensor, comprising:
a three-dimensional photosensitive surface having at least two planes of symmetry intersecting at right angles along a line through the center of symmetry of the surface;
electrode means for applying an energizing potential to said surface at spaced locations symmetrically arrayed with respect to said center of symmetry; and
means for deriving from said surface an output signal dependent upon the orientation of said body with respect to a source of photo-effective radiation.

3,400,277
VOLTAGE LEVEL CONVERTER CIRCUIT

Ronald L. Bruckner, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Ohio

Filed May 26, 1965, Ser. No. 458,929
1 Claim. (Cl. 307—264)

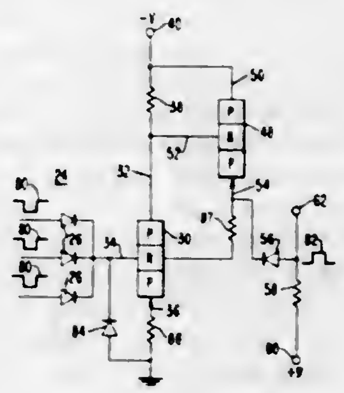


A voltage level converter circuit in which a clock signal, and a line input signal which varies between specified voltage levels, are employed to produce an output signal which varies between different specified voltage levels. To improve noise rejection, a resistive-capacitive delay is introduced between the circuit input and the output, which requires that the clock input and the line input remain at a given logical signal level simultaneously for a certain predetermined minimum period of time before the output signal is switched to a logic level which corresponds to the input logic level.

3,400,278
NON-SATURATING TRANSISTOR LOGIC CIRCUIT

James L. Walsh, Hyde Park, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 28, 1960, Ser. No. 78,928
3 Claims. (Cl. 307—215)



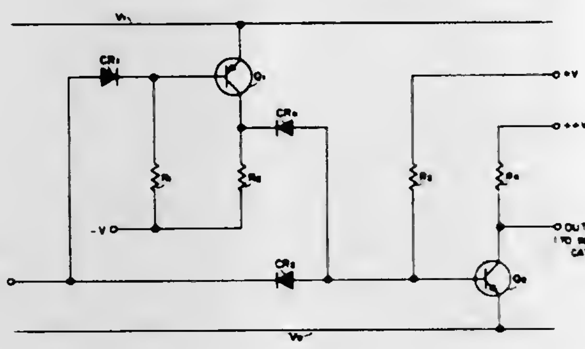
1. A logic circuit comprising a transistor having base, emitter and collector electrodes, an input circuit connected to said base electrode, a negative impedance device connected between the base and emitter electrodes of said transistor, a common collector configuration coupled into a feedback path between the base and collector electrodes of said transistor, means for adjusting the operating point of the transistor outside the saturation region thereof, and output circuit means connected to the com-

mon collector configuration for providing an output signal which is the inverse of a signal supplied to the input circuit.

3,400,279

VOLTAGE LEVEL SENSING CIRCUIT

Howard A. Grant, Pierrefonds, Quebec, Canada, assignor to Canadian Marconi Company, Montreal, Quebec, Canada
Filed Sept. 3, 1965, Ser. No. 485,024
Claims priority, application Canada, Sept. 30, 1964, 912,923
2 Claims. (Cl. 307—235)

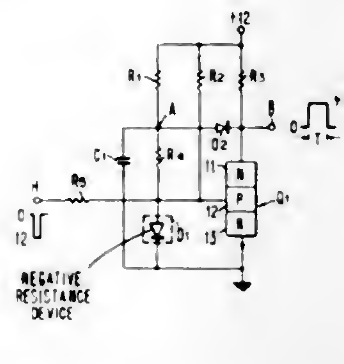


1. A voltage responsive circuit arrangement adapted to produce an output indicative of the fact that the level of a DC voltage signal applied as input thereto lies between two predetermined voltage limits, said arrangement comprising a PNP transistor having emitter base and collector elements, means connecting said PNP transistor emitter element to a terminal adapted to be supplied with a potential equal to the more positive of said predetermined voltage limits, load resistor means connecting said PNP transistor collector element to a terminal adapted for connection to a source of potential substantially more negative than the more negative of said predetermined voltage limits, resistor means connecting said PNP transistor base element to a terminal adapted for connection to a source of potential substantially more negative than the more negative of said predetermined voltage limits, an NPN transistor having emitter base and collector elements, means connecting said NPN transistor emitter element to a terminal adapted to be supplied with a potential equal to the more negative of said predetermined voltage limits, load resistor means connecting said NPN transistor collector element to a terminal adapted for connection to a source of potential substantially more positive than the more positive of said predetermined voltage limits, resistor means connecting said NPN transistor base element to a terminal adapted to be connected to a source of potential substantially more positive than the more positive of said predetermined voltage limits, an input terminal, a first diode having anode and cathode elements connected between said input terminal and said PNP transistor base element with the anode element of said first diode connected toward said input terminal and the cathode element of said first diode connected toward said PNP transistor base element, a second diode having anode and cathode elements connected between said input terminal and said NPN transistor base element with the cathode element of said second diode connected toward said input terminal and the anode element of said second diode connected toward said NPN transistor base element, a third diode having anode and cathode elements connected between the collector element of said PNP transistor and the base element of said NPN transistor with the cathode element of said third diode connected toward said PNP transistor collector element and the anode element of said third diode connected toward said NPN transistor base element and an output terminal connected to the collector element of said NPN transistor.

3,400,280

HIGH SPEED ASTABLE/MONOSTABLE DEVICE

John Lettieri, Modena, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 28, 1961, Ser. No. 98,575
7 Claims. (Cl. 307—286)

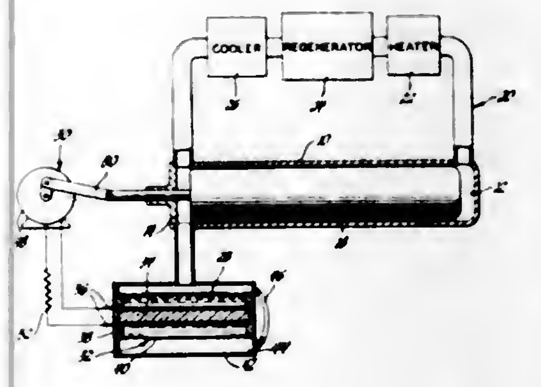


1. A monostable device for rendering output pulses having improved pulse width stability and improved rise and fall times, said monostable device consisting of: a transistor having an emitter, base, and collector; a tunnel diode connected between said base and said emitter of said transistor; a series circuit consisting of a diode and a first resistor connected between said base and said collector of said transistor; a capacitor connected between said emitter of said transistor and the juncture of said diode and said first resistor; a source of potential; a second resistor connected between said source of potential and said juncture of said diode and said first resistor; a third resistor connected between said source of potential and said base of said transistor; a fourth resistor connected between said source of potential and said collector of said transistor; an input terminal connected via a fifth resistor to said base of said transistor; and an output terminal connected to said collector of said transistor.

3,400,281

STIRLING CYCLE DRIVE FOR AN ELECTROKINETIC TRANSDUCER

Marvin J. Malik, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 27, 1964, Ser. No. 414,219
14 Claims. (Cl. 310—2)



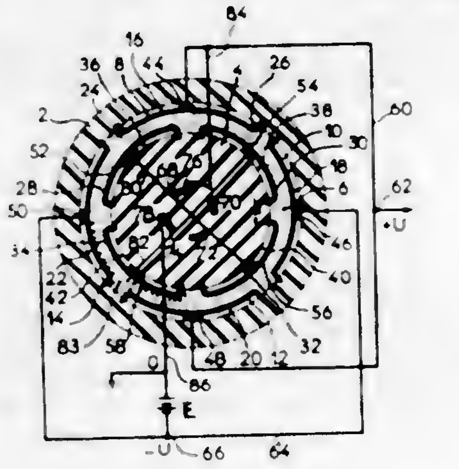
An energy conversion system utilizing the Stirling cycle and an electrokinetic transducer to convert thermal energy to electrical energy. This is achieved by replacing in a conventional Stirling cycle engine the usual power piston with a flexible diaphragm. The flexible diaphragm performs the power piston's functions of alternately compressing and expanding the working medium during the Stirling cycle and additionally the resultant pressure variations are used to drive an electrokinetic transducer. When the electrokinetic transducer is driven in this way an electrokinetic liquid is urged back and forth through a porous member so as to develop an alternating electric potential across the transducer's electrodes. This electric potential is used to drive a load and can also be used to drive a motor which in turn drives the Stirling cycle engine's displacer piston.

In an alternate construction the power piston is not replaced but is connected to a flexible diaphragm that drives the electrokinetic transducer in the same manner as the flexible diaphragm when used as a replacement for the power piston.

3,400,282

ROTARY ELECTROSTATIC ELECTRICAL APPARATUS

Noel J. Felici, Grenoble, France, assignor to Centre National de la Recherche Scientifique, Paris, France, an agency of the French Government
Filed Jan. 18, 1966, Ser. No. 521,343
Claims priority, application France, Jan. 22, 1965, 4,759, 4,760
20 Claims. (Cl. 310—6)

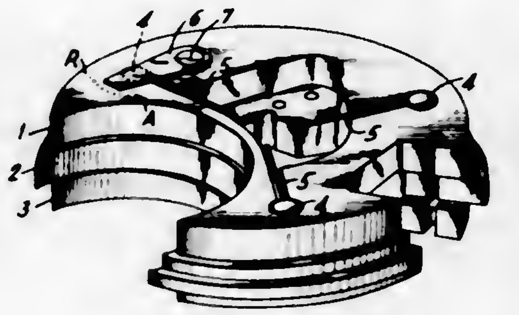


15. An electric rotating machine comprising, in combination, a pair of relatively rotatable members having spaced coaxial surfaces defining a separating space therebetween, a dielectric polar liquid in said space, said liquid exhibiting high resistive and dielectric characteristics when substantially pure but having comparatively lower resistivity and dielectric characteristics when containing contaminant ions, electric charge-carrier means associated with one of said members, means carried by a first of said members and defining a plurality of cavities having open sides facing said space, a plurality of semi-permeable membranes respectively sealing the open sides of said cavities and having surfaces exposed to the dielectric liquid in said space, a conductive liquid filling said cavities and contacting the opposite surfaces of said membranes, means including an electrode in each cavity in contact with the conductive liquid therein, a high-voltage terminal connected to one of said electrodes and another terminal at a substantially different voltage from that of the high-voltage terminal connected to another of said electrodes, said electrodes cooperating with said charge-carrier means to create electric fields across said space adjacent the respective membranes, the field adjacent one membrane being directed toward said one membrane and the field adjacent another membrane being directed away from said another membrane during at least a substantial portion of the rotational cycle of the machine, said fields directing contaminant ions of positive and negative polarity in said dielectric liquid through the membranes into the respective cavities to maintain the dielectric liquid in a state of high purity with high resistivity and dielectric characteristics.

3,400,283

RESONATOR REGULATOR

Paul Altenburger, Besancon, Doubs, France, assignor to The United States Time Corporation, Waterbury, Conn., a corporation of Connecticut
Filed Nov. 23, 1965, Ser. No. 509,266
4 Claims. (Cl. 310—36)

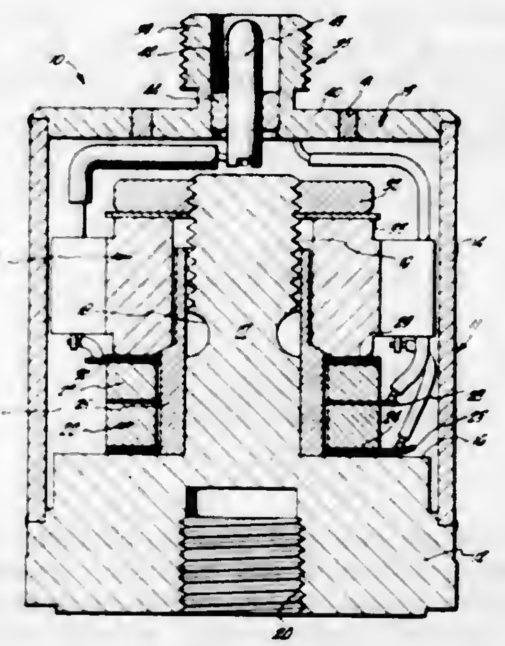


An electric watch includes a mechanical resonator unit. The unit consists of two vibratory masses which are driven simultaneously in short arcs in opposite directions about a common axis. An elongated adjustment member frictionally engages a pin on one of the masses. The adjustment member may be turned, its movement occurring in a plane parallel to the planes of vibration of the masses.

3,400,284

PIEZOELECTRIC ACCELEROMETER

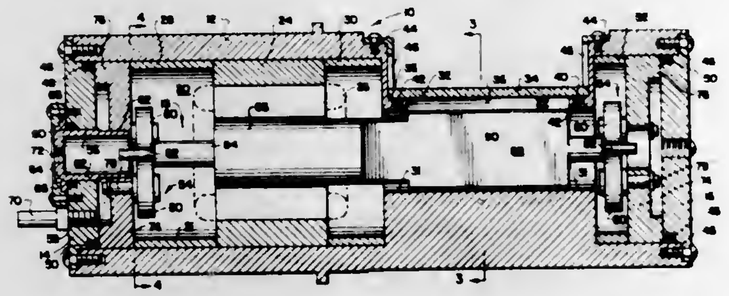
Shmuel Elazar, El Monte, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed July 14, 1966, Ser. No. 565,144
9 Claims. (Cl. 310—8.4)



1. An instrument transducer comprising a housing, a piezoelectric device in the housing for producing an electrical signal when deformed from a normal condition thereof, means movable in response to a physical input to the transducer for deforming said device from its normal condition so that the device generates an electrical signal having a value indicative of the value of said input, active circuit means in the housing of such type to require energization thereof from externally of its housing coupled to said device for receiving generated signals from the device and for operating upon the generated signals in a predetermined manner to provide transducer output signals, and connector terminal means carried by the housing and energization and transducer output signal including only two terminal elements each of which is conductively connected to separate locations in said circuit means.

3,400,285
HYSTERESIS SYNCHRONOUS MOTOR AND IMPROVED SHAFT SUB-ASSEMBLY THEREFOR

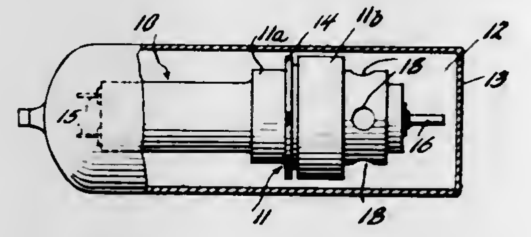
Willard E. Buck, P.O. Box 418,
Saratoga, Calif. 95070
Filed Dec. 20, 1965, Ser. No. 515,060
15 Claims. (Cl. 310—90)



1. An electrically-operated, high-speed rotating assembly comprising: an elongate housing having endplates at opposite ends thereof and the interior divided into a motor compartment and a mirror compartment arranged in end-to-end communicating relation, means forming a status structure for a synchronous motor mounted in the motor compartment, shaft bearings mounted in opposite ends of the housing, a unitary shaft journalled for rotation within the shaft bearings, a rotor formed of a magnetic material carried by the shaft for rotation therewith inside the stator in response to a revolving flux acting thereon, and at least one mirror having a plane polished reflecting surface carried by the shaft for rotation therewith inside the mirror compartment in close-coupled relation to the rotor.

3,400,286
MOTOR FOR USE IN HIGH VACUUM SYSTEM

Thomas Anthony Anastasio, Glen Burnie, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Sept. 30, 1964, Ser. No. 400,618
6 Claims. (Cl. 310—98)

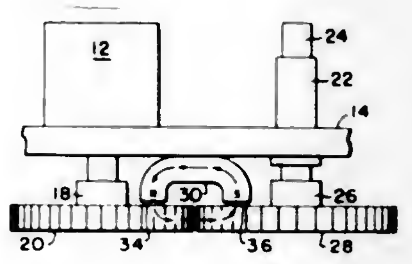


A motor for use in a high-vacuum chamber including a completely sealed, electrical motor for retaining the interstices of the motor at atmospheric pressure in which the motor is placed entirely within an evacuated system, the motor further being placed within a casing which includes a completely sealed, normal-atmosphere housing and a vacuum housing. A magnetic coupling drive is connected to the motor within the casing and imparts rotary motion to a shaft which extends from within the casing into the evacuated system.

3,400,287
FRICTIONLESS DRIVE

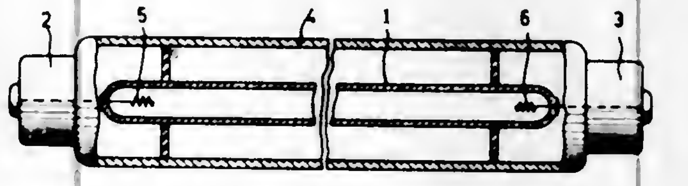
Joseph F. Huff, 72 Washington St.,
Hyde Park, Mass. 02136
Filed Oct. 22, 1965, Ser. No. 500,964
1 Claim. (Cl. 310—103)

A power transmission system in which a driving member and a driven member include teeth composed of magnetic material and in which a set of speed-change members composed of magnetic material are arranged for rotation between the driving member and the driven member. The speed-change members also have magnetic teeth and a source of magnetic flux is provided to energize a magnetic circuit which includes the driving member, the speed-change members and the driven member. The various teeth serve to concentrate magnetic flux at the points of separation between the various members.



3,400,288
SODIUM VAPOR DISCHARGE LAMP WITH INFRARED REFLECTING COATING

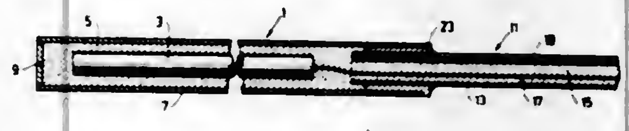
Rolf Groth, Aachen, Germany, assignor to North American Philips Co., Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 8, 1966, Ser. No. 592,859
Claims priority, application Germany, Nov. 13, 1965
N 27,625
4 Claims. (Cl. 313—47)



A sodium vapor lamp provided with a heat-reflective light-transmissible coating of doped In_2O_3 on the inner wall of the outer envelope.

3,400,289
NEUTRON DETECTOR HAVING A RADIOACTIVE VANADIUM EMITTER

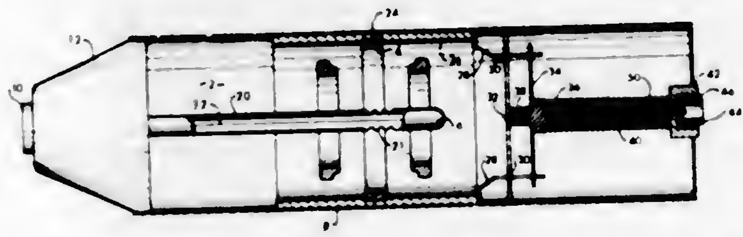
Karl Östen Ingvar Andersson, Nykoping, Sweden, assignor to Aktiebolaget Atomenergi, Stockholm, Sweden, a company of Sweden
Filed Feb. 3, 1966, Ser. No. 524,805
Claims priority, application Sweden, Feb. 8, 1965,
1,587/65
2 Claims. (Cl. 313—61)



A neutron detector comprises an emitter of a metal which, when neutron irradiated, gives a radioactive substance decaying by emission of beta-radiation, e.g., rhodium or silver or vanadium, and an insulating covering, e.g., of alumina or magnesia or beryllia, having a thickness of about 0.25 mm., the insulating covering being, in turn, surrounded by a collector of, e.g., stainless steel of about 0.25 mm. thickness, the beta registration producing an electric potential between the emitter and the collector.

3,400,290
STATIC ATMOSPHERE ION BEAM ACCELERATOR HAVING A MOVABLE TARGET

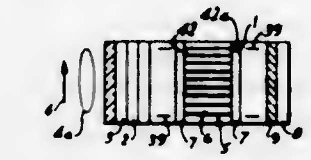
Reuben A. Bergan, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Aug. 25, 1965, Ser. No. 482,409
6 Claims. (Cl. 313—63)



A tritium target in D-T reactor is moved across ion beam by threaded bolt.

3,400,291
IMAGE INTENSIFYING TUBES PROVIDED WITH AN ARRAY OF ELECTRON MULTIPLYING MEMBERS

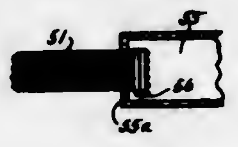
Edward Emanuel Sheldon, 30 E. 40th St.,
New York, N.Y. 10016
Filed Aug. 28, 1964, Ser. No. 392,960
18 Claims. (Cl. 313—65)



This invention relates to novel vacuum tubes which serve for producing images and which comprise a two-dimensional array of electron multiplying hollow members containing tunnels which serves to multiply the beam of electrons produced by image reactive electron emitting means and which beam has the pattern of said image. This device is characterized by the use of walls of electron multiplying members containing tunnels which are constructed of a material resistant to the leaching of the core of said members. In addition in some cases the walls are constructed of material which does not deform by the heat of fusion bonding said members into an array and preserves uniformity of the diameters of said tunnels which is essential for definition of images. Another embodiment of said invention is the novel X-ray image intensifying vacuum tube which incorporates said electron multiplying device.

3,400,292
RADIATION TRANSPORTING DEVICES PROVIDED WITH HOLLOW MEMBERS MOUNTED IN AN ARRAY

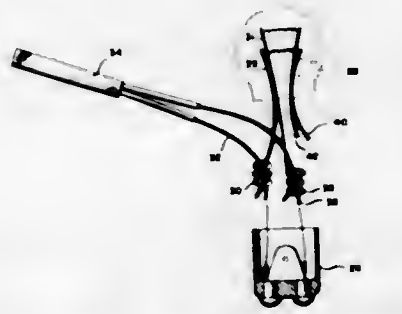
Edward Emanuel Sheldon, 30 E. 40th St.,
New York, N.Y. 10016
Original application Jan. 27, 1965, Ser. No. 428,483, now Patent No. 3,305,690, dated Feb. 21, 1967. Divided and this application Oct. 20, 1965, Ser. No. 498,961
17 Claims. (Cl. 313—65)



This invention relates to novel devices for conducting radiation which are characterized by the use of hollow members containing empty passages for the transport of said radiation. In some devices said hollow members are mounted into an array in which the ends of all said members are fixed in the same spatial relationship to each other so that the pattern of said transported radiation is preserved. In addition, in some devices said array is mounted in a vacuum tube provided with photoelectric means.

3,400,293
ADAPTER BULB FOR PROVIDING EXTERNAL ELECTRICAL CONNECTION BETWEEN POWERED VEHICLES AND TRAILERS

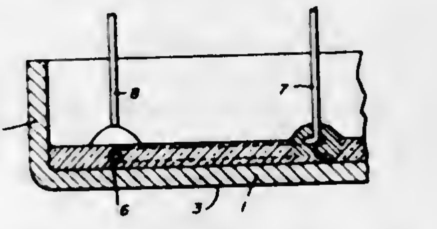
Harry J. Reichardt, Philadelphia, Pa., assignor to Arcoa, Incorporated, Portland, Oreg., a corporation of Oregon
Filed Jan. 5, 1965, Ser. No. 423,472
8 Claims. (Cl. 313—318)



This is a tail light assembly which enables the driver towing a vehicular trailer to adapt the vehicle electrical system to the trailer by plugging into one of the two conventional vehicular tail lights. The invention is an adapter bulb and connecting assembly providing external electrical connection between powered vehicles and trailers thereof.

3,400,294
HEATED CATHODE AND METHOD OF MANUFACTURE

August J. Kling, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 247,171, Dec. 26, 1962. This application Dec. 7, 1964, Ser. No. 418,591
4 Claims. (Cl. 313—340)

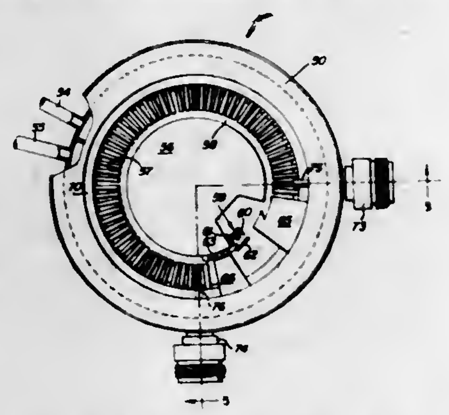


A low mass, high temperature cathode has a planar metal surface, the underside of which is roughened by deposition of a metal powder and sintering. A ceramic slurry deposited on the powder particles has interlocking engagement with the particles. A heating coil is at least partially embedded in a second layer of slurry which, after firing and sintering, results in a quick heating rigid structure, the interlocking engagement preventing separation of the sintered slurry and embedded heater coil from the planar metal surface during operation.

3,400,295
MATCHED TRANSMISSION LINE COUPLING FOR ELECTRON DISCHARGE TUBE

Harry F. Chapell, Maynard, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Nov. 17, 1964, Ser. No. 411,878
4 Claims. (Cl. 315—3.5)

A transition structure for coupling radio frequency energy from a coaxial conductor transmission line to a helical slow wave delay line within a crossed field traveling wave device includes a center conductor attached to the helical delay line at a preselected point to provide for efficient matching of the impedances of the respective lines

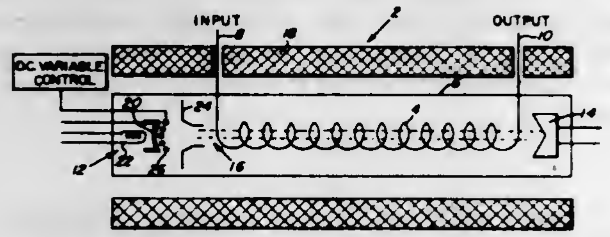


over a broad band of frequencies. The delay line is conductively coupled to the grounded tube metallic envelope to facilitate the circulation of a coolant through the helical delay line.

3,400,296

HIGH POWER ELECTRON BEAM PHASE SHIFTER

Donald L. Winsor, Wakefield, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Mar. 31, 1965, Ser. No. 444,187
14 Claims. (Cl. 315—3.5)

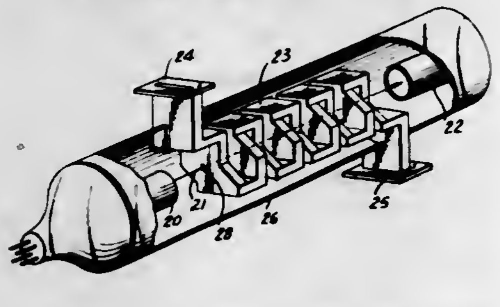


An electronic phase shifter device for controlling the propagating characteristics of electromagnetic wave energy by means of controlling the power level of an electron beam. The control of the reactive current component of the electron beam which is of incidental consideration in prior art traveling wave interaction type amplifier or oscillator devices is determined to be the primary phase shifting control means. The device is operated at a level where substantially no amplification of propagated microwave energy results and very low electron beam power values will control relatively high power electromagnetic wave energy.

3,400,297

TRAVELING-WAVE TYPE ELECTRON TUBE UTILIZING INTERACTION BETWEEN BEAM AND TE$_{20}$ WAVEGUIDE MODE

Yoshikazu Miyamoto, Suginami-ku, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed July 21, 1965, Ser. No. 473,672
Claims priority, application Japan, July 27, 1964, 39/42,040
4 Claims. (Cl. 315—3.5)

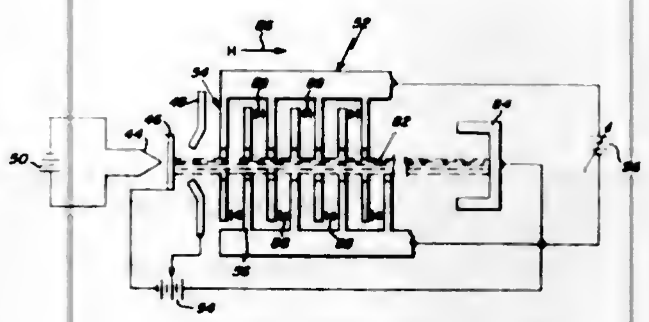


A traveling wave tube which has a slow-wave circuit structure of high impedance. The fundamental wave becomes the forward wave, and the construction of the device is so that a rectangular waveguide of the transmission mode, e.g., a TE$_{20}$ mode, has a cross section of electric fields of mutually opposite direction and is in bent and folded configuration.

3,400,298

SOLID STATE INTEGRATED PERIODIC STRUCTURE FOR MICROWAVE DEVICES

Hans-Joachim Krahn, Burlington, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Dec. 1, 1965, Ser. No. 510,893
9 Claims. (Cl. 315—3.5)

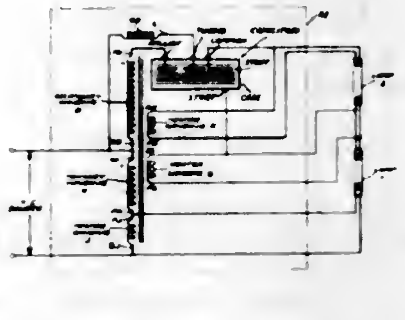


A slow wave periodic structure for traveling wave type devices is disclosed having integrated therein active electrically variable solid state components for varying the propagating characteristics of the slow wave structure, such as phase velocity, and interaction phenomenon of electromagnetic wave energy propagating along this structure with an adjacent electron beam to attain optimum operating results.

3,400,299

BALLAST TRANSFORMER SYSTEM FOR LAMPS

Daniel Lovinger and Franklin P. Eppert, Danville, Ill., assignors to General Electric Company, a corporation of New York
Filed Dec. 23, 1965, Ser. No. 515,898
2 Claims. (Cl. 315—97)

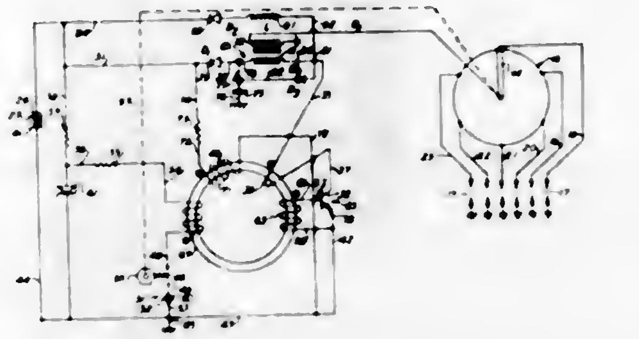


A ballast for a fluorescent lamp including a magnetic core and primary, secondary and heater windings coupled thereto. A capacitor is provided and includes an electrically conductive case, two insulated terminals, at least three insulating strips and three conducting strips. One of the conducting strips is insulated from the other two by one of the insulating strips. The other two conducting strips are spaced from each other in end-to-end relationship to thus provide two capacitors with a common conducting strip. The common conducting strip is electrically connected to one of the insulated terminals and one of the other two conducting strips is electrically connected to the other insulated terminal. The remaining conducting strip is electrically connected to the case. One insulated terminal is connected to the secondary winding and the other is connected to the lamp while the case is connected to one of the heater windings.

3,400,300

CAPACITIVE DISCHARGE IGNITION SYSTEM EMPLOYING A SATURABLE SWITCHING CORE AND A TRANSISTOR

Ole K. Nilssen, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 25, 1965, Ser. No. 466,948
4 Claims. (Cl. 315—205)



An ignition system for an internal combustion engine in which a capacitor is charged to a substantially constant electrical energy level just prior to the time for the requirement of ignition voltages. The charging of the capacitor may be done through a metering device comprising a saturable switching core and a solid state switching device upon the requirement for ignition voltages. The saturable switching core and the solid state switching device act to discharge the capacitor through the primary winding of the ignition coil. The capacitor in this case is charged to a sufficient voltage to permit voltages of a sufficiently high level to be induced in the secondary winding of the ignition coil to break down the spark gap of the ignition device or the spark plug. The charging mechanism or device for the capacitor may include an inductor connected in series with the output electrodes of the solid state switching device and one terminal of the source of electrical energy which may comprise an electrical storage battery. In addition, a unilateral conducting device may be positioned in series with the inductor and the one terminal of the source of electrical energy and is poled to permit current flow from the inductor to the one terminal of the source of electrical energy or electrical storage battery and to prevent current flow from this terminal through the inductor. Hence, the electrical energy that is stored in the inductor may flow into the capacitor to charge it to its proper operating level.

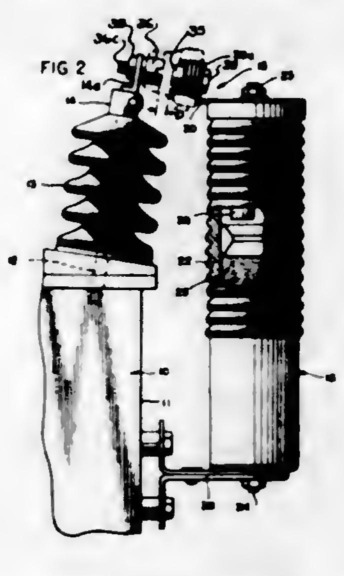
3,400,301

LIGHTNING ARRESTER IN COMBINATION WITH AN ARRESTER DISCONNECTOR CONTAINING EXPLOSIVE MEANS

Donald O. Misare, Riverside, Ill., assignor to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois
Filed May 27, 1966, Ser. No. 553,509
15 Claims. (Cl. 317—71)

1. A lightning arrester assembly for use with a high voltage electrical system comprising a lightning arrester and arrester disconnector means normally serially connected between a high voltage terminal of said system and ground, said arrester disconnector means including a housing and a pair of spaced terminals in said housing forming a relatively large spark gap therebetween, and explosive means in said housing between said spaced terminals including a containing conducting member forming a smaller spark gap with one of said terminals, said explosive disconnector means being operable upon current flow across said smaller spark gap to rupture said housing around said gap, and rigid support means for maintaining

FIG 2

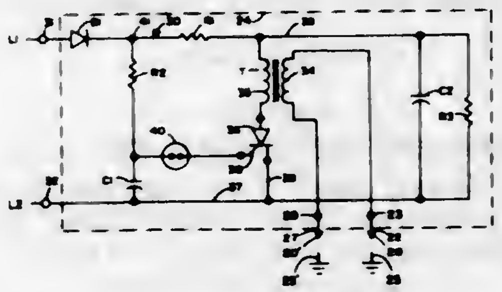


said spaced terminals in exposed spark gap forming relation after the rupture of said housing by said explosive disconnector means.

3,400,302

ELECTRIC IGNITER SYSTEM FOR FUEL BURNERS AND THE LIKE

Marsden L. Miller, Westfield, N.J., assignor to Ranco Incorporated, a corporation of Ohio
Filed Apr. 1, 1966, Ser. No. 539,516
9 Claims. (Cl. 317—96)



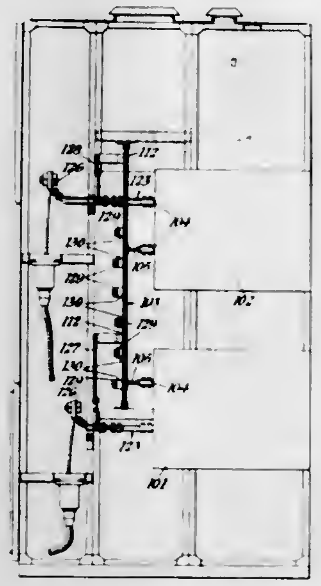
1. An igniter system comprising a transformer including a primary winding and a secondary winding, spark gap igniter means connected in circuit with said secondary winding, a source of electric current including two conductors connected to opposite sides of said source, one terminal of said primary winding connected to one of said conductors, circuit means connecting the other terminal of said primary transformer winding to the other of said conductors and including semiconductor switch means in series with said primary winding and responsive to a surge of current to render the circuit for said primary winding conductive, a capacitor connected in parallel with said primary winding and discharging through said primary when said switch means conducts, and means to periodically render said switch means conductive including an RC network comprising a second capacitor connected in parallel with said primary winding and to a control electrode of said switch means.

3,400,303

LAMINATED BUS ARRANGEMENT FOR ELECTRICAL DISTRIBUTION SYSTEMS

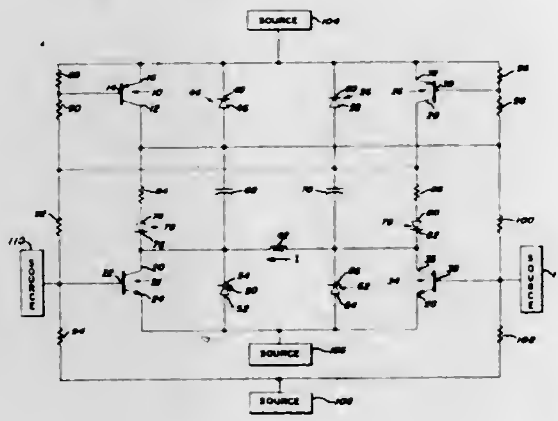
Thomas J. Rowlands, Bidford-on-Avon, and Ivan F. Smart, Sutton Coldfield, England, assignors to George Ellison Limited, Birmingham, England
Continuation-in-part of application Ser. No. 523,392, Jan. 27, 1966. This application May 15, 1967, Ser. No. 638,483
24 Claims. (Cl. 317—119)

Laminated bus arrangements are employed both for switch and circuit breaker panel boards and for bus bar trunking. The laminated bus utilizes thin sheet metal conductors interposed between insulating layers. The edges of the conductors are protected by flat strips sandwiched between the insulating layers and connections to the conductors are made through holes in the insulating layers. Where a connection is made to a conductor not adjacent either surface of the laminate, an enlarged hole is made in the overlying conductor and a washer or gasket is positioned in this hole between the adjacent insulating layers.



3,400,304
CURRENT REVERSING CIRCUIT

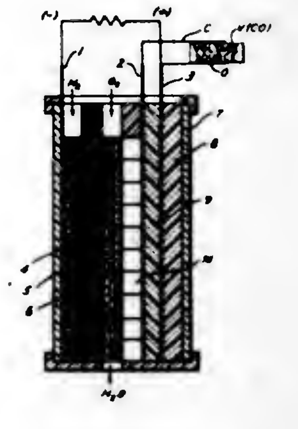
Kenneth L. Ziegler, Stow, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Feb. 25, 1966, Ser. No. 530,048
9 Claims. (Cl. 317—148.5)



1. A circuit for changing the direction of current flow in an inductive load having first and second terminals, comprising:
- a first capacitor connected to said first inductive load terminal;
- a second capacitor connected to said second inductive load terminal; and,
- first means connected to said inductive load for causing one of said capacitors and said inductive load to resonate and for causing said one capacitor and said inductive load to stop resonating to produce and maintain a reverse current flow in said inductive load.

3,400,305
ALTERNATING CURRENT ELECTRODES FOR ELECTROCHEMICAL POWER CELLS

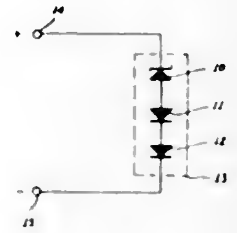
Samuel W. Coffman, Anaheim, Calif., assignor of one-fifth each to Audrey Dinwiddie Coffman, Stephen W. Coffman, John D. Coffman, and Mark J. Coffman
Filed Aug. 18, 1964, Ser. No. 390,317
10 Claims. (Cl. 317—231)



A controlled fuel cell in which electrochemical oxidation and electrochemical reduction occurs at two different electrodes with one of such electrodes (or both electrodes) being of semiconductor material, either of the NPN or PNP type, and being connected to a source of control current for controlling the current flow through the fuel cell such that an undulatory output current flows to a load connected to the fuel cell.

3,400,306
IRRADIATED TEMPERATURE COMPENSATED ZENER DIODE DEVICE

Dalton L. Knauss, Scottsdale, Ariz., assignor to Dickson Electronics Corp.
Filed Jan. 18, 1965, Ser. No. 426,207
18 Claims. (Cl. 317—234)



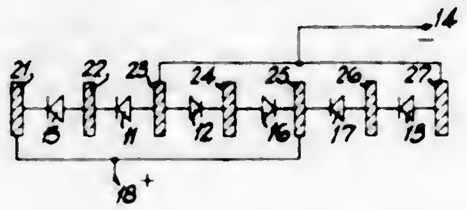
A temperature compensated Zener diode device produced by subjecting a PN junction formed in a semiconductor material to irradiation substantially in excess of the irradiation naturally occurring in the atmosphere to alter the temperature coefficient thereof.

3,400,307
FULL WAVE RECTIFIERS FOR THREE PHASE SUPPLY

Alfred Dickens Baker, Solihull, and Frank Grenville Hudman, Coldfield, England, assignors to Joseph Lucas Industries Limited, Birmingham, England, a British company
Filed Dec. 21, 1965, Ser. No. 515,407
Claims priority, application Great Britain, Dec. 23, 1964, 52,216/64
1 Claim. (Cl. 317—233)

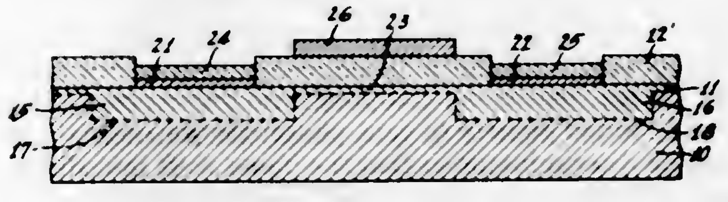
This invention relates to a full wave rectifier having a three-phase supply. The rectifier has seven electrically conductive plates with a rectifier diode stacked between each two adjacent plates. The anode and cathode terminal

of each rectifier is connected respectively to one of the two plates adjacent on its opposite sides. Two of the plates are connected to the anode of three of the diodes in a common terminal. Two other plates are connected to the cathode of three other diodes in a common terminal. The remaining plates comprise means for connecting one phase of the three-phase supply respectively thereto.



3,400,308
METALLIC CONTACTS FOR SEMICONDUCTOR DEVICES

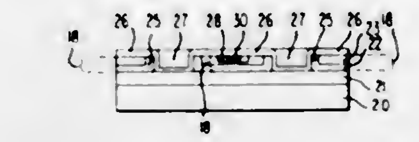
Eleftherios G. Athanassiadis, Lebanon, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 22, 1965, Ser. No. 466,032
2 Claims. (Cl. 317—234)



Disclosed is a metal contact for semiconductor devices having a first layer of nickel or cobalt in contact with a surface of a semiconductor body and a layer of aluminum overlying the first metallic layer.

3,400,309
MONOLITHIC SILICON DEVICE CONTAINING DIELECTRICALLY ISOLATNG FILM OF SILICON CARBIDE

Ven Y. Doo, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 18, 1965, Ser. No. 497,332
2 Claims. (Cl. 317—234)

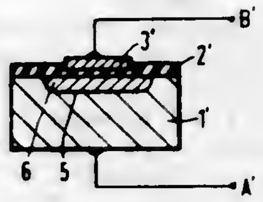


Semiconductor devices comprising single crystal silicon substrates having a plurality of electrically active elements wherein said elements are dielectrically isolated from the silicon substrate by an epitaxially grown silicon carbide layer.

3,400,310
SEMICONDUCTOR DEVICE WITH INTERELECTRODE CAPACITANCE COMPENSATION

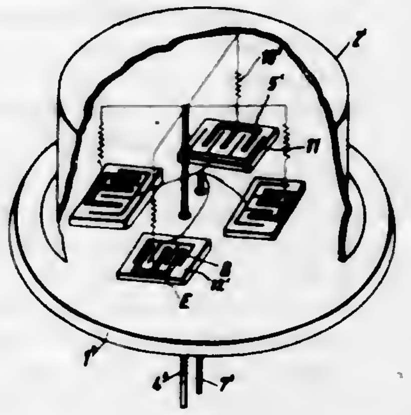
Heinz Dorendorf, Munich, Hugo Rüchardt, Gauting, near Munich, and Hans Rebstock, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed Feb. 3, 1966, Ser. No. 524,886
Claims priority, application Germany, Feb. 9, 1965, S 95,365
20 Claims. (Cl. 317—234)

A semiconductor device is compensated for capacitance by a zone of opposite conductivity type positioned in the semiconductor body and having a thickness and a contact surface in common with the contact surface of the semiconductor body. The common contact surface is in contact with a layer of electrical insulation which is positioned on a layer of electrical insulation which in turn is on the contact surface of the semiconductor body. The common contact surface of the zone is larger in area than the contact surface of the layer of conductive material. The common contact surface of the zone is larger in area than the contact surface of the layer of conductive material by substantially three times the thickness of the layer of electrical insulation.



3,400,311
SEMICONDUCTOR STRUCTURE HAVING IMPROVED POWER HANDLING AND HEAT DISSIPATION CAPABILITIES

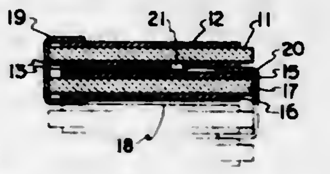
Reinhard Dahlberg, Dieter Gerstner, and Walter Klossika, Heilbronn (Neckar), Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Continuation of application Ser. No. 353,491, Mar. 20, 1964. This application Mar. 1, 1967, Ser. No. 619,875
Claims priority, application Germany, Mar. 21, 1963, T 23,669
13 Claims. (Cl. 317—235)



A power transistor composed of a plurality of low-power transistor elements disposed in a common housing and each having an emitter resistor, all of the elements being connected together for parallel operation as a single transistor, and all of the elements preferably being mounted on a common heat sink.

3,400,312
STACKED MICA CAPACITOR HAVING A MULTIPLE VALUE MICA FILM

John E. Dornfeld, Mequon, and Jack Greenberg, Whitefish Bay, Wis., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Sept. 6, 1966, Ser. No. 578,110
3 Claims. (Cl. 317—258)



The capacitance of a stack of electroded mica films is adjusted by the inclusion of a multiple-value mica film having a substantially maximum area electrode on one surface and a plurality of smaller isolated electrodes on the other surface. Varied capacitance values for the stack are obtained by different orientations of the several electrodes of the multiple-value mica film.

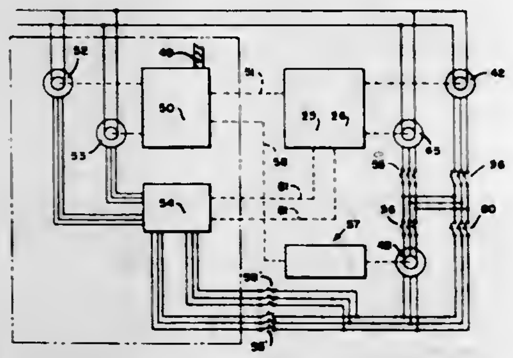
3,400,313

POINT TO POINT MOTOR POSITIONING CONTROL FOR A MACHINE TOOL INCLUDING TOOL OFFSET COMPENSATION AT EACH POINT

Edward P. Bullard III and Edward P. Bullard IV, Fairfield, Conn., assignors to The Bullard Company, Bridgeport, Conn., a corporation of Connecticut

Filed Oct. 22, 1964, Ser. No. 405,801

6 Claims. (Cl. 318—18)



An offset device for a program control providing point-to-point positioning of a movable member, the device having manually adjustable screws mounted on an indexable disk so that the screws are successively positioned at an operative station with each of the screws corresponding to a point on the programmed path of movement of the member. Each screw may variably position a rack connected to a differential generator, the output signal of which is determined by the position of the rack, and which signal may modify the output of a connected synchro generator to provide an offset from the position of the movable member called for by the program control. Upon a command from the program control, a torque motor moves the rack out of engagement with the screw positioned at the operative station while the disk is being indexed, and moves and maintains the rack in engagement with the screw which is then positioned at the operative station.

3,400,314

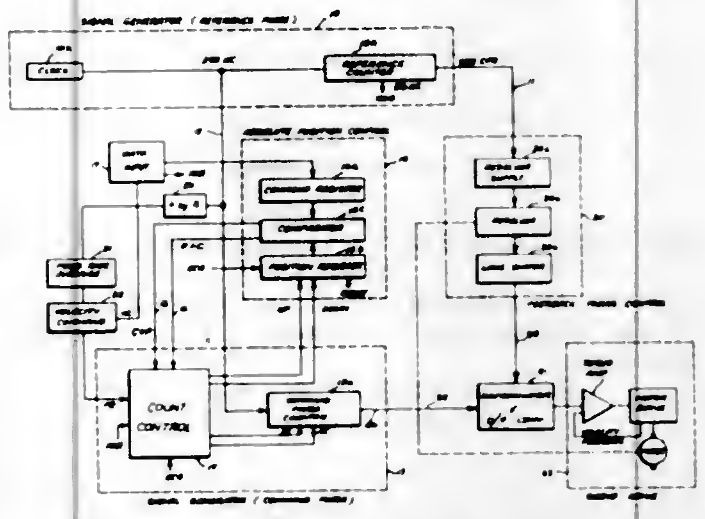
NUMERICAL POSITIONING CONTROL SYSTEM

William P. Wilson, Waynesboro, Va., assignor to General Electric Company, a corporation of New York

Filed May 27, 1965, Ser. No. 459,410

9 Claims. (Cl. 318—18)

1. A control system for moving one object with respect to another object in accordance with a command signal comprising: a source of input data for providing said command signal, means for generating a reference signal of a given frequency, means for storing a signal representative of the actual position of said one object in terms of its absolute coordinate, means for comparing said position and command signals and generating a first control signal when said command signal represents a coordinate larger than the coordinate represented by said position signal, said comparing means generating a second control signal when said command signal represents a coordinate smaller than the coordinate represented by said position signal, means coupled to said comparing means for generating a second signal of the same frequency and phase as said reference signal, said second signal generating means being responsive to said first control signal for changing the frequency of said second signal to a value on one side of said given frequency, said second signal generating means being responsive to said second control signal for changing the frequency to a value on the other side of said given frequency, means coupled to said comparing means and responsive to said first and second control signals for changing the position signals stored in said position storing means so that they will continually register the position of said one object, phase control means responsive to incremental changes in position of said one object for changing the phase of an applied signal a proportional amount, phase discriminating means, means for coupling said reference signals and said second signals to said phase control means and said phase discriminator so that the phase shift introduced by said phase control means is of a direction tending to cancel the change in phase between said second signal and said reference signal which is caused by the shift of frequency of said second signal generating means, and means for driving said one object at a speed and in a direction proportional to the magnitude and polarity of the output signal of said phase discriminating means.



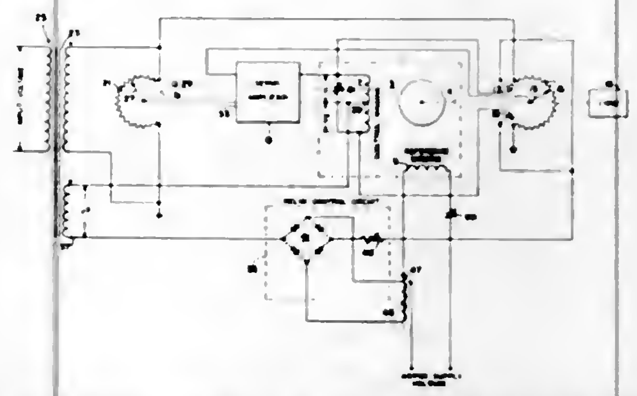
3,400,315

MOTOR CONTROL DEVICE UTILIZING ERROR SIGNAL TO CONTROL MOTOR ENERGIZATION

Adrian R. Doucette, Garden City, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Dec. 3, 1965, Ser. No. 511,569

4 Claims. (Cl. 318—18)



A limit switch circuit for limiting travel of a position-type servo system by relay means, before mechanical limit stops are reached. A moveable contact of a positioning potentiometer, connected to the output shaft of a servo motor, switches in a relay control circuit when the output shaft rotates to a preselected limit point in either direction of rotation. The relay control circuit is connected in series with a portion of the servo motor control winding and, when switched on, opens a relay switch in the servo motor supply voltage circuit. The motor is stopped until a reversing voltage is applied on the control winding.

3,400,316

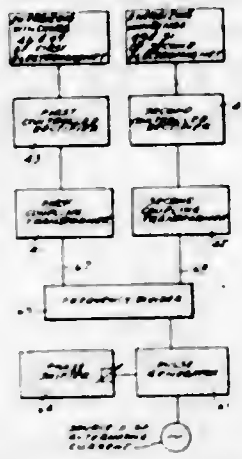
CIRCUIT ARRANGEMENT FOR PROVIDING PULSES IN DETERMINED PHASE RELATION TO EACH OTHER

Konrad Kuschel, Vienna, Austria, assignor to IFE-Gesellschaft für Maschinen- und Apparatebau Dipl. Ing. Sagl & Co., Vienna, Austria

Filed Aug. 10, 1965, Ser. No. 478,611

Claims priority, application Austria, Aug. 11, 1964, A 6,895

9 Claims. (Cl. 318—114)



A circuit arrangement for generating pulses to be applied to the electromagnets of a vibrator. The pulses are generated so that they are of a predetermined phase relationship to each other. A square wave pulse generator connected to a source of alternating current produces square wave pulses in synchronism with the frequency of the alternating current. A phase shifting arrangement connected to the square wave pulse generator shifts the phase of the pulses generated with respect to the alternating current. The frequency of the resulting square wave pulses is divided down by a frequency dividing arrangement having two outputs each transmitting pulses displaced in phase from the other output. Control rectifiers are connected to each one of the outputs of the frequency dividing arrangement. The signals derived from the control rectifiers are then applied to the electromagnets of the vibrator.

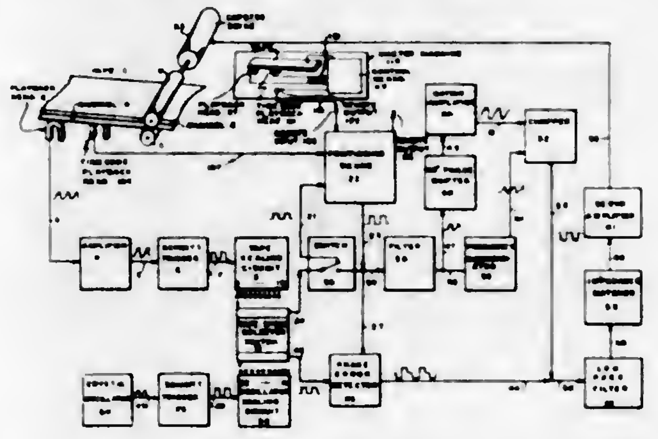
3,400,317

CONTROL SYSTEM FOR PROVIDING AND MAINTAINING RELATIVE POSITION OF TWO TAPE MEMBERS

Thomas Roy Thomas, Springfield, Ill., assignor to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware

Filed July 28, 1964, Ser. No. 385,723

16 Claims. (Cl. 318—314)



A system for time framing the output of two or more magnetic tapes, or sections thereof, without opening of the tape servo loop, which includes a fast response electronic tape speed servo control with low inertia capstan drive for each tape, and positioning means which compare position indicating signals on each tape to provide an error signal indicating the difference in the positions of the two tapes. The position error signal is fed to control means in the tape servo control for the first tape which reacts to such signal as if the drive of its tape has changed speed and automatically adjusts the driving speed by an amount determined by the value of the position signal. If the signals indicate the first tape lags the second tape, the position error signals fed to the control means for the servo cause the servo to react as if the speed of the first tape has decreased and the servo thereupon increases the speed of the drive for the first tape to reestablish the relative positions of the two tapes.

3,400,318

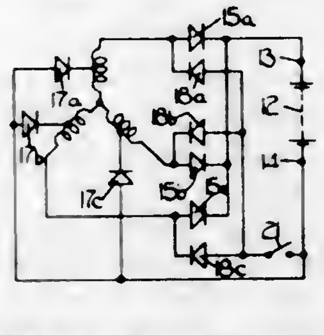
BATTERY CHARGING SYSTEMS

William Frank Hill, Stafford, England, assignor to Joseph Lucas Industries Limited, Birmingham, England

Filed Aug. 15, 1966, Ser. No. 572,264

Claims priority, application Great Britain, Aug. 25, 1965, 36,450/65

5 Claims. (Cl. 320—41)



1. A battery charging system for use in a road vehicle comprising in combination a pair of terminals between which in use the battery is connected, an alternator, first and second rectifying means each connecting the output winding of the alternator to said terminals, the first and second rectifying means being coupled to the output winding of the alternator in such a way that below a predetermined alternator speed the first rectifying means is capable of supply a greater output current to the terminals than the second rectifying means, but above the predetermined alternator speed the second rectifying means is capable of suplying a greater output current to said terminals than the first rectifying means, and automatically operable switch means for controlling which of said rectifying means is operating so as to enable maximum output current to be obtained from the alternator at any given time.

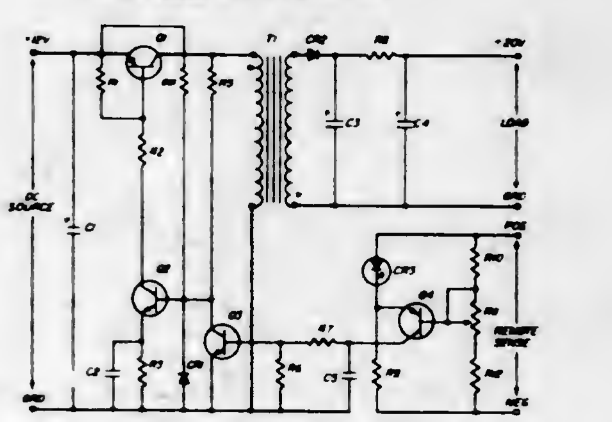
3,400,319

REGULATED VOLTAGE CONVERTER CIRCUIT FOR CONVERTING A DC VOLTAGE INTO A HIGHER DC VOLTAGE

Frederick A. Stich, Addison, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed June 3, 1966, Ser. No. 555,155

2 Claims. (Cl. 321—2)



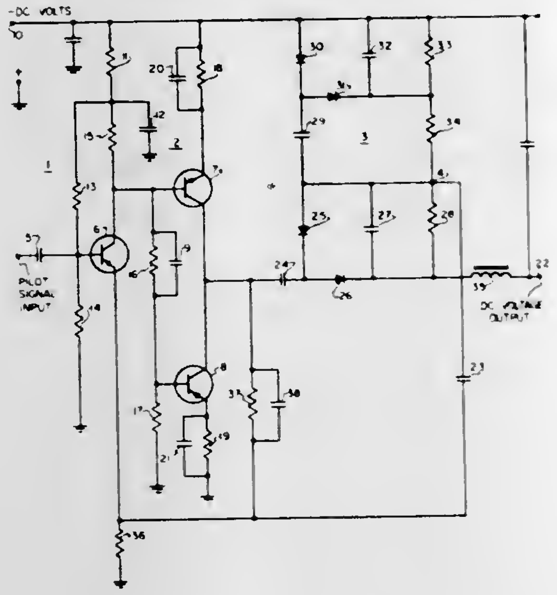
A transistorized power supply for converting a DC voltage to a higher DC voltage, employing a transistor as a series switching element, and control circuitry for determining the switching rate so as to provide a regulated output voltage, irrespective of load conditions.

3,400,320
CONVERTER HAVING DIODE RECTIFIERS IN A FEEDBACK VOLTAGE DIVIDER CIRCUIT FOR TEMPERATURE COMPENSATION

George S. Wu, Santa Clara, Calif., assignor, by mesne assignments, to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Dec. 14, 1965, Ser. No. 513,748

3 Claims. (Cl. 321—16)



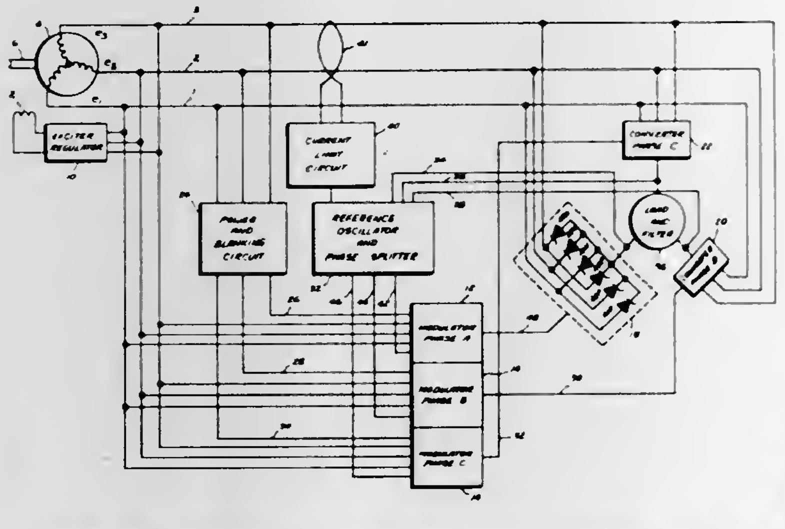
A converter comprises an amplifier stage to which constant alternating-current signal is applied, and a rectifier stage with two similar diode rectifier circuits connected in series across the output of the amplifier stage. The series rectifier circuits function as usual to convert the signals to direct-current voltage for a load circuit and in addition function as a feedback voltage divider in a negative feedback circuit connected to an input of the amplifier for regulating the overall gain of the converter. The regulation compensates for change in resistance of the diode rectifiers with change in temperature.

3,400,321
PROTECTIVE CIRCUITS FOR FREQUENCY CONVERTER SYSTEM

David L. Lafuze, Waynesboro, Va., assignor to General Electric Company, a corporation of New York

Filed Sept. 13, 1965, Ser. No. 486,670

34 Claims. (Cl. 321—60)



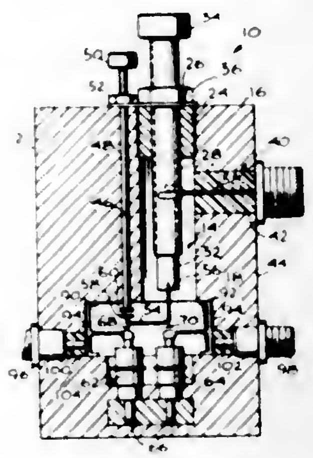
Protective circuits for a frequency converter of the cyclo-converter type are required to insure controlled and component-safe operation. These protective circuits include a blanking circuit to permit firing of the controlled rectifiers only when the controlled rectifiers are forward biased; a current limit circuit which distinguishes between acceptably large currents and prohibitively large currents; a gradual startup circuit which limits the likelihood of commutation failure at startup; and a current squelch circuit to inhibit circulating currents in the system filters.

3,400,322
X-BAND BALANCED FREQUENCY DOUBLER

Joseph H. Habra, Lawndale, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

Filed Apr. 1, 1966, Ser. No. 539,560

4 Claims. (Cl. 321—69)



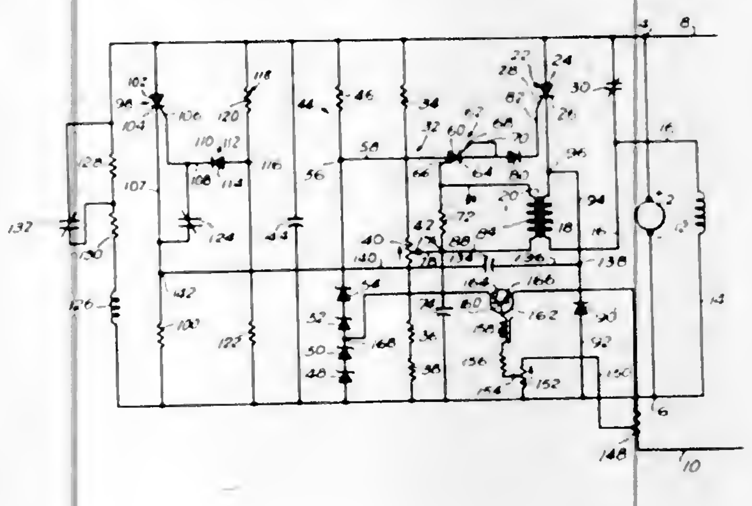
An X-band frequency doubler circuit of a balanced configuration employing dual varactors each having a separate variable bias source. The bias source varying the varactors impedance and maximizing the output power.

3,400,323
STATIC VOLTAGE REGULATOR FOR A D.C. GENERATOR

Baruch Berman, River Vale, N.J., assignor to Electric Regulator Corporation, Norwalk, Conn., a corporation of New York

Filed Feb. 21, 1964, Ser. No. 346,522

22 Claims. (Cl. 322—25)



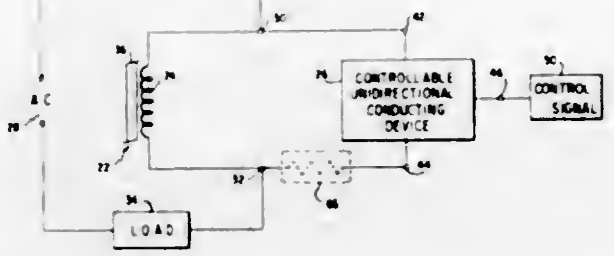
1. A static voltage regulation system for a D.C. generator having an armature and a field winding, said armature having first and second output terminals of opposite polarity, said system comprising a first controllable rectifier type valve connected between said first terminal and one end of said field winding, said valve having a controlling gate, the other end of said field winding being connected to said second terminal, means for sensing the voltage across said terminals and actuating said gate in accordance therewith so as, when said voltage is below a predetermined value, to turn said first valve on, a second valve connected between said terminals, and means operatively connected between said valves and effective to (1) turn said second valve off when said first valve shifts from off to on, (2) turn said second valve on a predetermined period of time after it has turned off, and (3) turn said first valve off when said second valve shifts from off to on.

3,400,324
HALF-WAVE CONTROL OF FULL-WAVE A.C.

Paul W. Covert, Valencia, Pa., assignor to Magnetics, Inc., a corporation of Pennsylvania

Continuation of application Ser. No. 207,611, July 5, 1962. This application Apr. 4, 1966, Ser. No. 540,107

1 Claim. (Cl. 323—17)



Symmetrical full-wave A.C. power control is achieved utilizing only half-wave control in a circuit embodying alternate current paths between an A.C. source and a load with one current path including a controllable rectifier means and the alternate current path including a saturable reactor. Firing of the saturable reactor means in one-half cycle of the A.C. source is slaved to firing of the controllable rectifier means in its conducting half cycle of the A.C. source. The saturable reactor means includes a core having a high ratio of retentive flux density to saturated flux density, that is a high squareness ratio core. Flux level in the saturable core is reset during each conducting half cycle of, and prior to firing of, the unidirectional conducting means. Slaving of the saturable reactor means results from this setting of the flux level in the saturable core prior to firing of the unidirectional conducting means during its conducting half cycle. The saturable reactor means fires at substantially the same firing angle in its conducting half cycle as firing occurs in the conducting half cycle of the unidirectional conducting means which is under external half-wave control. An impedance can be inserted in the path of certain low impedance controllable rectifier means to match the resistance of that path to that of the saturable reactor.

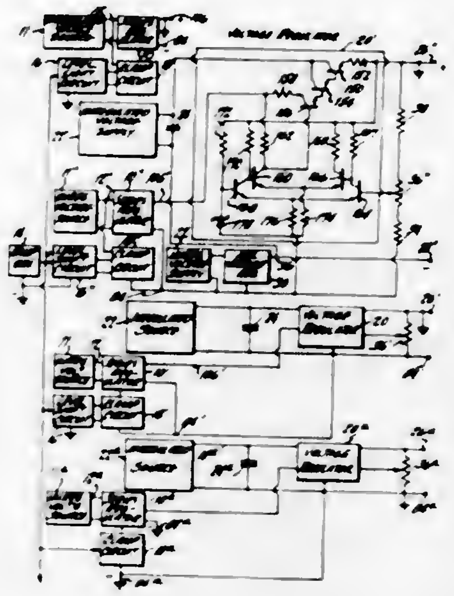
3,400,325
VOLTAGE REGULATOR INCLUDING TRANSIENT REDUCING MEANS

Robert B. Webb, Blackwood, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Jan. 28, 1966, Ser. No. 523,592

9 Claims. (Cl. 323—19)

One or more voltage regulators, which may provide different voltages of different polarities are turned on and off by one ramp generator having a terminal of one polarity grounded. A level shift circuit is connected between the ramp generator and those regulators having a terminal of the other polarity grounded. The voltage output of the ramp generator varies the conductivity of each regulator from zero when the regulator is off to a value dependent on the desired output voltage thereof when the regulator is turned on and vice versa. If low output voltages are desired, two regulators are connected in series in such a



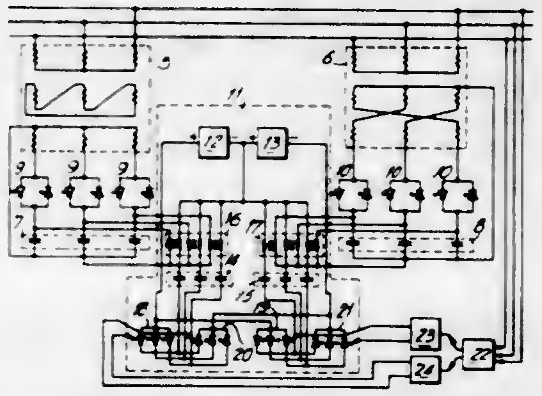
manner that the output is the difference in their voltages and the output is regulated by the sum of their voltages.

3,400,326
DEVICE FOR AUTOMATIC REACTIVE POWER REGULATION IN ELECTRIC NETWORKS

Leonid Alexeevich Zhukov, Lefortovsky val, 7/6, korpus 9, kv. 16; Ilya Ilich Kartashov, Scherbakovskaya ulitsa, 58, kv. 52; Evgenia Alexandrovna Pankratova, Frunzenskaya Naberezhnaya 24/1, kv. 215; and Jury Petrovich Ryzhov, Beskudnikovsky bulvar 20, korpus 2, kv. 10, all of Moscow, U.S.S.R.

Filed Feb. 18, 1966, Ser. No. 528,596

2 Claims. (Cl. 323—101)



Reactive power regulation in electric networks using controlled gates, series-connected with static capacitors, wherein the conduction period of said controlled gates is varied by applying boost current pulses to said static capacitors to charge them above the supply of voltage, thereby providing high-speed regulation of the reactive power output without accompanying current surges, said charging pulses being timed as required by the network operating conditions and the desired reactive power output.

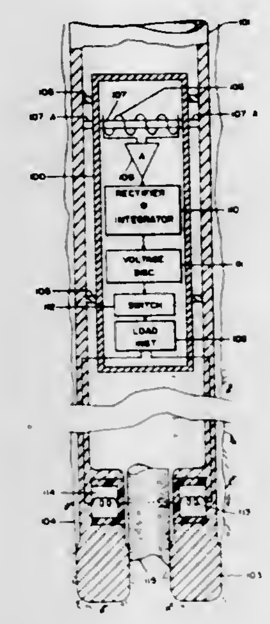
3,400,327
BOREHOLE TOOL ROTATIONAL SWITCHING SYSTEM CONTROLLED BY DETECTOR OF EARTH'S MAGNETIC FIELD

James H. Sexton and Bobbie J. Patton, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York

Filed Feb. 23, 1966, Ser. No. 529,364

11 Claims. (Cl. 324—8)

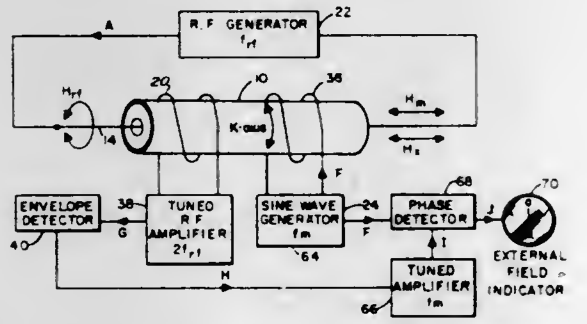
The specification discloses a magnetic field detecting means rotatably secured within a drill pipe for detecting the earth's magnetic field upon rotation of the drill pipe for controlling the switching of instrumentation located within the pipe. In the embodiment disclosed, the sensing means comprises an electrical coil, the output of which



is applied to a frequency discriminating system for producing a control signal for application to the instrumentation only when the drill pipe is rotating within a predetermined frequency range.

3,400,328
ANISOTROPIC FERROMAGNETIC THIN FILM MAGNETOMETER SYSTEMS UTILIZING A MODULATOR TO PERTURB THE FIELD ON THE SENSITIVE AXIS

Thomas C. Penn, Richardson, and Joseph A. Rice, Jr., Austin, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Feb. 24, 1964, Ser. No. 346,860
9 Claims. (Cl. 324—43)

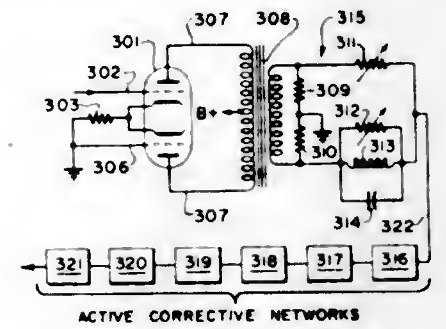


Disclosed are thin film magnetometer systems which utilize a modulator to perturb the field on the sensitive axis of the magnetometer to more easily detect weak external fields. In accordance with a preferred embodiment of the invention, the modulating signal is a square wave.

3,400,329
METHOD AND MEANS FOR CORRECTING AMPLITUDE AND DELAY DISTORTION IN A TRANSMISSION PATH

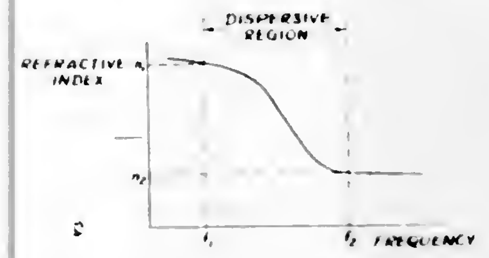
William D. Cannon, Metuchen, N.J., assignor to The Western Union Telegraph Company, New York, N.Y., a corporation of New York
Application Mar. 9, 1960, Ser. No. 13,866, which is a continuation-in-part of application Ser. No. 621,476, Nov. 9, 1956, which in turn is a continuation-in-part of application Ser. No. 469,948, Nov. 19, 1954. Divided and this application Feb. 23, 1965, Ser. No. 434,302
2 Claims. (Cl. 324—57)

A method and means for correcting amplitude and delay distortion in a transmission path is disclosed. A plurality of cascaded frequency selective active corrective networks are insertable in the transmission path. Each network has adjustable resistors. A cathode ray oscilloscope is connected to the transmission path to provide patterns whose nonlinearity is a measure of amplitude and delay distortion. By adjusting the resistors until the patterns are linearized, the amplitude and delay distortion in the transmission path is corrected. Various types of delay correction networks are also described.



3,400,330
REFRACTOMETER THAT MEASURES THE DIFFERENCE IN REFRACTIVE INDICES OF A GAS AT TWO FREQUENCIES

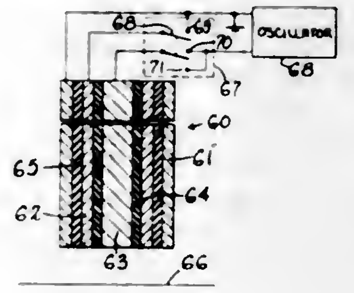
Moody C. Thompson, Jr., and Maurice J. Vetter, Boulder, Colo., assignors to the United States of America as represented by the Secretary of Commerce
Filed May 13, 1965, Ser. No. 455,662
3 Claims. (Cl. 324—58.5)



In this differential refractometer a sample of gas is placed in a multimode resonant cavity. The cavity is excited simultaneously in a fundamental and harmonic mode. The difference in phase between the output signals obtained at each of the two modes is measured to determine the difference in refractive indices of the gas at the two frequencies.

3,400,331
GAGING DEVICE INCLUDING A PROBE HAVING A PLURALITY OF CONCENTRIC AND COEXTENSIVE ELECTRODES

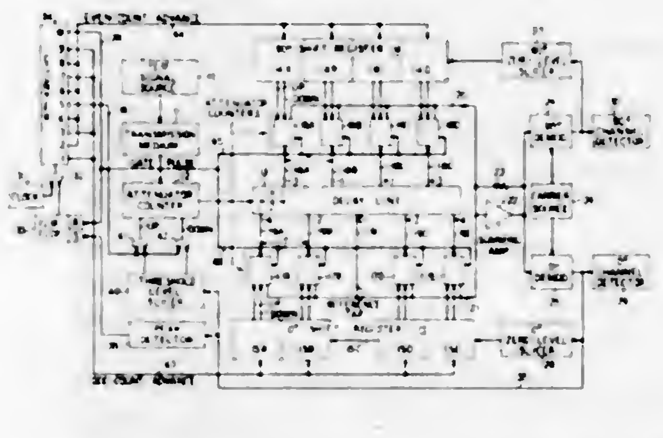
Daniel J. Harris, West Hartford, Conn., assignor to Pratt & Whitney Inc., West Hartford, Conn.
Filed Jan. 18, 1965, Ser. No. 426,166
2 Claims. (Cl. 324—61)



A gaging device for measuring the dimensions of an object relative to a reference plane, including a gaging probe having coaxial capacitor electrodes adapted, when excited, to produce an electrostatic fringe field at one end thereof, means for applying a radio frequency signal across said electrodes to create the fringe field, a variable frequency oscillator having a frequency of oscillation dependent upon the value of capacitance between said electrodes so that when an object is inserted within the fringe field the capacitance between the electrodes is varied which changes the frequency of oscillation of said oscillator, means for detecting the frequency of oscillation of said oscillator, and means for displaying the detected frequency of the oscillator on readout means calibrated in dimensional units.

3,400,332
AUTOMATIC EQUALIZER FOR QUADRATURE DATA CHANNELS

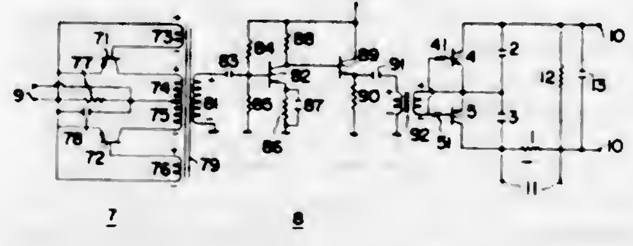
John F. O'Neill, Jr., Eatontown, and Burton R. Saltzberg, Middletown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 27, 1965, Ser. No. 516,503
11 Claims. (Cl. 325—42)



An automatic equalizer is connected to a dual channel quadrature carrier transmission medium. The attenuators connected to the taps of the delay line of the equalizer are incrementally adjusted in accordance with the polarity of the received test pulses that appear at the outputs of the quadrature demodulators. The in-phase demodulator controls the even numbered attenuators and the quadrature-phase demodulator controls the odd numbered attenuators.

3,400,333
MULTIPLIER

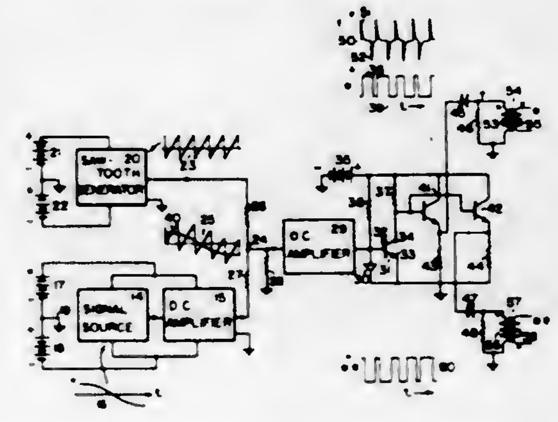
Fumiyuki Inose, Hachioji-shi, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Continuation-in-part of application Ser. No. 206,730, July 2, 1962. This application Nov. 24, 1964, Ser. No. 413,469
Claims priority, application Japan, July 1, 1961, 36/23,647
2 Claims. (Cl. 328—160)



A multiplier furnished with two input signals for the generation of one output signal proportional to the two input signals. One input signal is applied to both terminals of a series circuit of a resistor and two capacitors each connected in parallel with a switch, and another input signal is converted into a frequency signal by a converter. Such a converted signal is applied to the switches coupled in parallel with said two capacitors so as to perform on and off operations in opposite relation to each other, whereby a current flowing through said resistor is varied in proportion to the product of the fequency of said frequency signal and a voltage magnitude of the first mentioned input signal.

3,400,334
SOLID STATE SWITCHING TYPE LINEAR AMPLIFIER

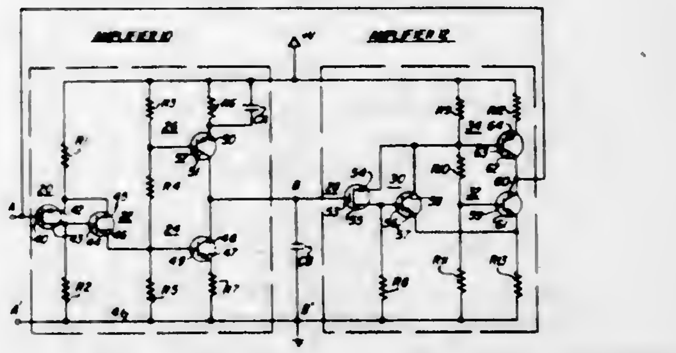
James A. Ross, Villa Park, Tadeusz W. Maciejowski, Orange, and Thomas R. Parkhill, Whittier, Calif., assignors to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,686
8 Claims. (Cl. 330—10)



This invention relates to a switching-type linear amplifier wherein the input signal to be amplified is mixed with a relatively high-frequency signal. A comparator circuit establishes a rectangular waveform having excursions depending upon the duration of the mixed signal above a threshold. The rectangular waveform is then differentiated and the resulting signals of corresponding polarity are employed to drive respective sides of a push-push power amplifier which functions as a switch to pass or block current from a power source through a low pass filter to develop an output signal across a load which is an amplified replica of the input signal.

3,400,335
INTEGRATABLE GYRATOR USING MOS AND BIPOLAR TRANSISTORS

Henry J. Orchard, San Mateo, and Desmond F. Sheahan, Redwood City, Calif., assignors to Automatic Electric Laboratories, Inc., a corporation of Delaware
Filed Dec. 2, 1966, Ser. No. 598,792
3 Claims. (Cl. 330—24)

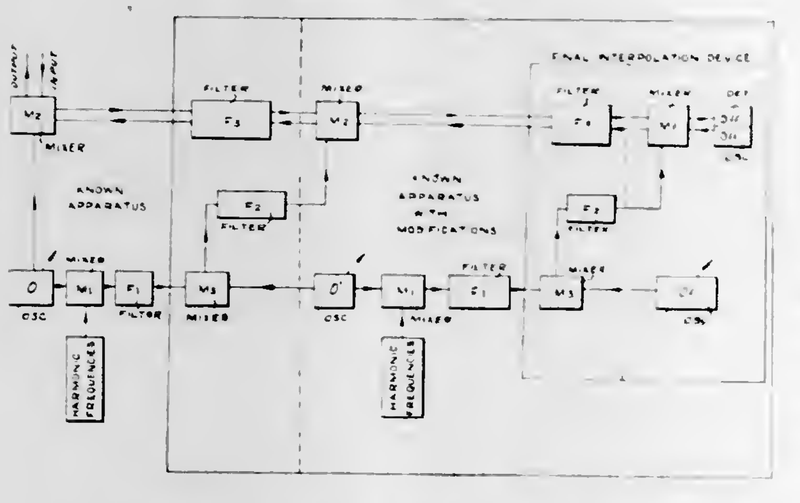


A two-port gyrator circuit has two similar amplifiers, one exhibiting a zero degree phase shift from its input to its output and the other exhibiting a 180° phase shift from its input to its output, having their respective inputs and outputs connected together in closed loop, with the output of one connected to the input of the other to form the gyrator output port and the output of the other connected to the input of the one to form the gyrator input port. Each amplifier has a high impedance input stage including a field-effect transistor, and a high impedance output stage including a pair of complementary bipolar transistors. When a capacitor is connected to the gyrator output port, the gyrator simulates an inductor with a Q factor of 500 at frequencies ranging from D.C. to 100 kHz.

3,400,336

DEVICE FOR SELECTING SIGNALS OF A SELECTED FREQUENCY IN RELATION TO GROUPS OF HARMONIC FREQUENCIES

Trevor L. Wadley, Warner Beach, Natal, Republic of South Africa, assignor to Racal-S.M.D. Electronics Pty. Limited, Pretoria, Republic of South Africa
Filed Feb. 13, 1967, Ser. No. 615,615
Claims priority, application Republic of South Africa, Feb. 18, 1966, 66/917
2 Claims. (Cl. 331—38)

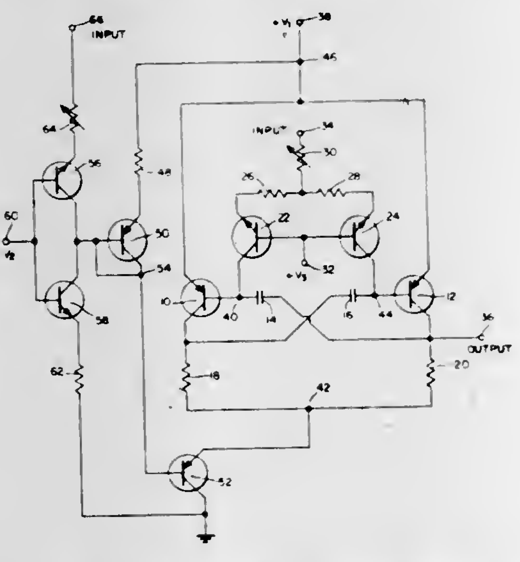


An electronic device for generating or receiving electrical signals of a desired frequency with a high degree of selectivity by relating the generated or received signal to groups of harmonic frequencies. The selectivity is increased by interpolating between the harmonic frequencies. For purposes of flexibility the interpolation circuit is substantially the same as the part of the circuit preceding the interpolation circuit.

3,400,337

STABILIZED VARIABLE FREQUENCY MULTIVIBRATOR

Robert E. Sherlin, Ormond Beach, Fla., assignor to General Electric Company, a corporation of New York
Filed Dec. 23, 1966, Ser. No. 604,245
3 Claims. (Cl. 331—113)

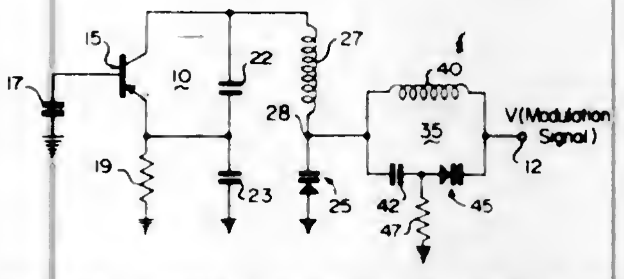


A collector-coupled transistor multivibrator with variable resistance paths (including another set of transistors) substituted for the usual fixed resistors. The charging rate of the capacitors is varied, in one case, by varying the impedance of these paths. A transistor is connected across the oscillator to maintain a constant voltage drop in spite of changes in supply voltage. Varying the base current of this transistor is an alternate means of varying the oscillator frequency.

3,400,338

WIDE BAND VOLTAGE CONTROLLED OSCILLATOR

Neal H. Ishman, Springfield, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Mar. 23, 1967, Ser. No. 625,528
3 Claims. (Cl. 331—117)

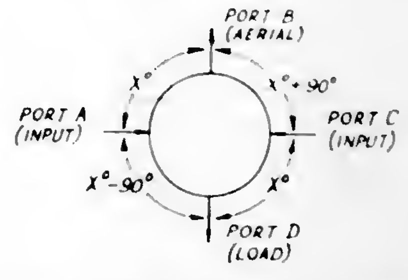


A wideband voltage controlled oscillator in which a parallel resonant circuit is used as an isolation network between a tuning voltage supply (modulation signal) and the voltage controlled oscillator to compensate automatically for amplitude variations and phase shift normally introduced by the combination of resistance of the isolation network and capacitance of the oscillator tuned network. The parallel resonant circuit is designated to resonate at center or design frequency of the oscillator so that at that frequency the isolation impedance is essentially purely resistive, while at low modulation signal frequencies an inductive reactance component predominates.

3,400,339

COMBINING OF RADIO FREQUENCY SIGNALS

Arthur Brian Shone, Finchampstead, England, assignor to The Marconi Company Limited and Standard Telephones & Cables Limited, both of London, England
Filed Aug. 2, 1965, Ser. No. 476,342
Claims priority, application Great Britain, Aug. 7, 1964, 32,288/64
5 Claims. (Cl. 333—9)



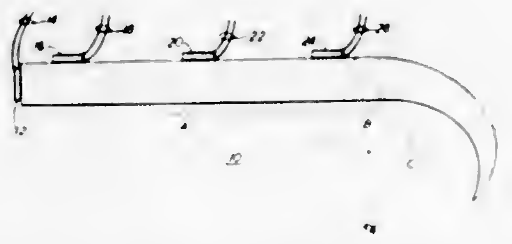
A commutating ring combining unit for feeding an aerial from two television transmitters has four terminals connected in a ring by transmission lines of lengths X°, $X°-90°$, X° and $X°+90°$ respectively where $X°=m\times 90°$ and $n\times 90°$ at the two tanrsmitter midband frequencies respectively and m and n are even and odd integers respectively.

3,400,340

ULTRASONIC WAVE TRANSMISSION DEVICES

Emmanuel P. Papadakis, Allentown, Pa., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 4, 1964, Ser. No. 387,411
4 Claims. (Cl. 333—30)

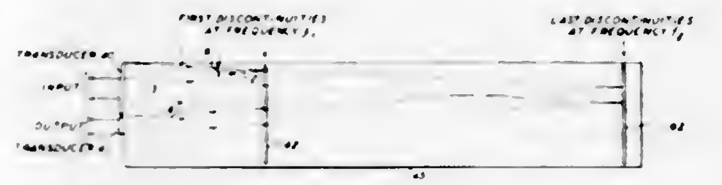
1. An ultrasonic delay line comprising a delay medium having an electromechanical input transducer for generating an ultrasonic wave in the delay medium and at least one electromechanical output transducer attached to a transmitting portion of the delay medium for detecting said wave, said delay medium comprising an elongated integral member having a first portion of a phase which is freely transmitting, a second portion of a phase whicn, relative to the first portion, is highly absorbing of acoustic energy, and a transition portion varying in phase gradually from the phase of the first portion to the phase of the second portion and intermediate said first and second portions, whereby the second portion substantially reduces reflection of acoustic energy back into the first portion.



3,400,341

ELASTIC DISPERSIVE DELAY LINE

Erhard K. Sittig, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 8, 1966, Ser. No. 532,650
4 Claims. (Cl. 333—30)


FIRST DISCONTINUITIES AT FREQUENCY f1
LAST DISCONTINUITIES AT FREQUENCY f2
TRANSDUCER
INPUT
OUTPUT
TRANSDUCER

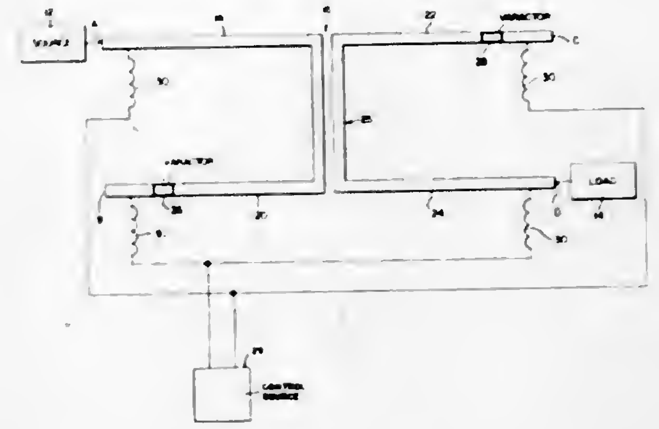
1. A dispersive, elastic wave delay line comprising:
an elastic wave propagation medium;
means located at one end of said medium for launching an elastic wave therein in a given direction and for extracting therefrom reflected wave energy;
and reactive discontinuities disposed along said medium in said given direction for reflecting portions of said wave energy towards said one end;
said discontinuities arranged to reflect signal components at different frequencies from different locations along said medium.

3,400,342

VOLTAGE CONTROLLED MICROWAVE PHASE SHIFTER

Howard Putnam, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Sept. 1, 1964, Ser. No. 393,527
3 Claims. (Cl. 333—31)

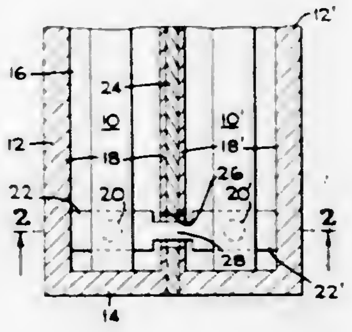
The present invention pertains to a phase shifter comprising the combination of a hybrid and variable reactance reflectors in the form of varactors. The varactors are serially connected in two arms of the hybrid and are spaced from the reactive open-end terminations thereof. The varactors provide reflections in conjunction with the reactive terminations of the arms wherein they are disposed. The phase of the reflections are readily varied by means of an external control voltage applied to the varactors. The varactors and the arms within which they are disposed receive energy applied to an input port of the hybrid and the energy is then reflected and delivered exclusively to an output port isolated from the input port.



3,400,343

TUNABLE BANDPASS FILTER

Philip S. Carter, Palo Alto, Calif., assignor to Physical Electronics Laboratories, San Mateo, Calif., a corporation of California
Filed Feb. 23, 1965, Ser. No. 434,551
14 Claims. (Cl. 333—73)



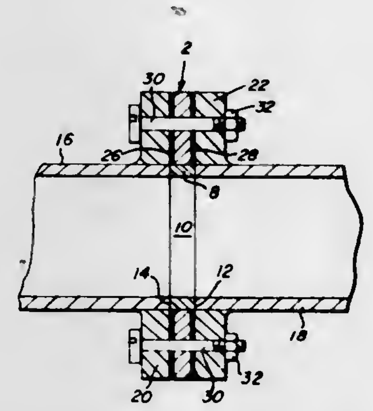
1. A bandpass filter comprising, in combination, an input portion adapted to receive radio-frequency energy and arranged so that electromagnetic fields are established therein, an output portion arranged to support radio-frequency fields and adapted to deliver radio-frequency energy therefrom, and coupling means for coupling energy from said input portion to said output portion, said coupling means comprising first and second ferrite resonator means exposed to said radio-frequency fields in a region of high magnetic field strength in said input and output portions, respectively, serial coupling sections for coupling electromagnetic energy away from said first resonator means and to said second ferrite resonator means, and an impedance inverter connected between said coupling sections to indirectly couple said resonator means whereby no direct coupling exists therebetween.

3,400,344

HIGH POWER MICROWAVE ENERGY WAVEGUIDE COUPLING GASKET

Alfred E. Booth, Marlboro, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Dec. 29, 1965, Ser. No. 517,222
9 Claims. (Cl. 333—98)

A waveguide gasket for radio frequency transmission lines comprising a demountable insert having a smooth lateral surface adapted for mounting within the central aperture in the holder plate to provide continuity along the wall surfaces between opposing waveguide sections secured together under mechanical pressure. The insert is

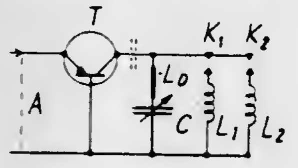


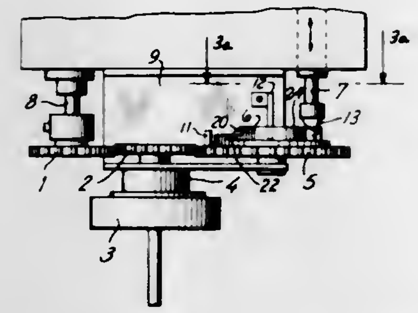
preferably of a thicker cross-sectional dimension than the holder plate.

3,400,345
TUNING SELECTION SYSTEM FOR UHF AND VHF TELEVISION BANDS

Edwin Oloff, Osterode am Harz, Germany, assignor to Imperial-Rundfunk- und Fernseewerk GmbH, Osterode am Harz, Germany

Filed Nov. 24, 1964, Ser. No. 413,483
Claims priority, application Germany, Nov. 27, 1963, J 24,803
4 Claims. (Cl. 334—47)



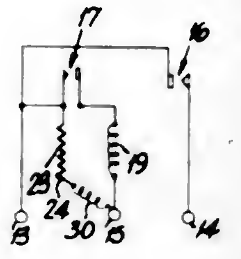


1. A tuning selector system for UHF and VHF television bands adaptable for connection with an input transistor, said tuning selector system comprising,
  a UHF circuit having a variable capacitor in series with a first inductor coil adapted to be fixedly connected across the base to collector of said input transistor,
  a coil selector circuit having a plurality of additional coils each of which corresponds to a particular frequency range in the VHF band, and
  switching means for selectively connecting one of said additional coils in parallel with said UHF tuning circuit to provide a tank tuning circuit for each of said corresponding frequency ranges in the VHF band,
  said coil selector circuit comprising a second inductor coil, and a third inductor coil having one of its ends connected to one end of said second inductor coil, and
  drive means for actuating said inductor switching means, said variable capacitor being of the air-dielectric rotary plate type, said drive means comprising a flywheel drive including a gear transmission system, said gear transmission system having a driving gear, a first gear coupled to said driving gear for rotating said variable plate capacitor, and a second gear coupled to said driving gear for driving said inductor switching means.

3,400,346
FLASHER UNIT FOR OPERATING INDICATOR LAMPS ON A ROAD VEHICLE

Eric Bernard Parkes, Birmingham, England, assignor to Joseph Lucas Industries Limited, Birmingham, England

Filed Apr. 25, 1966, Ser. No. 544,759
Claims priority, application Great Britain, Apr. 29, 1965, 18,024/65
1 Claim. (Cl. 335—141)

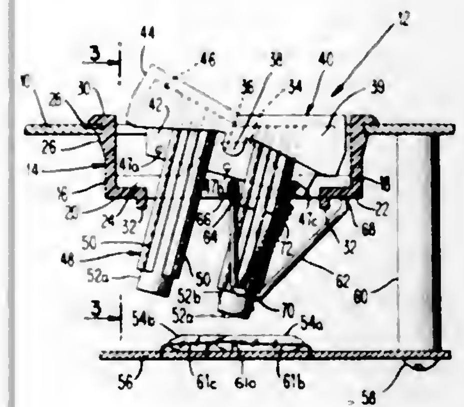


A flasher unit for operating direction indicator lamps on road vehicles includes a combined actuating wire and ballast resistor which when cold holds open the main contacts through which current flows to the indicator lamps. When current is passed through the actuating wire it expands to allow the main contacts to close, current flowing through the main contact energising the indicator lamps and also energising an electro-magnet winding which holds the main contacts closed. When the main contacts are closed, the actuating wire is short-circuited and so cools down, so that eventually the contacts are opened again. An extra winding is included in series with the actuating wire which opposes the main electromagnet winding.

3,400,347
MAGNETIC REED SWITCH

Albert Macys, Plymouth Meeting, and Richard Marinace, Erdenheim, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 27, 1966, Ser. No. 545,766
11 Claims. (Cl. 335—151)

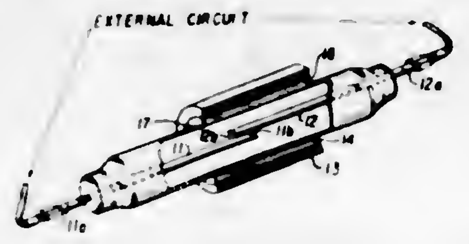


This invention comprises an ON-OFF switch which utilizes a reed member in conjunction with a permanent magnet. In particular the switch comprises a pressure plate pivotally mounted on a base channel and held there by a spring and spring retainer means. The base channel is held in position in an opening by means of outwardly and oppositely facing notches in order to receive the top edges of the switch assembly. By means of the above techniques, the entire assembly can be fabricated with a minimum of parts and the elimination of attachment devices to interconnect the various parts. Manual pressure on the pressure plate moves the permanent magnetic inoperative relation to the magnetic reed member. In operation, the reed switch is opened by pointing one pole of the permanent magnet at the overlapping portion of flexible reed switch members thus providing a "snap action" or repulse opening. During closing, the pole of the permanent magnet is pointed away from the overlapping portion of the flexible members. The switch closes with constant acceleration and the contacts close with a "snap action" since the overlapping reed member ends have induced in them fields of opposite polarity. This causes an attractive force to exist between the ends of the reed member which because of their flexibility allows them to come together into intimate contact.

3,400,348
POLARIZED REED RELAY WHEREIN THE PERMANENT MAGNET IS AROUND THE REED SWITCH AND IN CONTACT WITH THE COIL

Theodore De Parry, Elmhurst, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed July 3, 1961, Ser. No. 121,534
3 Claims. (Cl. 335—153)

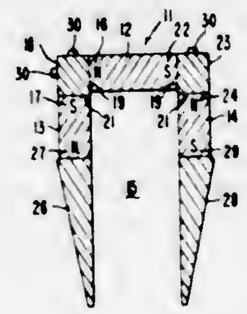


1. A magnetically operated high speed switch structure comprising:
  an energizing coil,
  a pair of cantilevered contact reeds extending within an elongated vitreous tube having an external surface and placed within said coil, said reeds activated in response to the energization of said coil;
  and a plastic magnetic member, positioned directly on said external surface of said tube and in direct contact with said energizing coil, said member supporting said energizing coil and being in operative relation therewith to maintain said reeds activated after deenergization of said coil, and to minimize the eddy currents generated by said coil.

3,400,349
U-SHAPED MAGNETIC CIRCUIT INCLUDING THREE PERMANENT MAGNETS SEPARATED BY POLE PIECES

David J. Harra, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Jan. 14, 1966, Ser. No. 520,606
6 Claims. (Cl. 335—210)



The web or connecting portion of the U is formed by a single bar magnet while each of the arms of the U, perpendicular to the web, includes a bar magnet poled in magnetically aiding relationship to the magnet in the web. A pair of pole pieces magnetically interconnect the web and arms of the U, while another pair of pole pieces at the ends of the arms are tapered to provide a region of uniform flux density between the arms.

3,400,350
SUPERCONDUCTOR MATERIALS AND DEVICES

Frederic Holtzberg, Pound Ridge, and Siegfried I. Methfessel, Montrose, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

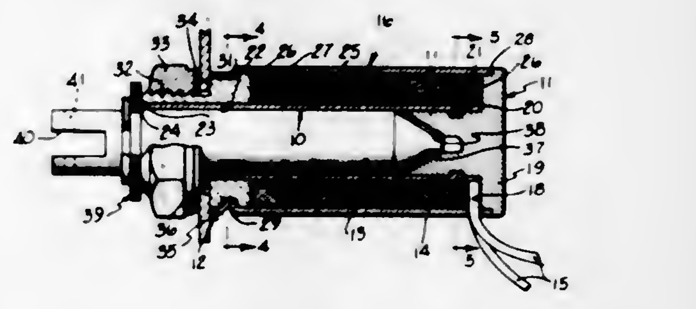
Filed Apr. 26, 1965, Ser. No. 450,872
8 Claims. (Cl. 335—216)

The superconductive devices to which this application is directed are formed using lanthanum chalcogenide components. These chalcogenides have been found to exhibit superconducting characteristics when at least a minimum number of the metal ion sites are occupied by lanthanum ions. As the number of sites, so occupied, is increased, the critical temperature of the material also increases. For example, La_2Se_3 and La_2S_3 are not superconducting at 1.3° K. By the addition of lanthanum metal ions to these compounds solid solutions are formed which are Type II superconductors. The critical transition temperature increases as more lanthanum ions are added. The highest transition temperatures are achieved when sufficient lanthanum ions are added to form either La_3Se_4 or La_3S_4. Superconducting devices such as high field magnets, and superconducting switching circuits, which can also be used as memory devices, are formed using lanthanum chalcogenides of the above-described types as the superconductive components.

3,400,351
SOLENOID PLUNGER STOP

Robert W. Flentge, Roselle, Ill., assignor to Albert F. Dormeyer, Chicago, Ill.

Filed Oct. 11, 1966, Ser. No. 585,880
9 Claims. (Cl. 335—257)



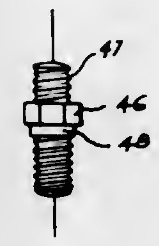
Solenoid having a plunger and plug and a plunger stop for cushioning the plunger during seating and for providing a positive predetermined air gap between the plunger and plug in seated position.

3,400,352
ENCAPSULATED INDUCTOR WITH EXTERNAL ADJUSTABLE MEANS FOR SELECTIVELY VARYING THE INDUCTANCE

Gustave W. Henke, Freeport, N.Y., assignor, by mesne assignments, to Varian Associates, Palo Alto, Calif., a corporation of California

Original application Jan. 2, 1962, Ser. No. 163,936, now Patent No. 3,239,782. Divided and this application Mar. 7, 1966, Ser. No. 558,154
4 Claims. (Cl. 336—75)

There is disclosed encapsulated variable inductors provided with externally adjustable means in the form of a coaxial ring or nut adapted to be moved along the length of the inductor for adjusting the inductance. The ring is provided with a resilient inner portion which

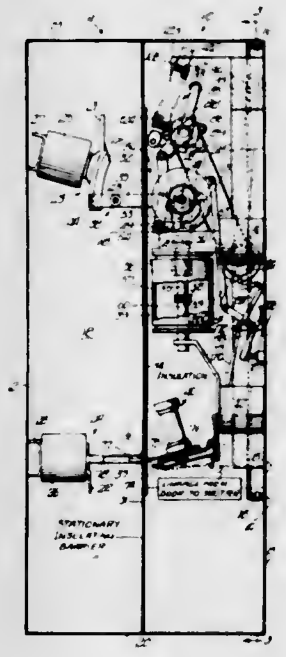


engages the encapsulated inductor to maintain the adjusted inductance.

3,400,353
METAL ENCLOSED SWITCHGEAR WITH SERIES CONNECTED SWITCH MEANS, CIRCUIT INTERRUPTER MEANS, CURRENT RESPONSIVE MEANS AND OPERATING MEANS MOUNTED ON DOOR

Guenther G. Schockelt, Skokie, Ill., assignor to S & C Electric Company, Chicago, Ill., a corporation of Delaware

Filed June 30, 1966, Ser. No. 561,839
20 Claims. (Cl. 337—7)



Safe metal enclosed switchgear in which the switchgear is enclosed in a metal housing provided with a door to permit access thereto. Mounted on the door and connected in series are a switch blade, a vacuum type circuit interrupter and a fuse with shunting contacts. Also mounted on the door is a stored energy mechanism operated by the blowing of the fuse for opening the switch blade and circuit interrupter together and a manually operated stored energy mechanism arranged to open the switch blade and circuit interrupter. Interlocks operate between the switch blade and door to prevent opening of the door when the switch blade is closed and between the fuse and a manually operated handle to prevent operation of the handle until the fuse is replaced. There is another interlock which prevents closure of the door once it has been opened after operation of the fuse.

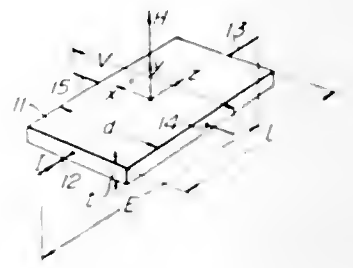
ERRATUM

For Class 337—229 see:
Patent No. 3,400,235

3,400,354
HALL-EFFECT DEVICE

Tatsuo Kawasaki and Hiromasa Hasegawa, Takatsuki-shi, Japan, assignors to Matsushita Electronics Corporation, Osaka, Japan, a corporation of Japan

Filed Dec. 23, 1966, Ser. No. 604,278
Claims priority, application Japan, Dec. 28, 1965, 41/308
1 Claim. (Cl. 338—32)

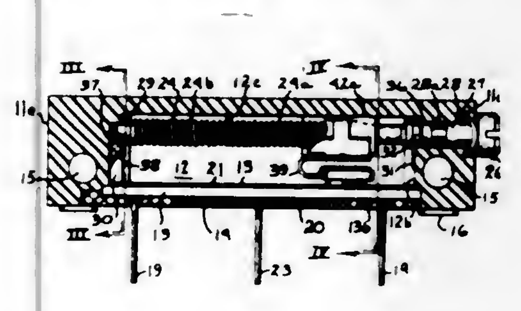


A Hall-effect device having a rectangular prism of a material with high carrier mobility, a pair of input current electrodes mounted on opposite sides of the prism and two pairs of output electrodes. The two pairs of electrodes are mounted on the sides of the prism perpendicular to the sides having the input electrodes with the electrodes of each pair being mounted on opposite sides of the prism and the pairs of electrodes being perpendicular to each other.

3,400,355
VARIABLE RESISTANCE CONTROL WITH IMPROVED HEAT DISSIPATOR ARRANGEMENT AND BEARING MEANS

John D. Van Benthuysen and Mervin B. Arisman, Elkhart, Ind., assignors to CTS Corporation, Elkhart, Ind., a corporation of Indiana

Filed Dec. 2, 1966, Ser. No. 598,712
10 Claims. (Cl. 338—183)

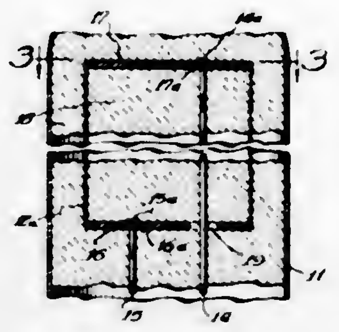


Variable resistance control having a journaled shaft rotatably mounted in a housing. Body of epoxy is formed in situ around at least one journal of the shaft, the body of epoxy adhering to the housing and forming an end thrust bearing rotatably supporting the shaft and limiting inward axial movement of the shaft. The housing is provided with a cavity closed by a substrate supporting a resistance element and a collector. The collector includes a heat dissipator disposed outwardly of the housing that facilitates removal of heat from the resistance element by uniformly distributing heat over the substrate. A U-shaped driver engaging the shaft carries a U-shaped member having a contactor wipably engaging the resistance element and the collector intermediate the ends thereof. The U-shaped member is provided with first and second tension means in the form of a pair of arms for biasing first and second legs of the U-shaped driver against diametrically opposite sides of the shaft in order to control rotational torque of the shaft. A clutching action between the shaft and the U-shaped driver is obtained as a result of resilient engagement of the shaft by the driver.

3,400,356
SCREEN HEATER WITH AN OUTER METALLIC SHEATH

Bayard C. Davis, 425 S. Grace St., Lombard, Ill. 60148; Alvin Singer, 1125 Hohrfelder Road, Glencoe, Ill. 60022; and Milford T. Chapman, Jr., 34 N. Grant Drive, Addison, Ill. 60101

Filed Nov. 16, 1965, Ser. No. 508,010
7 Claims. (Cl. 338—208)

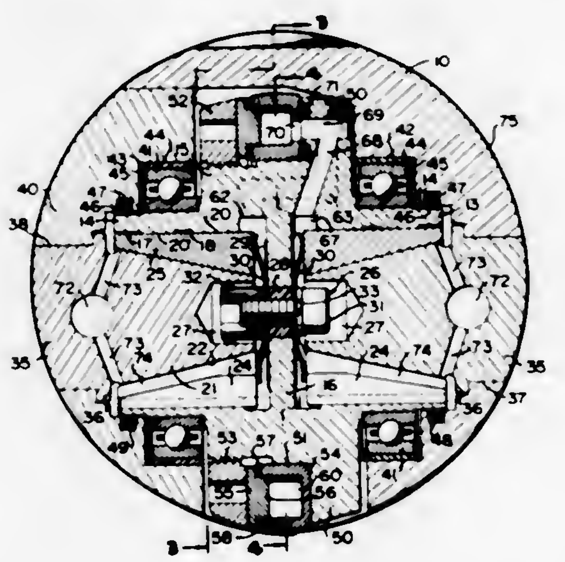


An electric heater construction. An outer, protective metallic sheath is filled with a mass of heat-conductive, electrically insulating ceramic material. A cylindrical screen heater element is embedded in the ceramic material. The screen element comprises a plurality of resistive heating wires which are electrically interconnected in mesh fashion to provide numerous current paths. Conductive means are provided to connect the screen element to a source of electrical energy.

3,400,357
DRY ROTARY JOINT

John T. Cary, Markham, Charles R. Locke, Western Springs, Richard F. Scharf, Chicago, and Martin F. Ahrens, Palos Park, Ill., assignors to Continental Can Company Inc., New York, N.Y., a corporation of New York

Filed Dec. 9, 1966, Ser. No. 600,461
17 Claims. (Cl. 339—8)

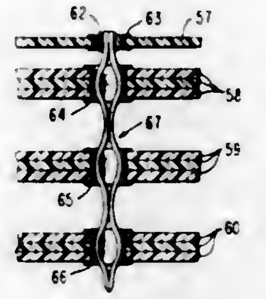


1. A rotary conductor for transferring electrical energy involving high levels of current, said conductor comprising a tubular body, conical pins projecting into said body from opposite ends thereof in axial alignment with each other and said body, a set of segmental brushes arranged circumferentially around each conical pin, and means resiliently urging said brushes into electrical energy transferring contacting relation with said pins and said body.

3,400,358
ELECTRICAL CONNECTOR

Herbert P. Byrnes, Wappingers Falls, Louis J. Gagliano, Poughkeepsie, and Henry C. Schick, Hopewell Junction, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 21, 1965, Ser. No. 500,127
6 Claims. (Cl. 339—17)

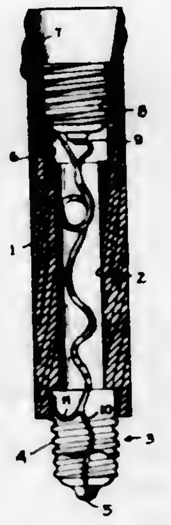


A small plug-in connector of the banana plug type is composed of two outwardly bowed wire halves which are welded together at both ends and rounded at one end to be inserted into small printed circuit through-holes. When such wires are of half round cross-section and welded with flat faces together at ends of bowed lengths, the resulting connector is unusually strong and flexible and yet suited to be fitted into smaller holes than ordinary wire or spring strip stock plugs. A single plug may be formed with more than one bowed section to pass through and connect several circuit boards or components. The simplicity of the joined wire halves makes the connector subject to continuous processing through several joining, shaping and plating steps in an economical fashion.

3,400,359
ELECTRIC CANDLE

Stefania Bedini, Via G. Pezzana, 68, Rome, Italy

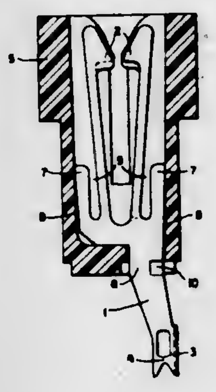
Filed Apr. 6, 1966, Ser. No. 540,650
Claims priority, application Italy, Apr. 6, 1965, 2,359/65
1 Claim. (Cl. 339—25)



A candle-simulating extension comprising a body having a plug at one end for threading into a standard electrical lamp-base socket, and a socket shell at its free end to receive the threads of a lamp base. The body is thick-walled and has counterbores at its ends in which the plug and shell are respectively secured. Electrical connections between the plug and shell extend in and along a central axial passageway in the body.

3,400,360
ELECTRICAL PLUG WITH FLEXIBLE CONTACT MEMBER

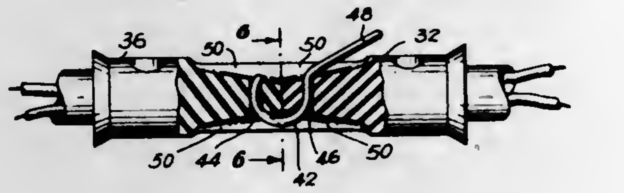
Karl-Friedrich Schmitt, Neckarsulm, and Walter Boch, Eberbach, Bad Neckartal, Germany, assignors to Ulrich Tuchel, Heilbronn (Neckar), Germany
Filed Jan. 16, 1967, Ser. No. 609,413
Claims priority, application Germany, Feb. 23, 1966, T 30,554
1 Claim. (Cl. 339—64)



An electrical plug including a housing made of insulating material and a flexible contact member mounted within the housing, one end of the flexible contact member including projecting tongues to engage a flat electrical contact, and the other end of the flexible contact member including means for connection to a conductor. Extensions project from the middle portion of the flexible contact member and abut against an interior surface of the housing to prevent the flexible contact member from being displaced by movement of the electrical conductor.

3,400,361
LOCKING CONNECTOR AND FLOOR TREATING MACHINE UTILIZING SAME

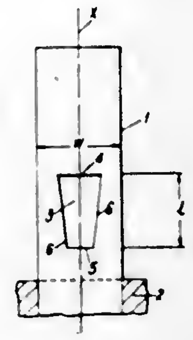
Nathaniel N. Okun, Baltimore, Md., assignor to The Cello Chemical Company, Baltimore, Md., a corporation of Maryland
Filed Nov. 3, 1966, Ser. No. 591,756
10 Claims. (Cl. 339—75)



A separable electrical connector comprises a male body made of yieldable insulating material and having two spaced collateral metal prongs projecting therefrom, a female body made of yieldable insulating material and having two spaced collateral passages to receive the prongs with the bodies in end-to-end relation, said passages having metal contacts therein to engage the prongs for electrical connection. There is a releasable means to hold the said two bodies against separation, said means including a hook shaped member having a handle part and a large round hook passing through a transverse hole in the male body and releasably received in another transverse hole in the female body, said hook having a diameter approximately the same as the spacing between said two holes but the parts are stressed for resilient frictional engagement. The hook member and the holes are located in said bodies in the region between the two spaced collateral prongs and passages.

3,400,362
FRACTURE RESISTANT CONNECTING POST

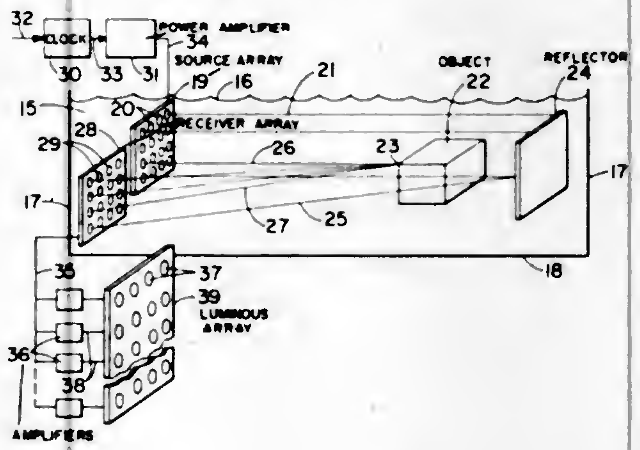
Lucas Gerardus Christianus Teurlings, Frederik, Netherlands, assignor to AMP Incorporated, Harrisburg, Pa.
Filed Mar. 14, 1967, Ser. No. 623,598
Claims priority, application Netherlands, Mar. 31, 1966, 6604265
7 Claims. (Cl. 339—277)

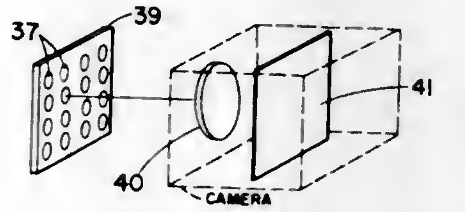


A flat sheet metal post securable in a mounting member which is provided with an aperture proximate the end securable in the mounting member to equalize the bending stress under the action of a bending force over the length of the apertured portion of the post and the bending stress is greater than such bending stress at any cross section of the remainder of the post.

3,400,363
WAVELET RECONSTRUCTION PROCESS FOR SONIC, SEISMIC, AND RADAR EXPLORATION

Daniel Silverman, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Dec. 9, 1965, Ser. No. 512,689
14 Claims. (Cl. 340—3)

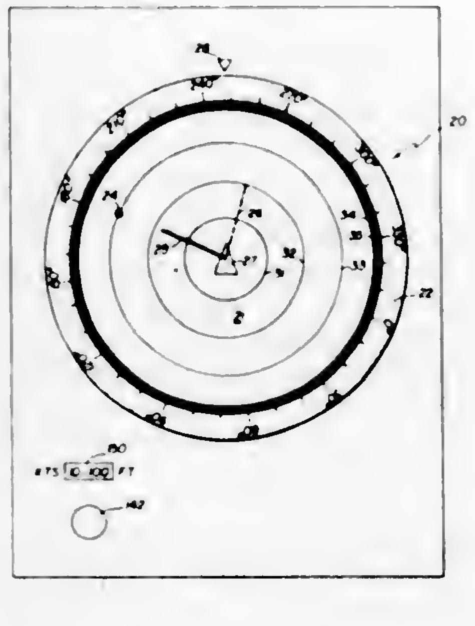




An object irradiated by coherent elastic waves such as sonic or seismic waves is visualized by an adaptation of holography, by detecting the interference pattern of direct and reflected elastic waves at an array of detectors, producing a corresponding distribution of luminous energy, photographing it, and looking at the photographic record in a beam of coherent (laser) light.

3,400,364
HORIZONTAL DISPLAY NAVIGATIONAL DEVICES

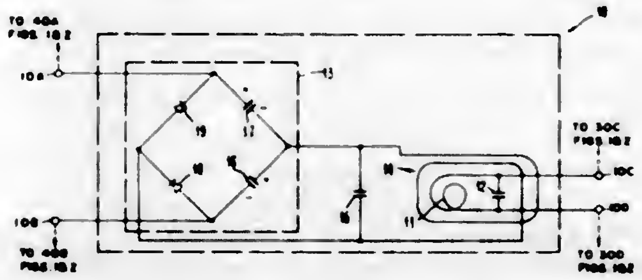
Joseph S. Musgrave, Bellevue, Wash., and Robert J. Rue and Jerry A. Nicholson, Wichita, Kans., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Substituted for abandoned application Ser. No. 292,327, July 2, 1963. This application Oct. 10, 1966, Ser. No. 585,437
10 Claims. (Cl. 340—24)



A cathode ray tube provides a horizontal position display of velocities, distances and headings between an airborne aircraft and its destination in response to logic networks and servomechanisms connecting the cathode ray tube to a conventional computer.

3,400,365
MAGNETIC VEHICLE DETECTOR WITH FEEDBACK ADJUSTMENT FOR AMBIENT CONDITIONS

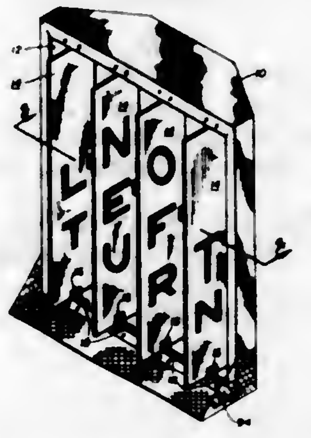
Walter K. French, Montrose, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 30, 1964, Ser. No. 422,315
6 Claims. (Cl. 340—38)



A small transmitting coil energized from a voltage-controlled variable frequency oscillator, which produces a concentrated substantially vertical magnetic field, and a large loosely-coupled receiving coil connected in a circuit resonant at a frequency higher than the highest frequency of the oscillator provides a sensitive magnetic vehicle detector when these coils are buried beneath the vehicular roadway. Any metal entering the flux field reduces the voltage output of the receiver to initiate a count. Persistence of metal produces a feedback to raise the oscillator frequency to restore the output of the receiver to compensate for metal trash or parked vehicles.

3,400,366
TRAFFIC PERIOD CONTROL SIGN HAVING MOVABLE SHUTTERS

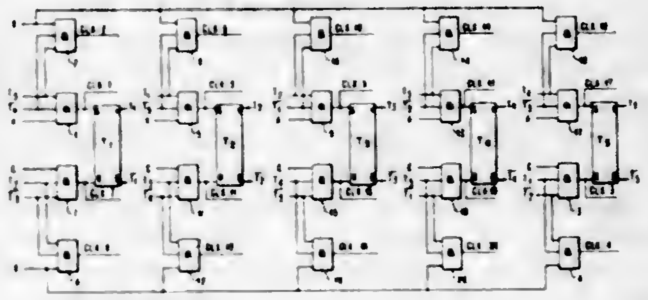
Donald M. Downing, 3737 W. 44th St., Tulsa, Okla. 74107
Filed June 21, 1965, Ser. No. 465,664
2 Claims. (Cl. 340—124)

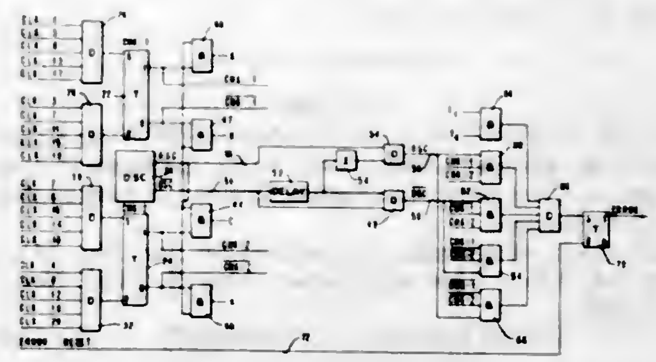


A traffic sign is disclosed having plural indicia bearing shutters pivoted in unison between two display positions by an electric motor. The control bar which moves the shutters contacts and supports the shutters in the display positions.

3,400,367
TIMING RING AND CHECKING CIRCUIT

Donald A. Epstein and Gunars Zvaigzne, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 28, 1964, Ser. No. 399,780
7 Claims. (Cl. 340—146.1)



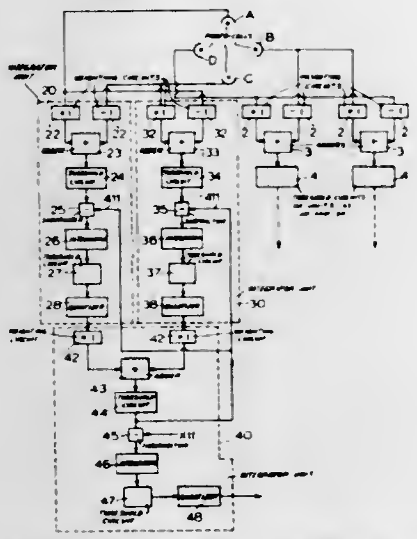


A self-checked timing circuit. An oscillator source generates a train of true and complement oscillator pulses. A ring of storage triggers is stepped by clock pulses. A pair of check triggers is also stepped by clock pulses. The outputs of the oscillator, the check triggers, and the storage triggers are combined to produce the clock pulses synchronized with the oscillator source. One check trigger is turned on and off alternately by odd clock pulses. The other check trigger is turned on and off alternately by even numbered clock pulses. The check triggers have the same output levels during the complement oscillator cycle but have opposite output levels during the true oscillator cycle. A check circuit is provided for comparing the outputs of the check triggers and the oscillator pulses in such a manner that if the check triggers have the same output levels during a true cycle or have different output levels during a complement cycle an error is indicated.

3,400,368
PATTERN SENSING DEVICES

Christopher Archibald Gordon Le May, Isleworth, Middlesex, England, assignor to Electric & Musical Industries Limited, Hayes, Middlesex, England, a British company

Filed Nov. 26, 1963, Ser. No. 326,136
Claims priority, application Great Britain, Nov. 28, 1962, 44,914/62
14 Claims. (Cl. 340—146.3)

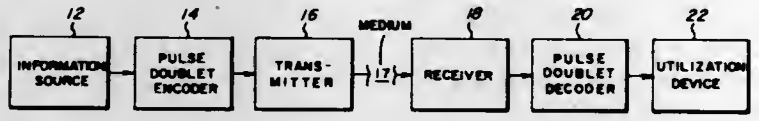


An arrangement for logically combining analogue signals in which, two or more analogue signals are represented as charges on respective integrators of which the outputs are quantized and combined in the desired logical manner, and, if the combined output exceeds a threshold, the charge on a third integrttor is increased and at the same time the charges on the first two integrators are reduced until the combined output no longer exceeds the threshold, when the charge on the third integrator represents the extent to which the logical combination is present. The arrangement is described as a precoder for a pattern recognition device in which the analogue signals represent the amounts of respective simple features present in a pattern and the outputs of the arrangement represent the presence of more complex features. The arrangement can also be used as a shifting register for analogue signals.

3,400,369
PULSE DOUBLET COMMUNICATION SYSTEM

David B. Cooper, New York, N.Y., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Continuation of abandoned application Ser. No. 251,389, Jan. 14, 1963. This application May 8, 1967, Ser. No. 637,006
18 Claims. (Cl. 340—167)

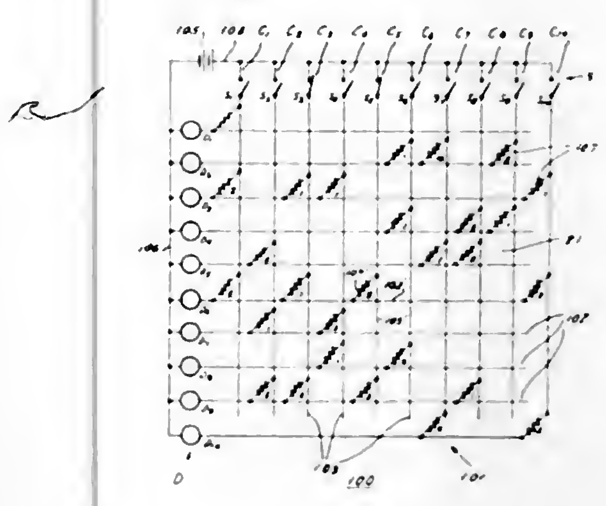


A communication system for communicating information in which the information to be communicated is encoded in the form of pulse doublets each having a constant energy content.

3,400,370
PROBABILITY COMPARATOR

Masahiko Fukamachi, Shiba Mita, Minatoku, Tokyo, Japan, assignor to Nippon Electric Company Limited, Shiba Mita, Minatoku, Tokyo, Japan, a corporation of Japan

Filed Dec. 19, 1962, Ser. No. 245,767
Claims priority, application Japan, Dec. 25, 1961, 36/47,378
4 Claims. (Cl. 340—172.5)



4. A probability comparator capable of comparing the magnitude of each probability of every possible conclusion D_1 through D_m which may be drawn against the given state of observed phenomena X_1 through X_n comprising a matrix having n row and m column windings associated respectively with conclusions and observed phenomena X_1 through X_n; a plurality of admittance elements electrically connecting selected ones of said row windings to selected ones of said column windings; said admittance elements having differing admittance values to correspond to the relative probability of the existence of a conclusion due to the presence of an observed event; means connected to each of said row windings for providing a reading related to the sum of all observed events related to each of said row windings; an electrical source; switch means operable to indicate the presence of an observed event connected to each of said column windings; each of said switch means being adapted to connect said voltage source to selected ones of said row windings upon closure thereof; said reading means comprising a plurality of ammeters each being connected to an associated row winding; said electrical source comprising a plurality of adjustable voltage sources each connected in series with an associated column winding adapted for regulating the intensity or severity of an observed phenomena.

3,400,371
DATA PROCESSING SYSTEM

Gene M. Amdahl and Gerrit A. Blaauw, Poughkeepsie, Elaine M. Boehm, Wappingers Falls, Peter Calingaert, Poughkeepsie, Richard J. Carnevale, Union, Richard Paul Case, Lagrangeville, Arthur F. Collins and Jack E. Greene, Vestal, William P. Hanf, Endicott, Jacob R. Johnson, Poughkeepsie, Albert A. Magdall, Vestal, Charles B. Perkins, Jr., Endicott, John W. Rood, Vestal, Bruce M. Updike, Union, and Anthony E. Villante, Binghamton, N.Y., and Helmut Weber, Sunnyvale, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

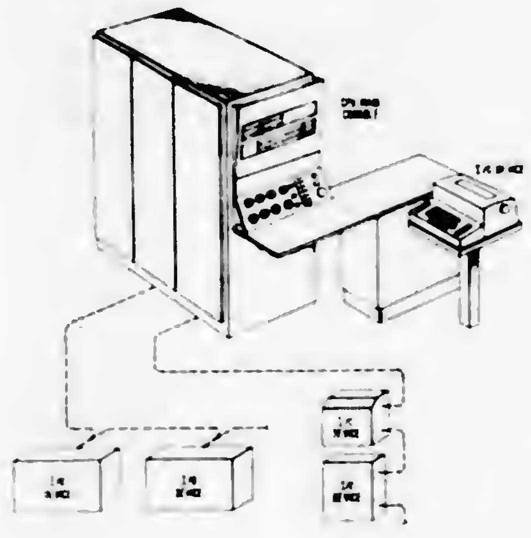
Filed Apr. 6, 1964, Ser. No. 357,372
131 Claims. (Cl. 340—172.5)

A general purpose computing system for scientific and commercial applications. The system comprises a main storage containing data and macro-instructions, a central processing unit for performing various arithmetic and logic functions under control of a read only memory containing sequences of micro-instructions each providing a pattern of control signals for controlling the transmission of data through the central processing unit. A plurality of related micro-instructions are utilized to carry out the various arithmetic and logic operations specified by the macro-instructions.

The main storage further includes general purpose registers and floating point registers and a local store for storing the various processing conditions and results. A storage protection feature provides for violation of protected areas and an appropriate alert is generated when a violation occurs.

The general registers have multiple functions and are utilized in address manipulations, fixed point binary accumulators, indexing operations, sources for addresses, shifting and logical operations. The floating point registers are utilized in all floating point arithmetic operations.

The system further includes a system of channels for input/output (I/O) operations, the latter having a select mode or multiplex mode of operation. In the multiplex mode there is a choice of a burst mode or the multiplex mode, the former requiring the full use of the I/O channel whereas in the multiplex mode several I/O operations are performed concurrently by the I/O channel. All operating conditions of the channel are stored in an appropriate control word. During processing operations all conditions of the system are under control of a Program Status Word which specifies various types of interruption codes, program/monitor codes, masking codes, machine status codes, etc.



A feature of the system includes a monitor program which contains the necessary instructions to handle a plurality of problem programs including I/O operations.

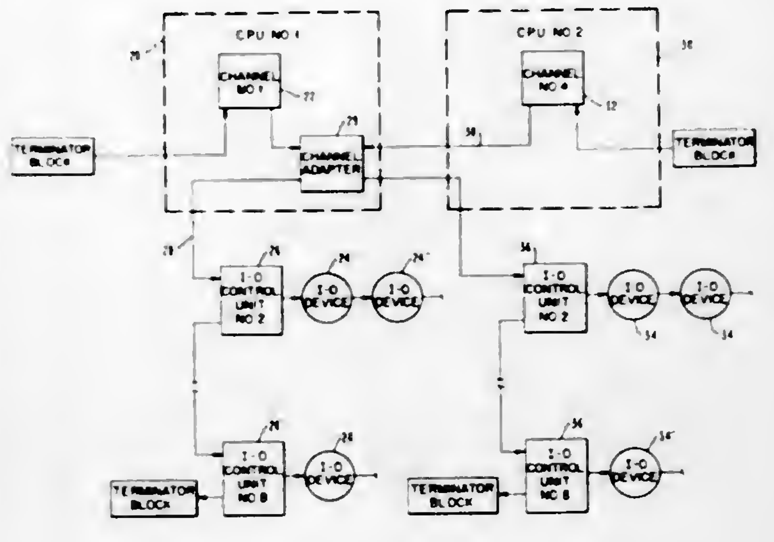
The central processing unit performs binary/decimal arithmetic manipulations for arithmetic functions. All aspects of these functions are controlled by facilities for data crossing, conversion, complementing, carry functions and decimal correction. The central processing unit further includes a plurality of data flow registers interconnected via transfer buses to an ALU (arithmetic logic unit) which performs the specific data processing functions specified by the operation code of an instruction and implemented by appropriate sequences of micro-programs of the read only memory.

All data processing functions, arithmetic and logical, are performed under control of a universal instruction set which includes binary/decimal arithmetic, various editing controls, translate and test operations, bit shifting, floating point operations for scientific applications, storage protection operations, program status control as well as I/O operations under control of monitor instructions.

3,400,372
TERMINAL FOR A MULTI-DATA PROCESSING SYSTEM

William F. Beausoleil and William C. Hoskinson, Poughkeepsie, Lewis E. King, Highland, and Herbert G. Weber III, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Feb. 16, 1965, Ser. No. 432,970
10 Claims. (Cl. 340—172.5)



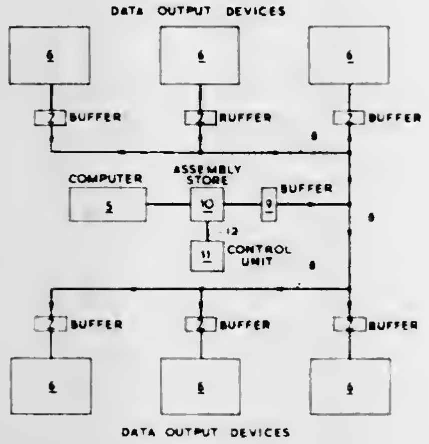
A channel adapter which electronically connects the data channel of one central processing unit (CPU) to the data channel of a second data processing unit. The data channel of the first CPU includes data transfer buses for both data in and data out, tag lines identifying signals on the buses and control lines for selecting and interlocking the first computer with the channel adapter. The second computer also has data transfer buses for data in and data out, tag lines identifying signals on the buses and control lines for selecting and interlocking the second computer with the channel adapter. The channel adapter looks like an input/output device attached to the channel and is assigned an address which can be transmitted from either CPU to select the adapter from among other input/output units that are connected to each channel. Information to be transferred from one channel to the other channel is held by a single register or buffer in the adapter which is connected to the appropriate channel interface as directed by a gating section. In order to transfer data from one computer to the other the first computer initiates a write command and the second computer initiates a read command. Thus the first computer transfers data across the interface as if it were performing a write operation and places the data in the buffer. The other computer then operates as if it were performing a read command and in response to control signals generated by the write operation takes the data from the buffer and transfers it to its own memory.

3,400,373
CONTROL UNIT FOR PROCESSOR-PERIPHERAL DEVICE TRANSFERS

Albert Watson Nicholson, Kidsgrove, Stoke-on-Trent, England, assignor to English Electric-Leo-Marconi Computers Limited, London, England, a British company

Filed Mar. 29, 1965, Ser. No. 443,456
Claims priority, application Great Britain, Apr. 1, 1964, 13,490/64
3 Claims. (Cl. 340—172.5)

This invention relates to a system for interconnecting a central computer and a plurality of peripheral devices such as magnetic tape units. The simplest method of constructing such a system is to make each peripheral device as nearly self-contained as possible, so that the only control information which passes between the central computer and the peripheral device is simple command and synchronising signals. However, this method involves the provision of a complete set of control circuitry in each peripheral device. The present invention provides a system wherein a common control unit is provided. This control unit is interposed between the central computer and the peripheral devices as far as control information is concerned, and also controls the flow of data through an assembly store located between the central computer and the peripheral devices. A particular function which the control unit performs is the starting up of magnetic tapes; on receiving a command from the central computer to operate a tape unit, the control unit starts up the tape unit and automatically measures off the time interval which that tape unit requires for the tape to reach the proper running speed.

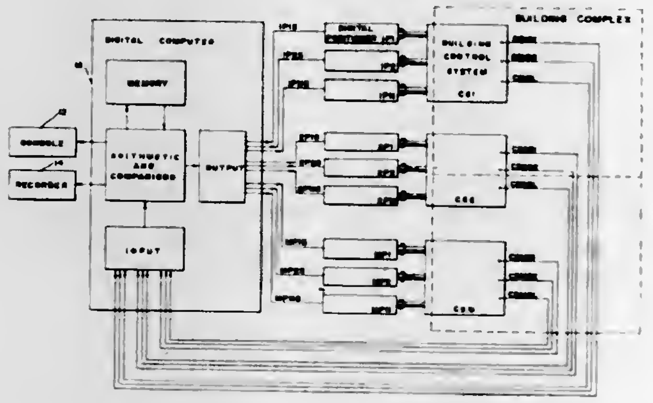


3,400,374
COMPUTERIZED CONTROL SYSTEMS

Paul A. Schumann, Richmond, Va., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed June 16, 1965, Ser. No. 464,404

20 Claims. (Cl. 340—172.5)



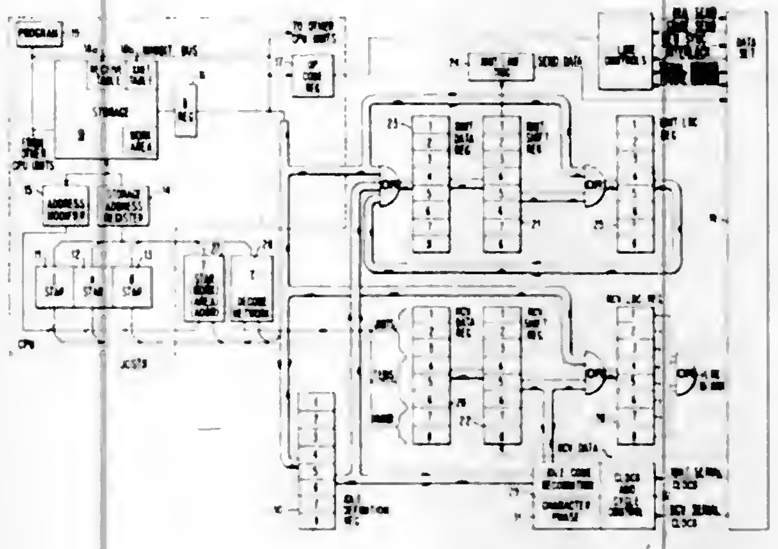
A computerized control system for buildings having a plurality of operating systems, such as heating and cooling systems, and a plurality of control devices for each operating system, a digital computer with a memory programmed to control points for the control devices receives input signals related to the condition being controlled and, after comparison with the corresponding control points in its memory, delivers corrective output signals to a digital positioner associated with each control device.

3,400,375
UNIVERSAL CODE SYNCHRONOUS TRANSMITTER-RECEIVER DEVICE

Raymond E. Bowling, Vestal, and George J. Laurer and Orville D. Montgomery, Endwell, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Aug. 12, 1965, Ser. No. 479,199

10 Claims. (Cl. 340—172.5)



1. A data message communication system comprising:
(a) a main data terminal,
(b) a plurality of remote terminals communicatively coupled with said main data terminal via communication channels,
(c) program controlled means at said main data terminal for selectively rendering one of said remote terminals operative to receive data messages,
(d) a data character register coupled with the communication channels,
(e) message character generating means at said main data terminal,
(f) a compartmentalized character storing medium for storing message character equivalents according to a line code,
(g) storage address means sequentially responsive to the message characters for addressing locations in said character storing medium and causing character equivalents data to be read out of same to said data character register, and
(h) means to transfer the data out of said data character register to the communication channels for transmission to the operative remote terminal.

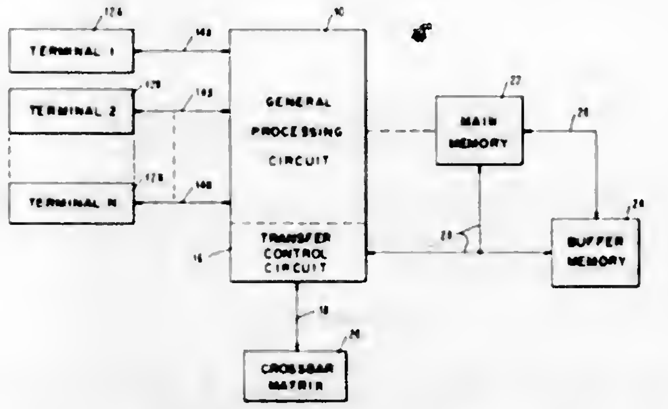
3,400,376
INFORMATION TRANSFER CONTROL SYSTEM

Eugene E. McDonnell, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Sept. 23, 1965, Ser. No. 489,588

9 Claims. (Cl. 340—172.5)

A system for exchanging information between instruction generating media such as computer programs or computer I/O terminals. The system includes a matrix storage device. When an indication is received that a first terminal or program wishes to send information to a second terminal or program, a first selected bit in the matrix storage device is set. When the second terminal is operating or the program is running, a determination is made as to whether the second terminal or program wishes to communicate with the first terminal or program respectively. If the latter determination is affirmative, a second selected bit is stored in the matrix storage device. When the first terminal is operating or the first program is thereafter running, the matrix storage device is interrogated to ascertain whether the information is to be sent and, in response to such ascertaining, causes the information to be transferred from a storage medium for the first terminal or program to a storage medium for the second terminal or program.

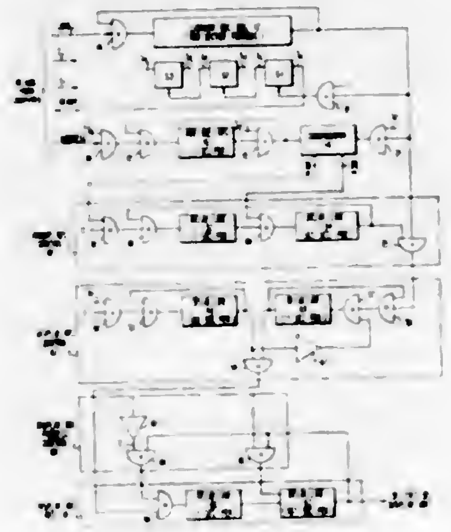


3,400,377
CHARACTER DISPLAY SYSTEM

Lyle H. Lee, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 13, 1965, Ser. No. 495,612

7 Claims. (Cl. 340—172.5)



A system for displaying characters including a storage means for storing sets of information corresponding to elemental areas of the characters and means for selecting and displaying the sets of information along scan lines such that the characters are recreated for display.

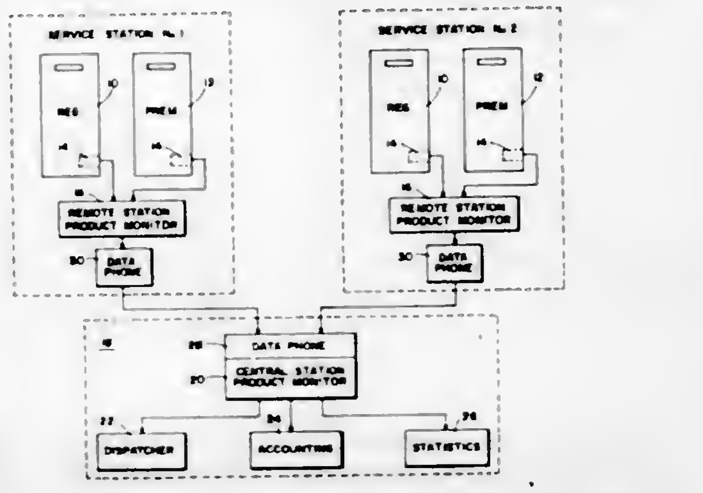
3,400,378
DATA ACQUISITION SYSTEM WITH PLURAL SCANNERS AT PLURAL REMOTE STATIONS

Lawrence R. Smith, Phoenix, and Wolfgang G. Stehr, Tempe, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Oct. 22, 1965, Ser. No. 501,303

5 Claims. (Cl. 340—172.5)

A data acquisition system having a central station connected to a plurality of remote stations through telephone type communication channels. Central station automatically dials a remote station for the transmission of data. Each remote station has a plurality of data stores which are coupled through scanners to a transmitter for transmitting the data sequentially to the central station. If a remote station did not answer a telephone call, central station automatically redials a predetermined number times. After the predetermined times of redialling, central station makes a record that a particular remote station could not be reached. Alarm information is also transmitted from remote stations to central station. The receivers of the various stations are decoupled from the communication network whenever it is transmitting. Scanners initiate end of message operation of each of the remote stations.



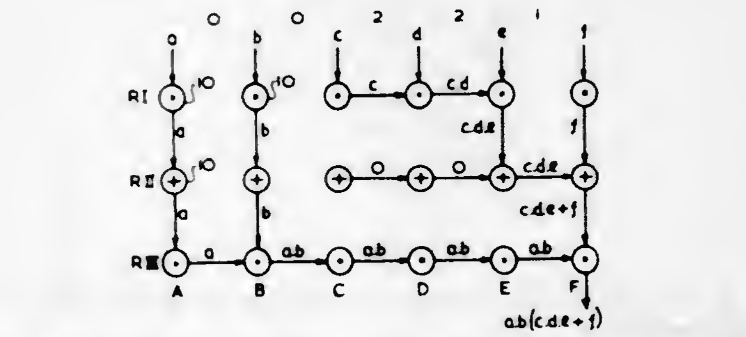
3,400,379
GENERALIZED LOGIC CIRCUITRY

Michael Godfrey Harman, London, England, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Jan. 3, 1966, Ser. No. 518,049

Claims priority, application Great Britain, Jan. 20, 1965, 2,556/65

5 Claims. (Cl. 340—172.5)



Rectangular logic circuit matrices for the implementation of logic equations are disclosed. One embodiment consists of alternating rows of AND gates and OR gates which are interconnected according to predetermined rules. Another embodiment consists of a matrix of identical logic elements which may be connected to supply a logical function signal to an adjacent logic element in the same row and the inverse of the logical function signal to an adjacent logic element in the same column according to predetermined rules.

3,400,380
DIGITAL COMPUTER HAVING AN ADDRESS CONTROLLER OPERATION

Roger E. Packard, Glendora, Calif., and Lloyd M. Cherry, Lake Park, Fla., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

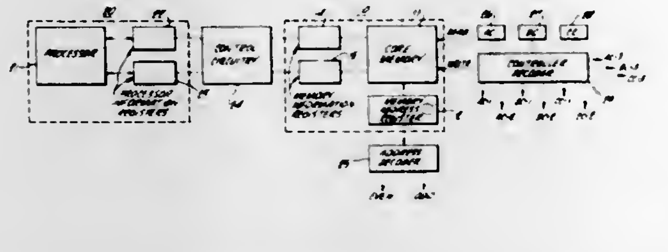
Filed Mar. 25, 1966, Ser. No. 537,506

16 Claims. (Cl. 340—172.5)

1. A data processing system comprising:
memory means for storing a plurality of individually addressable binary coded words including a plurality of data words and a plurality of instruction words;

processor means for performing manipulations upon the data words stored in the memory;

each instruction word including bits manifesting a particular operation performable by the processor and bits manifesting an address field, the address field bits comprising address bits manifesting a particular data word address and controller bits manifesting one of several data formats; and



means for transferring data words between the memory means and the processor means comprising translation means, controlled by the controller bits associated with the words being transferred, for effecting translations of each word between the format manifested by its controller bits and a predetermined processor format.

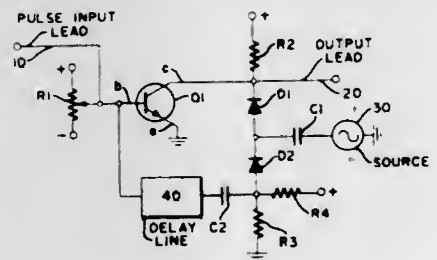
3,400,381

RECIRCULATING DELAY LINE MEMORY

Bruce E. Briley, La Grange Park, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Apr. 2, 1965, Ser. No. 445,036

8 Claims. (Cl. 340—173)



1. A recirculating memory arrangement comprising, in combination:

bistable circuit means including a single transistor operating on the minority carrier storage principle;

input circuit means for transmitting a pattern of sinusoidal signals to said transistor to establish a corresponding pattern of operating states thereof; and

regenerating means responsive to the state of said transistor to regenerate said transmitted pattern of sinusoidal signals.

3,400,382

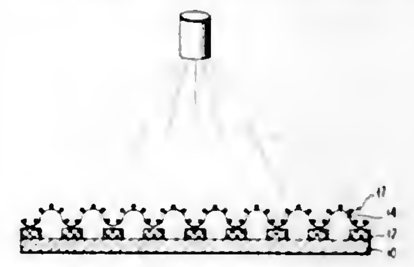
THERMOPLASTIC RECORDING MEDIUM

Fred Kurzweil, Jr., Saratoga, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed May 12, 1965, Ser. No. 455,074

8 Claims. (Cl. 340—173)

A memory system including a thermoplastic recording medium that has a series of channels formed thereon before information is recorded. The channels are used to guide the electron beam during the information writing operation. The channels are formed by a plurality of electrical conductors that are embedded in the thermoplastic material. The conductors are used to heat the strips of thermoplastic material directly above the conductors. After the thermoplastic material is heated, a uniform charge is deposited on the thermoplastic recording medium. The charge causes channels to be formed above the conductors.



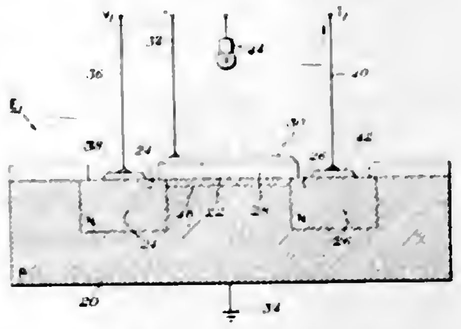
3,400,383

TRAINABLE DECISION SYSTEM AND ADAPTIVE MEMORY ELEMENT

Robert A. Meadows and Lawrence J. Housey, Jr., Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Continuation-in-part of application Ser. No. 387,618, Aug. 5, 1964. This application July 21, 1966, Ser. No. 573,141

14 Claims. (Cl. 340—173)



This specification discloses an adaptive memory device characterized by a body of semiconductor material having spaced electrical contacts and a film of electret material to induce, in the body between the electrical contacts, a conductive path of a conductance proportional to the degree of residual polarization of the electret material. The electret material exhibits a residual polarization after being subjected to a polarization-enabling energy and to a polarizing field. Means for applying polarization-enabling energy, and means for applying a polarized electric field to the film are described.

3,400,384

READ/WRITE CIRCUIT FOR DYNAMIC INFORMATION STORAGE UNIT

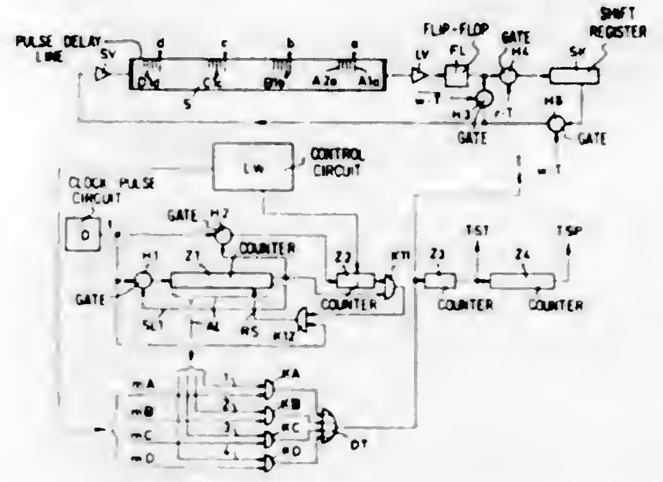
Volker Hildebrandt, Constance, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm, Danube, Germany

Filed Dec. 28, 1967, Ser. No. 694,258

Claims priority, application Germany, Dec. 29, 1966, T 32,882

7 Claims. (Cl. 340—173)

A plurality of dynamic information storage positions are defined in a delay line storage loop by means of sequential timing pulses. Binary coded numbers with N bits in the code of each digit are stored in the delay line storage loop in accordance with an interspersed serial code in which each bit of each binary coded number is adjacent in the time sequence to the corresponding bit of a different binary coded number, whereby the consecutive bits of each binary coded number are separated from each other in the time sequence and are interspersed among the individual bits of other binary coded numbers. In the read/write circuit, the individual bits of each binary coded number are defined and located by means of timing signals generated by a fixed counter and a variable counter. The fixed counter counts from 1 to $(N'-P)$, where N' is $1/N$ of the number of bits in all of the binary coded numbers and P is the number of binary coded numbers in the interspersed serial code. The variable counter counts to 0, P or 2P, and its count is added to the count of the fixed counter, which is restarted by the output of the variable counter. A logic circuit is coupled to the fixed counter



to produce P sequential timing signals in response to P consecutive steps in the counting cycle thereof, and a control circuit selects one of the sequential timing signals and applies it to the input and/or output of the delay line storage loop for writing the corresponding binary coded number into the pulse delay line or for reading out the corresponding binary coded number from the pulse delay line.

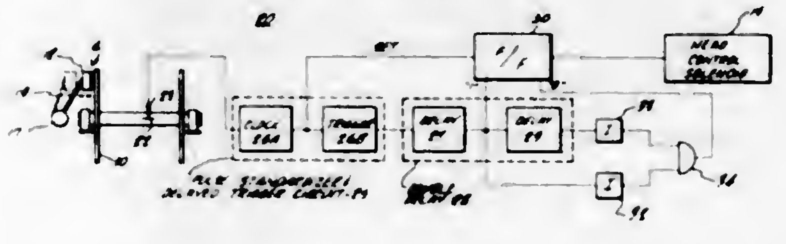
3,400,385

ELECTRICAL TACHOMETER CIRCUIT HAVING DIGITAL OUTPUT

Arnold J. Jorgensen, Duarte, and Lorrin O. Anderson, Covina, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed July 13, 1964, Ser. No. 382,323

7 Claims. (Cl. 340—174.1)



Electrical pulses are generated at intervals of time equal to the period of a rotating disk. A flip-flop having first and second stable states is triggered to assume its first state when the interval between generated pulses is less than a predetermined first time duration representing the nominal operating speed of the rotating disk. The flip-flop is triggered to assume its second state when the interval between the generated pulses exceeds a larger time duration representing the lowest acceptable operating speed of the rotating disk. The flip-flop can serve to control the movement of a magnetic transducer head into and out of proximity with the disk.

3,400,386

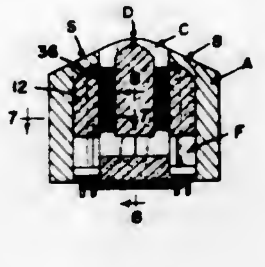
MULTICHANNEL MAGNETIC HEAD ASSEMBLY

Richard C. Sinnott, Menlo Park, Calif., assignor to Magnetic Industries, Inc., Palo Alto, Calif.

Filed May 27, 1964, Ser. No. 370,566

3 Claims. (Cl. 340—174.1)

A magnetic head that is formed of subassemblies that can be tested individually. An individual pedestal for supporting each magnetic core member and electric terminals on said pedestal to form terminations for a coil that circumscribes the core member. A larger subassembly



that forms one-half of a multichannel magnetic head, the subassembly being supported on a side piece that mounts plural core-pedestal subassemblies.

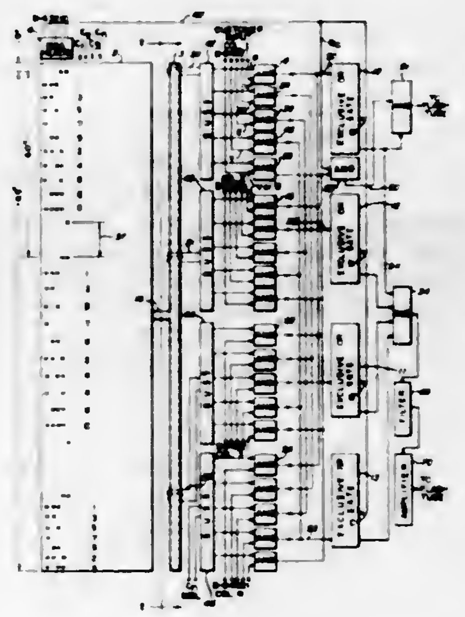
3,400,387

STROBOSCOPIC DISPLAY DEVICE WITH ROTATABLE DRUM HAVING CHARACTERS IN STAGGERED COLUMNS

Norman J. Appleton, Hingham, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Dec. 4, 1964, Ser. No. 416,043

8 Claims. (Cl. 340—324)



A display apparatus for displaying a row of characters corresponding to characters encoded on an input signal which comprises a rotatable cylinder bearing a plurality of sets of readable intelligence units to be read. An intelligence pattern is provided which is movable in coordination with the cylinder, each of the units of intelligence being uniquely represented by a different portion of the intelligence pattern and being positionally related to its representative pattern portion. Finally, means are provided for visually displaying the intelligence units represented by the pattern portion.

3,400,388

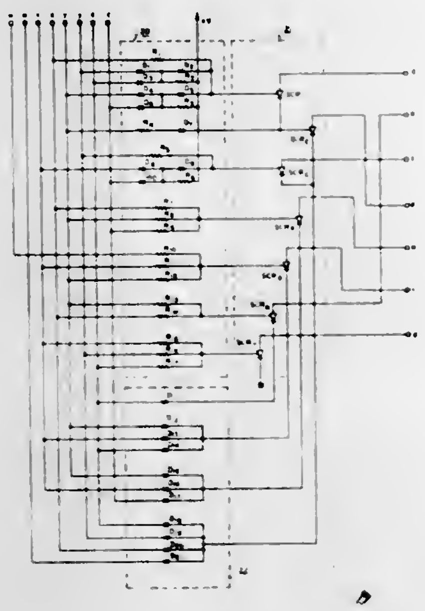
BINARY TO ALPHA-NUMERIC TRANSLATOR

Hans G. Blank, Bronx, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

Filed Sept. 17, 1965, Ser. No. 488,217

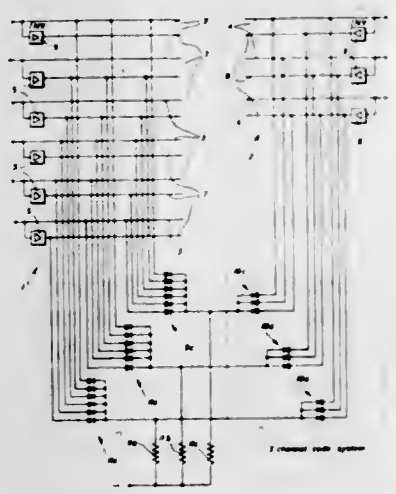
8 Claims. (Cl. 340—336)

A translator for converting a binary signal into a readout signal for controlling the energization of an alphanumeric display device is disclosed. The translator utilizes a matrix of controlled rectifiers (SCR) each of which is coupled in series with an individual element of the display. An additional matrix supplies current to the control electrodes of the SCR's in accordance with the binary signal. A third impedance matrix couples the cathodes of selected SCR's to ground through a low impedance path in accordance with the binary signal. The combination of the three matrices permits control of the elements of an alpha-numeric display with a relatively small number of electrical components.



3,400,389
CODE CONVERSION

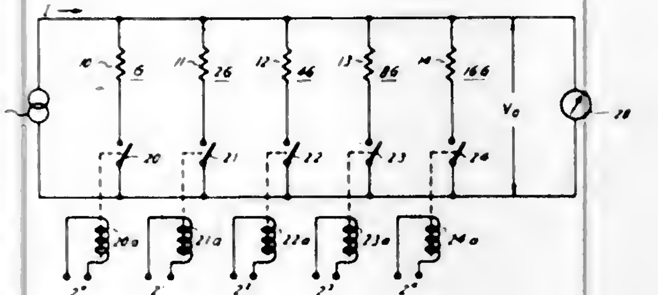
Hans Heymann, Wilhelmshaven, Germany, assignor to Olympia Werke AG, Wilhelmshaven, Germany
Filed Sept. 25, 1964, Ser. No. 399,305
Claims priority, application Germany, Oct. 11, 1963, O 9,722
10 Claims. (Cl. 340—347)



A code converter including first and second groups of conductors for carrying first and second sets of digital signals expressing data in first and second digital codes respectively, a first group of AND-circuits having their inputs coupled to corresponding conductors of the first group of conductors in accordance with the first digital code, a second group of AND-circuits having their inputs coupled to corresponding conductors of the second group of conductors in accordance with the second digital code, with the output of each AND-circuit in the first group being coupled to the output of a corresponding AND-circuit in the second group. A third group of conductors is coupled to the outputs of the AND-circuits for carrying a third set of digital signals expressing data in a third digital code. The AND-circuits transmit signals in both directions so as to enable conversion of any one of the three codes into the other two codes.

3,400,390
SIGNAL CONVERTER FOR CONVERTING A BINARY SIGNAL TO A RECIPROCAL ANALOG SIGNAL

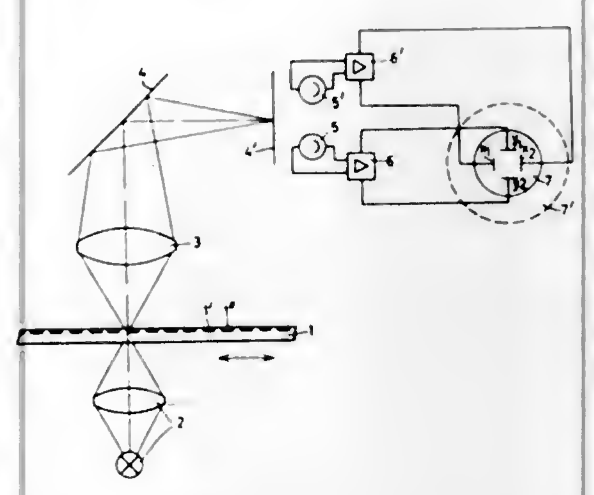
John S. Smith, Ridgefield, Conn., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Oct. 5, 1964, Ser. No. 401,598
5 Claims. (Cl. 340—347)



An illustrative embodiment of the invention converts a binary signal to an analog output that is inversely proportional to the numerical value of the input. Each binary signal bit enables or disables an associated transistor switch to connect or disconnect an individual resistance in parallel with a constant current source. The admittance of each resistance is directly proportional to the numerical weight accorded to the respective bit. The voltage thereby established across the entire array of connected parallel resistances is proportional to the reciprocal of the numerical value of the binary input signal.

3,400,391
INTERPOLATION DEVICE

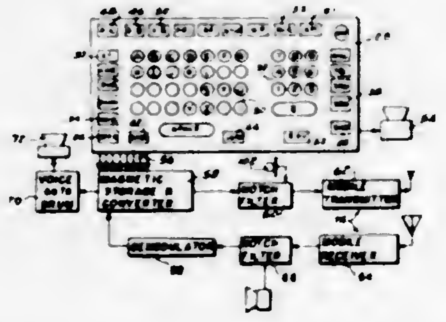
Kurt Räntsch, Heidenheim, Wurttemberg, and Otto Trötscher, Wurttemberg, Germany, assignors to Carl Zeiss, Wurttemberg, Germany, a corporation of Germany
Filed Oct. 29, 1964, Ser. No. 407,329
Claims priority, application Germany, Oct. 30, 1963, Z 10,436
13 Claims. (Cl. 340—347)



1. In an interpolation device for the digital interpolation of measuring values which are supplied by a length or angle measuring instrument, a signal imparting device including means for producing two separate sinusoidal primary signals which are phase displaced about 90°, a cathode ray tube having a deflection system and a picture screen, means for amplifying said primary signals and feeding the same to said deflection system of said cathode ray tube, said deflection system being so arranged that the electron beam in said cathode ray tube rotates continuously once in a complete closed path during each signal period of said primary signals and produces an annular luminous image on said picture screen, screen means associated with said picture screen and composed of light transmissive and opaque zones for subdividing said annular image into discrete interpolation steps and secondary signals adapted to be used for digital indication.

3,400,392
CODE SIGNAL TRANSMITTER AUTOMATICALLY DEENERGIZED UPON TRANSMITTING AN END-OF-MESSAGE SIGNAL

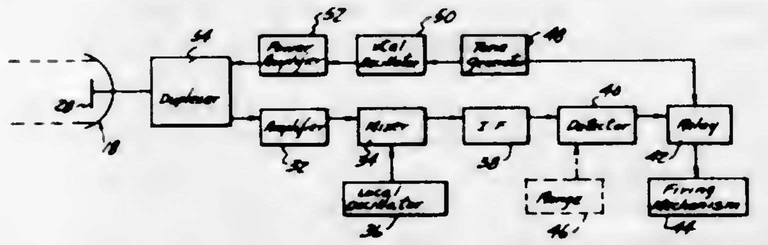
Frederick P. Willcox, 261-1 Oenoke Ridge, and Newland M. Smith, 140 Llewellyn Drive, both of New Canaan, Conn. 06840; and Harold E. Levitt, 701 Chapala, Pacific Palisades, Calif. 90272
Continuation of application Ser. No. 574,893, June 29, 1966, which is a division of application Ser. No. 235,067, Nov. 2, 1962, now Patent No. 3,281,789, dated Oct. 25, 1966. This application Aug. 15, 1967, Ser. No. 660,837
5 Claims. (Cl. 340—365)



A time-sharing coded-message signal system for interrogating a central information store from any of plural interrogating stations, includes at each interrogating station a message-encoding keyboard, a recorder for storing a message set up by the keyboard, a wave signal transmitter, and a "Transmit" control key for turning on the transmitter when the stored message is to be sent. The interrogating station also includes a special key for appending to the end of the coded message an end-of-message code group, and an arrangement by which the transmission of this group automatically turns off the transmitter, to conserve power and minimize transmitting time.

3,400,393
WEAPON SAFETY MECHANISM

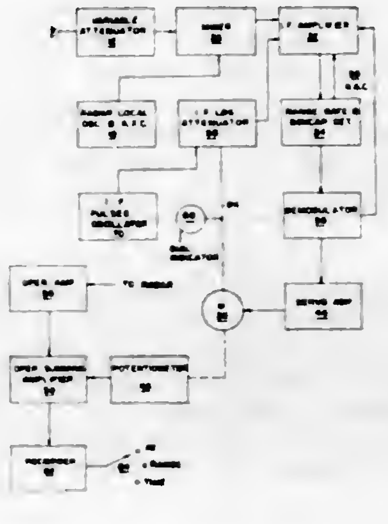
Saul H. Ash, 1331 Nicolet, Detroit, Mich. 48207
Filed Dec. 19, 1966, Ser. No. 602,670
2 Claims. (Cl. 343—6.5)



A safety mechanism for each weapon in a weapon safety system wherein each weapon has a directional electromagnetic wave receiving means which prevents the weapon from being discharged while aimed toward a source of the electromagnetic wave or, alternately, toward a reflector reflecting the electromagnetic waves being transmitted by a radiating device mounted on the weapon.

3,400,394
TARGET TRACKING RADAR SYSTEM PROVIDING DIRECT AND AUTOMATIC INDICATION OF TARGET SIZE

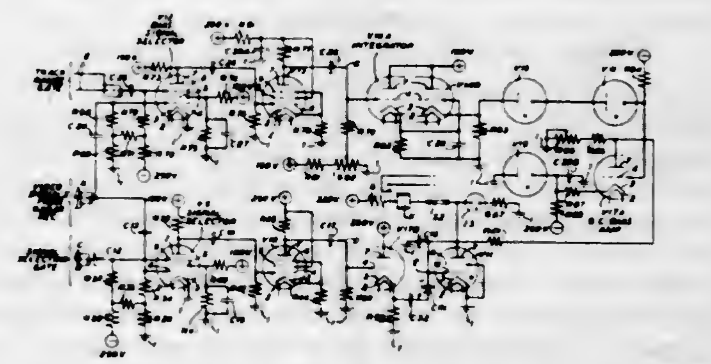
Jerre M. Murchison and Bernd Falk, Fort Worth, Tex., assignors to General Dynamics Corporation, Fort Worth, Tex., a corporation of Delaware
Continuation-in-part of application Ser. No. 451,109, Apr. 27, 1965. This application Aug. 29, 1966, Ser. No. 575,647
6 Claims. (Cl. 343—7)



A measurement system which accurately measures the amplitude and/or phase of pulsed radio frequency energies. Its prime feature is that the accuracy of measurement is essentially independent of non-linearities, gain variations, and drifts normally associated with I.F. amplifiers, detectors, etc. A reference pulse of known amplitude and phase is injected into the measuring circuits during a portion of the inter-pulse period when no other signals are present. The system compares the amplitude and/or phase of the reference pulse to the input pulse on a pulse-to-pulse basis; the error resulting from this comparison is used to adjust the amplitude and/or phase of the reference signal. Provision is made to precisely read out the amplitude and/or phase of the reference signal, this being the output of the measuring system.

3,400,395
AMPLITUDE COMPARISON APPARATUS

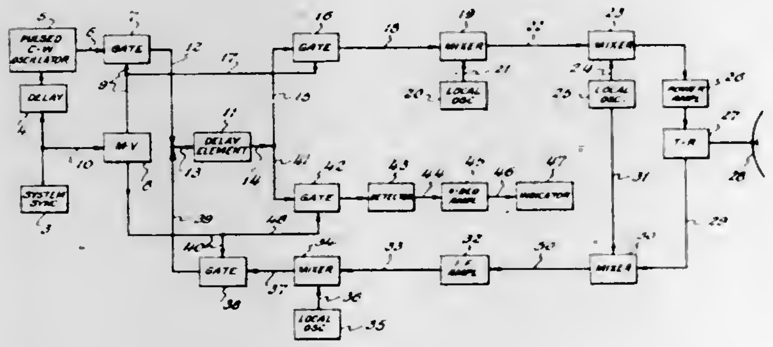
Thomas E. Lenigan, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 29, 1952, Ser. No. 268,751
7 Claims. (Cl. 343—17.1)



6. In a radar operated trial fire indicator system generating a radar signal for indicating the instant of shell burst by operating on the difference in rates of amplitude

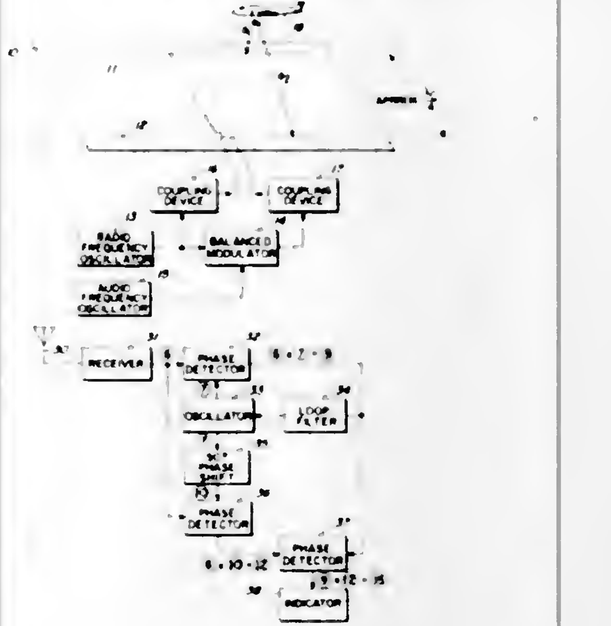
change between the radar shell signal returned from the shell as compared to the radar shell burst signal returned from the shell burst, apparatus comprising a source of variable amplitude shell burst and shell signals of positive video pulse voltage, an amplitude sensitive gaseous type trigger tube switch device conductively operative in response to positive voltage of sufficient magnitude applied to the input control circuit thereof, a video burst transmission circuit channel connecting said source with said gaseous device input circuit comprising means for operating said gaseous device in response to said shell burst signals of said positive video pulse voltage source, and a biasing transmission circuit channel connecting said source with said gaseous device input circuit comprising means for generating a direct current negative bias potential derived from and sensitive to the magnitude and the rate of change in amplitude of said variable amplitude positive video pulse voltage of said source and of sufficient negative amplitude to oppose and prevent said operation of said burst circuit gaseous device in response to said shell signals of said source but not in response to said burst signals thereof.

3,400,396
PULSE STRETCHING AND COMPRESSION RADAR SYSTEM
Charles E. Cook, Farmingdale, and Charles E. Brockner, Amityville, N.Y., assignors to Sperry Rand Corporation, a corporation of Delaware
Filed Nov. 14, 1955, Ser. No. 546,599
11 Claims. (Cl. 343—17.1)



4. In a pulse-type radar system, means for periodically generating fixed carrier frequency pulses having a given predominant frequency spectrum, means adapted to be coupled to said generating means for delaying the different frequencies in said fixed carrier pulses by different amounts in a manner such that said pulses are stretched in duration and are swept in frequency from one end of said spectrum to the other end, first frequency-changing means adapted to be coupled to said delaying means for changing each of the frequencies in the stretched and frequency-swept pulses obtained from said delaying means by a first given amount, means coupled to said first frequency-changing means for transmitting the changed frequency pulses therefrom toward a reflecting object, means for receiving the corresponding pulses reflected from said object, second frequency-changing means coupled to said receiving means for changing each of the frequencies in said reflected pulses by a second given amount predetermined to provide resultant pulses having said given spectrum but with the frequencies therein swept from said other end of said spectrum to said one end thereof, means coupling the output of said second frequency-changing means to said delaying means, and means for periodically uncoupling said second frequency-changing means from said delaying means and simultaneously coupling said generating means and said first frequency-changing means to said delaying means so that each generated pulse is stretched by said delaying means for transmission and its corresponding reflected pulse is compressed by the same delaying means into a substantial replica of said generated pulse prior to the generation of the next succeeding pulse.

3,400,397
AIRCRAFT POSITION IDENTIFICATION SYSTEM
Harris A. Stover, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Sept. 16, 1966, Ser. No. 580,045
5 Claims. (Cl. 343—105)



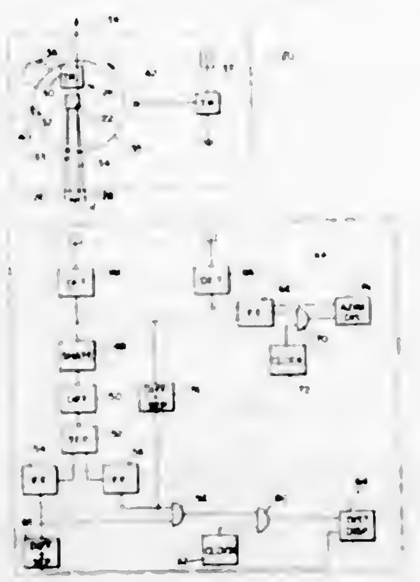
Described is a system which automatically indicates on which side of a plane, which lies between two parallel antennas, that a receiver is located. The system includes a transmitter having two parallel antennas and a receiver capable of indicating the phase relationship between the signals as received from said antennas. The system is capable of automatically providing the directional location of a receiver from a known space plane.

3,400,398
BROADCAST APPARATUS FOR POSITION DETERMINING SYSTEM
James M. Lapeyre and Robert F. Couret, New Orleans, La., and Guy L. Fougere, Cambridge, Mass., assignors, by direct and mesne assignments, to James M. Lapeyre, New Orleans, La.
Continuation of application Ser. No. 432,670, Feb. 15, 1965. This application Mar. 13, 1967, Ser. No. 632,486
19 Claims. (Cl. 343—106)

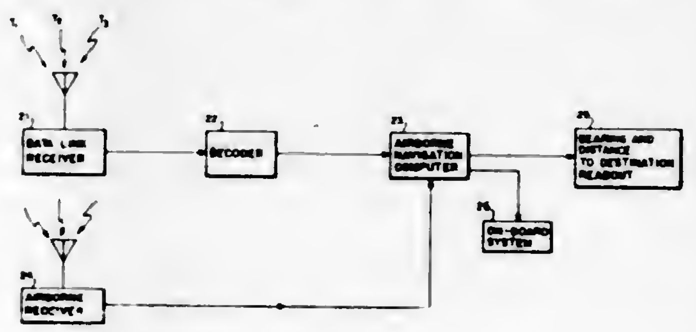
The present invention is to provide a position locating method and means based on transmission of signals from a single reference point, reception of the signals sequentially at a position spaced from the reference point and the determination of the distance of the position from the reference point, or the determination of the azimuth of the position from a predetermined reference direction through the reference point, or both, according to the timing between the sequential reception of selected signals.

The present invention provides a method and means in which signals are transmitted in the form of two directional beams which are spaced so that the most adjacent or most remote edges, or any two parallel portions of the two beams to the two beams are parallel to one another, and the beams are rotated in azimuth at a substantially constant angular rate about a common center.

The invention further includes means providing a signal pulse upon coincidence of a selected one beam edge with a predetermined reference direction; to provide means for detecting a singnal pulse of the type described and for determining the azimuth of the particular position according to the reception of the pulse and reception of energy indicative of the selected one beam edge or beam portion and to provide in such a system and located at the position the distance, azimuth, or both of which is to be determined, a unit receiver for sequentially detecting the energy of beams being azimuthally rotated at a constant angular rate through that position and means for determining the distance of that position from the reference point according to the timing interval between the detection of the beams by the receiver.



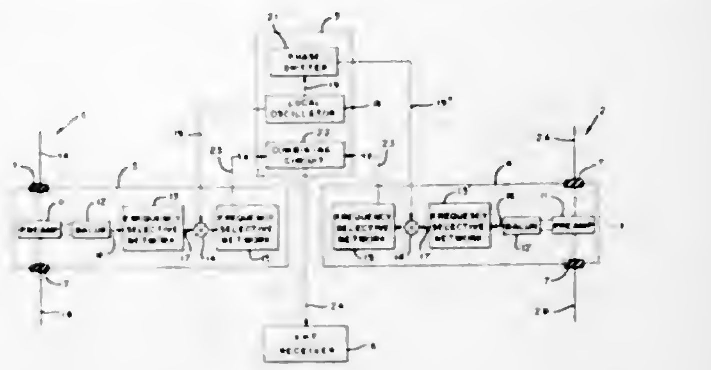
3,400,399
SYSTEM AND METHOD FOR OBTAINING ACCURATE TACTICAL NAVIGATION
Evans L. Kline, Alexandria, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 29, 1966, Ser. No. 605,940
15 Claims. (Cl. 343—112)


DATA LINK RECEIVER
DECODER
AIRBORNE NAVIGATION COMPUTER
BEARING AND DISTANCE TO DESTINATION READOUT
ON-BOARD SYSTEM
AIRBORNE RECEIVER

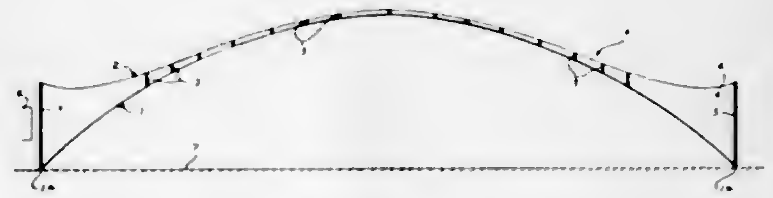
A tactical navigation system wherein information regarding the position of a destination area or vehicle is transmitted to an airborne vehicle which compares its position with that of the destination to result in the display of bearing and distance information to the destination or to generate steering commands to be used by the aircraft.

3,400,400
DIRECTION FINDER
Virgil R. Arens, Sunnyvale, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Feb. 2, 1967, Ser. No. 613,650
9 Claims. (Cl. 343—113)

The frequencies of signals received by the antennas of an Adcock direction finder are converted at the antennas to different frequencies. Signals having the different frequencies and signals picked up by cables interconnecting the antennas are coupled to a combining circuit where they are combined in phase opposition. The receiver utilizing the directional information in the output of the combining circuit is responsive only to combining circuit outputs having frequencies equal to the different frequencies.



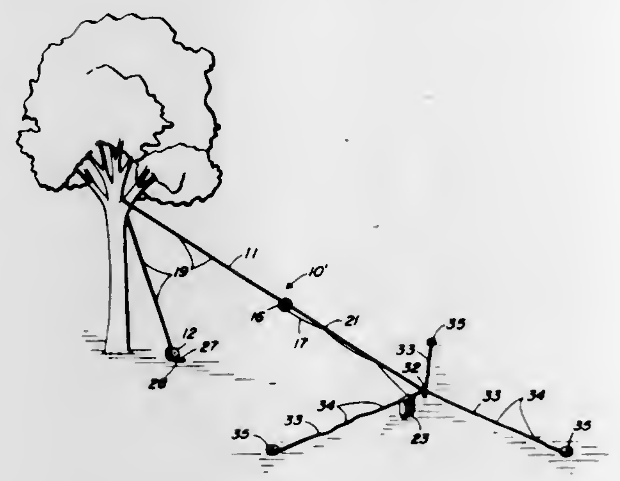
3,400,401
LUNEBERG LENS ANTENNA CONSTRUCTED FROM TWO GEODESIC DOMES
Kenneth W. Shaw, Box 3046, Eglin AFB, Fla. 32542
Filed Jan. 12, 1966, Ser. No. 520,191
7 Claims. (Cl. 343—720)



A directional radio and radar antenna employing the Luneberg principle and forming the roof of a large geodesic building structure comprising an upper arched shallow prefabricated geodesic dome and a lower concentric supporting shallow prefabricated geodesic dome therefor with the space therebetween opening outwardly around its periphery. Both spaced dome structures are formed of prefabricated substantially hexagonal metallic grid members and include spaced dielectric or plastic supporting means for the upper dome disposed between the domes, securing the domes in fixed rigid predetermined superimposed spaced relation. Plastic panels close the openings in the grid members. The structure is supported around its periphery and provides an unobstructed usable area under the geodesic antenna roof within the periphery thereof.

3,400,402
WIRE ANTENNA EXTENSIBLE ALONG CALIBRATED SUPPORT MEANS
Donald C. Gallagher, Marion, Lester W. Haerther, Cedar Rapids, and John A. Middleton and Edward G. Tuthill, Marion, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Mar. 12, 1965, Ser. No. 439,235
2 Claims. (Cl. 343—723)

A wire antenna system dependent in part on terrain features or structures such as existing trees or buildings for antenna support, and utilizing electrically nonconductive glassline cord with spaced frequency markings with relatively light wire as an antenna radiation element strung therealong and supported by the cord. Further, in a short wire version a plurality of counterpoise wires with spaced frequency markings are unreeled to desired frequency tuned lengths in diverse directions along the ground and with the partially unreeled reel ends left



laying on the ground in their extended diverse positions.

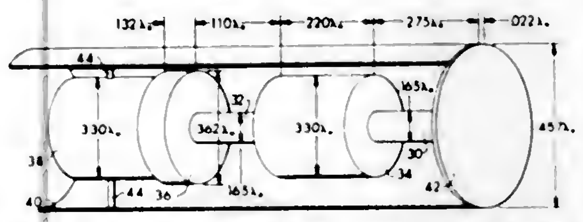
3,400,403
CENTRE-LOADED ANTENNA UNIT

Ashton James Spilsbury, 6691 Madrona Crescent, West Vancouver, British Columbia, Canada
Filed June 9, 1965, Ser. No. 462,691
10 Claims. (Cl. 343—750)

A centre-loaded transmitting and receiving antenna having a tubular resonator coil and a single turn inductor band extending around the longitudinal axis of the coil and mounted for adjustment by relative movement between the band and coil, whereby the inductance of the coil can be adjusted by relative movement between the band and coil without contact therebetween, after which the band and coil are releasably secured against further relative movement.

3,400,404
FLUSH MOUNTED COAXIAL HORN ANTENNA

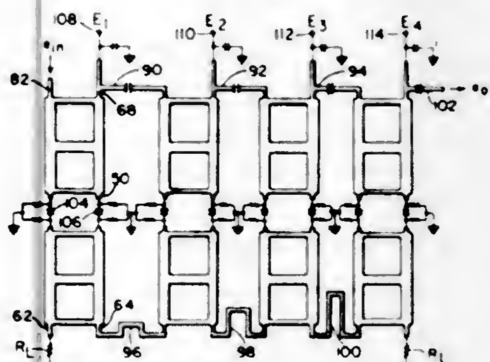
Randall W. Kreutel, Jr., Walpole, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed July 20, 1965, Ser. No. 473,346
5 Claims. (Cl. 343—784)



A hollow cylinder having an inner conductive surface is employed in conjunction with a mode rejection filter mounted coaxially within the cylinder to form a horn antenna.

3,400,405
PHASED ARRAY SYSTEM

Robert F. Patterson, Jr., Lincoln, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 1, 1964, Ser. No. 371,365
3 Claims. (Cl. 343—854)



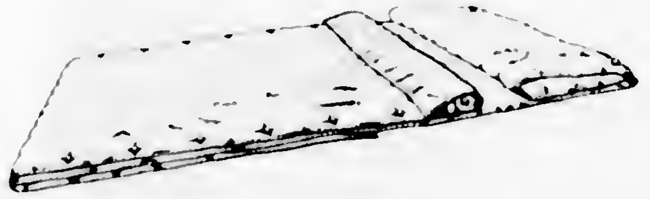
A multi-section switched delay line operative in response to binary control signals to produce selected amounts of time delay. Each of the switched delay line sections includes a first and second quadrature hybrid. Each hybrid has an input terminal, a pair of quadrature terminals, and an output terminal. A diode connects each quadrature terminal of the first hybrid to a corresponding quadrature terminal of the second hybrid. A first delay connects the output terminal of the first hybrid to an input terminal of a succeeding section and a second delay connects the output terminal of the second hybrid to another input terminal of the succeeding section. The diodes are rendered conducting in response to control signals whereby an input signal applied to the input terminal of the first hybrid is transferred to the output terminal of the second hybrid or an input signal applied to the input terminal of the second hybrid is transferred to the output terminal of the first hybrid.

DESIGNS

SEPTEMBER 3, 1968

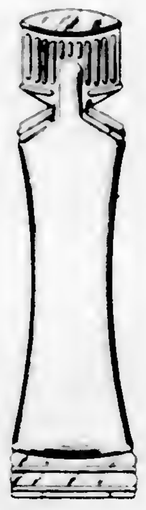
212,149
BED ROLL

Johan E. Tuvert, Kungsportsavenyen 22, Goteborg, Sweden
Continuation-in-part of design application Ser. No. 86,778, Aug. 31, 1965. This application Nov. 14, 1966, Ser. No. 4,646
Term of patent 14 years
(Cl. D5—2)



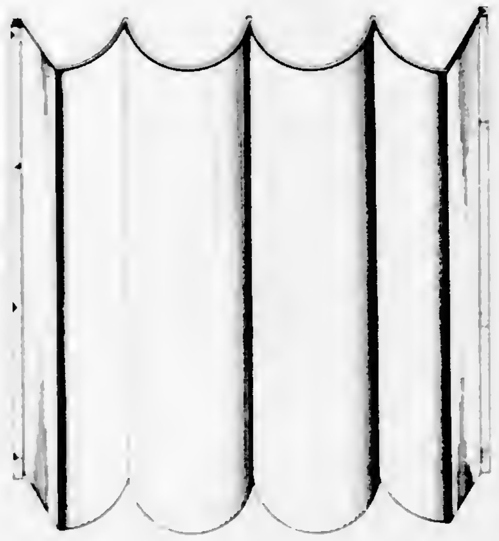
212,150
COLLAPSIBLE TUBELIKE CONTAINER

Monte C. Caliman, Jr., Livingston, N.J., assignor to Unette Corporation, Livingston, N.J., a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 10,024
Term of patent 14 years
(Cl. D9—194)



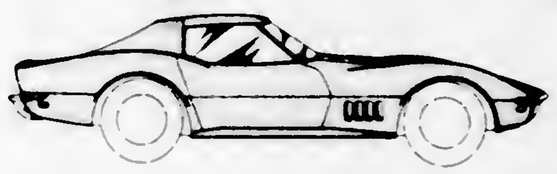
212,151
SIDING

Steve Costello, 236 Barrow St., Jersey City, N.J. 07302
Filed Nov. 14, 1967, Ser. No. 9,405
Term of patent 14 years
(Cl. D13—1)



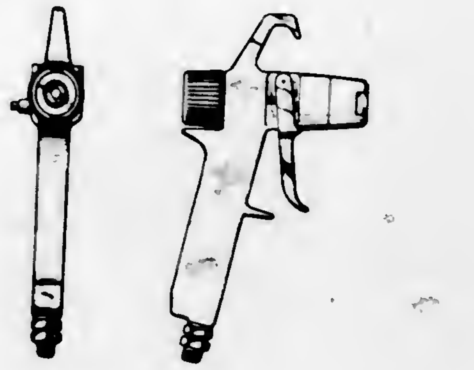
212,152
AUTOMOBILE

Henry G. Haga, Bloomfield Hills, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 16, 1968, Ser. No. 10,183
Term of patent 14 years
(Cl. D14—3)



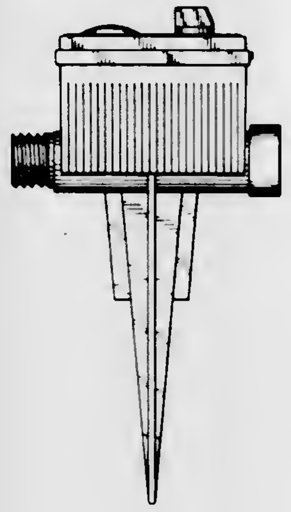
212,153
SPRAY GUN

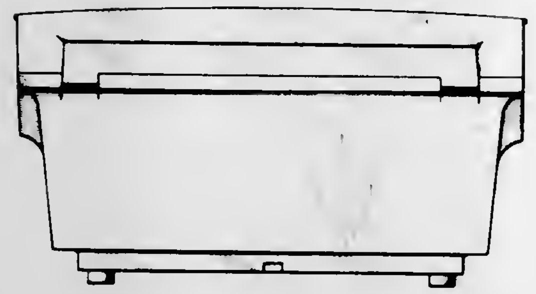
Josef Wagner, Friedrichshafen-Fischbach, Germany
Filed Feb. 20, 1968, Ser. No. 10,683
Term of patent 14 years
(Cl. D23—17)



212,154
COMBINED SPRINKLING METER AND SHUTOFF VALVE

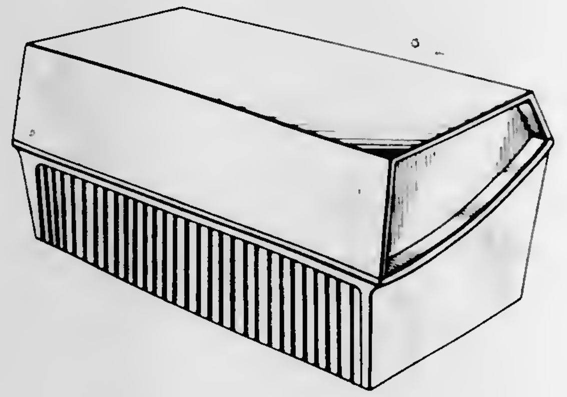
E. Burton Benjamin, Highland Park, Ill., assignor to Ansan Tool and Manufacturing Company, Inc., Chicago, Ill., a corporation of Illinois
Filed Feb. 1, 1968, Ser. No. 10,411
Term of patent 14 years
(Cl. D23—38)

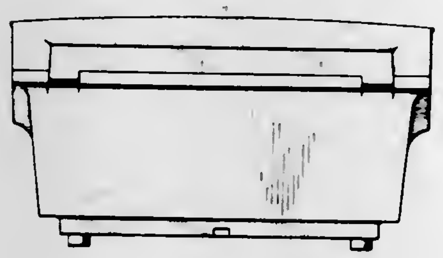




212,155
HEATER HOUSING FOR HAIR ROLLERS AND STEAM VAPORIZERS

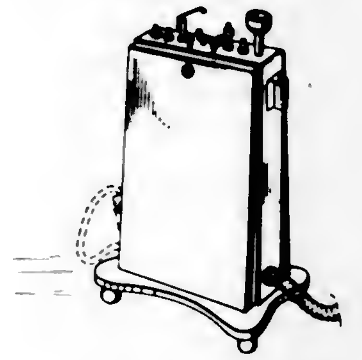
Samuel J. Popeil, 2920 N. Commonwealth Ave.,
Chicago, Ill. 60607
Filed July 26, 1967, Ser. No. 8,004
Term of patent 14 years
(Cl. D23—77)

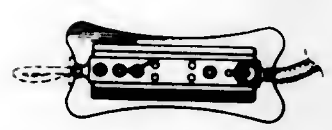




212,156
MOBILE DENTAL INSTRUMENT UNIT

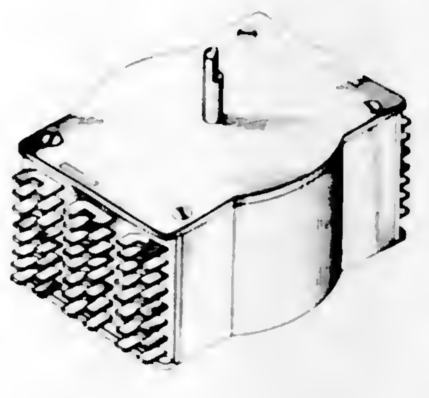
John D. Krantz, Inglewood, Calif., assignor to Coastal Dynamics Corporation, a corporation of California
Filed Dec. 14, 1967, Ser. No. 9,788
Term of patent 14 years
(Cl. D24—1)





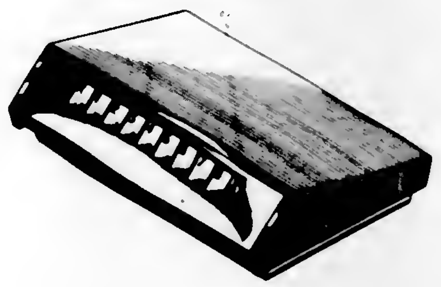
212,157
HOUSING FOR A SEQUENTIAL TIMING DEVICE

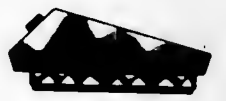
Joseph E. Wiser, Indianapolis, Ind., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed Sept. 9, 1966, Ser. No. 3,898
Term of patent 14 years
(Cl. D26—13)



212,158
MULTI-CAMERA TV MONITOR PUSH-BUTTON CONTROL DEVICE

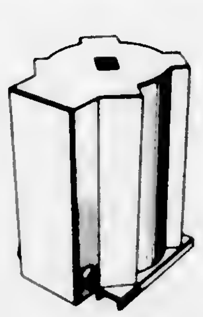
Walter G. Anders, Canton, Ohio, assignor to Diebold, Incorporated, Canton, Ohio, a corporation of Ohio
Filed Oct. 9, 1967, Ser. No. 8,934
Term of patent 14 years
(Cl. D26—14)





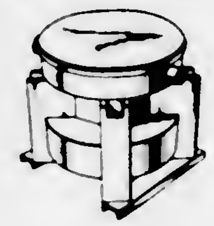
212,159
TRANSFORMER ENCLOSURE

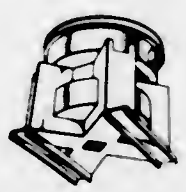
Buell Moore, Houston, Tex., assignor to Esquire, Inc., New York, N.Y., a corporation of Delaware
Original design application June 14, 1967, Ser. No. 7,477. Divided and this application Feb. 2, 1968, Ser. No. 10,779
Term of patent 14 years
(Cl. D26—15)



212,160
TRANSFORMER ENCLOSURE

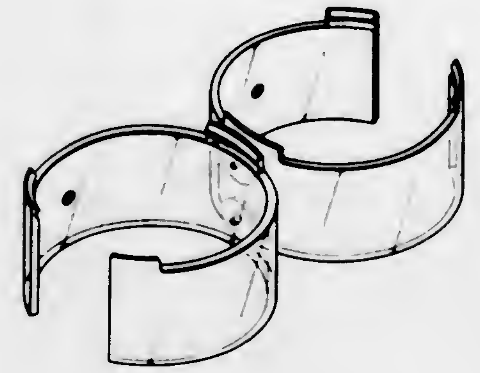
Buell Moore, Houston, Tex., assignor to Esquire, Inc., New York, N.Y., a corporation of Delaware
Original design application June 14, 1967, Ser. No. 7,477. Divided and this application Feb. 2, 1968, Ser. No. 10,780
Term of patent 14 years
(Cl. D26—15)





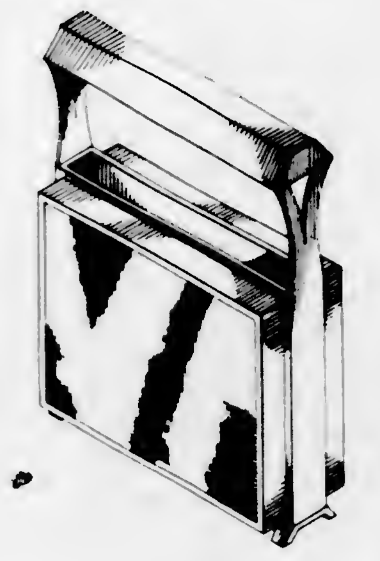
212,161
HOLDER FOR FOOD BOWLS FOR PETS

Tony Robert, 5701 Southwest Freeway,
Houston, Tex. 77027
Filed Aug. 28, 1967, Ser. No. 8,401
Term of patent 14 years
(Cl. D30—13)



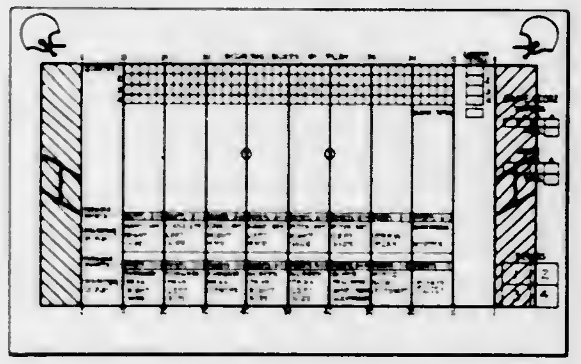
212,162
COMBINED PLANTER, ROOM DIVIDER, SUN LAMP AND SPEAKER UNIT

Gregory R. Davis, 6725 S. Eberhart Ave.,
Chicago, Ill. 60637
Filed Aug. 18, 1967, Ser. No. 8,314
Term of patent 14 years
(Cl. D33—1)



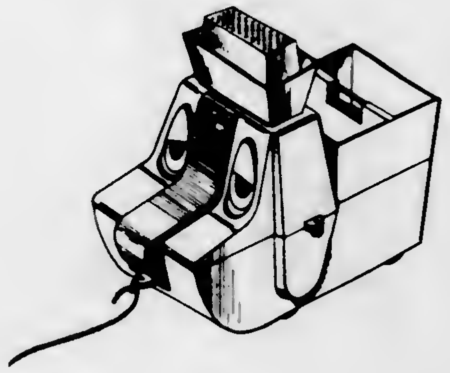
212,163
GAME BOARD

Elliot J. Grosberg, 862a Longacre Drive,
St. Louis, Mo. 63132
Filed Aug. 7, 1967, Ser. No. 8,145
Term of patent 3½ years
(Cl. D34—5)



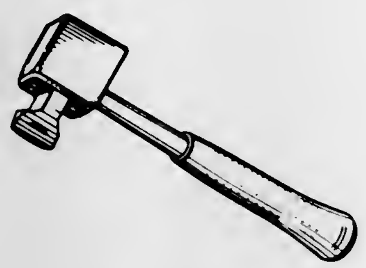
212,164
TRUNDLE SAND TOY

Sidney A. Tarrson, 777 S. Tripp,
Chicago, Ill. 60624
Filed Oct. 30, 1967, Ser. No. 9,204
Term of patent 14 years
(Cl. D34—15)



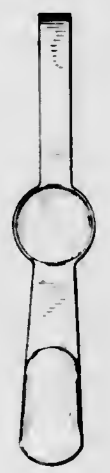
212,165
INJECTION HATCHET FOR TREATING DISEASED TREES

Michael Newton, 149 Peterson Road,
Philomath, Oreg.
Filed July 14, 1967, Ser. No. 7,804
Term of patent 14 years
(Cl. D35—2)



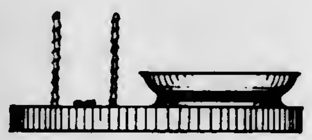
212,166
TONGS

Larry L. Hill, P.O. Box 30,
Bristol, Ill. 60512
Filed Nov. 24, 1967, Ser. No. 9,540
Term of patent 14 years
(Cl. D44—4)



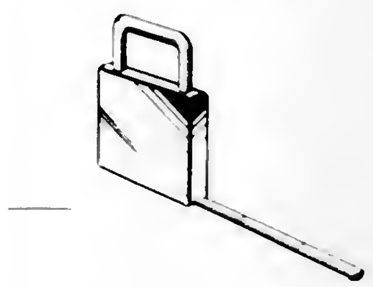
212,167
COMBINED FLOWER HOLDER AND CANDY SUPPORT

Saul Klayman, Mattapan, Mass., assignor to Kandy-pak, Inc., Roslindale, Mass., a corporation of Massachusetts
Filed Nov. 14, 1967, Ser. No. 9,398
Term of patent 14 years
(Cl. D44—10)



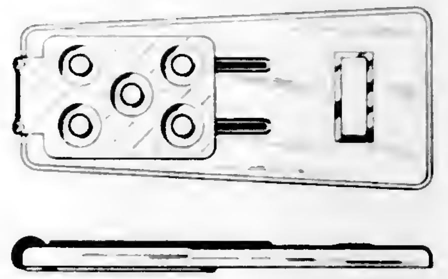
212,168
COMBINATION KEY RING AND TAPE MEASURE

Robert A. Bennett, Lot 6, Palmouth Drive, Huntington, Conn. 06484, and John Peterson, Jr., Long Meadow Road, Orange, Conn. 06477
Filed Nov. 6, 1967, Ser. No. 9,282
Term of patent 14 years
(Cl. D50—4)



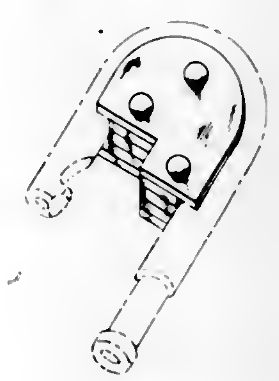
212,169
HASP

Daniel J. Foote, Wauwatosa, Wis., assignor to Master Lock Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 12, 1968, Ser. No. 10,149
Term of patent 14 years
(Cl. D50—5)



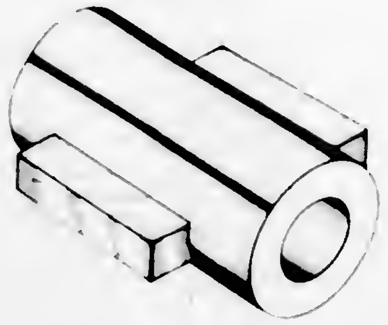
212,170
ANTIJIMMY DEVICE FOR PADLOCKS

Roger L. Owen, Milwaukee, and Daniel J. Foote, Wauwatosa, Wis., assignors to Master Lock Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 6, 1967, Ser. No. 8,885
Term of patent 14 years
(Cl. D50—8)



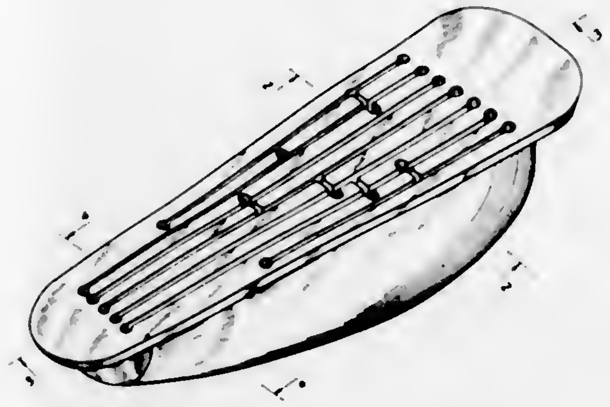
212,171
BICYCLE FREEWHEEL WRENCH

Frank C. Alves, 22289 Pearce St.,
Hayward, Calif. 94541
Filed July 21, 1967, Ser. No. 7,926
Term of patent 14 years
(Cl. D54—16)



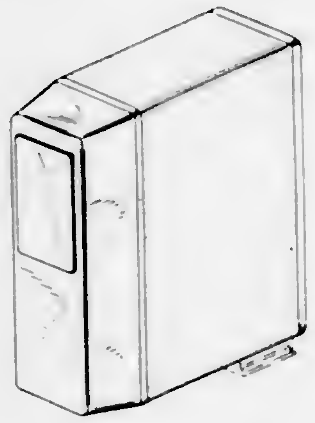
212,172
PERCUSSION MUSICAL INSTRUMENT

Julian B. Lewis, 1906 W. 23rd St.,
Los Angeles, Calif. 90018
Filed Oct. 13, 1967, Ser. No. 8,988
Term of patent 14 years
(Cl. D56—1)



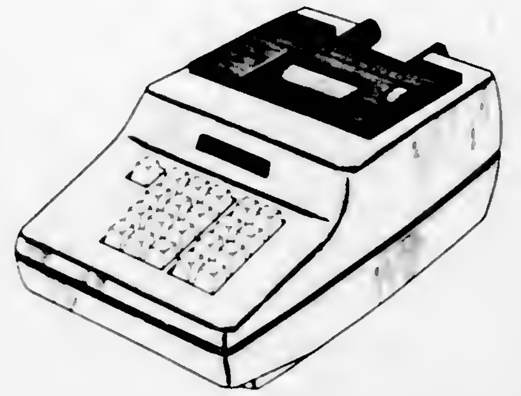
212,173
ELECTRONIC FLASH UNIT

Karl Ackermann, Berlin, Germany, assignor to Robert Bosch Elektronik und Photokino GmbH, Stuttgart, Germany
Filed Aug. 30, 1967, Ser. No. 8,426
Claims priority, application Germany Apr. 25, 1967
Term of patent 14 years
(Cl. D61—1)



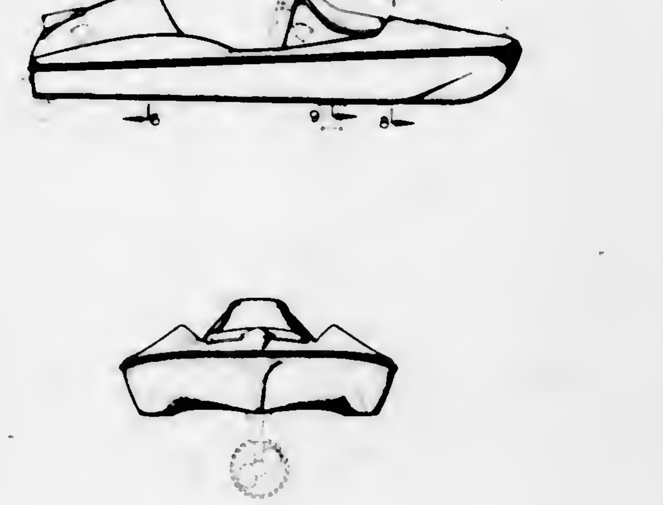
212,174
CALCULATING MACHINES

Alfons Boothby, Wilhelmshaven, Germany, assignor to Olympia Werke AG, Wilhelmshaven, Germany
Filed Oct. 18, 1967, Ser. No. 9,041
Term of patent 14 years
(Cl. D64—11)



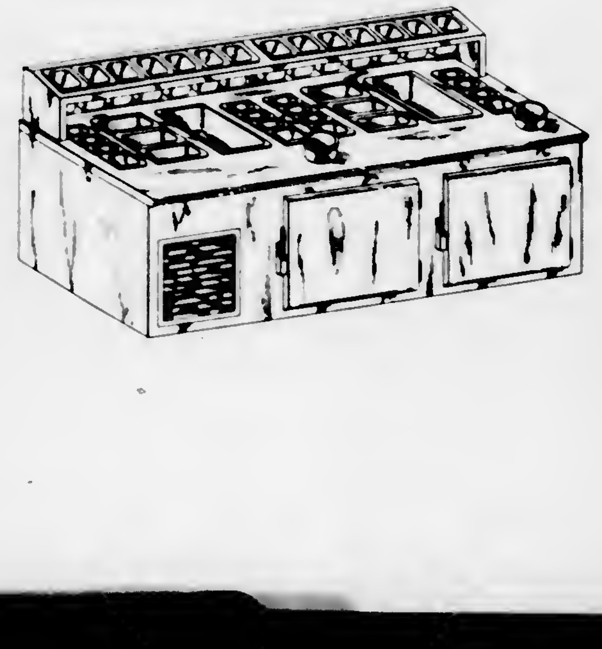
212,175
MINIATURE MOTOR BOAT

Jules J. Klein, Fort Lauderdale, Fla., assignor to Hydro-glas Industries, Inc., Detroit, Mich., a corporation of Michigan
Filed Oct. 17, 1967, Ser. No. 9,028
Term of patent 14 years
(Cl. D71—1)

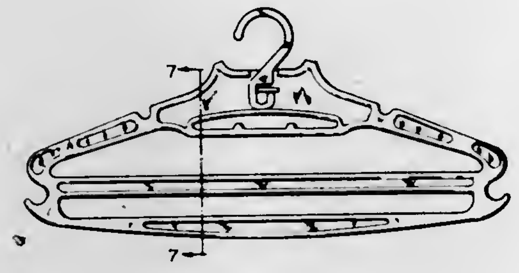


212,176
COMBINED FOOD SERVICE AND REFRIGERATED CABINET

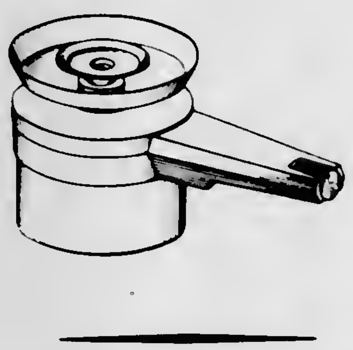
Theodore C. Lambertson, Millbrae, Calif., assignor, by mesne assignments, to Robert E. Church and Conrad J. Klein, and Commonwealth National Bank of San Francisco
Filed July 3, 1967, Ser. No. 7,698
Term of patent 14 years
(Cl. D80—2)



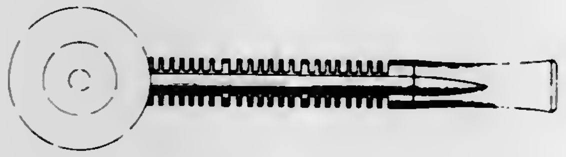
212,177
HANGER
Walter Bialo, 836 Broadway,
New York, N.Y. 10003
Filed Sept. 1, 1967, Ser. No. 8,464
Term of patent 14 years
(Cl. D80—8)



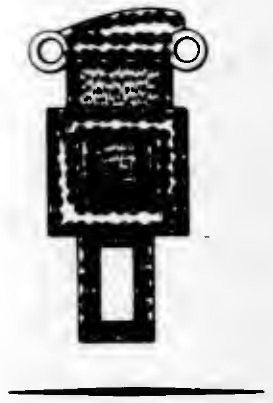
212,178
PORTABLE COOKING STOVE OR SIMILAR ARTICLE
William Rakocy, Clifton, N.J., assignor to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey
Filed Sept. 11, 1967, Ser. No. 8,554
Term of patent 14 years
(Cl. D81—10)



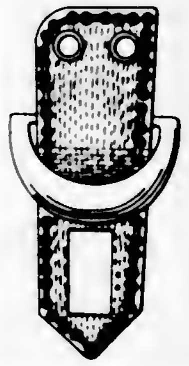
212,179
SMOKING PIPE
Stephen P. Chernock, 1553 Boston Post Road,
Milford, Conn. 06460
Filed May 29, 1967, Ser. No. 7,284
Term of patent 14 years
(Cl. D85—8)



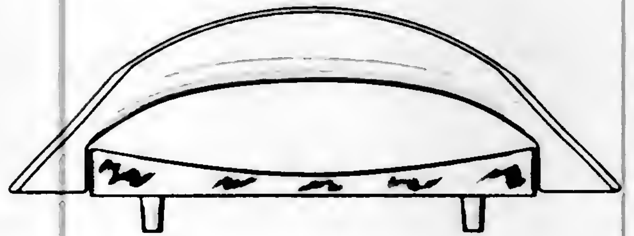
212,180
HANDBAG CLOSURE CLASP
David Damast, 22—14 40th Ave.,
Long Island City, N.Y. 11101
Filed Aug. 23, 1967, Ser. No. 8,358
Term of patent 3½ years
(Cl. D87—2)



212,181
HANDBAG CLOSURE CLASP
David Damast, 22—14 40th Ave.,
Long Island City, N.Y. 11101
Filed Aug. 23, 1967, Ser. No. 8,359
Term of patent 3½ years
(Cl. D87—2)



212,182
LUGGAGE HANDLE OR SIMILAR ARTICLE
Anthony N. D'Elia, Riverdale, and Edward M. Stolarz, Yorktown Heights, N.Y., assignors to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York
Filed Sept. 20, 1967, Ser. No. 8,660
Term of patent 14 years
(Cl. D87—2)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 3RD DAY OF SEPTEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Bradt, Horace A., to St. Louis Shipbuilding-Federal Barge, Inc. Process for separation of liquid from liquid-solid mixtures of fine solid particle size. Re. 26,449, 9–3–68, Cl. 210—44.
Ehrenspeck, Hermann W. Reflection antenna employing multiple director elements and multiple reflection of energy to effect increased gain. Re. 26,448, 9–3–68, Cl. 343—819.
Geller, Robert Z., to Inductosyn Corp. Analog-digital converter. Re. 26,451, 9–3–68, Cl. 340—347.
General Signal Corp.: *See—*
    Maynard, Wheeler D. Re. 26,450.
Inductosyn Corp.: *See—*
    Geller, Robert Z. Re. 26,451.
Maynard, Wheeler D., General Signal Corp. Electromagnetic relay with simplified structure. Re. 26,450, 9–3–68, Cl. 335—185.
St. Louis Shipbuilding-Federal Barge, Inc.: *See—*
    Bradt, Horace A. Re. 26,449.

LIST OF PLANT PATENTEES

Saratoga Horticultural Foundation: *See—*
    Thurnher, Armin. 2,830.
Thurnher, Armin, to Saratoga Horticultural Foundation. Magnolia grandiflora tree. 2,830, 9–3–68, Cl. 51.

LIST OF DESIGN PATENTEES

Ackermann, Karl, to Robert Bosch Elektronik und Photokino, G.m.b.H. Electronic flash unit. 212,173, 9–3–68, Cl. D61—1.
Alves, Frank C. Bicycle freewheel wrench. 212,171, 9–3–68, Cl. D34—16.
Anders, Walter G., to Diebold, Inc. Multi-camera TV monitor push-button control device. 212,158, 9–3–68, Cl. D26—14.
Ansan Tool and Mfg. Co., Inc.: *See—*
    Benjamin, E. Burton. 212,154.
Benjamin, E. Burton, to Ansan Tool and Mfg. Co., Inc. Combined sprinkling meter and shutoff valve. 212,154, 9–3–68, Cl. D23—38.
Bennett, Robert A., and J. Peterson, Jr. Combination key ring and tape measure. 212,168, 9–3–68, Cl. D50—4.
Bialo, Walter. Hanger. 212,177, 9–3–68, Cl. D80—8.
Boothby, Alfons, to Olympia Werke AG. Calculating machines. 212,174, 9–3–68, Cl. D64—11.
Bosch, Robert, Elektronik und Photokino, G.m.b.H.: *See—*
    Ackermann, Karl. 212,173.
Caliman, Monte C., Jr., to Unette Corp. Collapsible tubelike container. 212,150, 9–3–68, Cl. D9—194.
Chernock, Stephen P. Smoking pipe. 212,179, 9–3–68, Cl. D85—8.
Church, Robert E.: *See—*
    Lambertson, Theodore C. 212,176.
Coastal Dynamics Corp.: *See—*
    Krantz,John D. 212,156.
Commonwealth National Bank of San Francisco: *See—*
    Lambertson, Theodore C. 212.176.
Costello, Steve. Siding. 212,151, 9–3–68, Cl. D13—1.
Damast, David. Handbag closure clasp. 212,180, 9–3–68, Cl. D87—2.
Damast, David. Handbag closure clasp. 212,181, 9–3–68, Cl. D87—2.
Davis, Gregory R. Combined planter, room divider sun lamp and speaker unit. 212,162, 9–3–68, Cl. D33—1.
D'Elia, Anthony N., and E. M. Stolarz, to Presto Lock Co., Inc. Luggage handle or similar article. 212,182, 9–3–68, Cl. D87—2.
Diebold, Inc.: *See—*
    Anders, Walter G. 212,158.
Esquire, Inc.: *See—*
    Moore, Buell. 212,159.
    Moore, Buell. 212,160.
Foote, Daniel J., to Master Lock Co. Hasp. 212,169, 9–3–68, Cl. D50—5.
Foote, Daniel J.: *See—*
    Owen, Roger L., and Foote. 212,170.
General Motors Corp.: *See—*
    Haga, Henry G. 212,152.
Grosberg, Elliot J. Game board. 212,163, 9–3–68, Cl. D34—5.
Haga, Henry G., to General Motors Corp. Automobile. 212,152, 9–3–68, Cl. D14—3.
Hill, Larry L. Tongs. 212,166, 9–3–68, Cl. D44—4.
Hydroglas Industries, Inc.: *See—*
    Klein, Jules J. 212,175.
Kandy-pak, Inc.: *See—*
    Klayman, Saul. 212,167.
Klayman, Saul, to Kandy-pak, Inc. Combined flower holder and candy support. 212,167, 9–3–68, Cl. D44—10.
Klein, Conrad J.: *See—*
    Lambertson, Theodore C. 212,176.
Klein, Jules J., to Hydroglas Industries, Inc. Miniature motor boat. 212,175, 9–3–68, Cl. D71—1.
Krantz, John D., to Coastal Dynamics Corp. Mobile dental instrument unit. 212,156, 9–3–68, Cl. D24—1.
Lambertson, Theodore C., to R. E. Church, C. J. Klein, and Commonwealth National Bank of San Francisco. Combined food service and refrigerated cabinet. 212,176, 9–3–68, Cl. D80—2.
Lewis, Julian B. Percussion musical instrument. 212,172, 9–3–68, Cl. D56—1.
Mallory, P. R., & Co., Inc.: *See—*
    Wiser, Joseph E. 212,157.
Master Lock Co.: *See—*
    Foote, Daniel J. 212,169.
    Owen, Roger L., and Foote. 212,170.
Moore, Buell, to Esquire, Inc. Transformer enclosure. 212,159, 9–3–68, Cl. D26—15.
Moore, Buell, to Esquire, Inc. Transformer enclosure. 212,160, 9–3–68, Cl. D26—15.
Newton, Michael. Injection hatchet for treating diseased trees. 212,165, 9–3–68, Cl. D35—2.
Olympia Werke AG.: *See—*
    Boothby, Alfons. 212,174.
Owen, Roger L., and D. J. Foote, to Master Lock Co. Anti-jimmy device for padlocks. 212,170, 9–3–68, Cl. D50—8.
Peterson, John, Jr.: *See—*
    Bennett, Robert A., and Peterson. 212,168.
Popell, Samuel J. Heater housing for hair rollers and steam vaporizers. 212,155, 9–3–68, Cl. D23—77.
Presto Lock Co., Inc.: *See—*
    D'Elia, Anthony N., and Stolarz. 212,182.
Rakocy, William, to Ronson Corp. Portable cooking stove. 212,178, 9–3–68, Cl. D81—10.
Robert, Tony. Holder for food bowls for pets. 212,161, 9–3–68, Cl. D30—13.
Ronson Corp.: *See—*
    Rakocy, William. 212,178.
Stolarz, Edward M.: *See—*
    D'Elia, Anthony N., and Stolarz. 212,182.
Tarrson, Sidney A. Trundle sand toy. 212,164, 9–3–68, Cl. D34—15.
Tuvert, Johan E. Bed roll. 212,149, 9–3–68, Cl. D5—2.
Unette Corp.: *See—*
    Caliman, Monte C., Jr. 212,150.
Wagner, Josef. Spray gun. 212,153, 9–3–68, Cl. D23—17.
Wiser, Joseph E., to P. R. Mallory & Co., Inc. Housing for a sequential timing device. 212,157, 9–3–68, Cl. D26—13.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 3RD DAY OF SEPTEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

ACF Industries, Inc.: *See*—
Jeep, Charles W., Jr., and Niemeyer. 3,399,627.
Krug, John A. K., Jr. 3,399,636.
AMP Inc.: *See*—
Teurlings, Lucas G. C. 3,400,362.
A.P.V. Co. Ltd, The: *See*—
Usher, John D., and Linsdell. 3,399,708.
Abbott Laboratories: *See*—
Horrom, Bruce W. 3,400,132.
Abel, Martin L. Apparatus for producing oil-impregnated fibers. 3,399,648, 9–3–68, Cl. 118—37.
Abright & Wilson (Mfg.) Ltd.: *See*—
Hoye, Peter A. T., and Sunderland. 3,400,141.
Ackerman, Joseph I., Jr., to United Shoe Machinery Corp. Grommet assembly. 3,399,435, 9–3–68, Cl. 24—141.
Adam, Gunter. Safety toe iron for ski bindings. 3,399,902, 9–3–68, Cl. 280—11.35.
Adams, Frederick L.: *See*—
Crow, Morgan L., and Adams. 3,399,901.
Addressograph-Multigraph Corp.: *See*—
Gawron, Stanley A. 3,399,652.
Advance Industries, Inc.: *See*—
Weasel, George, Jr. 3,399,426.
Aero-Motive Mfg. Co.: *See*—
Becker, Roger T. and W. K. 3,400,230.
Agett, Albert H., R. V. Carini, and R. F. Alverson, to American Saint-Gobain Corp. Glass sheet feeder for cutting and processing machines. 3,399,885, 9–3–68, Cl. 271—1.
Agfa-Gevaert Aktiengesellschaft: *See*—
Winkler, Alfred, Bammesberger, Krobel, and Wilsch. 3,399,-842.
Agnew, Kenneth L. Photographic reproduction in three dimensions. 3,399,993, 9–3–68, Cl. 96—27.
Agnew, Patrick W., to Precision Hydraulics Ltd. Apparatus for tracing the contour of a shaped member. 3,399,600, 9–3–68, Cl. 90—62.
Agresta, Dano J., and B. H. Boelstler, to The Cross Co. Oil seal assembling device. 3,399,446, 9–3–68, Cl. 29—200.
Ahlert, Wilhelm, to Elektro-Thermit G.m.b.H. Apparatus for removing excess welding material from rail welds. 3,399,585, 9–3–68, Cl. 83—3.
Ahrens, Martin F.: *See*—
Cary, John T., Locke, Scharf, and Ahrens. 3,400,357.
Air Reduction Co.: *See*—
Marker, Roy C. 3,400,253.
Air Reduction Co., Inc.: *See*—
Platz, Gerald M. 3,400,024.
Air Techniques, Inc.: *See*—
Kauer, George C., Jr., and Brooks. 3,399,510.
Aktiebolaget Atomenergi: *See*—
Anderson, Karl O. I. 3,400,289.
Aktiebolaget Hammars Mekaniska Verkstad: *See*—
Holmberg, Bo F., and Kohlberg. 3,399,768.
Aktiebolaget Svenska Flaktfabriken: *See*—
Lanne, Bengt, and Wallin. 3,399,465.
Albert, Rudolf, Firma: *See*—
Pechstein, Fred. 3,399,836.
Albrecht, Harry A., and J. T. Platt, to Hoffmann-La Roche Inc. Sulfonamides and processes. 3,400,122, 9–3–68, Cl. 260—239.9.
Albrecht, Konrad: *See*—
Scherer, Otto, and Albrecht. 3,440,144.
Albritton Engineering Corp.: *See*—
Honeycutt, Don R. 3,399,786.
Alco Standard Corp.: *See*—
Ipsen, Harold N. 3,399,875.
Alexander, Charles F., Jr., and D. F. McCormick, to Brunswick Corp. Actuating means for marine clutch. 3,399,647, 9–3–68, Cl. 115—34.
Alfieri, Giuseppe, and R. Moriondo, to Fabbrica Italiana Magnetti Marelli S.p.A. Commutable shutoff valve with balanced surfaces for pneumatic apparatus, particularly braking systems. 3,399,932, 9–3–68, Cl. 303—54.
Alfieri, Giuseppe, and R. Moriondo, to Fabbrica Italiana Magnetti Marelli S.p.A. Commutable shutoff valve with balanced surfaces for pneumatic apparatus, particularly braking systems. 3,399,933, 9–3–68, Cl. 303—54.
Allard, Jules N., to United Shoe Machinery Corp. Machine for operating on shoes. 3,399,412, 9–3–68, Cl. 12—12.5.
Allegheny Ludlum Steel Corp.: *See*—
Lajoie, Peter A., and Harbaugh. 3,400,205.
Allen-Bradley Co.: *See*—
Walker, Philip F., Batcha, and Weisser. 3,399,793.
Allen, Edward L., and P. K. Bizilia, to Ingersoll-Rand Co. Power operated tool having positioning means. 3,399,736, 9–3–68, Cl. 173—163.
Allied Chemical Corp.: *See*—
Gilbert, Everett E., and Otto. 3,400,146.
Liggett, Robert W. 3,400,104.
Maykuth, Daniel J., Bergeron, and Pearson. 3,399,981.
Olsen, Samson. 3,400,052.
Orfeo, Sabatino R., Murphy, and Begun. 3,400,077.
Alta Industries, Inc.: *See*—
Sare, James R., Roplequet, and Bergeron. 3,400,037.
Altenburger, Paul, to The United States Time Corp. Resonator regulator. 3,400,283, 9–3–68, Cl. 310—36.
Altier, William, to Summit Candlelight Dinner Playhouse, Inc. Vertically moveable stage and guard rail means. 3,399,887, 9–3–68, Cl. 272—22.
Aluminum Co. of America: *See*—
Bruno, Guy D., Cheidelin, and Wells. 3,400,062.
Kramer, Max J. 3,400,260.
Alverson, Robert F.: *See*—
Agett, Albert H., Carini, and Alverson. 3,399,885.
Amano, Noboru, to Japan Atomic Energy Research Institute. System for A.C. operation of an ionization chamber. 3,400,-268, 9–3–68, Cl. 250—83.6.
Amblard, Claude, to Societe Anonyme Pour l'Equipement Electrique des Vehicules S.E.V. Marchal. Combustion engine ignition. 3,399,657, 9–3–68, Cl. 123—117.
Ambrose, William J., to Honeywell Inc. Transmitting apparatus. 3,399,909, 9–3–68, Cl. 285—61.
Amchem Products, Inc.: *See*—
Waldrum, John E., and Bishop. 3,399,638.
Amdahl, Gene M., G. A. Blaauw, E. M. Boehm, A. A. Magdall, C. B. Perkins, Jr., J. W. Rood, B. M. Updike, A. E. Villante, H. Weber, P. Calingaert, R. J. Carnevale, R. P. Case, A. F. Collins, J. E. Greene, W. P Hanf and J. R. Johnson, to International Business Machines Corp. Data processing system. 3,400,371, 9–3–68, Cl. 340—172.5.
American Bank Note Co.: *See*—
Guertin, Clifford D. 3,400,003.
American Biltrite Rubber Co., Inc.: *See*—
Mason, James N., and Kahn. 3,400,039.
American Cyanamid Co.: *See*—
Curtis, Gerard W. 3,399,954.
D'Errico, Michael J., and Kulick. 3,400,117.
Maulding, Donald R. 3,400,080.
Milionis, Jerry P., and Sust. 3,400,156.
Wiegman, Lenore. 3,399,986.
American Hydrotherm Corp.: *See*—
Geiringer, Paul L. 3,399,511.
American Potash & Chemical Corp.: *See*—
Randolph, Alan D. 3,399,976.
American Saint-Gobain Corp.: *See*—
Agett, Albert H., Carini, and Alverson. 3,399,885.
American Telephone and Telegraph Co.: *See*—
Nightingale, John G., Repholz, Sieglinger, and Zak. 3,400,222.
Amodeo, Licio, and Naldini, to Solvay & Cie. Process for the purification of aqueous solutions of hydrogen peroxide. 3,399,968, 9–3–68, Cl. 23—207.
Anastasio, Thomas A., to United States of America, Army. Motor for use in high vacuum system. 3,400,286, 9–3–68, Cl. 310—98.
Anderson, David F.: *See*—
Pedrotti, Donald G. 3,400,223.
Anderson, Edward A.: *See*—
Breed, Arthur R., and Anderson. 3,399,705.
Anderson, Emmett R., to Temescal Metallurgical Corp. Apparatus for regulating power applied to an electron gun employed in an electron beam furnace. 3,400,207, 9–3–68, Cl. 13—31.
Anderson, Garron P.: *See*—
Bennett, Sterling J., and Anderson. 3,399,562.
Anderson, Gordon K., R. A. Evans, and R. H. Hilmer, to Lear, Siegler, Inc. Apparatus for connecting a stationary air conditioning unit to aircraft. 3,399,545, 9–3–68, Cl. 62—237.
Anderson, Herman, and D. W. Trommer, to Quaker Oats Co. Dry milling corn process. 3,399,839, 9–3–68, Cl. 241—11.
Anderson, Ivar C. Fishing tackle box. 3,399,939, 9–3–68, Cl. 312—216.
Anderson, Lorrin O.: *See*—
Jorgensen, Arnold J., and Anderson. 3,400,385.
Andersson, Karl Ö. I., to Aktiebolaget Atomenergi. Neutron detector having a radioactive vanadium emitter. 3,400,289, 9–3–68, Cl. 313—61.
Andriulis, Vytautas, to Cenco Instruments Corp. Pump with auxiliary vacuum pumping stage. 3,399,826, 9–3–68, Cl. 230—152.
Aoki, Yoshio: *See*—
Tokorozawa, Sadao, Iwaski, and Aoki. 3,399,946.
Appleton, Norman J., to Raytheon Co. Stroboscopic display device with rotatable drum having characters in staggered columns. 3,400,387, 9–3–68, Cl. 340—324.
Arant, Perry, to Clayton Mfg. Co. Forced circulation steam generator with thermal-mechanical pre-removal of corrosive gases from the liquid supplied to the heating coil. 3,399,-655, 9–3–68, Cl. 122—406.
Archibald, Don M.: *See*—
Kramer, Kenneth C., Archibald, and Tobie. 3,399,850.
Arcoa, Inc.: *See*—
Reichardt, Harry J. 3,400,293.
Ardco, Inc.: *See*—
Buchbinder, Henry M., and Winsler. 3,399,784.
Arens, Virgil R., to Sylvania Electric Products Inc. Direction finder. 3,400,400, 9–3–68, Cl. 343—113.

Arethusa Establishment: *See*—
Zwoboda, Otto F. 3,400,071.
Arisman, Mervin B.: *See*—
Van Benthuysen, John D., and Arisman. 3,400,355.
Arkansas Co., Inc.: *See*—
Sapers, Ira ,and Cook. 3,399,953.
Armanet, Lucien, to Ateliers des Charmilles S.A. Pelton turbine of the horizontal shaft type. 3,399,864, 9–3–68, Cl. 253—113.
Armco Steel Corp.: *See*—
Vinson, John A. 3,399,694.
Armstrong Cork Co.: *See*—
Desch, Robert P., and Harbison. 3,400,005.
Armstrong, Samuel P. Transfer saddle. 3,399,852, 9–3–68, Cl. 248—49.
Asahi Kasei Kogyo Kabushiki Kaisha: *See*—
Hayashi, Akira. 3,399,761.
Asai, Osamu, to Kabushiki Kaisha Hitachi Seisakusho. Method for the protection of internal surfaces of the tubes for high-temperature, high-pressure boilers from corrosion. 3,400,022, 9–3–68, Cl. 148—6.14.
Ash, Saul H. Weapon safety mechanism. 3,400,393, 9–3–68, Cl. 343—6.5.
Atarashi, Yuji: *See*—
Fukumoto, Osamu, and Atarashi. 3,400,084.
Ateliers des Charmilles S.A.: *See*—
Armanet, Lucien. 3,399,864.
Athanassiadis, Eleftherios G., to Radio Corp. of America. 9–3–68, Cl. 317—234.
Atkinson, Joseph G., and P. H. Tremaine, to Merck, Sharp & Dohme of Canada, Ltd. Preparation of borodeuterides. 3,399,978, 9–3–68, Cl. 23—363.
Atomic Energy of Canada Ltd.: *See*—
Tolmie, Ronald W. 3,400,267.
Auer, Raymond L.: *See*—
Kohnle, Kenneth J., Auer, and Green. 3,400,185.
Auger, George C. B.: *See*—
Grant, Colin K. L. 3,399,914.
Augustin, Eugene H.: *See*—
Greenler, Robert J., and Augustin. 3,399,985.
Auld, Samuel H.: *See*—
Lear, William P., and Auld. 3,400,227.
Automatic Electric Laboratories, Inc.: *See*—
De Parry, Theodore. 3,400,348.
Briley, Bruce E. 3,400,381.
Orchard, Henry J., and Sheahan. 3,400,335.
Reimer, William A. 3,400,210.
Stich, Frederick A. 3,400,319.
Vande Wege, John R. 3,400,229.
Wu, George S. 3,400,320.
Avogadro, Alessandro: *See*—
Wurm, Joseph G., and Avogadro. 3,399,977.
Back, Walter, to Bopp & Reuther G.m.b.H. Flow meter. 3,399,567, 9–3–68, Cl. 73—230.
Bahrani, Abdul S., to The Proctor & Gamble Co. Method of and apparatus for combining webs. 3,399,884, 9–3–68, Cl. 270—52.
Bailey, Charles R. Portable holder for refuse cans. 3,399,903, 9–3–68, Cl. 280—47.34.
Bailey, Raymond E.: *See*—
Block, Dale G., Bailey, and Towle. 3,400,152.
Bailey, Robert L., and H. Bates, 1/10 to K. Wright. Towable water sled. 3,399,408, 9–3–68, Cl. 9—310.
Baker, Alfred D., and F. G. Hudman, to Joseph Lucas Industries Ltd. Full wave rectifiers for three phase supply. 3,400,-307, 9–3–68, Cl. 317—233.
Baker, Don R.: *See*—
Soong, Stassen Y. C., Cake, and Baker. 3,399,988.
Balassa, Leslie L. Wound-healing cartilage powder. 3,400,199, 9–3–68, Cl. 424—95.
Baldwin-Lima-Hamilton Corp.: *See*—
Otten, Philip S. 3,399,975.
Bammesberger, Karl: *See*—
Winkler, Alfred, Bammesberger, Krobel, and Wilsch. 3,399,842.
Barg, Herbert, to True Form Foundations, Inc. Girdle-slip. 3,399,679, 9–3–68, Cl. 128—519.
Barker, Allen, to The English Electric Co., Ltd. Heat exchange means in a liquid-metal cooled nuclear reactor. 3,400,046, 9–3–68, Cl. 176—40.
Barnes Engineering Co.: *See*—
Yoder, John R., Leftwich, and Fisher. 3,400,266.
Barns Lumber and Mfg. Co.: *See*—
Goodwin, Wayne M. 3,399,791.
Barr, John D., and D. R. Plummer, to Rank Precision Industries Ltd., d.b.a. The Rank Organisation Rank Taylor Hobson Division. Control devices for optical objectives of variable equivalent focal length. 3,399,943, 9–3–68, Cl. 350—167.
Barrington, Burchus Q., to Halliburton Co. Hydraulic jarring tool for use in wells. 3,399,740, 9–3–68, Cl. 175—297.
Barth, Bruce P., to Union Carbide Corp. Mixtures of polyarylene polyethers and vinylidene fluoride-hexafluoropropene copolymers. 3,400,065, 9–3–68, Cl. 204—159.2.
Barth Corp., The: *See*—
Sents, Adam J. 3,399,798.
Barth, Walter J., to I. E. du Pont de Nemours and Co. Consumable electrode stabilized against warping formed from compacted refractory metal particles. 3,400,206, 9–3–68, Cl. 13—16.
Bartl, Herbert: *See*—
Reischl, Artur, Hardt, Zorn, Bartl, and Speicher. 3,400,-173.
Bartley, Thomas S.: *See*—
Lee, Charles A., and Bartley. 3,399,587.
Bartolles, Rolf: *See*—
Hornfeck, Josef, and Bartolles. 3,399,598.
Bascom, Raymond E. Book ends. 3,399,782, 9–3–68, Cl. 211—43.
Bastian-Blessing Co., The: *See*—
Shaw, Harry N. 3,399,696.
Batcha, Carl M.: *See*—
Walker, Philip F., Batcha, and Weisser. 3,399,793.
Bateman, Richard M., and M. K. Parrent, to The General Tire & Rubber Co. Process of making compositions useful for hard rubber products. 3,400,096, 9–3–68, Cl. 260—33.6.
Bates, Harold: *See*—
Bailey, Robert L., and Bates. 3,399,408.
Battista, Orlando A., and J. A. Robertson, to FMC Corp. Method of preparing carbonized shaped cellulose crystallite aggregates. 3,400,181, 9–3–68, Cl. 264—29.
Bauer, Carl: *See*—
Diehl, Karl. 3,399,817.
Bauer, Ralph W., to Pittsburgh Plate Glass Co. Providing low viscosities for aged siliceous slurries. 3,400,002, 9–3–68, Cl. 106—309.
Baule, Werner G., to Borg-Warner Corp. Flexible resilient brake band. 3,399,749, 9–3–68, Cl. 188—259.
Beach, Alice L. Three-dimensional checker game apparatus. 3,399,895, 9–3–68, Cl. 273—181.
Beatty, Harold A.: *See*—
Gluckstein, Martin E., Rifkin, and Beatty. 3,400,082.
Beausoleil, William F., W. C. Hoskinson, L. E. King, and H. G. Weber, III, to International Business Machines Corp. Terminal for a multi-data processing system. 3,400,372, 9–3–68, Cl. 340—172.5.
Becker, John E., to Eclipse Consultants Ltd. Vented hydraulic coupling. 3,399,533, 9–3–68, Cl. 60—54.
Becker, Roger T., and W. K., to Aero-Motive Mfg. Co. Electric cable reel. 3,400,230, 9–3–68, Cl. 191—12.2.
Becker, William K.: *See*—
Becker, Roger T., and W. K. 3,400,230.
Beckman, Theresa: *See*—
Revelle, William A. 3,399,753.
Bedini, Stefania. Electric candle. 3,400,359, 9–3–68, Cl. 339—25.
Beets, Muus G. J., and W. Meerburg, to International Flavors & Fragrances. Preparation of myrcene hydrobromides. 3,400,162, 9–3–68, Cl. 260—601.
Begemann, Heinrich K. S. P., to Stichting Waterbouwkundig Laboratorium. Elongated object adapted to be driven into a resistant medium such as soil and a method for facilitating the driving in of such an object. 3,399,737, 9–3–68, Cl. 175—19.
Begun, Cary A.: *See*—
Orfeo, Sabatino R., Murphy, and Begun. 3,400,077.
Belar, Herbert: *See*—
Olson, Harry F., and Belar. 3,400,215.
Belder Trust: *See*—
Otto, Fritz. 3,399,704.
Bell & Howell Co.: *See*—
Krtous, George F., and Weninger. 3,399,845.
Weninger, Frank L. 3,399,844.
Bell Telephone Laboratories, Inc.: *See*—
Berreman, Dwight W. 3,399,942.
Krumreich, Charles L., and Mills. 3,400,226.
Lenigan, Thomas E. 3,340,395.
McGean, Thomas J., and Nathanson. 3,399,449.
O'Neill, John F., Jr., and Saltzberg. 3,400,332.
Papadakis, Emmanuel P. 3,400,340.
Sittig, Erhard K. 3,400,341.
Beloit Corp.: *See*—
Crist, Elmer E. 3,399,420.
Justus, Edgar J. 3,400,044.
Salomon, Salomon M. 3,399,770.
Salomon, Salomon M. 3,399,772.
Beloit Corp.: *See*—
Schmaeng, John F. 3,399,565.
Bennett, Charles H. Trim attachment for power boats. 3,399,-643, 9–3–68 Cl. 114—66.5.
Bennett, James C., to Electro Chemical Industries, Inc. Composite vehicle wheel and method of making the same. 3,399,930, 9–3–68, Cl. 301—65.
Bennett, Sterling J., and G. P. Anderson, to Thiokol Chemical Corp. Method and test assembly for testing viscoelastic materials. 3,399,562 9–3–68, Cl. 73—37.
Bensema, Eugene E., and A. R. Weber, to United States Steel Corp. Strip tension control for a rolling mill. 3,399,556, 9–3–68, Cl. 72—21.
Benson, Jewell R. Method for soil stabilization with improved emulsion asphalt. 3,399,608, 9–3–68, Cl. 94—23.
Bent, John H. Expansible plug for fluid systems. 3,399,801, 9–3–68, Cl. 220—24.
Bentley, John D. Mechanical sequential control system. 3,399,698, 9–3–68, Cl. 137—624.15.
Bergan, Reuben A., to Dresser Industries, Inc. Static atmosphere ion beam accelerator having a movable target. 3,400,290, 9–3–68, Cl. 313—63.
Berger, Frank M.: *See*—
Stiefel, Frank J. Ludwig, and Berger. 3,400,125.
Berger, Leo, A. Stempel, L. H. Sternbach, and E. Wenis to Hoffmann-La Roche Inc. Heterocyclic intermediates. 3,400,-128, 9–3–68, Cl. 260—256.4.
Bergeron, Duncan G.: *See*—
Sare, James R., Roplequet, and Bergeron. 34,00,037.
Bergeron, Elmo P.: *See*—
Maykuth, Daniel J., Bergeron, and Pearson. 3,399,981.
Berkson, Stanley M., to Stanbee Co., Inc. Method of manufacturing a shoe upper. 3,399,413, 9–3–68, Cl. 12—146.
Berman, Baruch, to Electric Regulator Corp. Static voltage regulator for a D.C. generator. 3,400,323, 9–3–68, Cl. 322—25.

- Berning, Peter H., and E. A. Small, Jr., to Libbey-Owens-Ford Glass Co. Transparent articles coated with gold, chromium, and germanium alloy film. 3,400,006, 9–3–68, Cl. 117—33.3.
- Berreman, Dwight W., to Bell Telephone Laboratories, Inc. Gas lens employing two oppositely-flowing gases having unequal refractive indices. 3,399,942, 9–3–68, Cl. 350—179.
- Berry, Charles J. : *See*—
  - Kaye, Michael C., and Berry. 3,399,564.
- Besha, Frank A. : *See*—
  - Kidgell, David J., and Besha. 3,399,649.
- Bestian, Herbert, and H. Korbanka, to Farbwerke Hoechst Aktienegesellschaft vormals Meister Lucius & Bruning. Process for preparing bright drying polyethylene dispersions using a potassium salt as the emulsifying agent. 3,400,089 9–3–68, Cl. 260—23.
- Beyer, Carlton E. : *See*—
  - Sheptak, Nicholas, and Beyer. 3,399,424.
- Biesma, Louw A., to North American Philips Co., Inc. Dry-shaving apparatus having shaving locking means. 3,399,-433, 9–3–68 Cl. 30—43.6.
- Billeter, Henry R., and A. B. Nelson, to Sloan Valve Co. Flush valve including adjustable restriction. 3,399,860, 9–3–68, Cl. 251—40.
- Billi, Giorgio. Circular knitting machine for manufacture of stockings. 3,399,551, 9–3–68, Cl. 66—108.
- Billingslea, Eugene E. : *See*—
  - Joyce, Ronald W., Billingslea, Sage, and Marshall. 3,399,596.
- Bilstein, August, KG : *See*—
  - Hausmann, Erwin. 3,399,882.
- Bird Machine Co. : *See*—
  - Fassle, Fritz. 3.399 828.
- Birjukova, Valentina N., to Gorkovsky Metallurgichesky Zavod. Bath for isothermal and step quenching of articles in salt and alkali melts. 3,399,877, 9–3–68, Cl. 266—6.
- Bishop, Paul W. : *See*—
  - Waldrum, John E., and Bishop. 3,399,638.
- Bissett- Berman Corp., The : *See*—
  - Brown, Neil L. 3,399,566.
- Biuro Projektow Przemyslu Hutniezego : *See*—
  - Dybal, Kazimferz, Oglaza, Stwora, and Suchon. 3,399,873.
- Bizilia, Paul K. : *See*—
  - Allen, Edward L., and Bizilia. 3,399 736.
- Black, William A. P., E. T. Dewar, and D. Rutherford, to United States of America, Agriculture. Carbohydrate derived polymers. 3,400,107, 9–3–68, Cl. 260—80.
- Bland, Geoffrey : *See*—
  - Morgan, William S., and Bland. 3,400,018.
- Blank, Hans G., to General Telephone and Electronics Laboratories, Inc. Binary to alpha-numeric translator. 3,400,388, 9–3–68, Cl. 340—336.
- Blaauw, Gerrit A. : *S* —
  - Amdahl, Gene M., Blaauw. Boehm, Calingaert, Carnevale, Case, Collins, Greene, Hanf, Johnson, Magdall, Perkins, Hood, Updike, Villante, and Weber. 3.400,371.
- Bleibtreu, Alexander, to Maschinenfabrik Reinhausen Gebruder Scheubeck K.G. Transfer switch for tap-changing transformers having contacts movable along orthogonal diameters of a circle. 3,400,231, 9–3–68, Cl. 200—11.
- Bleyle, Merrill, and C. T. Mitchell, Jr., to W. R. Grace & Co. Paper article coated with a novel slip composition. 3,400,-008, 9–3–68, Cl. 117—76.
- Block, Dale G., R. E. Bailey, and J. L. Towle, to Kewanee Oil Co. Sulfonamides and sulfonimides. 3,400,152, 9–3–68, Cl. 260—556.
- Bloom, Joseph L., to Joseph Lucas (Industries) Ltd. Mechanisms for controlling speed responsive governors. 3,399,-527, 9–3–68, Cl. 60—39.28.
- Blumberg Rex H., H. L. Caswell, and C. Chiou, to International Business Machine Corp. Process control of indium sheet film memories. 3,400,014, 9–3–68, Cl. 117—217.
- Blumenberg, Horst H., and E. J. Wolkoff, to Motorola, Inc. Manufacture of cathode ray tubes. 3,399,440, 9–3–68, Cl. 29—25.16.
- Blumenthal, Jack H. : *See*—
  - Theimer, Ernst T., and Blumenthal. 3,400,159.
- Boardman, Charles E., H. J. Schneider, B. F. Shoopak, and B. Wolfe, to General Electric Co. Steam cooled nuclear reactor power system with steam decontamination treatment. 3,400,048, 9–3–68, Cl. 176—60.
- Boch, Walter : *See*—
  - Schmitt, Karl-Friedrich, and Boch. 3,400,360.
- Bodanszky, Miklos, M. A. Ondetti, M. H. Von Saltza, V. L. Narayanan, and S. D. Levine, to E. R. Squibb & Sons Inc. Intermediates in the preparation of secretin. 3,400,118, 9–3–68, Cl. 260—112.5.
- Boehm, Elaine M. : *See*—
  - Amadhl, Gene N., Blaauw, Boehm, Calingaert, Carnevale, Case, Collins, Greene, Hanf, Johnson, Magdall, Perkins, Hood, Updike, Villante, and Weber. 3,400,371.
- Boeing Co., The : *See*—
  - Musgrave, Joseph S., Rue, and Nicholson. 3,400,364.
  - Ross, Edward C., and Chambers. 3,400,058.
- Boeke, Paul J., to Phillips Petroleum Co. Treating polymer compositions and product resulting therefrom. 3,400,116, 9–3–68, Cl. 260—94.9.
- Boelstler, Bruno H. : *See*—
  - Agresta, Dano J., and Boelstler. 3,399,446.
- Bogaart, Peter. Rotary toy hat. 3,399,486, 9–3–68, Cl. 46—53.
- Boggs, James L., to The National Cash Register Co. Reduction drive with intermittent rotary motion. 3,399,579, 9–3–68, Cl. 74—112.
- Bokros, Jack C., J. Chin, and A. S. Schwartz, to Gulf General Atomic Inc. Deposition of massive pyrolytic carbon. 3,399,969, 9–3–68, Cl. 23—209.1.
- Bolze, Gunther : *See*—
  - Haril, Ernst E., Dudzsus, Franz, Rethfeldt, Wienert, Muke, Hauptmann, and Bolze. 3,399,422.
- Bon, Pierre, to Compagnie des Ateliers et Forges de la Loire. Bubbling valves of liquid-phase and gaseous-phase exchange apparatus. 3,399,871, 9–3–68, Cl. 261—114.
- Boone, John D., and D. V. Knight, to E. I. du Pont de Nemours and Co. Process for making high-tenacity, low elongation industrial yarn. 3,400,194, 9–3–68, Cl. 264—290.
- Boonstoppel, Maurits : *See*—
  - Frielingsdorf, Hans, and Boonstoppel. 3,399,508.
- Boor, John, Jr., and E. A. Youngman, to Shell Oil Co. Polymerization catalysts and process. 3,400,112, 9–3–68, Cl. 260—93.7.
- Booth, Alfred E., to Raytheon Co. High power microwave energy waveguide coupling gasket. 3,400,344, 9–3–68, Cl. 333—98.
- Bopp & Reuther GmbH. : *See*—
  - Back, Walter. 3,399,567.
- Borg-Warner Corp. : *See*—
  - Baule, Werner G. 3,399,749.
- Bornefeld, Heinz, and K. Cziptschirsch. Pivoted light shield and snap-action auxiliary retainer. 3,399,923, 9–3–68, Cl. 296—97.
- Bourdeau, Romeo G., to Union Carbide Corp. Metallic carbides and a process of producing the same. 3,399,980, 9–3–68, Cl. 23—345.
- Bourgau, Yolande, and J. Fritz, to Societe Progil. Polyvinyl chloride stabilized with mixtures of a PCl₅-bis phenol reaction product, epoxy resin and heavy metal salt. 3,400,088, 9–3–68, Cl. 260—23.
- Bourque, Aurel W. : *See*—
  - McDermott, John R., White, and Bourque. 3,400,009.
- Boutillon, Gabriel, to Societe d'Electro-Chimie d'Electro-Metallurgie et des Acieries Electriques d'Ugine. Two-stage electrolytic process for preparing high-concentration sodium chlorate solutions. 3,400,063, 9–3–68, Cl. 204—95.
- Bowden, George F., and R. T. Dagiel, to Symons Mfg. Co. Rivetless concrete wall form panel with plywood facing and metal studding. 3,399,859, 9–3–68, Cl. 249—189.
- Bowers, Theron L., to International Telephone and Telegraph Corp. Switching network employing a homogeneous matrix. 3,400,220, 9–3–68, Cl. 179—18.
- Bowling, Raymond E., G. J. Laurer, and O. D. Montgomery, to International Business Machines Corp. Universal code synchronous transmitter-receiver device. 3,400,375, 9–3–68, Cl. 340—172.5.
- Brachvogel, Heinz, and G. Pickroth. Device for viewing the surface of cylindrical objects. 3,399,592, 9–3–68, Cl. 88—14.
- Bracken, Robert C., E. D. Lea, H. J. Jobe, and D. Maddox, to Phillips Petroleum Co. Method and apparatus for cooling compressor recycle gas. 3,399,542, 9–3–68, Cl. 62—117.
- Brader, Walter H., Jr. : *See*—
  - Cour, Thomas H., and Brader. 3,400,129.
- Bradley, Richard C. Apparatus and method for forming plastic articles. 3 399,834, 9–3–68, Cl. 239—10.
- Bradley, Theodore. Disposable office gown. 3,399,406, 9–3–68, Cl. 2—114.
- Braun, Ernst and G., to Halbach & Braun, Maschinenfabrik. Scraping conveyor. 3,399,757, 9–3–68, Cl. 198—171.
- Braun, Gert : *See*—
  - Braun, Ernst and G. 3,399,757.
- Brawn, Denis P. : *See*—
  - Rogovin, Lawrence, Brawn, and Kalberg. 3,400,147.
- Breed, Arthur R., to The Lamson & Sessions Co. Method of making a self-staking insert. 3,399,409, 9–3–68, Cl. 10—86.
- Breed, Arthur R., to The Lamson & Sessions Co. Sealing fastener. 3,399,589, 9–3–68, Cl. 85—1.
- Breed, Arthur R., and E. A. Anderson, to The Lamson & Sessions Co. Self-staking insert. 3,399,705, 9–3–68, Cl. 151—41.73.
- Briley, Bruce E., to Automatic Electric Laboratories, Inc. Recirculating delay line memory. 3,400,381, 9–3–68, Cl. 340—173.
- Bristol-Myers Co. : *See*—
  - Kohnle, Kenneth J., Auer, and Green. 3,400,185.
- British American Oil Co. Ltd., The : *See*—
  - Pogorski, Louis A. 3,399,967.
- British Welding Research Association : *See*—
  - Waller, David N. 3,400,242.
- Brixner, Lothar H., to E. I. du Pont de Nemours and Co. Rare earth silicate phosphor composition. 3,400,081, 9–3–68, Cl. 252—301.4.
- Broach, Billy G., to Heat Technology Laboratory, Inc. Measurement system for clinical diagnosis. 3,399,660, 9–3–68, Cl. 128—2.1.
- Brockardt, Frank G., and J. H. Koch, to West Virginia Pulp and Paper Co. Article feeding apparatus and method. 3,399,886, 9–3–68, Cl. 271—14.
- Brockner, Charles E. : *See*—
  - Cook, Charles E., and Brockner. 3,400,396.
- Brois, Stanley J., to Esso Research and Engineering Co. Preparation of thiophosphoric acid. 3,399,963, 9–3–68, Cl. 23—139.
- Brooks, Louis E. : *See*—
  - Kauer, George C., Jr., and Brooks. 3,399,510.
- Brooks, Warren B., to Mobil Oil Corp. Acoustic method for treatment of stuck pipe in a well. 3,399,724, 9–3–68, Cl. 166—4.
- Brown, Neil L., to The Bissett-Berman Corp. Flow meter. 3,399,566, 9–3–68, Cl. 73—204.

- Brown, William H., to Reynolds Metals Co. Treatment of aqueous alkaline aluminate liquors to remove chromium values. 3,399,958, 9–3–68, Cl. 23—52.
- Brown & Williamson Tobacco Corp. : *See*—
  - Sexstone, John H., and Hilgartner. 3,400,032.
- Bruckner, Ronald L., to The National Cash Register Co. Voltage level converter circuit. 3,400,277, 9–3–68, Cl. 307—264.
- Brudney, Harry, and R. S. Turshen, to Dollac Co. Plural eye unit holding means for doll heads. 3,399,488, 9–3–68, Cl. 46—169.
- Bruno, Guy D., N. Cheldelin, and N. Wells, to Aluminum Co. of America. Method of controlling alumina content during aluminum electrolysis. 3,400,062, 9–3–68, Cl. 204—67.
- Brunswick Corp. : *See*—
  - Alexander, Charles F., Jr., and McCormick. 3,399,647.
- Brunt, David L. Pneumatically cushioned bumper. 3,399,919, 9–3–68, Cl. 293—89.
- Brust, Bernard, R. I. Fryer, and L. H. Sternbach, to Hoffmann-La Roche Inc. 2-(4-pyridyl) methanol derivatives. 3,400,126, 9–3–68, Cl. 260—247.5.
- Brust, Bernard, R. I. Fryer, and L. H. Sternbach, to Hoffmann-La Roche Inc. 1,3-di(4-pyridyl)-2-propanol derivatives. 3,400,131, 9–3–68, Cl. 260—294.8.
- Bryan, Carney J., and H. Rovin. Automatic sewing machine system. 3,399,640, 9–3–68, Cl. 112—2.
- Bryson, Robert A., and R. B. Hawkes, to T. W. & C. B. Sheridan Co. Machine and method for transferring an article from one apparatus to another. 3,399,755, 9–3–68, Cl. 198—34.
- Bubber, Heinz, to International Standard Electric Corp. Method and circuit arrangement for central supervision of time measuring circuits of several functional units in telecommunications, particularly telephone exchange systems. 3,400,228, 9–3–68, Cl. 179—175.2.
- Buchanan, John D. Deflectable rotary mower blade. 3,399,519, 9–3–68, Cl. 56—295.
- Buchbinder, Henry M., and R. J. Winsler, to Ardco, Inc. Shelving units with rolling shelves. 3,399,784, 9–3–68, Cl. 211—151.
- Buck, Willard E. Hysteresis synchronous motor and improved shaft sub-assembly therefor. 3,400,285, 9–3–68, Cl. 310—90.
- Bucy, Harry R. Vacuum operated liquid dispensing means. 3,399,808, 9–3–68, Cl. 222—70.
- Bucyrus-Erie Co. : *See*—
  - Mork, George W. 3,399,785.
  - Reischl, Karl E. 3,399,868.
- Budd Co., The : *See*—
  - Dean, Albert G. 3,299,632.
  - Kolt, Erwin B. 3,400,182.
- Buetow, Richard C. : *See*—
  - Jahns, Kenneth V., and Buetow. 3,400,219.
- Builting, Francis P., and J. W. Waseleski, Jr., to Texas Instruments, Inc. Heating apparatus. 3,400,250, 9–3–68, Cl. 219—441.
- Bull, Hugh L. Dual column gas chromatography apparatus. 3,400,264, 9–3–68, Cl. 250—43.5.
- Bullard Co., The : *See*—
  - Bullard, Edward P. III and E. P. IV. 3,400,313.
- Bullard Edward P. IV : *See*—
  - Bullard, Edward P. III and E. P. IV. 3 400,312.
- Bullard, Edward P. III and E. P. IV, to The Bullard Co. Point to point motor positioning control for a machine tool including tool offset compensatin at each pint. 3,400,313, 9–3–68, Cl. 318—18.
- Burger, Edwin M., to Oliver Tire & Rubber Co. Method and apparatus for butt-splicing elongated elastomeric articles. 3,400,030, 9–3–68, Cl. 156—153.
- Burgess, Charles D., to Giffen-Burgess Corp. Seaming tape. 3,400,038, 9–3–68, Cl. 161—50.
- Burgess, Charles D., to Giffen-Burgess Corp. Sadiron. 3,400,-235, 9–3–68, Cl. 219—245.
- Burkland, Carl A. Golf putter. 3,399,898, 9–3–68, Cl. 273—164.
- Burlington Industries, Inc. : *See*—
  - Farrell, Rhomie H. 3,399,714.
- Burne, Frederick A., to Olin Mathieson Chemical Corp. Device for dispensing heated fluids. 3,399,810, 9–3–68, Cl. 222—146
- Burns, Erwin. Axially extensible rotary drive tool joint. 3,399,548, 9–3–68, Cl. 64—23.
- Burnside, Walter M. Matrix transformation game device. 3,399,896, 9–3–68, Cl. 273—188.
- Burroughs Corp. : *See*—
  - Jorgensen, Arnold J., and Anderson. 3,400,385.
  - Packard, Roger E., and Cherry. 3,400,380.
- Burton, Errol H. Automobile camper. 3,399,922, 9–3–68, Cl. 296—23.
- Busch, Richard E., to Sperry Rand Corp. Accumulator selecting and tens transfer mechanism for calculating machine. 3,399,830, 9–3–68, Cl. 235—133.
- Bushey, Donald H. : *See*—
  - Heywood, Vincent E., Bushey, and Chapman. 3,399,788.
- Bussard, Robert W. : *See*—
  - Hunter, Henry M., and Bussard. 3,399,534.
- Buttner, Gert : *See*—
  - Hartmann, Adolf, and Buttner. 3,400,192.
- Buttner, Karl, H. Richter, and H. Voller, to Deutsche Edelstahlwerke Aktiengesellschaft. Method and apparatus for compacting magnetic powder. 3,400,180, 9–3–68, Cl. 264—24.
- Buxton, Thomas S., and J. E. Pease, to Pan American Petroleum Corp. Recovery of petroleum by a cyclic thermal method. 3,399,722, 9–3–68, Cl. 166—2.
- Byrnes, Herbert P., L. J. Gagliano, and H. G. Schick, to International Business Machines Corp. Electrical connector. 3,400,358, 9–3–68, Cl. 339—17.
- C.A.V. Ltd. : *See*—
  - Seilly, Alec H., Gubb, and Peltret. 3,399,575.
  - Seilly, Alec H. 3,399,576.
- CPC Engineering Corp. : *See*—
  - Ciaffone, Charles P. 3,399,775.
- CTS Corp. : *See*—
  - Van Benthuysen, John D., and Arisman. 3,400,355.
- Cadillac Gage Co. : *See*—
  - Howland, Donald C. 3,399,861.
- Cagle, Harlan R., to Sahlin Engineering Co., Inc. Air and oil cylinder. 3,399,603, 9–3–68, Cl. 92—10.
- Cake, Byron H. : *See*—
  - Soong, Stassen Y. C., Cake, and Baker. 3,399,988.
- Caldwell, John R., and E. H. Hill, to Eastman Kodak Co. Polymers of N-(7,7-dialkyl-bicyclo[3.2.0]hept-6-YL) acrylamides and methacrylamides. 3,400,108, 9–3–68, Cl. 260—82.1.
- Calhoun, George M., to Shell Oil Co. Sulfides of higher fatty acids. 3,400,139, 9–3–68, Cl. 260—399.
- Calingaert, Peter : *See*—
  - Amdahl, Gene M., Blaauw, Boehm, Calingaert, Carnevale, Case, Collins, Greene, Hanf, Johnson, Magdall, Perkins, Hood, Updike, Villante, and Weber. 3,400,371.
- Campbell, Leonard S. : *See*—
  - Rennie, George S., and Campbell. 3,399,819.
- Canadian General Electric Co., Ltd. : *See*—
  - Howard, John F., and Lynch. 3,400,285.
- Canadian International Paper Co. : *See*—
  - Lee, Charles A., and Bartley. 3,399,587.
- Canadian Marconi Co. : *See*—
  - Grant, Howard A. 3,400,279.
- Cannon, William D., to Western Union Telegraph Co. Method and means for correcting amplitude and delay distortion in a transmission path. 3,400,329, 9–3–68, Cl. 324—57.
- Caperton, Charles B. Sewer rodding equipment. 3,399,416, 9–3–68, Cl. 15—104.3.
- Caprara, Pierre. Water resistant watch. 3,299,525, 9–3–68, Cl. 58—90.
- Carini, Reno V. : *See*—
  - Agett, Albert H., Carini, and Alverson. 3,399,885.
- Carlson, Robert L., to W. H. Miner, Inc. Damped spring. 3,399,880, 9–3–68, Cl. 267—1.
- Carlson Tool & Machine Co. : *See*—
  - Hazelton, Harold J. : *See*—
- Carnevale, Richard J. : *See*—
  - Amdahl, Gene N., Blaauw, Boehm, Calingaert, Carnevale, Case, Collins, Greene, Hanf, Johnson, Magdall, Perkins, Hood, Updike, Villante, and Weber. 3,400,371.
- Carnevale, Richard J. : *See*-
  - Amdahl, Gene N., Blaauw, Boehm, Calingaert, Carnevale, Case, Collins, Greene, Hanf, Johnson, Magdall, Perkins, Hood, Updike, Villante, and Weber. 3,400,371.
- Caropreso, Frank E. : *See*—
  - Radimer, Kenneth J., Caropreso, and Munday. 3,400,027.
- Carpino, Joseph O., J. C. Duddy, and M. H. Johnson, to The Electric Storage Battery Co. Carbon-coated duplex electrode and process for making the same. 3,400,020, 9–3–68, Cl. 136—120.
- Carr, John E. : *See*—
  - Revelle, William A. 3,399,752.
- Carrier Corp. : *See*—
  - Osborne, William T. 3,399,544.
- Carroll, Ellsworth W., deceased, by H. D. Carroll, executrix, to J. R. Carroll. Full automatic framing machine. 3,399,-445, 9–3–68, Cl. 29—200.
- Carroll, Hazel D. : *See*—
  - Carroll, Ellsworth W. 3,399,445.
- Carroll, John R. : *See*—
  - Carroll, Ellsworth W. 3,399,445.
- Carter, Philip S., to Physical Electronics Laboratories. Tunable bandpass filter. 3,400,343, 9–3–68, Cl. 333—73.
- Carter-Wallace, Inc. : *See*—
  - Stiefel, Frank J., Ludwig, and Berger. 3,400,125.
- Cary, John T., C. R. Locke, R. F. Scharf, and M. F. Ahrens, to Continental Can Co., Inc. Dry rotary joint. 3,400,357, 9–3–68, Cl. 339—8.
- Case, J. I., Co. : *See*—
  - Magee, Kenneth L. 3,399,517.
  - North, Max R. 3,399,733.
- Case, Richard P. : *See*—
  - Amdahl, Gene N., Blasuw, Boehm, Calingaert, Carnevale, Case, Collins, Greene, Hanf, Johnson, Magdall, Perkins, Hood, Updike, Villante, and Weber. 3,400,371.
- Cashavelly, Christy, and L. J. Sullivan. Combined water gun and bubble forming toy. 3,399,485, 9–3–68, Cl. 46—8.
- Caswell, Hollis L., and E. Stern, to International Business Machines Corp. Sputtering processes for depositing thin films of controlled thickness. 3,400,066, 9–3–68, Cl. 204—192.
- Caswell, Hollis L. : *See*—
  - Blumberg, Rex. H., Caswell, and Chiou. 3,400,014.
- Catravas, George N. : *See*—
  - Skeggs, Leonard T., and Catravas. 3,399,972.
- Cello Chemical Co., The : *See*—
  - Okun, Nathaniel N. 3,400,361.
- Cenco Instruments Corp. : *See*—
  - Andriulis, Vytautas. 3,399,826.
- Central Research, Inc. : *See*—
  - Pourchot, Melvin E. 3,399,730.
- Centre National de Recherches Metallurgiques : *See*—
  - Houbart, Yvan. 3,400,265.
  - Pirlet, Robert A. J. E. 3,399,570.
- Centre National de la Recherche Scientifique : *See*—
  - Felici, Noel J. 3,400,282.

Cerow, Joseph A., to Crane Co. Yoke adaptor for gear or motor operator. 3,399,862, 9-3-68, Cl. 251—214.

Chambers, Bryce: *See—*
  Ross, Edward C., and Chambers. 3,400,058.

Champion Corp.: *See—*
  Hammond, Clifton E., and Cline. 3,399,415.
  Hammond, Clifton E., and Cline. 3,399,417.

Chapell, Harry F., to Raytheon Co. Matched transmission line coupling for electron discharge tube. 3,400,295, 9-3-68, Cl. 315—3.5.

Chapman, George C., to Owens-Illinois, Inc. Apparatus for controlling glass tube and rod dimensions. 3,399,983, 9-3-68, Cl. 65—188.

Chapman, Milford T., Jr.: *See—*
  Davis, Bayard C., Singer, and Chapman. 3,400,356.

Chapman, Richard A., to Texas Instruments Inc. Energy converter. 3,400,015, 9-3-68, Cl. 117—224.

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  Heidel, Klaus, Schick, Jenkner, and Pratezel. 3,400,174.
  Winter, Hermann, and Weber. 3,400,113.

Cherkov, Efim M., V. S. Tikhonoc, and A. I. Ilchenko, to Gosudarstvenny Proektno-Konstruktorsky Institute "Gipromashugleobogashchenie." Dense media separator for coal dressing. 3,399,769, 9-3-68, Cl. 209—172.5.

Cherry, Lloyd M.: *See—*
  Packard, Roger E., and Cherry. 3,400,380.

Chester, George W. Loading barges onto ships using drydocks. 3,399,792, 9-3-68, Cl. 214—152.

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  Kautsky, George J. 3,399,982.
  Fox, Richard C. 3,400,011.
  Fox, Richard C. 3,400,092.

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  Bokros, Jack C., Chin, and Schwartz. 3,399,969.

Chiou, Charles: *See—*
  Blumberg, Rex H., Caswell, and Chiou. 3,400,014.

Chrysler Corp.: *See—*
  Huebner, George J., Jr., and Teague. 3,400,017.
  Roy, Amedee, and Corwin. 3,399,443.

Ciaffone, Charles P., to CPC Engineering Corp. Sewage treatment apparatus-grit washer-ejector. 3,399,775, 9-3-68, Cl. 210—221.

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Ciochetto, Joseph J., to Koppers Co., Inc. Method of making steel in a basic oxygen furnace utilizing preheated scrap metal. 3,399,992, 9-3-68, Cl. 75—43.

Clark Equipment Co.: *See—*
  Trost, Paul E., Palen, and Hammond. 3,399,921.

Clayton Mfg. Co.: *See—*
  Arant, Perry. 3,399,655.

Clayton, William: *See—*
  Woodcock, George S., Simpson, and Clayton. 3,399,550.

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  Hammond, Clifton E., and Cline. 3,399,415.
  Hammond, Clifton E., and Cline. 3,399,417.

Cline, Ronald E., to TRW Inc. Thermal switch. 3,399,717, 9-3-68, Cl. 165—32.

Clifford, Alfred T., and K. C. Hokanson, to Riegel Textile Corp. Formaldehyde absorbent composition. 3,400,079, 3-9-68, Cl. 252—184.

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Coast Metals, Inc.: *See—*
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Cobb, Clifton A.: *See—*
  Salisbury, Keith D., and Cobb. 3,399,552.

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  Coffman, Samuel W. 3,400,305.

Coffman, John D.: *See—*
  Coffman, Samuel W. 3,400,305.

Coffman, Mark J.: *See—*
  Coffman, Samuel W. 3,400,305.

Coffman, Samuel W., ⅕ each to A. D., S. W., J. D., and M. J. Coffman. Alternating current electrodes for electrochemical power cells. 3,400,305, 9-3-68, Cl. 317—231.

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  Coffman, Samuel W. 3,400,305.

Colangione, Ralph J.: *See—*
  Stetz, William, and Colangione. 3,399,499.

Coleman Co., Inc.: *See—*
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Collins, Arthur F.: *See—*
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Collins Radio Co.: *See—*
  Gallagher, Donald C., Haerther, Middleton, and Tuthill. 3,400,402.
  Stover, Harris A. 3,400,397.

Colombo, Mario: *See—*
  Lampani, Antonio, Colombo, Margola. 3,399,498.

Columbian Carbon Co.: *See—*
  Levine, Ralph. 3,400,165.
  McAllister, Charles G. 3,400,164.
  McAllister, Charles G. 3,400,166.

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Comment, Paul. Process of constructing a building. 3,399,505, 9-3-68, Cl. 52—743.

Compagnie des Ateliers et Forges de la Loire: *See—*
  Bon, Pierre. 3,399,871.

Concast Inc.: *See—*
  Rossi, Irving and Thalmann. 3,399,716.

Congdon, George L., and D. J. Lemens, to Demco Library Supplies, Inc. Identity card and key controlled shiftable date printer. 3,399,618, 9-3-68, Cl. 101—45.

Conley, Robert F., and M. K. Lloyd, to Georgia Kaolin Co. Potentiometric control of bleaching of kaolin clays. 3,399,960, 9-3-68, Cl. 23—110.

Connolly, John E., and A. C. Mick. Method of cold forming a solid ring. 3,399,560, 9-3-68, Cl. 72—368.

Consolidated Electrodynamics Corp.: *See—*
  Elazar, Shmuel. 3,400,284.

Continental Can Co., Inc.: *See—*
  Cary, John T., Locke, Scharf, and Ahrens. 3,400,357.
  Mesrobian, Robert B., and Szatkowski. 3,400,029.

Continental Oil Co.: *See—*
  Tung, Shao E., and McIninch. 3,400,072.

Controls Company of America: *See—*
  Matthies, Alan A. 3,399,543.

Cook, Alton A.: *See—*
  Sapers, Ira, and Cook. 3,399,953.

Cook, Charles E., and C. E. Brockner, to Sperry Rand Corp. Pulse stretching and compression radar system. 3,400,396, 9-3-68, Cl. 343—17.1.

Cook, Wendell S., to The Firestone Tire & Rubber Co. Stereolinear butadiene stabilized with a combination of stabilizers. 3,340,099, 9-3-68, Cl. 260—45.85.

Cooper, David B., to Raytheon Co. Pulse doublet communication system. 3,400,369, 9-3-68, Cl. 340—167.

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  Stulac, Josef F., Cornish, and Selkirk. 3,399,711.

Corry, William A., to Interchemical Corp. Novel coated and molded woven fabrics and method of making the same. 3,400,004, 9-3-68, Cl. 117—7.

Corsetti, John A.: *See—*
  Macaluso, Michael, Jr., and Corsetti. 3,399,780.

Corwin, John M.: *See—*
  Roy, Amedee, and Corwin. 3,399,443.

Cour, Thomas H., and W. H. Brader, Jr., to Jefferson Chemical Co., Inc. Purification of 2-methyltriethylenediamine by solvent extraction and azeotropic distillation. 3,400,129, 9-3-68, Cl. 260—268.

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  Lapeyre, James M., Couret, and Fougere. 3,440,398.

Couture, Richard P. Control of liquid dispensing units of the metering type. 3,399,807, 9-3-68, Cl. 222—17.

Covert, Paul W., to Magnetics, Inc. Half-wave control of full-wave A.C. 3,400,324, 9-3-68, Cl. 323—17.

Cox, Ernest P. Fishhooks. 3,399,482, 9-3-68, Cl. 43—15.

Coyle, Peter A., A. G. M. Reeves, and D. C. Sanders, to The Plessey Co. Ltd. Electric control circuits. 3,400,251, 9-3-68, Cl. 219—503.

Crane Co.: *See—*
  Cerow, Joseph A. 3,399,862.

Crathern, Charles F. H. Registration apparatus. 3,400,031, 9-3-68, Cl. 156—364.

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Crawford, Thomas A. Sanitary seal for casters. 3,399,421, 9-3-68, Cl. 16—26.

Creed, James R. Apparatus for and method of producing viscid oil. 3,399,623, 9-3-68, Cl. 103—1.

Crenshaw, Walter J., and W. P. Durst, to Riegel Textile Corp. Weft-inserter drive for shuttleless looms. 3,399,700, 9-3-68, Cl. 139—123.

Crist, Elmer E., to Beloit Corp. Doctor shape control device. 3,399,420, 9-3-68, Cl. 15—256.51.

Cross, Alexander D., to Syntex Corp. 3-desoxy-pregnenes and #-19-nor-pregnenes and their preparation. 3,400,137, 9-3-68, Cl. 260—397.4.

Cross Co., The: *See—*
  Agresta, Dano J., and Boelstler. 3,399,446.

Crow, Morgan L., and F. L. Adams, to Dresser Industries, Inc. Tubing blowout preventer. 3,399,901, 9-3-68, Cl. 277—129.

Crowe, Andrew R., and W. F. Foster, to C. H. Heist, Ohio Corp. Sandblast truck assembly. 3,399,492, 9-3-68, Cl. 51—8.

Crowe, George A., Jr.: *See—*
  Gardner, Jack H., and Crowe. 3,399,672.

Currie, William A., to Messrs Berk Ltd. Powder feeder with rotary, axially movable flow controller. 3,399,814, 9-3-68, Cl. 222—549.

Curtis, Gerard W., to American Cyanamid Co. Softening leather by application of an acetylated monoglyceride. 3,399,954, 9-3-68, Cl. 8—94.22.

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Dassesse, Pierre, and R. Dechenne, to Solvay & Cie. Polymerisation of olefins in the presence of a catalyst comprising an organometallic compound and the reaction product of a transition metal compound and a hydroxychloride of a bivalent metal. 3,400,110, 9-3-68, Cl. 260—88.2.

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De Parry, Theodore, to Automatic Electric Laboratories, Inc. Polarized reed relay wherein the permanent magnet is around the reed switch and in contact with the coil. 3,400,348, 9-3-68, Cl. 335—153.

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Dodge, Rues M. Brake contour spinner. 3,399,493, 9-3-68, Cl. 51—26.

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  Knowlton, Robert C. 3,399,439.
  Littler, Clarence A. 3,399,991.
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E-C Corp.: *See—*
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- Ehrhart, Gustav, E. Lindner, and H. Ott, to Farbwerke Hoechst Aktiengesellschaft vormals, Meister Lucius & Bruning. N-/1-phenyl-propyl (2)/-N-aminoethyl-(2′)-diphenylamines and the salts thereof. 3,400,155, 9–3–68, Cl. 260—570.5.
- Eichorn, Roger H., to Xerox Corp. Xerographic apparatus. 3,399,610, 9–3–68, Cl. 95—1.7.
- Eigenmann, Ludwig. Roadway surface marking, and marked road. 3,399,607, 9–3–68, Cl. 94—1.5.
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- Elam, Edward U., and J. C. Martin, to Eastman Kodak Co. Alkoxyalkylidenecyclobutanones. 3,400,101, 9–3–68, Cl. 260—63.
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- Elazar, Shmuel, to Consolidated Electrodynamics Corp. Piezoelectric accelerometer. 3,400,284, 9–3–68, Cl. 310—8.4.
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- Electrodyne Research Corp.: *See*—
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- Elektro-Thermit G.m.b.H.: *See*—
  - Ahlert, Wilhelm. 3,399,585.
- Element Ltd.: *See*—
  - Gell, Philip A. M. 3,400,204.
- Ellett, Alec S., to Ellett Copper & Brass Co., Ltd. Process and apparatus for continuous de-aerating of fruit and vegetables. 3,399,999, 9–3–68, Cl. 99—154.
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  - Ellett, Alec S. 3,399,999.
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  - Rowlands, Thomas J., and Smart. 3,400,303.
- Enblom, Paul A., to Judd Ringer Corp. Liquid dispenser. 3,399,639, 9–3–68, Cl. 111—7.4.
- Eng, Jackson, and S. H. J. Greenwood, to Esso Research and Engineering Co. Preparation of steam cracked naphtha for benzene recovery. 3,400,169, 9–3–68, Cl. 260—674.
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- Ensor, Arthur J. Interlocking building elements. 3,399,916, 9–3–68, Cl. 287—189.36.
- Enstrom, Ronald E., J. J. Hanak, K. Strater, and F. R. Nyman, to Radio Corp. of America. Method of coating superconducting niobium tin with lattice defects. 3,400,016, 9–3–68, Cl. 117—227.
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- Epstein, Donald A., and G. Zvaigzne, to International Business Machines Corp. Timing ring and checking circuit. 3,400,367, 9–3–68, Cl. 340—146.1.
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- Evans, Richard A.: *See*—
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- Esso Research and Engineering Co.: *See*—
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  - Eng, Jackson, and Greenwood. 3,400,169.
  - House, William T., Segura, Senn, and Byars. 3,399,513.
  - Matsuo, Ryota, Matsugu, and Kanoh. 3,400,184.
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- Etchison, Gibson O., R. A. McDaniel, and G. E. Hines, to West Point-Pepperell, Inc. Process for preventing seam pucker. 3,399,642, 9–3–68, Cl. 112—262.
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- Fallesen, Mai, to Maifa Tekniska Aktiebolag. Toothbrush. 3,399,947, 9–3–68, Cl. 401—173.
- Fan, Hsing Y., W. E. Rader, M. Legator, and L. C. Larrick, to Shell Oil Co. Methanonaphthalene compositions and methods of using the same. 3,400,200, 9–3–68, Cl. 424—278.
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- Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
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- Farrell, Rhomie H., to Burlington Industries, Inc. Permanently pleated draperies. 3,399,714, 9–3–68, Cl. 160—348.
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- Fassle, Fritz, to Bird Machine Co. Centrifuge solids discharge receiving compartment. 3,399,828, 9–3–68, Cl. 233—47.
- Faulkner, Reginald D., to Trisal Clips Pty., Ltd. Cable clip. 3,399,433, 9–3–68, Cl. 24—123.
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- Fawkes, Donald G., to Henry Pratt Co. Self-cutting key structure. 3,399,910, 9–3–68, Cl. 287—52.05.
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- Fearing, Ralph B., E. N. Walsh, and J. B. McBain, to Stauffer Chemical Co. O-isopropyl-S-(p-tolyl)chloromethylphosphonodithioate. 3,400,178, 9–3–68, Cl. 260—961.
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- Fiber Industries, Inc.: *See*—
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- Fornari, Joseph C., to Philco-Ford Corp. Susceptor for growing polycrystalline silicon on wafers of monocrystalline silicon. 3,399,651, 9–3–68, Cl. 118—500.
- Forrest, John A., and G. O. Jackson, to United Kingdom Atomic Energy Authority. Locking structure. 3,399,719, 9–3–68, Cl. 105—47.
- Forst, Solomon. Parking garage construction. 3,399,789, 9–3–68, Cl. 214—16.1.
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  - Haril, Ernst E., Dudzsus, Franz, Rethfeldt, Weinert, Muke Hauptmann, and Bolze. 3,399,422.
- Franzen, Erwin F. Tapered shell electric furnaces. 3,400,208, 9–3–68, Cl. 13—35.
- Freeman, Harry, to Tainer Tech Corp. Cushioning container. 3,399,797, 9–3–68, Cl. 217—52.
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- French, Walter K., to International Business Machines Corp. Magnetic vehicle detector with feedback adjustment for ambient conditions. 3,400,365, 9–3–68, Cl. 340—38.
- Frick, Charles E., to Union Carbide Corp. Foam spray gun having replaceable nozzle. 3,399,837, 9–3–68, Cl. 239—415.
- Fried, John H., to Syntex Corp. 16α,17α-ethylene-4-pregneno pyrazoles. 3,400,120, 9–3–68, Cl. 260—239.5.
- Frieder, Leonard P., to Gentex Corp. Simplified boat canopy. 3,399,687, 9–3–68, Cl. 135—6.
- Frielingsdorf, Hans, and M. Boonstoppel, to Shell Oil Co. Apparatus for forming bottles or similar containers from thermoplastic material, filling them with liquid and subsequently sealing them in one operation. 3,399,508, 9–3–68, Cl. 53—140.
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  - Brust, Bernard, Fryer, and Sternbach. 3,400,131.
- Fuell, Frederick J., F. G. Mattos, J. L .Fowler, and B. G. Parkins, to Fairey Engineering Ltd. Hydraulic sequential control systems. 3,399,601, 9–3–68, Cl. 91—36.
- Fujii, Takeshi: *See*—
  - Hirose, Isao, Funahashi, and Fujii. 3,399,956.
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  - Masaki, Sumi, Ohmori, Hoshino, and Fujiwara. 3,400,100.
- Fukamachi, Masahiko, to Nippon Electric Co. Ltd. Probability comparator. 3,400,370, 9–3–68, Cl. 340—172.5.
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- Fukuda, Junichi, S. Masamuue, Y. Susuki, and Y. Okabe, to Mitsubishi Petrochemical Co., Ltd. Production of high-purity benzene from cracked petroleum residues. 3,400,168, 9–3–68, Cl. 260—672.
- Fukumoto, Osamu, and Y. Atarashi, to Toyo Rayon Kabushiki Kaisha. Catalyst composition for polymerising alpha-olefins. 3,400,084, 9–3–68, Cl. 252—429.
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- Gagliano, Louis J.: *See*—
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- Gahle, Walter, to Firma Rheinmetall G.m.b.H. Spraying canister. 3,399,468, 9–3–68, Cl. 35—25.
- Galedrige, John J. Pool table with ballast. 3,399,890, 9–3–68, Cl. 273—6.
- Galimberti, Gianfranco. Machine for internal applications and machining in an endless tubular article made up of a thermoplastic material or the like. 3,400,033, 9–3–68, Cl. 156—514.
- Gallagher, Donald C., L. W. Haerther, J. A. Middleton, and E. G. Tuthill, to Collins Radio Co. Wire antenna extensible along calibrated support means. 3,400,402, 9–3–68, Cl. 343—723.
- Gallinger, Clyde T., to E. I. du Pont de Nemours and Co. Method for removing solid particulate materials from fused electrolytes. 3,400,060, 9–3–68, Cl. 204—60.
- Gardner, Jack H., and G. A. Crowe, to Johnson & Johnson. Dressing. 3,399,672, 9–3–68, Cl. 128—156.
- Gawron, Stanley A., to Addressograph-Multigraph Corp. Automatic toner concentrate detector. 3,399,652, 9–3–68, Cl. 118—637.
- Gebbia, Joseph S. Storage pallet for preassembled piano strings and pins. 3,399,588, 9–3–68, Cl. 84—197.
- Geiringer, Paul L., to American Hydrotherm Corp. Jet compressor. 3,399,511, 9–3–68, Cl. 55—86.
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- Gilbert, Everett E., and J. A. Otto, to Allied Chemical Corp. Di(N-methylcarbamates) of fluoroketone derivatives. 3,400,146, 9–3–68, Cl. 260—479.
- Giles, Algy F., Jr. Rotor-blade. 3,399,731, 9–3–68, Cl. 170—159.
- Gilles, Auguste, to Societe a Responsabilite Limitee dite: Gaz-Transport. Tank for liquefied gas. 3,399,800, 9–3–68, Cl. 220—15.
- Giorgini, Pietro. Detachable charger for automatic shotguns. 3,399,481, 9–3–68, Cl. 42—87.
- Gleich, Walter A., J. H. La Rochelle, and G. H. Riesser, to Shell Oil Co. Purification of alpha-methylidene alkenals. 3,400,161, 9–3–68, Cl. 260—601.
- Gloersen, Per, B. Gorowitz, and T. W. Karras, to General Electric Co. Inductive metal vaporiser. 3,400,241, 9–3–68, Cl. 219—10.65.
- Gluckstein, Martin E., E. B. Rifkin, and H. A. Beatty, to Ethyl Corp. Smoke generating compositions and method of use thereof. 3,400,082, 9–3–68, Cl. 252—305.
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- Gottschald, Rudolf, to A. Ehrenreich & Cie. Ball joints, especially for guides and steering gear, preferably in motor vehicles. 3,399,913, 9-3-68, Cl. 287—87.
- Gouget, Jacques M. Propelling pencil with an incorporated sharpening device. 3,399,945, 9-3-68, Cl. 401—50.
- Gould, Joseph C., M. C. Monck, and J. H. Lynch, to The B. F. Goodrich Co. Catheter and valve therefor. 3,399,677, 9-3-68, Cl. 128—349.
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- Graham, Harold L., and O. M. Kiel, to Esso Production Research Co. Method for propping a fracture. 3,399,727, 9-3-68, Cl. 166—42.
- Graham, John B., to Kimberly-Clark Corp. Pressure forming apparatus for making paper. 3,400,045, 9-3-68, Cl. 162—317.
- Grant, Colin K. L., to C. K. L. Grant, and G. C. B. Auger. Latticework components. 3,399,914, 9-3-68, Cl. 287—189.35.
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- Gray, James H. Trash-removal system. 3,399,518, 9-3-68, Cl. 56—28.
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- Hamling, Bernard H., to Union Carbide Corp. Process for producing metal nitride fibers, textiles and shapes. 3,399,979, 9-3-68, Cl. 23—347.
- Hammond, Clifton E., and H. R. Cline, to Champion Corp. Control systems for power rodder constructions. 3,399,415, 9-3-68, Cl. 15—104.3.
- Hammond, Clifton E., and H. R. Cline, to Champion Corp. Valve control means. 3,399,417, 9-3-68, Cl. 15—104.3.
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- Harman, Michael G., to The National Cash Register Co. Generalized logic circuitry. 3,400,379, 9-3-68, Cl. 340—172.5.
- Harp, Harry J., Jr., to Union Carbide Corp. Apparatus for making a hollow elongated plastic article. 3,399,427, 9-3-68, Cl. 18—14.

- Harra, David J., to Varian Associates. U-shaped magnetic circuit including three permanent magnets separated by pole pieces. 3,400,349, 9-3-68, Cl. 335—210.
- Harris, Daniel J., to Pratt & Whitney Inc. Gaging device including a probe having a plurality of concentric and co-extensive electrodes. 3,400,331, 9-3-68, Cl. 324—61.
- Harris, Martin H., J. W. Jennings, and F. M. Smith, to Gulf Research & Development Co. Method of plugging perforations in casings. 3,399,726, 9-3-68, Cl. 166—42.
- Harrison, Gerald L., to E. I. du Pont de Nemours and Co. Use of silicones to improve die-clicking of bonded nonwoven polyester fibrous sheets. 3,400,013, 9-3-68, Cl. 117—138.8.
- Harry, Nicholas G. Convertible sports equipment. 3,399,889, 9-3-68, Cl. 273—1.5.
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- Hartley, Nelson, to Hartley Controls Corp. Sand hopper. 3,399,466, 9-3-68, Cl. 34—167.
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- Hausmann, Erwin, to August Bilstein, KG. Hydraulic shock absorber assembly with parallel-connected gas spring and automatically controllable damping, particularly for motor vehicles. 3,399,882, 9-3-68, C. 267—64.
- Hawes, Alan B. Monorail train having articulated trucks. 3,399,629, 9-3-68, Cl. 104—118.
- Hawk, Elwin A., Sr., to Coast Metals, Inc. Powder spray torch. 3,399,835, 9-3-68, Cl. 239—85.
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- Hayakawa, Shigeru, T. Iguchi, and Y. Kasahara, to Matsushita Electric Industrial Co., Ltd. Electrical heating device. 3,400,252, 9-3-68, Cl. 219—504.
- Hayashi, Akira, to Asahi Kasei Kogyo Kabushiki Kaisha. Yarn package. 3,399,761, 9-3-68, Cl. 206—65.
- Hayashi, Junichi, and S. Tsukuma. Winding machine for winding yarns or the like materials into cheese or cones. 3,399,840, 9-3-68, Cl. 242—35.5.
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- Hegedus, Walter J., and C. A. Leyerle, Jr., to Farrel Corp. Apparatus for removing railroad wheels. 3,399,447, 9-3-68, Cl. 29—208.
- Hehn, Bruce A. Furniture construction. 3,399,926, 9-3-68, Cl. 297—457.
- Heidel, Klaus, A. Schick, H. Jenkner, and H.-E. Praetzel, to Chemische Werke Huls Aktiengesellschaft. Flame resistant unsaturated polyester resins containing a vinyl ether of a brominated phenol. 3,400,174, 9-3-68, Cl. 260—869.
- Hein, Richard D., to The General Tire & Rubber Co. Elastomeric energy absorber. 3,399,907, 9-3-68, Cl. 280—440.
- Heinzelman, Edward, Jr., to Oakite Products Inc. Conversion coating compositions and method. 3,400,021, 9-3-68, Cl. 148—6.1.
- Heist, C. H., Ohio Corp.: *See—*
  - Crowe, Andrew R., and Foster. 3,399,492.
- Heitmann, Herbert, to International Standard Electric Corp. Time scan network search. 3,400,224, 9-3-68, Cl. 179—18.
- Hell, Rudolf, to Dr.-Ing. Rudolf Hell Kommanditgesellschaft. Electrostatic telegraphic printer. 3,400,213, 9-3-68, Cl. 178—15.
- Helms, Thomas F., to Idex Corp. Method and apparatus for testing the pressure tightness of containers. 3,399,563, 9-3-68, Cl. 73—45.2.
- Hemrick, Philip J., R. P. Gremling, H. R. Mason, and M. F. Schreurs, to The General Tire & Rubber Co. Article having iridescent surface and method of making same. 3,400,036, 9-3-68, Cl. 161—2.
- Hendrick, Russell C., to Honeywell Inc. Lift and pitch control apparatus for aircraft. 3,399,849, 9-3-68, Cl. 244—77.
- Hendrickson, Otto, ½ to A. Lohbeck. Air operated sanding machine. 3,399,494, 9-3-68, Cl. 51—62.
- Henke, Alfred M., W. C. Offutt, and R. T. Sebulsky, to Gulf Research & Development Co. Hydrogenation of a dealkylated aromatic compound. 3,400,167, 9-3-68, Cl. 260—667.
- Henke, Gustave W., to Varian Associates. Encapsulated inductor with external adjustable means for selectively varying the inductance. 3,400,352, 9-3-68, Cl. 336—75.
- Henry, Robert R. Shaft adjustment apparatus and power transmission means. 3,399,582, 9-3-68, Cl. 74—571.
- Hercules Inc.: *See—*
  - Naff, John T. 3,400,070.
- Herman, Harvey. Cooling unit. 3,399,539, 9-3-68, Cl. 62—3.
- Herscovitch, William H. Convertible rail-highway tractor. 3,399,633, 9-3-68, Cl. 105—26.1.
- Hesston Mfg. Co., Inc.: *See—*
  - Rollins, Eugene C. 3,399,766.
- Hetmann, Richard, to Porsche, Dr. Ing., h.c.F., K.G., Firma. Drive unit for vehicles. 3,399,743, 9-3-68, Cl. 180—55.
- Hettinger, Donald M., to The Weatherproof Products Corp. Tilt-out sash window. 3,399,490, 9-3-68, Cl. 49—414.
- Hewlett-Packard Co.: *See—*
  - Spencer, Samuel F., and Mikkelsen. 3,399,974.
- Heymann, Hans, to Olympia Werke AG. Code conversion. 3,400,389, 9-3-68, Cl. 340—347.
- Heywood, Vincent E., D. H. Bushey, and W. A. Chapman, Jr., to United States Envelope Co. Apparatus for handling envelopes. 3,399,788, 9-3-68, Cl. 214—8.5.
- Hildebrandt, Richard D.: *See—*
  - Lewis, Robert A., and Hildebrandt. 3,400,061.
- Hildebrandt, Volker, to Telefunken Patentverwertungsgesellschaft m.b.H. Read/write circuit for dynamic information storage unit. 3,400,384, 9-3-68, Cl. 340—173.
- Hilgartner, George H., Jr.: *See—*
  - Sexstone, John H., and Hilgartner. 3,400,032.
- Hill, Clifford W. Hypodermic injector including a needle guide with pain desensitizing means. 3,399,675, 9-3-68, Cl. 128—215.
- Hill, Edward H.: *See—*
  - Caldwell, John R., and Hill. 3,400,108.
- Hills, Stanley, to Electric Storage Battery Co. Electrolytic process for preparing electrochemically active cadmium. 3,400,056, 9-3-68, Cl. 204—10.
- Hill, William F., to Joseph Lucas Industries Ltd. Battery charging systems. 3,400,318, 9-3-68, Cl. 320—41.
- Hilmer, Ralph H.: *See—*
  - Anderson, Gordon K., Evans, and Hilmer. 3,399,545.
- Hines, George E.: *See—*
  - Etchison, Gibson O., McDaniel, and Hines. 3,399,642.
- Hintz, Carman R.: *See—*
  - Johnson, Glenn W., Jr., Heenan, Ciccolella, and Hintz. 3,399,477.
- Hipperling, Edgar: *See—*
  - Doelz, Hans, Hipperling, and Seidel. 3,399,720.
- Hirose, Isao, K. Funahashi, and T. Fujii, to Teijin Ltd. Process for converting monovalent thallium compounds to trivalent thallium compounds. 3,399,956, 9-3-68, Cl. 23—23.
- Hirschfield, William A., to Dorr-Oliver, Inc. Screw feeder for feeding sewage sludge or the like to a combustion chamber. 3,399,637, 9-3-68, Cl. 110—8.
- Hodson, Cary M., to Textron Inc. Machine for generating toric surfaces. 3,399,496, 9-3-68, Cl. 51—124.
- Hoffman, Lewis C., to E. I. du Pont de Nemours and Co. Surface modified electrostatic enamel powders and method. 3,400,000, 9-3-68, Cl. 106—49.
- Hoffmann-La Roche Inc.: *See—*
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  - Berger, Leo, Stempel, Sternbach, and Wenis. 3,400,128.
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  - Wenner, Wilhelm, and Uskokovic. 3,400,119.
- Hofschneider, Josef, to Patentauswertung Vogelbusch Gesellschaft m.b.H. Processes for treating fluids with gases in a vessel. 3,400,051, 9-3-68, Cl. 195—142.
- Hogue, Ronald L. Lockout preventer for automotive vehicles. 3,399,554, 9-3-68, Cl. 70—262.
- Hojo, Takeshi, M. Fukano, and T. Tanabe, to Tokyo Keiki Seizosho Co., Ltd. Shock preventive means for nautical meters. 3,399,879, 9-3-68, Cl. 267—1.
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  - Clifford, Alfred T., and Hokanson. 3,400,079.
- Holden, Kenneth G., to Smith Kline & French Laboratories. Method for preparing 6,6-ethylene steroids. 3,400,136, 9-3-68, Cl. 260—397.4.
- Holder, John H. Magnetic protractor square. 3,399,458, 9-3-68, Cl. 33—93.
- Holle, Werner H., and R. Krelling, to Ernst Leitz, G.m.b.H. Focusing system for projectors. 3,399,595, 9-3-68, Cl. 88—24.
- Holm, Warren M., to Radium Chemical Co., Inc. Variable intensity neutron generator comprising intermeshing webs of beryllium foil and radium impregnated gold foil. 3,400,269, 9-3-68, Cl. 250—84.5.
- Holmberg, Bo F., and U. Kohlberg, to Aktiebolaget Hammars Mekaniska Verkstad. Lumber or board sorting apparatus. 3,399,768, 9-3-68, Cl. 209—125.

- Holstein, Richard, and H. Voigt, to Haniel & Lueg G.m.b.H. Multisection combustion grate with lateral sealing means. 3,399,662, 9–3–68, Cl. 126—176.
- Holtzberg, Frederic, and S. I. Methfessel, to International Business Machines Corp. Superconductor materials and devices. 3,400,350, 9–3–68, Cl. 335—216.
- Honeycutt, Don R., to Albritton Engineering Corp. Rod eye assembly. 3,399,786, 9–3–68, Cl. 212—58.
- Honeywell Inc.: *See*—
  - Ambrose, William J. 3,399,909.
  - Hendrick, Russell C. 3,399,849.
  - Maczko, William J., and Lethin. 3,400,259.
- Honigh, Christiaan G. F., to N.V. Koninklijke Nederlandsche Zoutindustrie. Method of liquefying chlorine by absorption in and desorption from a solvent. 3,399,537, 9–3–68, Cl. 62—17.
- Hood, John W.: *See*—
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- Hooker Chemical Corp.: *See*—
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  - Ludington, Ralph S. 3,400,102.
  - Mekjean, Matthew, and Sconce. 3,400,249.
- Hopkins, Leslie A., to Hovercraft Development Ltd. Air cushion supported vehicles with distributing duct within the cushion space. 3,399,744, 9–3–68, Cl. 180—128.
- Hope, William F.: *See*—
  - Lang, Ernest U., and Hope. 3,399,557.
- Hopper, John D., and F. B. Wells, to United States of America, Army. Flexible explosive comprising RDX, HMX or PETN and mixed plasticizer. 3,400,025, 9–3–68, Cl. 149—18.
- Hornfeck, Josef, and R. Bartolles, to Rheinmetall G.m.b.H. Firearm barrel comprising a breechblock displaceable transversely to the bore axis. 3,399,598, 9–3–68, Cl. 89—24.
- Horrom, Bruce W., to Abbott Laboratories. Tertiary 2,6-dihalo-isonicotinamide derivatives. 3,400,132, 9–3–68, Cl. 260—294.9.
- Horton, Clarence V. Portable garage. 3,399,686, 9–3–68, Cl. 135—1.
- Horton, John W., to Internationl Business Machines Corp. Two dimensional radiation scanner locating position by the time it takes a group of minority carriers to reach a terminal of the device. 3,400,273, 9–3–68, Cl. 250—211.
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  - Beausoleil, William F., Hoskinson, King, and Weber. 3,400,372.
- Hosoda, Yutaka, to Mitsui Kagaku Kogyo Kabushiki Kaisha. Metallized polyolefin dyeing with 1,4-dihydroxy or 1,4,5,8 tetrahydroxy-halogenated anthraquinones substituted in the 2 position by phenoxy, alkylimino, anilino and N-alkylanilino groups. 3,399,952, 9–3–68, Cl. 8—31.
- Houbart, Yvan, to Centre National de Recherches Metallurgiques. X-ray spectrometry apparatus having both interchangeable specimens and radiation sources. 3,400,265, 9-3-68, Cl. 250—49.5.
- Houdek, Ronald J. Reloadable shotgun shell device. 3,399,622, 9–3–68, Cl. 102—42.
- Hough, Lewis M., Jr., K. E. Humbert, Jr., and J. R. Huffstetler, to Wix Corp. Impregnated fiber air filter and method of making same. 3,399,516, 9–3–68, Cl. 55—487.
- House, William T., M. A. Segura, W. L. Senn. Jr. and G. A. Byars, to Esso Research and Engineering Co. Coated cuprous halide sorbents and a method for sorbing ligands. 3,399,513, 9–3–68, Cl. 55—74.
- Housey, Lawrence J., Jr.: *See*—
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  - Hunt, Rowland D. 3,399,644.
- Howard, Charles L., to General Electric Co. Jet pumping system for a nuclear reactor. 3,400,047, 9–3–68, Cl. 176—56.
- Howard, John F., and H. J. Lynch., to Canadian General Electric Co., Ltd. Current limiting fuse. 3,400,235, 9–3–68. Cl. 337—229.
- Howe, Milton A., Jr., to W. R. Grace & Co. Process and apparatus for simultaneously heat sealing and heat shrinking film. 3,399,506, 9–3–68, Cl. 53—39.
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- Howson, W. H., Limited: *See*—
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- Hoye, Peter A. T., and P. Sunderland, to Albright & Wilson (Mfg.) Ltd. Method of preparing aliphatic tin halides. 3,400,141, 9–3–68, Cl. 260—429.7.
- Hryniowski, Bohdan D. Distributors of material. 3,399,771, 9–3–68, Cl. 209—245.
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- Huebner, George J., Jr., and D. M. Teague, to Chrysler Corp. Turbine engine cleaning. 3,400,017, 9–3–68, Cl. 134—7.
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  - Hough, Lewis M., Jr., Humbert, and Huffatetler. 3,399,516.
- Humbert, Kingsley E., Jr.: *See*—
  - Hough, Lewis M., Jr., Humbert, and Huffstetler. 3,399,516.
- Hummel, Gail. Truck body. 3,399,794, 9–3–68, Cl. 214—394.
- Humphrey, Bingham J., I. Zelitch, and P. J. C. Kuiper. Method of closing plant stomata with alkenyl succinic acids. 3,399,990, 9–3–68, Cl. 71—113.
- Hunt, Rowland D., to Hovercraft Development Ltd. Gas-cushion vehicles. 3,399,644, 9–3–68, Cl. 114—67.
- Hunter, Henry M., and R. W. Bussard, to TRW Inc. Gas core reactor propulsion system. 3,399,534, 9–3–68, Cl. 60—203.
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- Iida, Yoshio: *See*—
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- Ikeda, Nobuhisa, to Kabushiki Kaisha Tone Boring. Continuous feeding and rotating device for bore drilling rods. 3,399,735, 9–3–68, Cl. 173—149.
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- Illinois Lock Co., The: *See*—
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- Illinois National Bank and Trust Co., *See*—
  - Ipsen, Harold N. (decd.), by The Illinois National Bank and Trust Co. 3,399,875.
- Imamura, Yukio. High speed recoilless chisel device. 3,399,441, 9–3–68, Cl. 29—81.
- Imperial-Rundfunk-und Fernseewerk G.m.b.H.: *See*—
  - Oloff, Edwin. 3,400,345.
- Imura, Shinichi, and Y. Tamai, to Echiru Kagaku Kogyo Kabushiki Kaisha. Preparation of equilibrated tetraalkyl lead mixtures. 3,400,142, 9–3–68, Cl. 260—437.
- Industrial Filter & Pump Mfg. Co.: *See*—
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- Industrie-Werke Karlsruhe Aktiengesellschaft: *See*—
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- Injeski, Stanley G., to Worldsbest Industries, Inc. Retractible clothes rack. 3,399,783, 9–3–68, Cl. 211—103.
- Inose, Fumiyuki, to Kabushiki Kaisha Hitachi Seisakusho. Multiplier. 3,400,333, 9–3–68, Cl. 328—160.
- Insolio, Thomas A., and R. P. Detorre, to The Fletcher-Terry Co. Glass cutting head. 3,399,586, 9–3–68, Cl. 83—8.
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  - Dym, Herbert, and Lynch. 3,400,272.
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  - Kidgell, Davis J., and Besha. 3,399,649.
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  - Edwin, Edson L. 3,400,225.
- Ipsen, Harold N., deceased (by The Illinois National Bank and Trust Co., executor), to Alco Standard Corp. Heat treating furnace. 3,399,875, 9–3–68, Cl. 263—36.

- Isaji, Toshio, to Kabushiki Kaisha Hoyu Shokai. Method of simultaneously permanently dyeing and waving human hair. 3,399,682, 9–3–68, Cl. 132—7.
- Ishman, Neal H., to Melpar, Inc. Wide band voltage controlled oscillator. 3,400,338, 9–3–68, Cl. 331—117.
- Isoda, Haruo, to Yamaoka, Tadao. Automatic noncompression starting device. 3,399,659, 9–3–68, Cl. 123—182.
- Isomaa, Erik. Electric steam bath stove. 3,400,248, 9–3–68, Cl. 219—367.
- Itazaki, Hiroshi: *See*—
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- Ivanchich, Peter G., to Ford Motor Co. Manually controlled multiple ratio power transmission mechanism for use with an automative vehicle driveline. 3,399,580, 9–3–68, Cl. 74—331.
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- Jackson, George O.: *See*—
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- Jackson, Norman C., to The Standard Products Co. Method of manufacturing strip structures. 3,399,448, 9–3–68, Cl. 29—415.
- Jacob, Norman B. Adapter for camera. 3,400,261, 9–3–68, Cl. 240—1.3.
- Jacoby, John H. Method for making a heat dissipator. 3,399,444, 9–3–68, Cl. 29—157.3.
- Jade Corp., The: *See*—
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- Jaffe, Nissen A. Combination credit card. 3,399,473, 9–3–68. Cl. 40—2.2.
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- Jeep, Charles W., Jr., and E. W. Niemeyer, to ACF Industries, Inc. In-the-line fuel pump. 3,399,627, 9–3–68, Cl. 103—118.
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  - Harris, Martin H., Jennings, and Smith. 3,399,726.
- Jensen, Lee. Isometric exercise cradle. 3,399,888, 9–3–68, Cl. 272—81.
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- Johns-Manville Corp.: *See*—
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- Johnson, Arthur C. W., to Combustion Research Corp. Low intensity radiant heater system and burner therefor. 3,399,833, 9–3–68, Cl. 237—53.
- Johnson, Eugene P., Jr., and H. W. A. Vandermeer, to Dynamics Research Corp. Electrooptical shaft encoder. 3,399,590, 9–3–68, Cl. 88—14.
- Johnson, Gary L., and R. M. Shryock to E.T.M. Corp. Finger-held tools. 3,399,456, 9–3–68, Cl. 30—232.
- Johnson, Glenn W., Jr., S. A. Heenan, J. A. Ciccolella, and C. R. Hints, to Elastic Stop Nut Corp. of America. Reflectorized indicia. 3,399,477, 9–3–68, Cl. 40—130.
- Johnson & Johnson: *See*—
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- Johnson, Michael P., to United States Envelope Co. Multiple pocket envelope. 3,399,823, 9–3–68, Cl. 229—72.
- Jones, Dennis G., and G. E. Greubel, to Kennametal Inc. Cutting insert. 3,399,442, 9–3–68, Cl. 29—95.
- Jones, Ernest W., J. S. Mathias, and V. R. Weiss, to Sperry Rand Corp. Modular system for a continuous electrolytic deposition process for wire. 3,399,685, 9–3–68, Cl. 134—64.
- Jones, Loyd W., to Pan American Petroleum Corp. Scale inhibitor composition and method. 3,400,078, 9–3–68, Cl. 252—180.
- Jones, Wilfred, and W. Edmondson, to Cyprane Ltd. Volatile anaesthetic vaporising apparatus. 3,399,673, 9–3–68, Cl. 128—188.
- Jorgensen, Arnold J., and L. O. Anderson, to Burroughs Corp. Electrical tachometer circuit having digital output. 3,400,385, 9–3–68, Cl. 340—174.1.
- Joslyn Mfg. and Supply Co.: *See*—
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- Joyce, Ronald W., E. E. Billingslea, L. C. Sage, and R. K. Marshall, to Victor Comptometer Corp. Air operated projectile firing apparatus. 3,399,596, 9–3–68, Cl. 89—7.
- Judd Ringer Corp.: *See*—
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- Jurkiewicz, Walter S. Mechanical football center training device. 3,399,892, 9–3–68, Cl. 273—55.
- Justus, Edgar J., to Beloit Corp. Headbox flow control apparatus. 3,400,044, 9–3–68, Cl. 162—343.
- Kabushiki Kaisha Hitachi Seisakusho: *See*—
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- Kabushiki Kaisha Hoyu Shokai: *See*—
  - Isaji, Toshio. 3,399,682.
- Kabushiki Kaisha Tone Boring: *See*—
  - Ikeda, Nobuhisa. 3,399,785.
- Kahmann, Claud E. Swimming pool system. 3,399,540, 9–3–68, Cl. 62—98.
- Kahn, Marvin M.: *See*—
  - Mason, James N., and Kahn. 3,400,039.
- Kaiser Aluminum & Chemical Corp.: *See*—
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  - Smith, Arthur D., and Langewis. 3,399,558.
- Kalberg, John N.: *See*—
  - Rogovin, Lawrence, Brawn, and Kalberg. 3,400,147.
- Kalous, Michael J., deceased, by M. L. Feuer, executor and trustee, to Pullman Inc. Production of 68 to 70% nitric acid. 3,399,965, 9–3–68, Cl. 23—162.
- Kanoh, Teruchika: *See*—
  - Matsuo, Ryota, Matsng, and Kanoh. 3,400,184.
- Kaplan, David. Body binder. 3,399,669, 9–3–68, Cl. 128—78.
- Karr, Willis F., to Federal Engineering Co., Inc. Moving sidewalk. 3,399,758, 9–3–68, Cl. 198—181.
- Karras, Thomas W.: *See*—
  - Gloersen, Per, Gorowitz, and Karras. 3,400,241.
- Kartashov, Ilya I.: *See*—
  - Zhukov, Leonid A., Kartashov, Pankratova, and Ryzhov. 3,400,826.
- Kasahara, Yukio: *See*—
  - Hayakawa, Shigeru, Iguchi, and Kasahara. 3,400,252.
- Kato, Jun: *See*—
  - Minyu, Toshikazu, Kato, Koguchi, and Kobayashi. 3,400,209.
- Katona, Frank. Stretching form for fur garments and the like. 3,399,815, 9–3–68, Cl. 223—68.
- Kauer, George C., Jr., and L. E. Brooks, to Air Techniques, Inc. Process and apparatus for dehydrating compressed gas. 3,399,510, 9–3–68, Cl. 55—33.
- Kautsky, George J., to Chevron Research Co. Detergent gasoline containing straight-chain tertiary alkyl attached primary amines. 3,399,982, 9–3–68, Cl. 44—69.
- Kawasaki, Tatsuo, and H. Hasegawa, to Matsushita Electronics Corp. Hall-effect device. 3,400,354, 9–3–68, Cl. 338—32.
- Kaye, Michael C., and C. J. Berry, to Freightliner Corp. Load cell. 3.399,564, 9–3–68, Cl. 73—141.
- Kazlauskas, Gasparas. Welding head. 3,400,287, 9–3–68, Cl. 219—60.
- Keane, Robert S., to Victor Equipment Co. Control valve including independently operable pilot valves. 3,399,689, 9–3–68, Cl. 137—220.
- Keating, John H., to Standard International Corp. Method of making a composite metal article. 3,400,010, 9–3–68, Cl. 117—93.3.
- Kelite Corp.: *See*—
  - McDonald, Louis. 3.400,023.
- Keller, Dwight P., to Reynolds Metals Co. Pot shell for fused bath electrolysis. 3.400,068, 9–3–68, Cl. 204—243.
- Kelly, William F. Anchors for stressed cables. 3,399,434, 9–3–68, Cl. 24—126.
- Kelly, William F. Apparatus for post-tensioning prestressed concrete. 3,399,437, 9–3–68, Cl. 25—118.
- Kelly, William F. Jacking apparatus for post-tensioning concrete. 3 399,865, 9–3–68, Cl. 254—29.
- Kendall Co., The: *See*—
  - Olson, Arthur R. 3,400,188.
  - Samour, Carlos M., and Satas. 3,400,103.
- Kendall Co., The: *See*—
  - Satas, Donatas. 3,399,671.
- Kenmore, Herbert. Apparatus for treating wire and rods. 3,399.702, 9–3–68, Cl. 140—1.
- Kennametal Inc.: *See*—
  - Jones, Dennis G., and Greubel. 2,399,442.
- Kenner Products Co.: *See*—
  - Kuhn, James O., and Rave. 3,399,944.
- Kessler, Alec, and T. Rosen. Continuous towel ironing structure. 3,399,471, 9–3–68, Cl. 38—2.
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  - Block, Dale G., Bailey, and Towle. 3,400,152.
- Kidgell, David J., and F. A. Besha, to International Business Machines Corp. Apparatus for making saw blades. 3,399,649, 9–3–68, Cl. 118—47.
- Kiel, Othar M.: *See*—
  - Graham, Harold L., and Kiel. 3,399,727.
- Kielsmeier, Elwood W., and W. D. Paynter, to Oscar Mayer & Co., Inc. Apparatus for forming collagen fiber coated products. 3,399,423, 9–3–68, Cl. 17—35.
- Kimberly-Clark Corp.: *See*—
  - Graham, John B. 3,400,045.
- Kimoto, Takeshi. Traveller for ring spinning and twisting machines. 3,399,497, 9–3–68, Cl. 57—125.
- King, Lewis E.: *See*—
  - Beausoleil, William F., Hoskinson, King, and Weber. 3,400,372.
- Kirchof, Fred. Social correspondence card construction. 3,399,825, 9–3–68, Cl. 229—92.8.
- Kita, Donald A., to Chas. Pfizer & Co., Inc. Medical diagnostic method. 3,399,971, 9–3–68, Cl. 23—230.
- Klalber, Walter, to Elbatainer Kunststoff- und Verpackungs G.m.b.H. & Co. Multiple-container units. 3,399,663, 9–3–68, Cl. 126—262.
- Klanes, Michael C., to Delta Engineering Corp. Counting machine with adjustable article channeling mechanism. 3,399,756, 9–3–68, Cl. 198—39.

Klessig, Ernst F., and P. D. Hancock, to Racine Hydraulics & Machinery, Inc. Impact tools. 3,399,602, 9–3–68, Cl. 91—235.
Kline, Evans L., to United States of America, Navy. System and method for obtaining accurate tactical navigation. 3,400,399, 9–3–68, Cl. 343—112.
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  Minyu, Toshikazu, Kato, Koguchi, and Kobayashi. 3,400,-209.
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Kohnle, Kenneth J., R. L. Auer, and D. M. Green, to Bristol-Myers Co. Agglomeration of smaller pharmaceutical particles into larger microspherules and enteric-coating thereof. 3,400,185, 9–3–68, Cl. 264—117.
Koizumi, Masaru, to Mansei Kogyo Kabushiki Kaisha. Fuel control mechanism in liquefied gas fudled lighter. 3,399,-951, 9–3–68, Cl. 431—344.
Koizumi, Takao, to Teijin Ltd. Process for the preparation of low torque crimped textile yarn. 3,399,524, 9–3–68, Cl. 57—157.
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Kopp, Jean E. Bearing mountings for rollers in continuously variable ratio friction drives. 3,399,934, 9–3–68, Cl. 308—15.
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  Bestian, Herbert, and Korbanka. 3,400,089.
Korte, Willard H., to Tasco Sales, Inc. Camera mount optical instruments. 3,399,612, 9–3–68, Cl. 95—12.
Koyano, Yutaka, to Kurashiki Rayon Co., Ltd. Method of manufacturing synthetic fibers of polyvinyl alcohol having high abrasion resistance. 3,400,191, 9–3–68, Cl. 264—210.
Krahn, Hans-Joachim, to Raytheon Co. Solid state integrated periodic structure for microwave devices. 3,400,298, 9–3–68, Cl. 315—3.5.
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  Echard, Rollan R. D. J., and Krait. 3,399,624.
Kramer, Kenneth C., D. M. Archibald, and H. N. Tobie, to Lear Siegler, Inc. Automatic landing approach control system for aircraft. 3,399,850, 9–3–68, Cl. 244—77.
Kramer, Max J., to Aluminum Co. of America. Transductor pulse-time control and divider system. 3,400,260, 9–3–68, Cl. 235—196.
Kraut, Oscar E. Method of and means for loud speaker sound wave distribution. 3,400,217, 9–3–68, Cl. 179—1.
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  Holle, Werner H., and Krelling. 3,399,595.
Kreis, Philipp. Gas or liquid fuel fired space heater. 3,399,-661, 9–3–68, Cl. 126—118.
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Kreutel, Randall W., Jr., to Sylvania Electric Products, Inc. Flush mounted coaxial horn antenna. 3,400,404, 9–3–68, Cl. 343—784.
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  Winkler, Alfred, Bammelsberger, Krobel, and Wilsch. 3,399,842.
Krtous, George F., and F. L. Weninger, to Bell & Howell Co. Take-up reel having variably torqued sprocket ring. 3,399,-845, 9–3–68, Cl. 242—74.
Krug, John A. K., Jr., to ACF Industries, Inc. Floor securing means. 3,399,636, 9–3–68, Cl. 105—422.
Krumreich, Charles L., and E. A. Mills, to Bell Telephone Laboratories, Inc. Hand telephone set. 3,400,226, 9–3–68, Cl. 179—100.
Krumtinger, Robert T., to Westinghouse Air Brake Co. Transmission shift indicator. 3,399,577, 9–3–68, Cl. 74—15.84.
Kubinski, Ronald J., and D. W. Hagemann, to Sundstrand Corp. Piston return mechanism. 3,399,628, 9–3–68, Cl. 103—162.
Kuboyama, Jun: *See—*
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Kugler, Emanuel. Plastic bag. 3,399,822, 9–3–68, Cl. 229—62.5.
Kuhn, James O., and K. B. Rave, to Kenner Products Co. Toy movie projector. 3,399,944, 9–3–68, Cl. 352—128.
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Kujawa, Francis M., and B. O. Schoepfle, to Hooker Chemical Corp. High density polyurethane foams. 3,400,085, 9–3–68, Cl. 260—2.5.
Kulick, Russell J.: *See—*
  D'Errico, Michael J., and Kulick. 3,400,117.
Kunkel, Lorenz V.: *See—*
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Kurtz, John. Coupling device for plastic-lined pipe. 3,399,908, 9–3–68, Cl. 285—55.
Kurzwell, Fred, Jr., to International Business Machines Corp. Thermoplastic recording medium. 3,400,382, 9–3–68, Cl. 340—173.
Kuschel, Konrad, to IFE-Gesellschaft fur Maschinen-und Apparatebau Dipl. Ing. Sag & Co. Circuit arrangement for providing pulses in determined phase relation to each other. 3,400,316, 9–3–68, Cl. 318—114.
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Lampani Antonio, M. Colombo, and G. B. Margola, to Societa Ceramica Italiana Richard-Ginori S.p.A. Abrading apparatus for finishing plates. 3,399,498, 9–3–68, Cl. 51—145.
Lamson & Sessions Co., The: *See—*
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  Breed, Arthur R. 3,399,589.
  Breed, Arthur R., and Anderson. 3,399,705.
Landers, Don B., and M. R. Richardson, to Oil States Rubber Co. Dual joint. 3,399,605, 9–3–68, Cl. 92—180.
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Lang, Ernest U., and W. F. Hope, to National-Standard Co. Apparatus for extruding a relatively soft metal sheath onto a hard metal wire. 3,399,557, 9–3–68, Cl. 72—258.
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Lapeyre, James M., R. F. Couret, and G. L. Fougere, to J. M. Lapeyre. Broadcast apparatus for position determining ssyetm. 3,440,398, 9–3–68, Cl. 343—106.
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  Lapeyre, James M., Couret, and Fougere. 3,440,398.
Larrick, Linda C.: *See—*
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  Bowling, Raymond E., Laurer, and Montgomery. 3,400,375.
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Lawrence, Owen N., to Joseph Lucas (Industries) Ltd. Fuel flow control apparatus for gas turbine engines. 3,399,530, 9–3–68, Cl. 60—39.28.
Le Bus Royalty Co.: *See—*
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Le Bus, Franklin L., Sr., to Le Bus Royalty Co. Antiharmonic cable spooling method and apparatus therefor. 3,399,846, 9–3–68, Cl. 242—117.
Le Duc, Joseph A. M., to Pullman Inc. Electrode including non-metallic substrate. 3,400,019, 9–3–68, Cl. 136—120.
Le May, Christopher A. G., to Electric & Musical Industries Ltd. Pattern sensing devices. 3,400,368, 9–3–68, Cl. 340—146.3.
Le Roy, Gene, to Union Carbide Corp. Method for the permanent compression of a sheet of flexible polyurethane foam. 3,400,196, 9–3–68, Cl. 264—321.
Le Voy's Inc.: *See—*
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Lea, Engene D.: *See—*
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Lear Siegler, Inc.: *See—*
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Lear Jet Industries, Inc.: *See—*
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Lear, William P., and Auld, to Lear Jet Industries, Inc. Combined radio and magnetic tape player. 3,400,227, 9–3–68, Cl. 179—100.11.
Lee, Charles A., and T. S. Bartley, to Canadian Internaitonal Paper Co. Sheet handling method and apparatus. 3,399,387, 9–3–68, Cl. 83—99.
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Lefevre, Lloyd E., R. J. Mathieson, and F. E. Romesberg, to The Dow Chemical Co. Process for preparing filamentary microtapes of labyrinthian cross section. 3,400,193, 9–3–68, Cl. 264—288.
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  Yoder, John R., Leftwich, and Fisher. 3,400,266.
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  Fan, Hsing Y., Rader, Legator, and Larrick. 3,400,200.
Lehto, Eric. Protective cover for liquefied petroleum gas systems. 3,399,553 9–3–68, Cl. 70—158.
Leitz, Ernst, G.m.b.H.: *See—*
  Holle, Werner H., and Krelling. 3,399,595.
Lemelson, Jerome H. Apparatus for surface forming materials. 3,399,425, 9–3–68, Cl. 18—10.
Lemens, Donald J.: *See—*
  Congdon, George L., and Lemens. 3,399,618.
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Leonhart, Charles J., to The Nuarc Co. Photographic machine. 3,399,594, 9–3–68, Cl. 88—24.
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  Vroom, Harold B., and Lepak. 3,400,255.
Lepelletier, Pierre A. G., to Societe Anonyme Francaise du Ferodo. Volume controlling means for hydraulic brakes. 3,399,748, 9–3–68, Cl. 188—152.
Lethin, Walter R.: *See—*
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Lettieri, John, to International Business Machines Corp. High speed astable/monostable device. 3,400,280, 9–3–68, Cl. 307—286.
Levine, Ralph, to Columbian Carbon Co. Selective hydrogenation of cyclododecatriene. 3,400,165, 9–3–68, Cl. 260—666.
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  Willcox, Frederick P., Smith, and Levitt. 3,400,392.
Levy, William G. Artist's bench. 3,399,925, 9–3–68, Cl. 297—156.
Lewicki, Artur. Flexible extension for socket wrenches of ratchet type. 3,399,584, 9–3–68, Cl. 81—177.
Lewis, Charles T. Cable grip support. 3,399,853, 9–3–68, Cl. 248—60.
Lewis, Robert A., and R. D. Hildebrandt, to Kaiser Aluminum & Chemical Corp. Electrolytic cell for production of aluminum and method of making the same. 3,400,061, 9–3–68, Cl. 204—67.
Leyerle, Charles A., Jr.: *See—*
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Lindabury, Tryon S., Sr., and B. M. Mahon, to Lockheed Aircraft Corp. Power transmission mechanism. 3,399,578, 9–3–68, Cl. 74—89.21.
Lindner, Ernst: *See—*
  Enrhart, Gustav, Lindner, and Ott. 3,340,155.
Ling-Temco-Vought, Inc.: *See—*
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Linsdell, Ronald H.: *See—*
  Usher, John D., and Linsdell. 3,399,708.
Lippmann, Irwin, to A. H. Robins Co., Inc. Compressible sustained release pharmaceutical tablet lipid-colloidal silica gel matrix fragment granules. 3,400,197, 9–3–68, Cl. 424—21.
Liska, Erich, to Payer-Lux Eduard Payer. Mounting means for the lower reciprocable bolt blade of a cutter head for a dry shaver. 3,399,464, 9–3–68, Cl. 30—43.92.
Litchard, Alexander. Automatic packaging machine. 3,399,507, 9–3–68, Cl. 53—59.
Littler, Clarence A., to E. I. du Pont de Nemours and Co. Freeze-resistant pesticidal composition. 3,399,991, 9–3–68, Cl. 71—120.
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  Conley, Robert F., and Lloyd. 3,399,960.
Locke, Charles R.: *See—*
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  Lindabury, Tryon S., Sr., and Mahon. 3,399,578.
Lodi, Robert A. Cigar nib. 3,399,681, 9–3–68, Cl. 131—189.
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Long, Eric L., to Cheery Electrical Products Corp. Snap-action switch. 3,400,234, 9–3–68, Cl. 200—67.
Longford, Charles G.: *See—*
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Looman, Johannes, and F. Striepe, to Zahnradfabrik Friedrichshafen Aktiengesellschaft. Gear hobbing machine. 3,399,-599, 9–3–68, Cl. 90—8.
Loria, Walter J., and J. Suhre. Liquid agitating device. 3,399,-869, 9–3–68, Cl. 259—114.
Love, Douglas S., to The Express Injector Co. Ltd. Protecting holders. 3,399,759, 9–3–68, Cl. 206—1.
Lovinger, Daniel, and F. P. Eppert, to General Electric Co. Ballast transformer system for lamps. 3,400,299, 9–3–68, Cl. 315—97.
Lucas, Elbert J.: *See—*
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  Gilbert, Brian. 3,399,658.
  Hill, William F. 3,400,318.
  Lawrence, Owen N. 3,399,529.
  Lawrence, Owen N. 3,399,530.
  Parkes, Eric B. 3,400,346.
  Skinner, Robert T. J. 3,399,625.
  Skinner, Robert T. J. 3,399,626.
  Warne, Eugene H. 3,399,528.
  Wright, John T. M. 3,399,531.
Lucas, Malcolm B., to The Proctor & Gamble Co. Delayed opening dispenser. 3,399,806, 9–3–68, Cl. 222—546.
Ludington, Ralph S., to Hooker Chemical Corp. Process for preparing a phosphonated polyester resin. 3,400,102, 9–3–68, Cl. 260—75.
Ludwig, Bernard J.: *See—*
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Luker, Jackson M. Foil bake pan with heat tube. 3,399,858, 9–3–68, Cl. 249—117.
Lundgren, Edward S. Disposable cholangiorgraphy catheter. 3,399,668, 9–3–68, Cl. 128—2.
Lusher, Kenneth G., to Owens-Illinois, Inc. Electrical printing methods and apparatus. 3,399,611, 9–3–68, Cl. 95—1.7.
Lynch, Henry J.: *See—*
  Howard, John F., and Lynch. 3,400,235.
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  Gould, Joseph C., Monck, and Lynch. 3,399,677.
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  Dym, Herbert, Horton, and Lynch. 3,400,271.
Lynch, Robert J.: *See—*
  Dym, Herbert, and Lynch. 3,400,272.
Macaluso, Michael, Jr., and J. A. Corsetti. Protector or guard for a glass containing an iced drink. 3,399,780, 9–3–68, Cl. 210—469.
Maciejowski Tadeuoz W.: *See—*
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MacKenzie, Fred T., and H. J. Tabbut, to United Shoe Machinery Corp. Machines for operating on shoe parts. 3,399,-410, 9–3–68, Cl. 12—1.
Macys, Albert, and R. Marinace, to Sperry Rand Corp. Magnetic reed switch. 3,400,347, 9–3–68, Cl. 335—151.
Maczko, William J., and W. R. Lethin, to Honeywell, Inc. Multi-function adder including multi-stage carry chain register with conditioning means. 3,400,259, 9–3–68, Cl. 235—166.
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  Bracken, Robert C., Lea, Jobe, and Maddox. 3,399,542.
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  Pecksen, Otto, Ziolkowski, and Madlener. 3,399,620.
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Magee, Kenneth L., to J. I. Case Co. Harvester header. 3,399,-517, 9–3–68, Cl. 56—17.
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Malick, Franklin S. Powered unicycle. 3,399,742, 9–3–68, Cl. 180—21.
Malik, Marvin J., to General Motors Corp. Stirling cycle drive for an electrokinetic transducer. 3,400,281, 9–3–68, Cl. 310—2.
Maltner, Heinrich, Gmbh: *See—*
  Rabe, Peter. 3,399,949.
Manger, Willem H.: *See—*
  Zuiderweg, Frederik J., and Manger. 3,399,870.
Mann, John P.: *See—*
  Fox, Charles H., and Mann. 3,399,532.
Mansei Kogyo Kabushiki Kaisha: *See—*
  Koizumi, Masaru. 3,399,951.
March, Franz. Buckle, particularly for a skiing boot. 3,399,-430, 9–3–68, Cl. 24—70.
Marconi Co. Ltd., The: *See—*
  Rainger, Peter, and Davies. 3,400,211.
  Shone, Arthur B. 3,400,339.
Margola, Gianni B.: *See—*
  Lampani, Antonio, Colombo, and Margola. 3,399,498.
Marinace, Richard: *See—*
  Macys, Albert, and Marinace. 3,400,347.
Marker, Roy C., to Air Reduction Co. Graphite cloth heating element clamped on bus bars. 3,400,258, 9–3–68, Cl. 219—541.
Marks, Raymond. Bait box. 3,399,484, 9–3–68, Cl. 43—55.
Marshall, Robert K.: *See—*
  Joyce, Ronald W., Billingslea, Sage, and Marshall. 3,399,-596.
Martin, Alan. Portable rivet setting tool. 3,399,561, 9–3–68, Cl. 72—391.
Martin, Jerald R. Measuring instrument. 3,399,459, 9–3–68, Cl. 33—111.

Martin-Marietta Corp. : *See*—
  Richards, Edward F., Depperman, and McKenzie. 3,399,829.
  Westerman, William J., Jr. 3,399,688.
Masaki, Sumi, T. Ohmori, T. Hoshino, and Y. Fujiwara to Nippon Oil Co., Ltd. Process for the production of saturated carbonyl compounds from unsaturated hydrocarbons. 3,400,160, 9–3–68, Cl. 260—597.
Masamuue, Shinobu : *See*—
  Fukuda, Junichi, Masamuue, Suzuki, and Okabe. 3,400,168.
Maschinenfabrik Reinhausen Gebruder Scheubeck K.G. : *See*—
  Bleibtreu, Alexander. 3,400,231.
Maslow, Philip H., to W. R. Grace & Co. Sealing compositions comprising halogenated butyl rubber, drying oil and liquid polyisobutylene. 3,400,090, 9–3–68, Cl. 260—23.7.
Mason, Hugh R. : *See*—
  Hemrick, Philip J., Gremling, Mason, and Schreurs. 3,400,036.
Mason, James N., and M. M. Kahn, to American Biltrite Rubber Co., Inc. Composite carpet matting and method of making the same. 3,400,039, 9–3–68, Cl. 161—63.
Mason, Ronald F., and J. L. Van Winkle, to Shell Oil Co. Bicyclic heterocyclic sec- and tert-phosphines. 3,400,163, 9–3–68, Cl. 260—606.5.
Maspero, Pierluigi. Joint for converging supporting elements, particularly for corner structures of furniture. 3,399,912, 9–3–68, Cl. 287—54.
Mathey, Charles J., to Ford Motor Co. Multiple function circuit controller and circuit. 3,400,232, 9–3–68, Cl. 200—18.
Mathias, Joseph S. : *See*—
  Jones, Ernest W., Mathias, and Weiss. 3,399,685.
Mathieson, Robert J. : *See*—
  Lefevre, Lloyd E., Mathieson, and Romesberg. 3,400,193.
Mathis, Clyde H., to Phillips Petroleum Co. Rubber polymer treatment process. 3,400,109, 9–3–68, Cl. 260—85.1.
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Matsuo, Ryota, T. Matsugu, and T. Kanoh, to Esso Research and Engineering Co. Process and apparatus for preparing film from thermoplastic resins. 3,400,184, 9–3–68, Cl. 264—89.
Matsushita Electric Industrial Co., Ltd. : *See*—
  Hayakawa, Shigeru, Iguchi, and Kasahara. 3,400,252.
  Nishimoto, Kazuyuki, and Iida. 3,399,667.
  Ouchi, Hiromu, and Nishida. 3,400,076.
Matsushita Electronics Corp. : *See*—
  Kawasaki, Tatsuo, and Hasegawa. 3,400,354.
Matthies, Alan A., to Controls Co. of America. Valve with bimetal operator means. 3,399,543, 9–3–68, Cl. 62—202.
Mattos, Frank G. : *See*—
  Fuell, Frederick J., Mattos, Fowler, and Parkins. 3,399,601.
Maulding, Donald R., to American Cyanamid Co. Generation of light by the reaction of oxalic-type amides with hydroperoxides in the presence of a fluorescent compound. 3,400,080, 9–3–68, Cl. 252—188.3.
Maykuth, Daniel J., E. P. Bergeron, and J. H. Pearson, to Allied Chemical Corp. Tungsten-rhenium alloys. 3,399,981, 9–3–68, Cl. 29—182.2.
McAllister, Charles G., to Columbian Carbon Co. Selective hydrogenation of cyclododecatriene to cyclododecene. 3,400,164, 9–3–68, Cl. 260—666.
McAllister, Charles G., to Columbian Carbon Co. Selective hydrogenation of cyclododecatriene. 3,400,166, 9–3–68, Cl. 260—666.
McBain, John B. : *See*—
  Fearing, Ralph B., Walsh, and McBain. 3,400,178.
McBeth, Lloyd T., to Rexall Drug and Chemical Co. Solvent recovery method. 3,400,053, 9–3–68, Cl. 203—69.
McCormick, Daniel F. : *See*—
  Alexander, Charles F., Jr., and McCormick. 3,399,647.
McCormick, Andrew J., and W. F. Woodan. Football practice reaction mechanism. 3,399,891, 9–3–68, Cl. 273—55.
McCullough, Duoyne L. : *See*—
  Robb, Howard E., Newman, and McCullough. 3,400,087.
McDaniel R. Allen : *See*—
  Etchison, Gibson O., McDaniel, and Hines. 3,399,642.
McDermott, John R., D. O. White, and A. W. Bourque, to W. R. Grace & Co. Process and apparatus for forming gaskets for container elements. 3,400,009, 9–3–68, Cl. 117—93.2.
McDonald, Louis, to Kelite Corp. Composition for preservation of metals, process and article. 3,400,023, 9–3–68, Cl. 148—6.15.
McDonnell, Eugene E., to International Business Machines Corp. Information transfer control system. 3,400,376, 9–3–68, Cl. 340—172.5.
McGean, Thomas J., and D. Nathanson, to Bell Telephone Laboratories, Inc. Method of making coaxial cable. 3,399,449, 9–3–68, Cl. 29—477.7.
McGill, Howard L., to Schlumberger Technology Corp. Retrievable well packer. 3,399,729, 9–3–68, Cl. 166—120.
McIninch, Edward : *See*—
  Tung, Shao E., and McIninch. 3,400,072.
McKay, Dwight L., to Phillips Petroleum Co. Continuously lagering a fermented beverage under high pressure. 3,399,996, 9–3–68, Cl. 99—48.
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  Richards, Edward F., Depperman, and McKenzie. 3,399,829.
McKey, Thomas J. Seat construction. 3,399,883, 9–3–68, Cl. 267—89.
McLauchlan, A. B., Co., Inc. : *See*—
  McLauchlan, Robert D. 3,399,414.
McLauchlan, Robert D., to A. B. McLauchlan Co., Inc. Berry cleaner and washer. 3,399,414, 9–3–68, Cl. 15—3.11.
McLaughlin, Jack E. Liquid dispensing apparatus for use in body treatment. 3,399,876, 9–3–68, Cl. 128—229.
McLean, Ronald S. Exhaust track sander apparatus. 3,399,917, 9–3–68, Cl. 291—3.
McNabb, Louis A., to Mech-Tronics Corp. Electron beam welding machine. 3,400,243, 9–3–68, Cl. 219—121.
McRoskey, Leonard H., to Republic Tool & Mfg. Corp. Electric switch with coil spring contact. 3,400,236, 9–3–68, Cl. 200—153.
Mead Corp., The : *See*—
  Wood, Prentice J. 3,399,804.
Meadows, Robert A., and L. J. Housey, Jr., to Texas Instruments Inc. Trainable decision system and adaptive memory element. 3,400,383, 9–3–68, Cl. 340—173.
Mech-Tronics Corp. : *See*—
  McNabb, Louis A. 3,400,243.
Meerburg, Wilhelmina : *See*—
  Beets, Muus G. J., and Meerburg. 3,400,162.
Meijer, Roelf J., to North American Philips Co., Inc. Hot-gas reciprocating engine. 3,399,526, 9–3–68, Cl. 60—24.
Mekjean, Matthew, and J. S. Sconce, to Hooker Chemical Corp. Heating system. 3,400,249, 9–3–68, Cl. 219—378.
Meli, Joseph. Hair curler. 3,399,684, 9–3–68, Cl. 132—40.
Melpar, Inc. : *See*—
  Ishman, Neal H. 3,400,338.
Melpar, Inc. : *See*—
  Shewmake, Glenn A., and Pentecost. 3,399,604.
  Tiner, Jack D., and Smit. 3,399,653.
Meltzer, Henry E. Machine for electrically heating floor tile prior to removal. 3,400,244, 9–3–68, Cl. 219—228.
Merck, Sharp & Dohme of Canada, Ltd. : *See*—
  Atkinson, Joseph G., and Tremaine. 3,399,978.
Merles, Jacques, to Pechiney Compagnie de Produits Chimiques et Electrometallurgiques. Apparatus for the purification of aluminum. 3,399,878, 9–3–68, Cl. 266—34.
Merriman, Inc. : *See*—
  Wayson, Andrew J. 3,399,522.
Merser, Francis G., to Dennison Mfg. Co. Button attachment. 3,399,432, 9–3–68, Cl. 24—90.
Mesrobian, Robert B., and R. R. Szatkowski, to Continental Can Co., Inc. Method of making spiral wound container bodies. 3,400,029, 9–3–68, Cl. 156—82.
Messner, Georg, to Oronzio de Nora Impianti Elettrochimici. Method and apparatus for breaking electric current in fluent conductors. 3,400,055, 9–3–68, Cl. 204—1.
Messrs Berk, Ltd. : *See*—
  Currie, William A. 3,399,814.
Methfessel, Siegfried I. : *See*—
  Holtzberg, Frederic, and Methfessel. 3,400,350.
Mettallgesellschaft Aktiengesellschaft : *See*—
  Michels, Rudolf, Welling, and Ueberle. 3,399,964.
Meynell, Lionel C., to Meynell & Sons, Ltd. Valve for controlling the mixing of hot and cold fluids. 3,399,831, 9–3–68, Cl. 236—12.
Meynell & Sons, Ltd. : *See*—
  Meynell, Lionel C. 3,399,831.
Michael, Gregor, and W.-D. Willmund, to Dehydag Deutsche Hydverwerke G.m.b.H. Acidic copper electroplating baths and method. 3,400,059, 9–3–68, Cl. 204—52.
Michels, Rudolf, H. Welling, and D. Ueberle, to Mettallgesellschaft Aktiengesellschaft. Process for regenerating used hydrochloric acid containing pickling liquours. 3,399,964, 9–3–68, Cl. 23—154.
Mick, Abner C. : *See*—
  Connolly, John E., and Mick. 3,399,560.
Middleton, John A. : *See*—
  Gallagher, Donald C., Haerther, Middleton, and Tuthill. 3,400,402.
Midland-Ross Corp. : *See*—
  Weber, Hans B. 3,399,631.
  Zanow, Andrey L. 3,399,787.
Midwest Curtain Co. : *See*—
  Stulac, Josef F., Cornish, and Selkirk. 3,399,711.
Mieiresonne, Arthur C., to Owens-Illinois, Inc. Glass parts for forming cathode-ray tube envelopes. 3,399,799, 9–3–68, Cl. 220—2.1.
Mikkelsen, Louis : *See*—
  Spencer, Samuel F., and Mikkelsen. 3,399,974.
Millionis, Jerry P., and P. V. Susi, to American Cyanimid Co. Triaminotriphenylammonium salts. 3,400,156, 9–3–68, Cl. 260—576.
Miller, Ira H., to Owens-Illinois, Inc. Liquid pourout fitment. 3,399,811, 9–3–68, Cl. 222—147.
Miller, Marsden L., to Ranco Inc. Electric igniter system for fuel burners and the like. 3,400,302, 9–3–68, Cl. 317—96.
Mills, Eugene A. : *See*—
  Krumreich, Charles L., and Mills. 3,400,226.
Miner, W. H., Inc. : *See*—
  Carlson, Robert L. 3,399,880.
Minnesota Mining and Mfg. Co. : *See*—
  Golben, Michael. 3,400,012.
  Kremer, Leon V., and Rambosek. 3,400,095.
  Riedsel, Richard G. 3,400,042.
Minyu, Toshikazu, J. Kato, T. Koguchi, and R. Kobayashi, to Furukawa Electric Co. Ltd. Aeolian vibration damper. 3,400,209, 9–3–68, Cl. 174—42.
Misare, Donald O., to Joslyn Mfg. and Supply Co. Lightning arrester in combination with an arrester disconnector containing explosive means. 3,400,301, 9–3–68, Cl. 317—71.
Mitchell, Charles T., Jr. : *See*—
  Bleyle, Merrill, and Mitchell. 3,400,008.
Mitchell, George A. Method and apparatus for processing tubing. 3,399,559, 9–3–68, Cl. 72—330.
Mitchell, William N. Numerically and physically balanced game playing die. 3,399,897, 9–3–68, Cl. 273—146.

Mitschang, William J. Antifriction bearings. 3,399,935, 9–3–68, Cl. 308—200.
Mitsubishi Petrochemical Co., Ltd. : *See*—
  Fukuda, Junichi, Masamuue, Suzuki, and Okabe. 3,400,168.
Mitsui Kagaku Kogyo Kabushiki Kaisha : *See*—
  Hosoda, Yutaka. 3,399,952.
  Okubo, Ichiro, and Tsujimoto. 3,400,124.
Miyamoto, Yoshikazu, to Kabushiki Kaisha Hitachi Seisakusho. Traveling-wave type electron tube utilizing interaction between beam and TE waveguide mode. 3,400,297, 9–3–68, Cl. 315—35.
Mize, William E., to The Yoder Co. Method and apparatus for joining strip ends. 3,399,450, 9–3–68, Cl. 29—482.
Mobil Oil Corp. : *See*—
  Brooks, Warren B. 3,399,724.
  Dahan, Paul C. 3,399,645.
  Sexton, James H., and Patton. 3,400,327.
  Strange, Lloyd K. 3,399,721.
Mocotte, Jacques, to Progil. Fungicidal composition containing pentachlorophenol and an organotin compound. 3,400,201, 9–3–68, Cl. 424—288.
Mohawk Data Sciences Corp. : *See*—
  Sims, John C., Jr. 3,399,619.
Molins, Desmond W., to Molins Machine Co., Ltd. Manufacture of filter plugs. 3,399,606, 9–3–68, Cl. 93—1.
Molins Machine Co., Ltd. : *See*—
  Molins, Desmond W. 3,399,606.
Monck, Myron C. : *See*—
  Gould, Joseph C., Monck, and Lynch. 3,399,677.
Monroe, Robert C., to Schlumberger Technology Corp. Well jar. 3,399,741, 9–3–68, Cl. 175—297.
Monsanto Co. : *See*—
  Morita, Eiichi. 3,400,106.
  Webster, Sidney T., and D'Amico. 3,400,133.
Montgomery, Orville D. : *See*—
  Bowling, Raymond E., Laurer, and Montgomery. 3,400,375.
Moore, Floyd A. Pneumatic material placement apparatus. 3,399,609, 9–3–68, Cl. 94—39.
Moore, Jack C. Phonograph record vending dispenser. 3,399,805, 9–3–68, Cl. 221—119.
Morales, Juan G. : *See*—
  Ward, Loyal F., Jr., and Morales. 3,400,177.
Morgan, William S., and G. Bland, to Formica International Ltd. Handling laminating plates. 3,400,018, 9–3–68, Cl. 134—42.
Mori, Ernest A. : *See*—
  Goodwin, Robert J., Mori, Pekarek, Schaub, and Zinkham. 3,399,739.
Moriondo, Roberto : *See*—
  Alfieri, Giuseppe, and Moriondo. 3,399,932.
  Alfieri, Giuseppe, and Moriondo. 3 399,933.
Morita, Eiichi, to Monsanto Co. Basic zinc double salts of O,O-dialkyl phosphorodithioic acids as vulcanization accelerators for rubber. 3,400,106, 9–3–68, Cl. 260—79.5.
Mork, George W., to Bucyrus-Erie Co. Boom handling apparatus. 3,399,785, 9–3–68, Cl. 212—39.
Morrison, Willard L., to The Union Stock Yard and Transit Co. of Chicago. Method of retaining volatile essences in coffee during roasting. 3,399,998, 9–3–68, Cl. 99—68.
Motorola, Inc. : *See*—
  Blumenberg, Horst H., and Wolkoff. 3,399,440.
  Jahns, Kenneth V., and Buetow. 3,400,219.
  Smith, Lawrence R., and Stehr. 3,400,378.
Mottin, Ralph E. : *See*—
  Oglevee, Harold J., and Mottin. 3,399,803.
Muke, Rudolf : *See*—
  Haril, Ernst E., Dudszus, Franz, Rethfeldt, Wienert, Muke, Hauptmann, and Bolze. 3,399,422.
Munday, Theodore C. F. : *See*—
  Radimer, Kenneth J., Caropreso, and Munday. 3,400,027.
Murchison, Jerre M., and B. Falk, to General Dynamics Corp. Target tracking radar system providing direct and automatic indication of target size. 3,400,394, 9–3–68, Cl. 343—7.
Murphy, Kevin P. : *See*—
  Orfeo, Sabatino R., Murphy, and Begun. 3,400,077.
Musgrave, Joseph S., R. J. Rue, and J. A. Nicholson, to The Boeing Co. Horizontal display navigational devices. 3,400,364, 9–3–68, Cl. 340—24.
Myers, George H., and F. C. Harter, to Whirlpool Corp. Solid state ignition circuit for fuel burners. 3,399,948, 9–3–68, Cl. 431—68.
N.V. Koninklijke Nederlandsche Zoutindustrie : *See*—
  Honigh, Christiaan G. F. 3,399,537.
N.V. Machinefabriek L. te Strake, Deurne : *See*—
  Te Strake, Lambertus. 3,399,701.
N.V. Onderzoekingsinstituut Research : *See*—
  Van Dort, Hein M., and De Jonge. 3,400,100.
Nacke, Kenneth F., to Dow Chemical Co. Process for centrifugally spinning hollow or filled filaments. 3,400,189, 9–3–68, Cl. 264—167.
Naff, John T., to Hercules Inc. High efficiency plasma processing head including a diffuser having an expanding diameter. 3,400,070, 9–3–68, Cl. 204—311.
Naffziger, Arthur J. Fishing lure. 3,399,483, 9–3–68, Cl. 43—44.4.
Nagata, Wataru, T. Tomita, and H. Itazaki, to Shionogi & Co., Ltd. Process for preparing 8β-methyl-11β-hydroxy steroids. 3,400,123, 9–3–68, Cl. 260—239.55.
Nagele, Francis C., to North American Rockwell Corp. Backlash-free spline joint. 3,399,549, 9–3–68, Cl. 64—23.
Nagy, Frank P. Door latch. 3,399,918, 9–3–68, Cl. 292—136.
Nakano, Syunsuke. Temperature and discomfort index indicator. 3,399,509, 9–3–68, Cl. 73—336.
Nalbandian, Richard B. Display device. 3,399,781, 9–3–68, Cl. 211—1.5.
Naldini, Renzo : *See*—
  Amodeo, Licio, and Naldini. 3,399,968.
Narayanan, Venkatachala L. : *See*—
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  McGean, Thomas J., and Nathanson. 3,399,449.
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  Boggs, James L. 3,399,579.
  Bruckner, Ronald L. 3,400,277.
  Durig, Richard F. 3,400,270.
National Cash Register Co., The : *See*—
  Harman, Michael G. 3,400,379.
National Oats Co. : *See*—
  Hanser, William F. 3,399,838.
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  Puddington, Ira E., and Farnand. 3,399,765.
National Research Development Corp. : *See*—
  Newman, Edward A. 3,400,216.
  Tarver, William J. 3,399,478.
National-Standard Co. : *See*—
  Lang, Ernest U., and Hope. 3,399,557.
Neisewander, Ray H. Cable brake for overhead door. 3,399,710, 9–3–68, Cl. 160—201.
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  Billeter, Henry R., and Nelson. 3,399,860.
Nemoede, Donald P. : *See*—
  Foster, Thomas W., and Nemoede. 3,399,820.
Nerwin, Hubert, to Eastman Kodak Co. Film advancing and rewinding mechanism. 3,399,843, 9–3–68, Cl. 242—71.6.
Newman, Charles J., and E. J. Lucas, to The Grote Mfg. Co., Inc. Vehicle lamp mounting and wiring fixture. 3,400,262, 9–3–68, Cl. 240—8.2.
Newman, Edward A., to National Research Development Corp. Speech recognition apparatus. 3,400,216, 9–3–68, Cl. 179—1.
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  Robb, Howard E., Newman, and McCullough. 3,400,087.
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  Racca, Romolo. 3,399,851.
Nicholson, Albert W., to English Electric-Leo-Marconi Computers Ltd. Control unit for processor-peripheral device transfers. 3,400,373, 9–3–68, Cl. 340—172.5.
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  Musgrave, Joseph S., Rue, and Nicholson. 3,400,364.
Nielsen, Hans K., Jr., D. E. Noyes, G. Godin, and F. C. Norgard, to Johns-Manville Corp. Process of adding bituminous additives to a fibrous material in the grinding zone of a refiner. 3,400,043, 9–3–68, Cl. 162—171.
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  Jeep, Charles W., Jr., and Niemeyer. 3,399,627.
Nightingale, John G., J. M. Repholz, J. C. Sieglinger, and S. Zak, to American Telephone and Telegraph Co. Message unit charging and billing equipment. 3,400,222, 9–3–68, Cl. 179—7.1.
Nilssen, Ole K., to Ford Motor Co. Capacitive discharge ignition system employing a saturable switching core and a transistor. 3,400,300, 9–3–68, Cl. 315—205.
Nippon Electric Co. Ltd. : *See*—
  Fukamachi, Masahiko. 3,400,370.
Nippon Oil Co., Ltd. : *See*—
  Masaki, Sumi, Ohmori, Hoshino, and Fujiwara. 3,400,160.
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Nishida, Masamitsu : *See*—
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  Nielsen, Hans K., Jr., Noyes, Godin, and Norgard. 3,400,043.
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  Groth, Rolf. 3,400,288.
  Biesma, Louw A. 3,399,453.
  Meijer, Roelf J. 3,399,526.
  Theyssen, Artur W. J. 3,399,813.
  Van Malland, Jan. 3,399,613.
North American Rockwell Corp. : *See*—
  Nagele, Francis C. 3,399,549.
North, Max R., to J. I. Case Co. Load-depth control linkage. 3,399,733, 9–3–68, Cl. 172—9.
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  Stetz, William, and Colangione. 3,399,499.
Noyes, David E. : *See*—
  Nielsen, Hans K., Jr., Noyes, Godin, and Norgard. 3,400,043.
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  Hansen, Francis W., and Nulf. 3,399,941.
Nyman, Frederick R. : *See*—
  Enstrom, Ronald E., Hanak, Strater, and Nyman. 3,400,016.
Nyrop, Per, to Dorr-Oliver, Inc. Screening centrifuges. 3,399,774, 9–3–68, Cl. 210—213.
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  Heinzelman, Edward, Jr. 3,400,021.
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  Harders, Fritz, and Oeters. 3,399,715.

- Offutt, William C.: *See*—
  - Henke, Alfred M., Offutt, and Sebulsky. 3,400,167.
- Oglaza, Zygmunt: *See*—
  - Dybal, Kazimierz, Oglaza, Stwora, and Suchon. 3,399,873.
- Oglevee, Harold J., and R. E. Mottin, to Parke, Davis & Co. Self-locking medicament capsule. 3,399,803, 9–3–68, Cl. 220—63.
- Ohmori, Tadashi: *See*—
  - Masaki, Sumi, Ohmori, Hoshino, and Fujiwara. 3,400,160.
- Oil States Rubber Co.: *See*—
  - Landers, Don B., and Richardson. 3,399,605.
- Okabe, Yoshio: *See*—
  - Fukuda, Junichi, Masamuue, Suzuki, and Okabe. 3,400,168.
- Okubo, Ichiro, and M. Tsujimoto, to Mitsui Kagaku Kogyo Kabushiki Kaisa. Optical brightening and new compositions of matter. 3,400,124, 9–3–68, Cl. 260—240.
- Okumura, George K., and J. E. Wilkinson. Process of producing soy milk from sprouted soybeans. 3,399,997, 9–3–68, Cl. 99—64.
- Okun, Nathaniel N., to The Cello Chemical Co. Locking connector and floor treating machine utilizing same. 3,400,361, 9–3–68, Cl. 330—75.
- Old Pal, Inc.: *See*—
  - Woolworth, Richard G. 3,399,750.
- Olin Mathieson Chemical Corp.: *See*—
  - Burne, Frederick A. 3,399,810.
  - Polak, Roger J., Wojtowicz, and Zaslowsky. 3,400,135.
- Oliver Tire & Rubber Co.: *See*—
  - Burger, Edwin M. 3,400,030.
- Oloff, Edwin, to Imperial-Rundfunk-und Fernseewerk G.m.b.H. Tuning selection system for UHF and VHF television bands. 3,400,345, 9–3–68, Cl. 334—47.
- Olsen, Andrew H.: *See*—
  - Trutner, Donald G., and Olsen. 3,399,984.
- Olsen, Samson, to Allied Chemical Corp. Coke oven standpipe and elbow cleaning apparatus. 3,400,052, 9–3–68, Cl. 202—241.
- Olsen, Thomas O. Cushion for decelerating falling bodies. 3,399,407, 9–3–68, Cl. 5—348.
- Olson, Arthur R., to The Kendall Co. Method for producing reticulated film. 3,400,188, 9–3–68, Cl. 264—156.
- Olson, Harry F., and H. Belar, to Radio Corp. of America. Voiced sound fundamental frequency detector. 3,400,215, 9–3–68, Cl. 179—1.
- Olympia Werke AG.: *See*—
  - Heymann, Hans. 3,400,389.
- O'Neill, John F., Jr., and B. R. Saltzberg, to Bell Telephone Laboratories, Inc. Automatic equalizer for quadrature data channels. 3,400,332, 9–3–68, Cl. 325—42.
- O'Neill, Raymond J. Block and maritime structures formed therefrom. 3,399,535, 9–3–68, Cl. 61—3.
- O'Neill, Raymond J., to De Laval Turbine, Inc. Filter apparatus having tubular filter medium. 3,399,778, 9–3–68, Cl. 210—387.
- Ondetti, Miguel A.: *See*—
  - Bodanszky, Miklos, Ondetti, Von Saltza, Narayanan, and Levine. 3,400,118.
- Orchard, Henry J., and D. F. Sheahan, to Automatic Electric Laboratories, Inc. Integratable gyrator using mos and bipolar transistors. 3,400,335, 9–3–68, Cl. 330—24.
- Orfeo, Sabatino R., K. P. Murphy, and C. A. Begun, to Allied Chemical Corp. Fluorinated hydrocarbon containing compositions. 3,400,077, 9–3–68, Cl. 252—171.
- Oronzio de Nora Impianti Elettrochimici: *See*—
  - Messner, Georg. 3,400,055.
- Orr, Robert J., to Polymer Corp. Ltd. Rubber blend. 3,400,086, 9–3–68, Cl. 260—5.
- Ortho Pharmaceutical Corp.: *See*—
  - Shroff, Arvin P. 3,400,130.
- Orwig, Nelson: *See*—
  - Kuns, Roger R., and Orwig. 3,399,546.
- Orwin, Olaf J. B., to Fisholow Products Ltd. Gravity roller conveyors. 3,399,752, 9–3–68, Cl. 193—35.
- Osborne, William T., to Carrier Corp. Refrigeration system with high side float. 3,399,544, 9–3–68, Cl. 62—218.
- Oscar Mayer & Co., Inc.: *See*—
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- Osgood, Bradley D. Trim strip with heat sealed edge folds and method of making same. 3,400,040, 9–3–68, Cl. 161—104.
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  - Ehrhart, Gustav, Lindner, and Ott. 3,400,155.
- Otten, Philip S., to Baldwin-Lima-Hamilton Corp. Precipitation of $CaSO_4$ on inert particles with cold water wash. 3,399,975, 9–3–68, Cl. 23—301.
- Otto, Fritz, to Belder Trust. Comminuting apparatus. 3,399,704, 9–3–68, Cl. 146—182.
- Otto, Julian A.: *See*—
  - Gilbert, Everett E., and Otto. 3,400,146.
- Ouchi, Hiromu, and M. Nishida, to Matsushita Electric Industrial Co., Ltd. Piezoelectric ceramic compositions. 3,400,076, 9–3–68, Cl. 252—62.9.
- Owens-Illinois, Inc.: *See*—
  - Chapman, George C. 3,399,983.
  - Lusher, Kenneth G. 3 399,611.
  - Mielresonne, Arthur C. 3,399,799.
  - Miller, Ira H. 3,399,811.
- Packard, Roger E., and L. M. Cherry, to Burroughs Corp. Digital computer having an address controller operation. 3,400,380, 9–3–68, Cl. 340—172.5.
- Palen, Richard L.: *See*—
  - Trost, Paul E., Palen, and Hammond. 3,399,921.
- Pan American Petroleum Corp.: *See*—
  - Buxton, Thomas S., and Pease. 3,399,722.
  - Grekel, Howard, and Kunkel. 3,399,970.
  - Jones, Loyd W. 3,400,078.
  - Silverman, Daniel. 3,400,363.
  - Sparks, Neil R. 3,399,745.
  - Vincent, Renic P. 3,399,646.
- Pankratova, Evgenia A.: *See*—
  - Zhukov, Leonid A., Kartashov, Pankratova, and Ryzhov. 3,400,326.
- Pannier, Karl A., W. H. Ring, and J. L. Sorenson, to Le Voy's Inc. Catheter placement unit. 3,399,674, 9–3–68, Cl. 128—214.4.
- Papadakis, Emmanuel P., to Bell Telephone Laboratories, Inc. Ultrasonic wave transmission devices. 3,400,340, 9–3–68, Cl. 333—30.
- Parke, Davis & Co.: *See*—
  - Oglevee, Harold J., and Mottin. 3,399,803.
- Parkes, Eric B., to Joseph Lucas Industries Ltd. Flasher unit for operating indicator lamps on a road vehicle. 3,400,346, 9–3–68, Cl. 335—141.
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- Parrent, Michael K.: *See*—
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- Parry, Harvey L., to Shell Oil Co. Composition containing 2,2-bis(2,3-epoxypropoxyphenyl) propane and trimellitic anhydride. 3,400,098, 9–3–68, Cl. 260—37.
- Parsons, Joseph L. Golf practice device. 3,399,571, 9–3–68, Cl. 73—379.
- Passalaqua, Joseph J., to Industrial Filter & Pump Mfg. Co. Filter cake stabilizing and cleaning means. 3,399,777, 9–3–68, Cl. 210—332.
- Patentauswertung Nogelbusch Gesellschaft m.b.H.: *See*—
  - Hofschneider, Josef. 3,400,051.
- Patterson, Robert F., Jr., to Sylvania Electric Products Inc. Phased array system. 3,400,405, 9–3–68, Cl. 343—854.
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- Payette, Lionel J., to General Electric Co. Coating compositions comprising a mixture of (1) a phenol-formaldehyde resin, (2) a melamine-aldehyde resin, (3) a polyisocyanate and (4) a blend of high and low molecular weight polyvinyl formal resins. 3,400,172, 9–3–68, Cl. 260—839.
- Payne, Calvin L., Jr., to Tudor Metal Products Corp. Game board utilizing different windowed cards and spinner therefor. 3,399,893, 9–3–68, Cl. 273—94.
- Payne, Harold J. W., and C. E. Dyer, to H. H. Robertson Co. Building sheathing elements. 3,399,503, 9–3–68, Cl. 52—406.
- Payne, Linwood K., Jr., and M. H. J. Weiden, to Union Carbide Corp. Nitralkyl carbamoyloximes. 3,400,153, 9–3–68, Cl. 260—566.
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- Pechiney Compagnie de Produits Chimiques et Electrometallurgiques: *See*—
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- Pechstein, Fred, to Rudolf Albert, Firma. Atomizing pump. 3,399,836, 9–3–68, Cl. 239—333.
- Pecksen, Otto, H. Ziolkowski, and P. Madlener, to Industrie-Werke Karlsruhe Aktiengesellschaft. Detonator for land mines. 3,399,620, 9–3–68, Cl. 102—8.
- Pedrotti, Donald G., and D. F. Anderson, to RCK, Inc. Multiple input control system with single amplifier. 3,400,223, 9–3–68, Cl. 179—15.
- Peerless Industries, Inc.: *See*—
  - Wilson, Edward W., and Wooden. 3,399,832.
- Pekarek, Joseph L.: *See*—
  - Goodwin, Robert J., Mori, Pekarek, Schaub, and Zinkham. 3,399,739.
- Peltret, Pierre H.: *See*—
  - Seilly, Alec H., Gubb, and Peltret. 3,399,575.
- Penn, Thomas C., and J. A. Rice, Jr., to Texas Instruments Inc. Anisotropic ferromagnetic thin film magnetometer systems utilizing a modulator to perturb the field on the sensitive axis. 3,400,328, 9–3–68, Cl. 324—43.
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- Perrine, Walter E., to Tonalea Enterprises, Inc. Silent firearm. 3,399,597, 9–3–68, Cl. 89—14.

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- Phillips, James A., Jr., 30% to James A. Phillips, Sr., and Leah M. Phillips. Steam operated hot water heater. 3,399,718, 9–3–68, Cl. 165—39.
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  - Phillips, James A., Jr. 3,399,718.
- Phillips Petroleum Co.: *See*—
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  - Bracken, Robert C., Lea, Jobe, and Maddox. 3,399,542.
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  - Stumpe, Nelson A., Jr. 3,400,091.
  - Trepka, William J. 3,400,114.
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- Pilot Man-Nen-Hitsu Kabushiki Kaisha: *See*—
  - Tokorozawa, Sadao, Iwasaki, and Aoki. 3,399,946.
- Piriet, Robert A. J. E., to Centre National de Recherches Metallurgiques. Measuring temperatures. 3,399,570, 9–3–68, Cl. 73—339.
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- Platz, Gerald M., to Air Reduction Co., Inc. Inhibiting ozone decomposition with SF, CCl_2F_2 or CF_4. 3,400,024, 9–3–68, Cl. 149—1.
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- Plummer, Dexter R., to The Rank Precision Industries Ltd., t/a Rank Organisation Rank Taylor Hobson Division. Control mechanisms for an optical objective having a zoom control element. 3,400,212, 9–3–68, Cl. 178—7.92.
- Pogorski, Louis A., to The British American Oil Co. Ltd. Method for production of deuterated methanes and heavy water. 3,399,967, 9–3–68, Cl. 23—204.
- Polak, Roger J., J. A. Wojtowicz, and J. A. Zaslowsky, to Olin Mathieson Chemical Corp. Oxetane compounds. 3,400,135, 9–3–68, Cl. 260—333.
- Polymer Corp. Ltd.: *See*—
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- Ponsar, Yves M. Method and apparatus for determining relative densities. 3,399,573, 9–3–68, Cl. 73—438.
- Poppelsdorf, Fedor, to Union Carbide Corp. Production of bis/beta(N,N-dimethylaminoalkyl/ethers. 3,400,157, 9–3–68, Cl. 260—584.
- Porepp, Hans. Slide fastener with plastic coupling elements. 3,399,436, 9–3–68, Cl. 24—205.13.
- Porsche, Dr. Ing., h.c.F. K.G., Firma: *See*—
  - Hetmann, Richard. 3,399,743.
- Porter, Wellington W. Harvester. 3,399,520, 9–3–68, Cl. 56—327.
- Portnoff, Lawrence A. Occupant-propelled skate board vehicle. 3,399,906, 9–3–68, Cl. 280—221.
- Potter, John R., to Finch, Pruyn & Co., Inc. Typewriter paper carton with lift strip. 3,399,762, 9–3–68, Cl. 206—65.
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  - Fawkes, Donald G. 3,399,910.
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- Presswood, John K., and W. E. Foster, to Ethyl Corp. Process for recovering olefins from mixtures with aluminum alkyls. 3,400,170, 9–3–68, Cl. 260—677.
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  - Quimby, Oscar T. 3,400,176.
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- Prusha, George. Process for treating racing tires with perchloroethylene, naphtha and a rubber solvent and composition. 3,399,706, 9–3–68, Cl. 152—211.
- Puddington, Ira E., and J. R. Farnand, to National Research Council. Oil phase separation. 3,399,765, 9–3–68, Cl. 209—5.
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- Quimby, Oscar T., to The Procter & Gamble Co. Phosphonate compounds. 3,400,148, 9–3–68, Cl. 260—502.4.
- Quimby, Oscar T., and J. B. Prentice, to The Procter & Gamble Co. Process for preparing organo-phosphorous compounds using phosphorous acid anhydrides. 3,400,149, 9–3–68 Cl. 260—502.4.
- Quimbly, Oscar T., and J. B. Prentice, to The Procter & Gamble Co. Bicyclic dimer of ethane-1-hydroxy-1,1-diphosphonic acid and salts thereof. 3,400,151, 9–3–68, Cl. 260—502.4.
- Quimby, Oscar T., to The Procter & Gamble Co. Propanepolyphosphonate compounds. 3,400,176, 9–3–68, Cl. 260—932.
- Quirk, Martin R., to John I. Thornycroft & Co., Ltd. Burner assemblies. 3,399,950, 9–3–68, Cl. 431—153.
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- Rainger, Peter, and R. E. Davies, to The Marconi Co. Ltd. and Standard Telephones & Cables Ltd. Television standards conversion. 3,400,211, 9–3–68, Cl. 178—6.8.
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- Ranco Inc.: *See*—
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- Randolph, Alan D., to American Potash & Chemical Corp. Process for producing borax decahydrate crystals. 3,399,976, 9–3–68, Cl. 23—301.
- Rank Precision Industries Ltd.: *See*—
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- Rantsch, Kort, and O. Trotscher, to C. Zeiss. Interpolation device. 3,400,391, 9–3–68, Cl. 340—347.
- Rasmussen, Ole-Bendt, to Phillips Petroleum Co. Prestretched plastic films. 3,400,041, 9–3–68, Cl. 161—117.
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  - Krahn, Hans-Joachim. 3 400,298.
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- Read, Ivan J. Apparatus for separating solids from liquids. 3,399,773, 9–3–68, Cl. 210—196.
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Reid, Gilbert R., to Sperry Rand Corp. Method of fabricating electrical connectors. 3,399,452, 9-3-68, Cl. 29—629.

Reid, Laurance S. Adsorber. 3,399,514, 9-3-68, Cl. 55—179.

Reimer, William A., to Automatic Electric Laboratories, Inc. Interlayer connection technique for multilayer printed wiring boards. 3,400,210, 9-3-68, Cl. 174—68.5.

Reisch, George J., to General Electric Co. Hub and shaft coupling. 3,399,911, 9-3-68, Cl. 287—53.

Reischl, Artur, D. Hardt, B. Zorn, H. Bartl, and W. Speicher, to Farbenfabriken Bayer Aktiengesellschaft. Urethane polymers containing graft copolymer of vinyl chloride or saponified ethylene-vinyl ester. 3,400,173, 9-3-68, Cl. 260—859.

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Revelle, William A., 65% to T. Beckman, 10% to J. E. Carr, 10% to R. Y. Kodama, and 15% to R. J. Rengel. Printer with type wheel rotatable in either direction. 3,399,753, 9-3-68, Cl. 197—49.

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Rietsch, Eberhard, to Wuppermann, Theodor, Gesellschaft mit beschrankter Haftung. Method and apparatus for chucking workpieces for electric resistance welding employing constant pressure contact jaws. 3,400,240, 9-3-68, Cl. 219—97.

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Rigor, Herbert W. Medicine bottle. 3,399,764, 9-3-68, Cl. 206—1.5.

Rinder, Robert M. Digital display device using reflected light. 3 399,474, 9-3-68, Cl. 40—28.

Rinder, Robert M. Digital indicator. 3,399,475, 9-3-68, Cl. 40—28.

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Ripka, Josef, and J. Hybl, to Vyzkumny Ustav Bavlnarsky. Method of continuous spinning of fiber strands into yarns in a spinning chamber. 3,399,523, 9-3-68, Cl. 57—156.

Ritchie, Charles I., to Punta, Bangor Operations, Inc. Fluid bed heating and cooling apparatus. 3,399,874, 9-3-68, Cl. 263—21.

Robb, Howard E., G. D. Newman, Jr., and D. L. McCullough, to Gulf Oil Corp. Finely divided calcite in combination with a fatty alcohol as nucleating agents for nylon polyamides. 3,400,087, 9-3-68, Cl. 260—18.

Robbins, Frederick P. Ram impactor. 3,399,928, 9-3-68, Cl. 299—37.

Roberts, Donald L., to R. J. Reynolds Tobacco Co. 4-(1-hydroxy-2,6,6-trimethyl-2-cyclohexen-1-yl)-3-butene-2-one. 3,400,158, 9-3-68, Cl. 260—587.

Robertshaw Controls Co.: *See—*
  Schumann, Paul A. 3,400,374.

Robertson, H. H., Co.: *See—*
  Payne, Harold J. W., and Dyer. 3,399,503.

Robertson, James A.: *See—*
  Battista, Orlando A., and Robertson. 3 400,181.

Robertson, James A., to FMC Corp. Stable granular sodium tripolyphosphate. 3,399,959, 9-3-68, Cl. 23—106.

Robins, A. H., Co., Inc.: *See—*
  Lippmann, Irwin. 3,400,197.

Rocma Anstalt: *See—*
  Vidal, Paul I. 3,400,183.

Rogers, Barbara S. Toy vehicle having supported indicia thereon. 3 399,489, 9-3-68, Cl. 46—202.

Rogovin, Lawrence, D. P. Brawn, and J. N. Kalberg, to The Procter & Gamble Co. Process for preparation of organophosphorous compounds. 3,400,147, 9-3-68, Cl. 260—502.4.

Rohlf, Gunter. Guiding means for sliding shuttering for building structures with slightly inclined and vertical concrete walls. 3,399,438, 9-3-68, Cl. 25—131.

Rollins, Eugene C., to Hesston Mfg. Co., Inc. Combination cleaner and conveyor for harvesters. 3,399,766, 9-3-68, Cl. 209—107.

Romesberg, Floyd E.: *See—*
  Lefevre, Lloyd E., Mathieson, and Romesberg. 3,400,193.

Rood, John W.: *See—*
  Amdahl, Gene M., Blaauw, Boehm, Calingaert, Carnevale, Case, Collins, Greene, Hanf, Johnson, Magdall, Perkins, Rood, Updike, Villante, and Weber. 3,400,371.

Rood, William E., Jr. Slotted belt type cotton trash cleaner. 3,399,767, 9-3-68, Cl. 209—108.

Rooney, William J. Easy threadable printing ink ribbon. 3,399,754, 9-3-68, Cl. 197—172.

Roplequet, Richard L.: *See—*
  Sare, James R., Roplequet, and Bergeron. 3,400,037.

Rosen, Theodore: *See—*
  Kessler, Alec, and Rosen. 3,399,471.

Ross, Edward C., and B. Chambers, to The Boeing Co. Electrochemical process for anodic coating of metal surfaces. 3 400,058, 9-3-68, Cl. 204—56.

Ross, James A., T. W. Maciejowski, and T. R. Parkhill, to Ling-Temco-Vought, Inc. Solid state switching type linear amplifier. 3,400,334, 9-3-68, Cl. 330—10.

Rossi, Irving, and A. Thalmann, to Concast Inc. Method for cooling hot metal, especially continuously cast metal. 3,399,716, 9-3-68, Cl. 164—89.

Rossman, Wendell E. Auditorium installations. 3,399,501, 9-3-68, Cl. 52—10.

Rotax Ltd.: *See—*
  Guy, Kenneth T. 3,399,690.

Rovin, Herman: *See—*
  Bryan, Carney J., and Rovin. 3,399,640.

Rowan, Eugene V., and H. H. Farmer, to R. T. Vanderbilt Co., Inc. Sulfurized oxymolybdenum organophosphorodithioates and process therefor. 3,400,140, 9-3-68, Cl. 260—429.

Rowe, Charles E., Jr. Plastic magazine for cartridges for firearms. 3,399,480, 9-3-68, Cl. 42—50.

Rowlands, Thomas J., and I. F. Smart, to George Ellison Ltd. Laminated bus arrangement for electrical distribution systems. 3,400 303, 9-3-68 Cl. 317—119.

Roy, Amedee, and J. M. Corwin, to Chrysler Corp. Turbine wheel. 3 399,443, 9-3-68, Cl. 29—156.8.

Rüchardt Hugo: *See—*
  Dorendorf, Heinz, Rüchardt, and Rebstock. 3 400,310.

Rudszinat, Willy, to Hauni-Werke Korber & Co., KG. Method and apparatus for feeding paste in tobacco processing machines. 3 400 007, 9-3-68, Cl. 117—44.

Rue, Robert J.: *See—*
  Musgrave, Joseph S., Rue, and Nicholson. 3,400,364.

Ruka, Roswell J., and J. Weissbart, to Westinghouse Electric Corp. Electrochemical method for separating O_2 from a gas; generating electricity; measuring O_2 partial pressure; and fuel cell. 3,400 054, 9-3-68, Cl. 204—1.

Russell, George F. Process and apparatus for moisture content de-peaking and equalization. 3,399,460, 9-3-68, Cl. 34—1.

Rutherford, David: *See—*
  Black, William A. P., Dewar, and Rutherford. 3,400,107.

Ryzhov, Jury P.: *See—*
  Zhukov, Leonid A., Kartashov, Pankratova, and Ryzhov. 3,400,326.

S & C Electric Co.: *See—*
  Schockelt, Guenther G. 3,400,353.

Sage, Leopold C.: *See—*
  Joyce, Ronald W., Billingslea, Sage, and Marshall. 3,399,596.

Sahlin Engineering Co., Inc.: *See—*
  Cagle, Harlan R. 3,399,603.

Salisbury, Keith D., and C. A. Cobb, to Whirlpool Corp. Washing machine agitator with adjustable vanes. 3,399,552, 9-3-68, Cl. 68—134.

Salomon, Salomon M., to Beloit Corp. Method for centrifugal separation of particles from a mixture. 3,399,770, 9-3-68, Cl. 209—211.

Salomon, Salomon M., to Beloit Corp. Duplex pulp screen. 3,399,772, 9-3-68, Cl. 209—273.

Saltzberg, Burton R.: *See—*
  O'Neill, John F., Jr., and Saltzberg. 3,400,332.

Samour, Carlos M., and D. Satas, to The Kendall Co. Latently crosslinkable pressure-sensitive adhesive polymers. 3,400,103, 9-3-68, Cl. 260—78.

Sanders Associates, Inc.: *See—*
  Putnam, Howard. 3,400,342.

Sanders, David C.: *See—*
  Coyle, Peter A., Reeves, and Sanders. 3,400,251.

Sandy, Charles A., to E. I. du Pont de Nemours and Co. Process for making tetramethyl lead. 3,400,143, 9-3-68, Cl. 260—437.

Sangamo Electric Co.: *See—*
  Thomas, Thomas R. 3,400,317.

Sapers, Ira, and A. A. Cook, to Arkansas Co., Inc. Dye assistant for polyamides containing alkylene polyamines diamidated with fatty acids, polyethylene glycol fatty acid ester and an alkyl quaternary ammonium compound. 3,399,953, 9-3-68, Cl. 8—54.

Sare, James R., R. L. Roplequet, and D. G. Bergeron, to Alta Industries, Inc. Method of manufacturing cellular packing materials. 3,400,037, 9-3-68, Cl. 161—42.

Sargent Industries, Inc.: *See—*
  Valenti, Peter, and Wysong. 3,399,581.

Satas, Donatas, to The Kendall Co. Spray coated absorbent dressing. 3,399,671, 9-3-68, Cl. 128—156.

Satas, Donatas: *See—*
  Samour, Carlos M., and Satas. 3,400,103.

Scharf, Richard F.: *See—*
  Cary, John T., Locke, Scharf, and Ahrens. 3,400,357.

Schaub, Paul W.: *See—*
  Goodwin, Robert J., Mori, Pekarek, Schaub, and Zinkham. 3,399,739.

Scheidig, Rudolf, to International Standard Electric Corp. Counting device. 3,400,256, 9-3-68, Cl. 235—92.

Scherer, Otto, and K. Albrecht, to Farbwerke Hoechst Aktiengesellschaft vormals, Meister Lucius & Bruning. Basic copper-(11)-salts of alkylsulfuric acids. 3,400,144, 9-3-68, Cl. 260—438.1.

Schering AG: *See—*
  Wiechert, Rudolf. 3,400,138.

Schick, Anton: *See—*
  Heidel, Klaus, Schick, and Jenkner. 3,400,174.

Schick, Henry C.: *See—*
  Byrnes, Herbert P., Galliano, and Schick. 3,400,358.

Schiessler, Siegfried: *See—*
  Weckler, Gerhard, and Schiessler. 3,400,121.

Schillreff, George H. Underwater flare. 3,399,621, 9-3-68, Cl. 102—37.8.

Schinke, James W. Skate board structure. 3,399,904, 9-3-68, Cl. 280—87.04.

Schlumberger Technology Corp.: *See—*
  McGill, Howard L. 3,399,729.
  Monroe, Robert C. 3,399,741.
  Smith, John S. 3,400,257.
  Smith, John S. 3,400,390.
  Stafford, John A. 3,399,616.

Schmaeng, John F., to Beloit Corp. Stock velocity measurement device. 3,399,565, 9-3-68, Cl. 73—194.

Schmieding, Warren H. F.: *See—*
  Vogel, Arthur E. 3,399,905.

Schmitt, Karl-Friedrich, and W. Boch, to Tuchel, Ulrich. Electrical plug with flexible contact member. 3,400,360, 9-3-68, Cl. 339—64.

Schneider, Henry J.: *See—*
  Boardman, Charles E., Schneider, Shoopak, and Wolfe. 3,400,048.

Schoch, Karl F., and A. I. Dahl, to General Electric Co. Liquid transfer system. 3,399,691, 9-3-68, Cl. 137—375.

Schockelt, Guenther G., to S & C Electric Co. Metal enclosed switchgear with series connected switch means, circuit interrupter means, current responsive means and operating means mounted on door. 3,400,353, 9-3-68, Cl. 337—7.

Schoepfle, Blaine O.: *See—*
  Kujawa, Francis M., and Schoepfle. 3,400,085.

Schofield, Elenore H. Indoor overshoe. 3,399,470, 9-3-68, Cl. 36—7.1.

Schreurs, Merle F.: *See—*
  Hemrick, Philip J., Gremling, Mason, and Schreurs. 3,400,036.

Schroeder, Charles S., to Eaton Yale & Towne Inc. Weston brake hoist construction. 3,399,667, 9-3-68, Cl. 254—168.

Schroer, Gary J., to Schroer Mfg. Co., Inc. Animal restraining cage. 3,399,654, 9-3-68, Cl. 119—96.

Schroer Mfg. Co., Inc.: *See—*
  Schroer, Gary J. 3,399,654.

Schugar, Harvey J., and M. J. Furey, to Esso Research and Engineering Co. Lubricating films. 3,400,083, 9-3-68, Cl. 252—42.7.

Schults, William J. Spring mounting for vibratory tables and the like. 3,399,857, 9-3-68, Cl. 248—350.

Schumann, Paul A., to Robertshaw Controls Co. Computerized control systems. 3,400,374, 9-3-68, Cl. 340—172.5.

Schwacofer, Raymond C. Artichoke processing mechanism. 3,399,703, 9-3-68, Cl. 146—52.

Schwartz, Alan S.: *See—*
  Bokros, Jack C., Chin, and Schwartz. 3 399,969.

Schwartz, Jacob L., to Shell Oil Co. Method for making integral containers having precisely parallel vertical walls. 3,400,111, 9-3-68, Cl. 264—89.

Schwartz, Samuel H., to The Dole Valve Co. Solenoid valve. 3,399,697, 9-3-68, Cl. 137—612.1.

Schwartzenbek, Eugene F., and J. Turkevich, to Pullman, Inc. Regeneration of platinum and palladium reforming catalyst. 3,400,073, 9-3-68, Cl. 208—140.

Schwartsman, Everett H. Vacuum pump system. 3,399,827, 9-3-68, Cl. 230—116.

Sconce, James S.: *See—*
  Meklean, Matthew, and Sconce. 3,400,249.

Sears, Roebuck, and Co.: *See—*
  Slate, Arthur R. 3,399,647.

Sebulsky, Raynor T.: *See—*
  Henke, Alfred M., Offutt, and Sebulsky. 3,400,167.

Segura, Marnell A.: *See—*
  House, William T., Segura, Senn, and Byars. 3,399,513.

Seidel, Joachim: *See—*
  Doelz, Hans, Hipperling, and Seidel. 3,399,720.

Seller, Ernst E., to United States of America, National Aeronautics and Space Administration. Method for leakage testing of tanks. 3,399,574, 9-3-68, Cl. 73—49.2.

Seilly, Alec H., K. F. Gubb, and P. H. Peltret, to C. A. V. Ltd. Starting mechanisms for internal combustion engines. 3,399,575, 9-3-68, Cl. 74—7.

Seilly, Alec H., to C. A. V. Ltd. Starting mechanism for internal combustion engines. 3,399,576, 9-3-68, Cl. 74—7.

Selkirk, Bruce B.: *See—*
  Stulac, Josef F., Cornish, and Selkirk. 3,399,711.

Senn, William L., Jr.: *See—*
  House, William T., Segura, Senn, and Byars. 3,399,513.

Sentz, Adam J., to The Barth Corp. Snap-in bung. 3,399,798, 9-3-68, Cl. 217—113.

Sexstone, John H., and G. H. Hilgartner, Jr., to Brown & Williamson Tobacco Corp. Filter rod making machine. 3,400,032, 9-3-68, Cl. 156—380.

Sexton, James H., and B. J. Patton, to Mobil Oil Corp. Borehole tool rotational switching system controlled by detector of earth's magnetic field. 3,400,327, 9-3-68, Cl. 324—8.

Shafer, Merrill, to International Business Machines Corp. Magnetic materials and process of preparation. 3,399,957, 9-3-68, Cl. 23—52.

Shanklin, Donald J., and A. Elzenberg, to Superior Industries, Inc. Safety seat belt buckle. 3,399,431, 9-3-68, Cl. 24—77.

Shapiro, Eli, to Plastic Products of Texas, Inc. Automatic roof vent. 3,399,500, 9-3-68, Cl. 52—1.

Shaw, Harry N., to The Bastian-Blessing Co. Differential bypass valve. 3,399,696, 9-3-68, Cl. 137—563.

Shaw, Kenneth W. Luneberg lens antenna constructed from two geodesic domes. 3,400,401, 9-3-68, Cl. 343—720.

Sheahan, Desmond F.: *See—*
  Orchard, Henry J., and Sheahan. 3,400,395.

Sheldon, Edward E. Image intensifying tubes provided with an array of electron multiplying members. 3,400,291, 9-3-68, Cl. 313—65.

Sheldon, Edward E. Radiation transporting devices provided with hollow members mounted in an array. 3,400,292, 9-3-68, Cl. 313—65.

Shell Oil Co.: *See—*
  Boor, John, Jr., and Youngman. 3,400,112.
  Calhoun George M. 3,400,139.
  Fan, Hsing Y., Rader, Legator, and Larrick. 3,400,200.

Shell Oil Co.: *See—*
  Frielingsdorf, Hans, and Boonstoppel. 3,399 508.
  Gleich, Walter A., La Rochelle, and Riesser. 3,400,161.
  Mason, Ronald F., and Van Winkle. 3,400,163.
  Parry, Harvey L. 3,400,098.
  Schwartz Jacob L. 3 400 111.
  Stuart, Charles A. 3,399,723.
  Ward, Loyal F., Jr., and Morales. 3,400,177.
  Zuiderweg, Frederik J., and Manger. 3,399,870.

Shepherd, Frank B. Golf putting game. 3,399,899, 9-3-68, Cl. 273—176.

Sheptak, Nicholas, and C. E. Beyer, to The Dow Chemical Co. Apparatus for blow molding plastic bottle with a handle. 3,399,424, 9-3-68, Cl. 18—5.

Sheridan, T. W. & C. B., Co.: *See—*
  Bryson, Robert A., and Hawkes. 3,399,755.

Sherlin, Robert E., to General Electric Co. Stabilized variable frequency multivibrator. 3,400,337, 9-3-68, Cl. 331—113.

Sherritt Gordon Mines Ltd.: *See—*
  Follnsbee, John C. 3,399,734.

Shewmake, Glenn A., and J. L. Pentecost, to Melpar, Inc. Water pressure activated switch. 3,399,604, 9-3-68, Cl. 92—41.

Shibata, Hiroshi, to Kureha Kagaku Kogyo Kabushiki Kaisha. Mercury-cathode chlorine cell and mercury feeding means. 3,400,067, 9-3-68, Cl. 204—219.

Shionogi & Co., Ltd.: *See—*
  Hakata, Hiroshi. 3,399,751.
  Nagata, Wataru, Tomita, and Itazaki. 3,400,128.

Shirai, Takao, to Kabushiki Kaisha Honda Gijutsu. Arrangement for detachably securing a helmet to a two-wheel vehicle. 3,399,855, 9-3-68, Cl. 248—201.

Shone, Arthur B., to The Marconi Co. Ltd. Combining of radio frequency signals. 3,400,339, 9-3-68, Cl. 333—9.

Shoopak, Bernard F.: *See—*
  Boardman, Charles E., Schneider, Shoopak, and Wolfe. 3,400,048.

Shroff, Arvin P., to Ortho Pharmaceutical Corp. Substituted Δ^{8}-octahydroquinoline-2,7-diones and their 7-alkylene thiaketals. 3,400,130, 9-3-68, Cl. 260—289.

Shryock, Robert M.: *See—*
  Johnson, Gary L., and Shryock. 3,399,456.

Sibley, Henry C., to General Signal Corp. Line circuit for code communication systems with photoresistive pulse producer. 3,400,218, 9-3-68, Cl. 179—2.

Siegfried Aktiengesellschaft: *See—*
  Stille, Gunther, and Wagner-Jauregg. 3,400,203.
  Kramer, Kenneth C., Archibald, and Toble. 3,399,850.

Siegler, Lawrence D. Toys. 3,399,487, 9-3-68, Cl. 46—75.

Sieglinger, John C.: *See—*
  Nightingale, John G., Repholz, Sieglinger, and Zak. 3,400,222.

Siemens Aktiengesellschaft: *See—*
  Dorendorf, Heinz, Rüchardt, and Rebstock. 3,400,310.
  Walz, Heinz. 3,399,536.

Silverman, Daniel, to Pan American Petroleum Corp. Wavelet reconstruction process for sonic, seismic and radar exploration. 3,400,363, 9–3–68, Cl. 340—3.
Silverman, Meyer S., to Pennsalt Chemicals Corp. Method of preparing rhombohedral crystalline tungsten disulfide. 3,399,962, 9–3–68, Cl. 23—134.
Simmons Co.: *See—*
Hansen, Francis W., and Nulf. 3,399,941.
Simmons, Howard E., Jr., to E. I. du Pont de Nemours and Co. Preparation of tetracyano-1,4-dithiin. 3,400,134, 9–3–68, Cl. 260—327.
Simonich, Mario. Operating device for a closing member of an ice-cream dispensing nozzle in an ice-cream continuously producing apparatus. 3,399,809, 9–3–68, Cl. 222—70.
Sims, John C., Jr., to Mohawk Data Sciences Corp Type arrangement in endless band line printers. 3,399,619, 9–3–68, Cl. 101—93.
Simpson, Francis: *See—*
Woodcock, George S., Simpson, and Clayton. 3,399,550.
Singer, Alvan: *See—*
Davis, Bayard C., Singer, and Chapman. 3,400,356.
Sinnott, Richard C., to Magnetic Industries, Inc. Multichannel magnetic head assembly. 3,400,386, 9–3–68, Cl. 340—174.1.
Sittig, Erhard K., to Bell Telephone Laboratories, Inc. Elastic dispersive delay line. 3,400,341, 9–3–68, Cl. 333—30.
Skeggs, Leonard T., and G. N. Catravas, to Technicon Corp. Chromatography analysis apparatus and method. 3,399,972, 9–3–68, Cl. 23—230.
Skinner, Robert T. J., to Joseph Lucas (Industries) Ltd. Liquid displacement pumps. 3,399,625, 9–3–68, Cl. 103—97.
Skinner, Robert T. J., to Joseph Lucas (Industries) Ltd. Liquid displacement pumps. 3,399,626, 9–3–68, Cl. 103—97.
Slate, Arthur R., to Sears, Roebuck and Co. Fishing line spool holder. 3,399,847, 9–3–68, Cl. 242—129.6.
Slee, Roger H.: *See—*
Westwell, William G., and Slee. 3,399,747.
Sliepcevich, Cedomir M., and H. T. Hashemi. 37½% to University Engineers, Inc., and 62½% to E-C Corp. Method for separating relatively pure water from aqueous solutions. 3,399,538, 9–3–68, Cl. 62—58.
Sloan Valve Co.: *See—*
Billeter, Henry R., and Nelson. 3,399,860.
Small, Edward A., Jr.: *See—*
Berning, Peter H., and Small. 3,400,006.
Smart, Ivan F.: *See—*
Rowlands, Thomas J., and Smart. 3,400,303.
Smit, Jacob: *See—*
Tiner, Jack D., and Smit. 3,399,653.
Smith, Arthur D., and C. Langewis, to Kaiser Aluminum & Chemical Corp. Die assembly. 3,399,558, 9–3–68, Cl. 72—282.
Smith, Francis M.: *See—*
Harris, Martin H., Jennings, and Smith. 3,399,726.
Smith, George L. V. Glazing strip. 3,399,504, 9–3–68, Cl. 52—499.
Smith, Herbert Q., and E. E. Ivy, to Pennsalt Chemicals Corp. Insect control with hexamethyditin. 3,400,202, 9–3–68, Cl. 424—288.
Smith Industries International, Inc.: *See—*
Haspert, John C. 3,399,738.
Smith-Johannsen, Robert, to Chemelex, Inc. Methods of coating electrically conductive compositions. 3,399,451, 9–3–68, Cl. 29—620.
Smith, John S., to Schlumberger Technology Corp. Arithmetic operations using two or more digital-to-analog converters. 3,400,257, 9–3–68, Cl. 235—150.52.
Smith, John S., to Schlumberger Technology Corp. Signal converter for converting a binary signal to a reciprocal analog signal. 3,400,390, 9–3–68, Cl. 340—347.
Smith Kline & French Laboratories: *See—*
Holden, Kenneth G. 3,400,136.
Smith, Lawrence R., and W. G. Stehr, to Motorola, Inc. Data acquisition system with plural scanners at plural remote stations. 3,400,378, 9–3–68, Cl. 340—172.5.
Smith, Newland M.: *See—*
Willcox, Frederick P., Smith, and Levitt. 3,400,392.
Smith, Richard P. Skill game with ball movable in spherical container. 3,399,894, 9–3–68, Cl. 273—115.
Societa Ceramica Italiana Richard-Ginori S.p.A.: *See—*
Lampani, Antonio, Colombo, and Margola. 3,399,498.
Societe Anonyme Francaise du Ferodo: *See—*
Lepelletier, Pierre A. G. 3,399,748.
Societe Anonyme Pour l'Equipement Electrique des Vehicules S.E.V. Marchal: *See—*
Amblard, Claude. 3,399,657.
Societe a Responsabilite Limitee Dite :Gaz-Transport: *See—*
Gilles, Auguste. 3,399,800.
Societe d'Electro-Chimie d'Electro-Metallurgie et des Acieries Electriques d'Ugine: *See—*
Boutillon, Gabriel. 3,400,063.
Societe Progil: *See—*
Bourgau, Yolande, and Fritz. 3,400,088.
Solvay & Cie: *See—*
Amodeo, Licio, and Naldini. 3,399,968.
Dassesse, Pierre, and Dechenne. 3,400,110.
Soong, Stassen Y. C., B. H. Lake, and D. R. Baker, to Stauffer Chemical Co. Method of controlling the growth of weeds. 3,399,988, 9–3–68, Cl. 71—94.
Sorenson, James L.: *See—*
Pannier, Karl A., Ring, and Sorenson. 3,399,674.
Sparks, Neil R., to Pan American Petroleum Corp. Recording elastic waves with varying travel times. 3,399,745, 9–3–68, Cl. 181—.5.
Speed-O-Print Business Machines Corp.: *See—*
Hyosaka, Alfred M. 3,399,615.
Speicher, Wolfgang: *See—*
Reischl, Artur, Hardt, Zorn, Bartl, and Speicher. 3,400,173.
Spencer, Samuel F., and L. Mikkelsen, to Hewlett-Packard Co. Gas analyzer. 3,399,974, 9–3–68, Cl. 23—254.
Sperry Rand Corp.: *See—*
Busch, Richard E. 3,399,830.
Cook, Charles E., and Brockner. 3,400,396.
Hawkins, Robert D. 3,400,274.
Jones, Ernest W., Mathias, and Weiss. 3,399,685.
Macys, Albert, and Marinace. 3,400,347.
Reid, Gilbert R. 3,399,452.
Spielman, Arnold: *See—*
Spielman David, and A. 3 399.547.
Spielman, David, and A. Ring. 3,399,547, 9–3–68, Cl. 63—15.
Spilsbury, Ashton J. Centre-loaded antenna unit. 3,400,403, 9–3–68, Cl. 343—750.
Sprague Electric Co.: *See—*
Dornfeld, John E., and Greenberg. 3,400,312.
Sprague, Gordon V., Jr., to United Shoe Machinery Corp. Apparatus for melting and dispensing thermoplastic material. 3,399,665, 9–3–68, Cl. 126—343.5.
Squibb, E. R., & Sons, Inc.: *See—*
Bodanszky, Miklos, Ondetti, Von Saltza, Narayanan, and Levine. 3,400,118.
Stadlin, Walter O., to Lees & Northrup Co. Economic control of power tools. 3,400,258, 9–3–68, Cl. 235—151.21.
Stafford, John A., to Schlumberger Technology Corp. Film processor for recorders. 3,399,616, 9–3–68, Cl. 95—94.
Staklinski, Fred, to DeLuxe Laboratories, Inc. Adjustable roller guide. 3,399,816, 9–3–68, Cl. 226—79.
Stanbee Co., Inc.: *See—*
Berkson, Stanley M. 3,399,413.
Standard International Corp.: *See—*
Keating, John H. 3,400,010.
Stan'ard Products Co., The: *See—*
Jackson, Norman C. 3,399,448.
Standard Telephone & Cable Ltd.: *See—*
Rainger, Peter, and Davies. 3,400,211.
Stanzak, William W. T. Structural member interconnecting arrangement. 3,399,915, 9–3–68, Cl. 287—189.36.
Stauffer Chemical Co.: *See—*
Fearing, Ralph B., Walsh, and McBain. 3,400,178.
Soong, Stassen Y. C., Lake, and Baker. 3,399,988.
Steere Enterprises, Inc.: *See—*
Steere Frank W., Jr. 3,399,455.
Steere, Frank W., Jr., to Steere Enterprises, Inc. Seamless plastic razor head cover. 3,399,455, 9–3–68, Cl. 30—90.
Stegner, Douglass M. Container. 3,399,818, 9–3–68, Cl. 229—14.
Stehlin, Theodore A. Valve including elastomeric boot with sealing ring. 3,399,695, 9–3–68, Cl. 137—551.
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Suchon, Kazimierz: *See—*
Dybal, Kazimierz, Oglaza, Stwora, and Suchon. 3,399,873.
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Thompson, Moody C., Jr., and M. J. Vetter, to United States of America, Commerce. Refractometer that measures the difference in refractive indices of a gas at two frequencies. 3,400,330, 9–3–68, Cl. 324—58.5.
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Tolmie, Ronald W., to Atomic Energy of Canada Ltd. Method and apparatus for radiation direction finding. 3,400,267, 9–3–68, Cl. 250—83.3.
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  - Bourdeau, Romeo G. 3,399,980.
  - Frick, Charles E. 3,399,837.
  - Grimm, Donald C., and Pierce. 3,400,075.
  - Hamling, Bernard H. 3,399,979.
  - Harp, Harry J., Jr. 3,399,427.
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  - Allard, Jules N. 3,399,412.
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  - Greene, Blandford W., and Desmond. 3,399,641.
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- United States Steel Corp.: *See—*
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  - Zunich, Angelo. 3,399,634.
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- Usher, John D., and R. H. Linsdell, to The A.P.V. Co. Ltd. Parallel flow passage, plate type evaporators. 3,399,708, 9–3–68, Cl. 159—28.
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- Van Benthuysen, John D., and M. B. Arisman, to CTS Corp. Variable resistance control with improved heat dissipator arrangement and bearing means. 3,400,355, 9–3–68, Cl. 338—183.
- Vande Wege, John R., to Automatics Electric Laboratories, Inc. Maintenance provisions for pulse sequenced equipment. 3,400,229, 9–3–68, Cl. 179—175.2.
- Vanderbilt, R. T., Co., Inc.: *See—*
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- Vandermeer, Harry W. A.: *See—*
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- Van Malland, Jan, to North American Philips Co., Inc. Light copying device with a cooling arrangement. 3,399,613, 9–3–68, Cl. 95—77.5.
- Vannest, James L., to The Fafnir Bearing Co. Bearing ball retainer. 3,399,936, 9–3–68, Cl. 308—201.
- Vannest, James L., to The Fafnir Bearing Co. Bearing retainer. 3,399,937, 9–3–68, Cl. 308—201.
- Van Pool, Joe, to Phillips Petroleum Co. Recovery of organic fluorides. 3,400,171, 9–3–68, Cl. 260—683.42.
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- Vidal, Paul I., to Rocma Anstalt. Method of producing cellular elements. 3,400,183 9–3–68, Cl. 264—53.
- Villax, Joao, to International Rectifier Corp. Preparation and isolation of tetracyclines with the aid of tetracycline complexes. 3,400,030, 9–3–68, Cl. 195—80.
- Vincent, Renic P. to Pan American Petroleum Corp. Submarine anchor assembly. 3,399,646, 9–3–68, Cl. 114—206.
- Vinson, John A., to Armco Steel Corp. High speed, high power reciprocating pumps and valve stacks therefor. 3,399,694, 9–3–68, Cl. 137—512.
- Vogel, Arthur E., of ¼ to A. E. Vogel, R. Dawson, W. H. F. Schmieding, and P. Fultz. Controlled suspension system for vehicles. 3,399,905, 9–3–68, Cl. 280—124.
- Vogt, Clarence W. Feed mechanism. 3,399,931, 9–3–68, Cl. 302—49.
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- Vroom, Harold B., deceased, by R. Lepak, executor, to Veeder Industries, Inc. Count transfer system. 3,400,255, 9–3–68, Cl. 235—92.
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- Wallace, Joseph D., to The Coleman Co., Inc. Three-way convertible cooler. 3,399,938, 9–3–68, Cl. 312—214.
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- Warne, Eugene H., to Joseph Lucas (Industries) Ltd. Control linkages. 3,399,528, 9–3–68, Cl. 60—39.28.
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- Waters, Oscar B., Jr., ½ to W. R. Grace & Co., and ½ to United States of America, Interior. Method for separating Na_2SO_4 from brines or bitterns. 3,399,961, 9–3–68, Cl. 23—121.
- Watkinson, Leonard J., to W. H. Howson, Ltd. Processing of presensitized photolithographic printing plates. 3,399,994, 9–3–68, Cl. 96—48.
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- Wensel, George Jr., to Advance Industries, Inc. Method of and apparatus for extruding thermoplastic material. 3,399,426, 9–3–68, Cl. 18—12.
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  - Winter, Hermann, and Weber. 3,400,113.
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  - Weinstein, Abraham, B., Erdman, and Weber. 3,400,097.
- Webster, Sidney T., and J. J. D'Amico, to Monsanto Co. Method of rearranging thioethers to thiones. 3,400,133, 9–3–68, Cl. 260—305.
- Weckler, Gerhard, and S. Schiessler, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. 2,4,6-Tri-(1-amino-substituted aromatic)-S-triazines. 3,400,121, 9–3–68, Cl. 260—239.7.
- Wedner, Benjamin M., to Gulf Research & Development Co. Quick opening valve. 3,399,802, 9–3–68, Cl. 220—47.
- Welden, Mathias H. J.: *See—*
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- Weinberger, Karl, to Riffelmacher & Weinberger. Method and apparatus for re-shaping a garland. 3,400,195, 9–3–68, Cl. 264—320.
- Weinstein, Abraham B., S. Erdman, and J. Weber. Cast porcelain prosthesis and method of making the same. 3,400,097, 9–3–68, Cl. 260—37.
- Weisberg, Sidney, to Worthy Products Corp. Drapery pleat forming and supporting assembly. 3,399,712, 9–3–68, Cl. 160—348.
- Weisbord, Leon: *See—*
  - Riordan, Hugh E., and Weisbord. 3,399,572.
- Weiss, Hansjurgen, to Dornier System G.m.b.H. Device for preventing trailing-edge fluttering of paraglider airfoils. 3,399,848, 9–3–68, Cl. 244—41.
- Weiss, Vladimir R.: *See—*
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- Wells, Richard G.: *See—*
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- Weninger, Frank L., to Bell & Howell Co. Take-up reel having torqued sprocket ring. 3,399,844, 9–3–68, Cl. 242—74.
- Weninger, Frank L.: *See—*
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  - Berger, Leo, Stempel, Sternbach, and Wenis. 3,400,128.
- Wenner, Wilhelm, and M. R. Uskokovic, to Hoffmann-La Roche Inc. Novel 4,1-benzothiazepin-2(1H)-ones and 4,1-benzothiazepines. 3,400,119, 9–3–68, Cl. 260—239.3.
- Westerman, William J., Jr., to Martin-Marietta Corp. Mechanically entrained fluidic oscillator. 3,399,688, 9–3–68, Cl. 137—81.5.
- Western Union Telegraph Co.: *See—*
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- West Point-Pepperell, Inc.: *See—*
  - Etchison, Gibson O., McDaniel, and Hines. 3,399,642.
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- Westinghouse Air Brake Co.: *See—*
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- Westinghouse Electric Corp.: *See—*
  - Ruka, Roswell J., and Weissbart. 3,400,054.
- Westwell, William G., and R. H. Slee, to Perkins Engines Ltd. Hydrodynamic fluid brake. 3,399,747, 9–3–68, Cl. 188—90.
- Whirlpool Corp.: *See—*
  - Myers, George H., and Harter. 3,399,948.
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- Whyte, David D., P. F. Pflaumer, and J. K. Dyer, to The Procter & Gamble Co. Process for preparing hydroxydiphosphonic acids from elemental phosphorus, oxygen and carboxylic acids. 3,400,150, 9–3–68, Cl. 260—502.4.
- Wiechert, Rudolf, to Schering AG. $\Delta^{1,2}$-5α-androstadien-3,17β-diol-3,17-diesters. 3,400,138, 9–3–68, Cl. 260—397.5.
- Wiegman, Lenore, to American Cyanamid Co. Novel ammonium polyphosphates and methods for preparing the same. 3,399,986, 9–3–68, Cl. 71—47.
- Wienert, Fritz O. Pellet manufacture. 3,400,179, 9–3–68, Cl. 264—15.
- Wienert, Gunther H. R.: *See—*
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- Wikholm, Karl O. Method for producing leakproof containers. 3,400,028, 9–3–68, Cl. 156—64.
- Wilczynski, Janusz S.: *See—*
  - Drougard, Renee M., and Wilczynski. 3,399,591.
- Wiley, Fred E., to Phillips Petroleum Co. Making plastic film from particles. 3,400,186, 9–3–68, Cl. 264—126.
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- Willcox, Frederick P., N. M. Smith, and H. Levitt. Code signal transmitter automatically deenergized upon transmitting an end-of-message signal. 3,400,392, 9–3–68, Cl. 340—365.
- Williams, Gordon E. Tire construction. 3,399,707, 9–3–68, Cl. 152—321.
- Willmund, Wolf-Dieter: *See—*
  - Michael, Gregor, and Willmund. 3,400,059.
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- Wilson, Edward W., and D. L. Wooden, to Peerless Industries, Inc. Modulating fuel control system. 3,399,832, 9–3–68, Cl. 236—91.
- Wilson, James H., to United States Steel Corp. System for indicating liquid level. 3,399,568, 9–3–68, Cl. 73—295.
- Wilson, James L. Reciprocal carriage operating apparatus. 3,399,630, 9–3–68, Cl. 104—162.
- Wilson, Reginald D. Drapery hanger. 3,399,713, 9–3–68, Cl. 160—348.
- Wilson, William P., to General Electric Co. Numerical positioning control system. 3,400,314, 9–3–68, Cl. 318—18.
- Winchell, Alan M., to GAF Corp. Antistatic backing layers for photographic film. 3,399,995, 9–3–68, Cl. 96—87.
- Winkler, Alfred, K. Bammesberger, H. Krobel, and H. Wilsch, to Agfa-Gevaert Aktiengesellschaft. Motion picture projector. 3,399,842, 9–3–68, Cl. 242—55.11.
- Winsler, Robert J.: *See—*
  - Buchbinder, Henry M., and Winsler. 3,399,784.
- Winsor, Donald L., to Raytheon Co. High power electron beam phase shifter. 3,400,296, 9–3–68, Cl. 315—3.5.
- Winter, Hermann, and H. Weber, to Chemische Werke Huls Aktiengesellschaft. Molecular weight control of polydiolefins. 3,400,113, 9–3–68, Cl. 260—94.3.
- Wise, Ralph H. Windshield wiper. 3,399,419, 9–3–68, Cl. 15—250.42.
- Wix Corp.: *See—*
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- Wochnowski, Waldemar: *See—*
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- Wolfe, Bertram: *See—*
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- Wolfe, Bertram, to General Electric Co. Steam cooled nuclear reactor power system. 3,400,049, 9–3–68, Cl. 176—60.
- Wolkoff, Edward J.: *See—*
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- Wolniak, Stanley C.: *See—*
  - Gray, Raymond K., and Wolniak. 3,399,535.
- Wolters Gerard C., to General Electric Co. Music distribution system using FM transmission over house wiring. 3,400,221, 9–3–68, Cl. 179—2.5.
- Wood, David L., to Universal Pole Bracket Corp. Removable structure climbing device. 3,399,746, 9–3–68, Cl. 182—92.
- Wood, Prentice J., to The Mead Corp. Article carrier. 3,399,804, 9–3–68, Cl. 220—118.
- Woodcock, George S., and H. E., F. Simpson, and W. Clayton. Straight bar knitting machines. 3,399,550, 9–3–68, Cl. 66—5.
- Woodcock, Herbert E.: *See—*
  - Woodcock, George S., and H. E., Simpson, and Clayton. 3,399,550.
- Wooden, Donald L.: *See—*
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- Woods, William G., H. Goldsmith, and R. F. Crawford, to United States Borax & Chemical Corp. 2-alkylaminobenzimidazoles as herbicides. 3,399,987, 9–3–68, Cl. 71—92.
- Woodward, Walter S. Sharpener for safety razor blades, and method. 3,399,495, 9–3–68, Cl. 51—85.
- Woolworth, Richard G., to Old Pal, Inc. Holding means and carrying means for ski equipment. 3,399,750, 9–3–68, Cl. 190—41.
- Worldsbest Industries, Inc.: *See—*
  - Injeski, Stanley G. 3,399,788.
- Worthy Products Corp.: *See—*
  - Weisberg, Sidney. 3,399,712.
- Wright, John T. M., to Joseph Lucas (Industries) Ltd. Hydraulic transmission systems. 3,399,531, 9–3–68, Cl. 60—53.
- Wright, Kelley: *See—*
  - Bailey, Robert L., and Bates. 3,399,408.
- Wu, George S., to Automatic Electric Laboratories, Inc. Converter having diode rectifiers in a feedback voltage divider circuit for temperature compensation. 3,400,320, 9–3–68, Cl. 321—16.

Wu, Tse C., to General Electric Co. Cyclopolysiloxanes. 3,400,145, 9–3–68, Cl. 260—448.2.

Wuppermann, Theodor, Gesellschaft mit beschrankter Haftung: *See*—
Rietsch, Eberhard. 3,400,240.

Wurm, Joseph G., and A. Avogadro, to European Atomic Energy Community-Euratom. Process for processing irradiated ceramic reactor fuels. 3,399,977, 9–3–68, Cl. 23—325.

Wurst, Gerhard: *See*—
Thoma, Georg, Wurst, and Geist. 3,399,521.

Wynn Development Ltd.: *See*—
Wynn, Edward D., and Longford. 3,399,418.

Wynn, Edward D., and C. G. Longford, to Wynn Development Ltd. Window or windscreen wiper mechanisms. 3,399,418, 9–3–68, Cl. 15—250.24.

Wysong, Paul V., Jr.: *See*—
Valenti, Peter, and Wysong. 3,399,581.

Xerox Corp.: *See*—
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Yakim, Charles. Ornamental illuminated color star light. 3,400,263, 9–3–68, Cl. 240—10.

Yamaoka, Tadao: *See*—
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Yang, Peter Q., and K. J. White, to Dennison Mfg. Co. Adjustable support for record copier. 3,399,940, 9–3–68, Cl. 312—233.

Yoder, John R., R. F. Leftwich, and D. W. Fisher, to Barnes Engineering Co. Infrared radiometric microscope. 3,400,266, 9–3–68, Cl. 250—83.3.

Yoder Co., The: *See*—
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Zahnradfabrik Friedrichshafen Aktiengesellschaft: *See*—
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Zak, Stanley: *See*—
Nightingale, John G., Repholz, Sieglinger, and Zak. 3,400,222.

Zanow, Andrey L., to Midland-Ross Corp. Car draft-rigging with swivel-joint structure. 3,399,787, 9–3–68, Cl. 213—64.

Zaslowsky, Joel A.: *See*—
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Zeiss, Carl: *See*—
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Zemberry, William L., to United States Steel Corp. Method and device for measuring simulated flaws in standard specimens. 3,400,238, 9–3–68, Cl. 219—69.

Zhukov, Leonid A., I. I. Kartashov, E. A. Pankratova, and J. P. Ryzhov. Device for automatic reactive power regulation in electric networks. 3,400,326, 9–3–68, Cl. 323—101.

Ziegler, Kenneth L., to Raytheon Co. Current reversing circuit. 3,400,304, 9–3–68, Cl. 317—148.5.

Zimmerman, Merle A. Method for sterilizing clothing and the like in a bag with a sterilizing fluid. 3,399,955, 9–3–68, Cl. 21—58.

Zinkham, Robert E.: *S*—
Goodwin, Robert J., Mori, Pekarek, Schaub, and Zinkham. 3,399,739.

Zinn, Alfred W., to General Precision, Inc. Directional radiation sensor comprising a three-dimensional photosensitive surface. 3,40,276, 9–3–68, Cl. 250—211.

Zob, Almos P. Dual-input electric side-arm water heater. 3,400,246, 9–3–68, Cl. 219—297.

Zorn, Bruno: *See*—
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Zuiderweg, Frederik J., and W. H. Manger, to Shell Oil Co. Apparatus for contacting gases and liquids. 3,399,870, 9–3–68, Cl. 261—114.

Zunich, Angelo, to United States Steel Corp. Movement lubricating bearing assembly. 3,399,634, 9–3–68, Cl. 105—218.

Zvalgzne, Gunars: *See*—
Epstein, Donald A., and Zvaigzne. 3,400,367.

Zwoboda, Otto F., to Arethusa Establishment. Ozonizing apparatus for air. 3,400,071, 9–3–68, Cl. 204—317.

Ziolkowski, Horst: *See*—
Pecksen, Otto, Ziolkowski, and Madlener. 3,399,620.

CLASSIFICATION OF PATENTS

ISSUED SEPTEMBER 3, 1968

NOTE.—First number, class; second number, subclass; third number, patent number

2 – 114 : 3,399,406
5 – 348 : 3,399,407
8 – 31 : 3,399,952
54 : 3,399,953
94.22 : 3,399,954
9 – 310 : 3,399,408
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(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

September 3, 1968 Volume 854 Number 1

TRADEMARKS

NOTICES

Service by Publication

A petition to cancel each of the registrations identified below having been filed, and the notice of such proceedings sent by registered mail to each registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrants listed herein, their assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancelation will be proceeded with as in the case of default.

Imperial Litemaster Distributors, Inc., Chicago, Ill., Reg. No. 441,755, Canc. No. 9149.

Kay Ruth Dress Company, Inc., Jackson, Miss., Reg. No. 442,342, Canc. No. 9154.

American Education Series, Inc., Independence, Oreg., Reg. No. 773,200, Canc. No. 9158.

Michael J. Stimac, Palm Springs, Calif., Reg. No. 529,430, Canc. No. 9174.

EDWIN L. REYNOLDS,
First Assistant Commissioner of Patents.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 121,818 (DESIGN OF MR. PEANUT), Planters Nut & Chocolate Co., Salted peanuts and peanut bars; **Reg. No. 123,641** (PLANTERS AND DESIGN), same, Salted peanuts, peanut bars, raw peanuts, peanut-butter, peanut-meal, chocolate cream candy, nut-candy, chocolate candy, and peanut-candy; **Reg. No. 237,024** (GROTESQUE FIGURE OF A PEANUT MAN), same, Chocolate-covered peanuts; **Reg. No. 508,052** (MR. PEANUT AND DESIGN OF PEANUT MAN), same, Salted peanuts, peanut candy, chocolate covered peanuts, and salted assorted nuts, and peanut oil for cooking purposes; **Reg. No. 526,962** (DESIGN OF MR. PEANUT), same, Peanut oil for medicinal purposes; **Reg. No. 536,518**, same, Plastic salt and pepper shakers; **Reg. No. 538,882** ("MR. PEANUT"), same, Salted shelled peanuts, potato chips, candied and buttered popcorn and doughnuts; **Reg. No. 799,958** (MR. PEANUT AND DESIGN), Standard Brands Incorporated, Shelled nuts, candy, peanut bars, peanut butter and peanut oil; **Reg. No. 206,415** (MR. PEANUT), The Planters Nut and Chocolate Company, Candy, salted peanuts, peanut meal, peanut butter and candied peanuts, **Reg. No. 526,963** (MR. PEANUT AND DESIGN), same, Peanut oil for medicinal purposes; **Reg. No. 222,961** (PLANTERS JUMBO BLOCK), same, Peanut-candy bar; **Reg. No. 315,261** (PLANTERS "HI-HAT"), Planters Edible Oil Company, Edible oils for salads and for cooking purposes; **Reg. No. 319,615** ("PLANTERS" AND DESIGN), Planters Nut and Chocolate Co., Salted peanuts; **Reg. No. 322,461** (PLANTERS), same, Roasted peanuts, raw peanuts, salted peanuts, peanut butter, peanut meal; candy and peanut confections—namely, peanut candy bars, chocolate coated peanuts, and chocolate coated peanut candy bars; **Reg. No. 528,074**, same, Shelled and salted peanuts, salted mixed nuts, peanut butter sandwiches, potato chips, candied and buttered popped popcorn, and doughnuts; **Reg. No. 706,102**, same, Edible peanut oil, **filed**

CONDITION OF TRADEMARK APPLICATIONS AS OF JULY 31, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)] 15,049
Date of oldest new application .... June 9, 1967
Date of oldest amended application (filing date) .... June 15, 1964

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	9-7-67	4-21-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	11-1-67	5-16-66
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	10-27-67	6-15-64
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	6-9-67	3-14-66
Renewals (All Classes)	7-1-68	....
Sec. 12(c) Publications (All Classes)	7-1-68	....

Applications filed during the month of July 1968—2,564

Registrations Issued .... 536—No. 855,740 to No. 856,275
Renewals Issued 101

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

May 6, 1968, D.C.N.J. (Camden), Doc. 436–68, *Standard Brands Incorporated* v. *Solomon Gelnik*.

Reg. No. 123,641. (See Reg. No. 121,818.)

Reg. No. 206,415. (See Reg. No. 121,818.)

Reg. No. 222,961. (See Reg. No. 121,818.)

Reg. No. 237,034. (See Reg. No. 121,818.)

Reg. No. 315,261. (See Reg. No. 121,818.)

Reg. No. 319,615. (See Reg. No. 121,818).

Reg. No. 322,461. (See Reg. No. 121,818.)

Reg. No. 506,052. (See Reg. No. 121,818.)

Reg. No. 524,505 (SCRABBLE), The Production and Marketing Corporation, Game including board and playing pieces; **Reg. No. 589,217**, same, Scoring devices and turn-tables used in the playing of games and board games; **Reg. No. 617,871**, same, Score pads, **filed** May 16, 1968, D.C., S.D.N.Y., Doc. 68–C–2006, *Production & Marketing Co.* v. *E. S. Lowe Co., Inc.*

Reg. No. 526,962. (See Reg. No. 121,818.)

Reg. No. 526,963. (See Reg. No. 121,818.)

Reg. No. 528,074. (See Reg. No. 121,818.)

Reg. No. 536,518. (See Reg. No. 121,818.)

Reg. No. 538,882. (See Reg. No. 121,818.)

Reg. No. 589,217. (See Reg. No. 524,505.)

Reg. No. 617,871. (See Reg. No. 524,505.)

Reg. No. 704,772 (SERVICEMASTER AND DESIGN), Wade, Wenger & Associates, Inc., General household, office, and institutional cleaning and renovating services, such as wall and window washing, window shades, blind and drapery cleaning, mothproofing, floor maintenance including surfacing, cleaning, polishing, and waxing, dry cleaning and laundry work; **Reg. No. 782,584** (SERVICEMASTER), Wade, Wenger Servicemaster Co., Maintenance services for cleaning interiors of commercial buildings and private homes and furnishings thereof, **filed** May 21, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–859–HP, *Servicemaster Industries, Inc., etc.* v. *Servicemaster of Southern California, et al.*

Reg. No. 706,102. (See Reg. No. 121,818.)

Reg. No. 779,958. (See Reg. No. 121,818.)

Reg. No. 782,584. (See Reg. No. 704,772.)

Reg. No. 805,531 (LEKTRIEVER), Sperry Rand Corporation, Mechanized filing units, **filed** Apr. 19, 1967, D.C., S.D.N.Y., Doc. 67–C–1536, *Sperry Rand Corporation* v. *The Mosler Safe Co.* Dismissed on stipulation and order, May 24, 1968.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 240,483. Styla Accessories Limited, Birmingham, Warwick, England. Filed Mar. 8, 1966.

STYLA

Priority claimed under Sec. 44(d) on British Reg. No. 887,039, dated Nov. 17, 1965. Owner of British Reg. Nos. 784,966, and 784,967.

Class 19—Vehicles

For Wheel Disks, Hub Caps, Mud Flaps, Splash Guards, Tire Trims, Radiator Grills, Rear View Mirrors, Anticondensation Panels, Ornaments and Embellishments for Automotive Vehicles (Int. Cl. 12).

Class 21—Electrical Apparatus, Machines, and Supplies

For Spotlights, Parking Lights, Directional Signalling Lights, Fog Lamps, and Parts Thereof (Int. Cl. 11).

Class 6—Chemicals and Chemical Compositions

For Organic Rust and Corrosion Inhibitors, and Radiator Antifreeze (Int. Cls. 1 and 2).

Class 15—Oils and Greases

For Motor and Industrial Lubricating Oils, Automotive and Industrial Greases, Transmission Fluids, and Liquid and Gaseous Fuels (Int. Cls. 1 and 4).

First use at least as early as Apr. 10, 1963.

SN 259,455. McMartin Industries, Inc., Omaha, Nebr. Filed Nov. 25, 1966.

MC MARTIN

Owner of Reg. No. 720,487.

Class 21—Electrical Apparatus, Machines, and Supplies

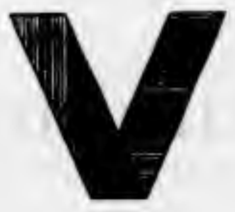
For Electronic Equipment—Namely, Radio Receivers, Microphones, Antennas, Speakers, Transformers, Relays, Tape Recorders, Amplifiers, and Intercommunication Equipment (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Lecterns, Monitors, FM Stereo Monitors, FM Modulation Monitors, FM Frequency Monitors, AM Noise Meters, Multiplex Signal Generators, and FM Field Strength Meters (Int. Cl. 9).

First use Dec. 14, 1959.

SN 267,482. Ashland Oil & Refining Company, Ashland, Ky. Filed Mar. 24, 1967.



The vertical shading represents the color red, the horizontal shading represents the color blue, and the cross-hatched shading represents a combination of the blue superimposed on the red. Owner of Reg. Nos. 700,385, 820,565, and others.

SN 269,139. Kent Rubber Corporation, Jericho, N.Y. Filed Apr. 14, 1967.

ONDINE

Class 39—Clothing

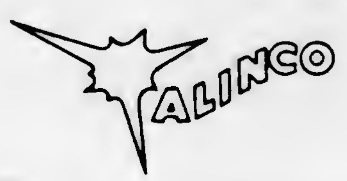
For Household Rubber Gloves and Bathing Caps (Int. Cl. 25).

Class 44—Dental, Medical, and Surgical Appliances

For Hot Water Bottles (Int. Cl. 21).

First use Aug. 19, 1966.

SN 270,097. Textron Electronics, Inc., Providence, R.I. Filed Apr. 27, 1967.



Class 21—Electrical Apparatus, Machines, and Supplies

For Amplifiers (Int. Cl. 9).
First use at least as early as Mar. 15, 1955.

Class 26—Measuring and Scientific Appliances

For Strain Gage and Pressure Transducers, Circuit Testers and Resistance Meters, and Null Detectors (Int. Cl. 9).
First use at least as early as July 1952.

SN 272,659. Dayco Corporation, Dayton, Ohio. Filed May 31, 1967.

LASR

Class 1—Raw or Partly Prepared Materials

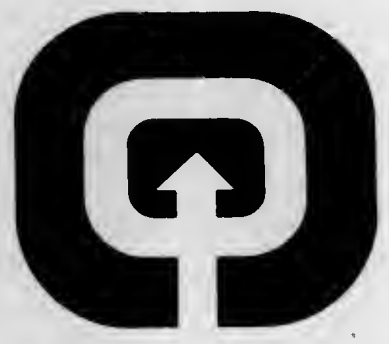
For Natural or Synthetic Rubber Molding Compounds, Sheets and Strips (Int. Cl. 17).

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Gaskets for Aircraft Windows and Doors; Seals for Aircraft Windows, Doors and Fittings; and Packing for Aircraft Windows, Doors and Structural Fuel Cell Fittings (Int. Cl. 17).

First use in or about May 1967.

SN 279,017. Marquette Corporation, Minneapolis, Minn. Filed Aug. 25, 1967.



Owner of Reg. Nos. 802,155 and 812,943.

Class 21—Electrical Apparatus, Machines, and Supplies

For Vacuum Cleaners, and Battery Chargers and Boosters (Int. Cl. 9).
First use Feb. 15, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Frame Straighteners for Automotive Vehicles (Int. Cl. 7).
First use June 2, 1967.

Class 26—Measuring and Scientific Appliances

For Tune Up Equipment—Namely, Equipment for Testing and Indicating the Condition of Internal Combustion Engines in Connection With the Adjusting and Tuning Thereof (Int. Cl. 9).
First use May 25, 1965.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Electrical Welders and Parts Thereof; Gas Welding and Cutting Equipment—Namely, Torch Handles and Tips, Cutting Attachments With Cutting Tips, Hose and Gas Regulators, and Welding Rods (Int. Cls. 6 and 9).
First use Mar. 1, 1965.

SN 282,549. Curtis Mathes Sales Company, Dallas, Tex. Filed Oct. 16, 1967.

Curtis Mathes

The mark "Curtis Mathes" is the name of an individual, whose consent is made of record.

Class 21—Electrical Apparatus, Machines, and Supplies

For Television Units, Radio-Receivers, Hi-Fi Components and Parts Thereof, Combination Radio-Phonograph Units, and Combination TV-Phonograph Units (Int. Cl. 9).

Class 36—Musical Instruments and Supplies

For Stereo Phonograph Record Players, Magnetic Tape Recording Units, and Tape Playback Units (Int. Cl. 9).
First use August 1959.

SN 282,550. Curtis Mathes Sales Company, Dallas, Tex. Filed Oct. 16, 1967.

CM

Class 21—Electrical Apparatus, Machines, and Supplies

For Television Units, Radio-Receivers, Hi-Fi Components and Parts Thereof, Combination Radio-Phonograph Units, and Combination TV-Phonograph Units (Int. Cl. 9).

Class 36—Musical Instruments and Supplies

For Stereo Phonograph Record Players, Magnetic Tape Recording Units, and Tape Playback Units (Int. Cl. 9).
First use August 1959.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 282,471. Limestone Products Corporation of America, Newton, N.J. Filed Oct. 13, 1967.

SHELL-PRODUCER

Owner of Reg. No. 628,863.
For Ground Limestone for Use as a Poultry Feed Ingredient (Int. Cl. 31).
First use Dec. 21, 1943.

SN 286,094. Chevron Chemical Company, San Francisco, Calif. Filed Dec. 4, 1967.

WEBSPUN

For Synthetic Fibers (Int. Cl. 22).
First use June 30, 1966.

SN 286,999. The Borden Company, New York, N.Y. Filed Dec. 15, 1967.

CASCOMEL

For Melamine Formaldehyde Resin (Int. Cl. 1).
First use Dec. 28, 1965.

SN 287,042. Pluess-Staufer (North American) Inc., New York, N.Y. Filed Dec. 15, 1967.

CALIBRITE

For Calcium Carbonate Filler (Int. Cl. 1).
First use April 1964.

SN 287,359. Hercules Incorporated, Wilmington, Del. Filed Dec. 21, 1967.

POLYCUP

For Crosslinking Synthetic Resin (Int. Cl. 1).
First use Nov. 27, 1967.

SN 296,543. Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd., Miyakojima-ku, Osaka, Japan. Filed Apr. 25, 1968.

KANEBO BELESA

For Synthetic Leather (Int. Cl. 18).
First use at least as early as February 1967; in commerce Mar. 11, 1968.

SN 298,896. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed May 23, 1968.

STRYCE

For Man-Made Fibers for Generalized Use in the Industrial Arts (Int. Cl. 22).
First use May 15, 1968.

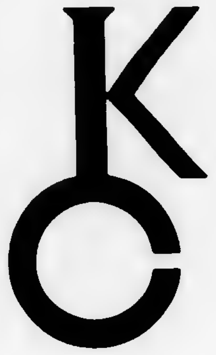
SN 298,899. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed May 23, 1968.

QIANA

For Man-Made Fibers for Generalized Use in the Industrial Arts (Int. Cl. 22).
First use May 15, 1968.

Class 2—Receptacles

SN 278,601. Kollmor Chemicals, Chicago, Ill. Filed Aug. 18, 1967.



For Edible Sausage Casings (Int. Cl. 18).
First use June 27, 1967.

SN 281,391. Plastics, Inc., St. Paul, Minn. Filed Sept. 28, 1967.

MICROPROOF

For Plastic Dishware Usable in a Microwave Oven and Used for Serving Food (Int. Cl. 21).
First use Apr. 1, 1967.

SN 283,727. Southern Graphic Industries, Nashville, Tenn. Filed Oct. 30, 1967.

UNI-JAK

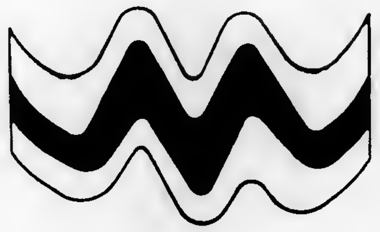
For Phonograph Record Jackets (Int. Cl. 16).
First use June 16, 1967.

SN 283,883. Eastern Seaboard Plastics, Inc., Newark, N.J. Filed Nov. 1, 1967.

SERVETTE

For Plastic Coasters Which Clip on to the Leg (Int. Cl. 21).
First use Oct. 8, 1967.

SN 284,488. Marcal Paper Mills, Inc., East Paterson, N.J. Filed Nov. 9, 1967.



The mark comprises a stylized letter "m."
For Paper Products—Namely, Sandwich Bags, Lunch Bags, and Garbage Bags (Int. Cl. 16).
First use Apr. 10, 1967.

SN 289,703. Lily-Tulip Cup Corporation, New York, N.Y. Filed Jan. 26, 1968.

LILYFOME

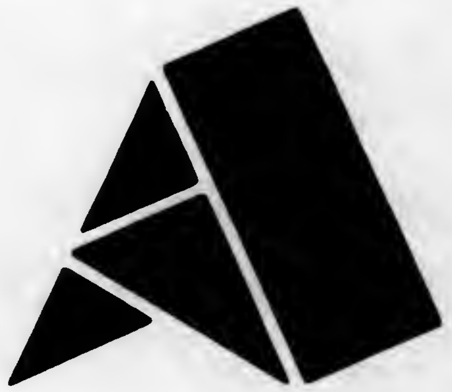
Owner of Reg. Nos. 87,365, 623,306, and others.
For Receptacles of Plastic Material—Namely, Cups, Plates, Bowls, Dishes, and Trays (Int. Cl. 21).
First use on or about Jan. 12, 1968.

SN 289,705. Lily-Tulip Cup Corporation, New York, N.Y. Filed Jan. 26, 1968.

Lilyfome

Owner of Reg. Nos. 87,365, 623,306, and others.
For Receptacles of Plastic Material—Namely, Cups, Plates, Bowls, Dishes, and Trays (Int. Cl. 21).
First use on or about Jan. 12, 1968.

SN 291,694. American Can Company, New York, N.Y. Filed Feb. 23, 1968.



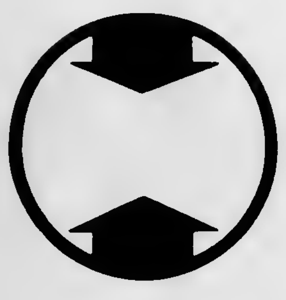
For Metal Cans and Components for Beverages (Int. Cl. 6).
First use July 25, 1966.

SN 294,814. Consolidated Packaging Corporation, Chicago, Ill. Filed Apr. 3, 1968.

CONSO·COLOR

For Corrugated Boxes Made of Corrugated or Combined Board Having One or More Surfaces of Colored Linerboard and for Folding Cartons Made of Colored Boxboard (Int. Cl. 16).
First use Sept. 19, 1967.

SN 295,230. Hedwin Corporation, New York, N.Y. Filed Apr. 9, 1968.



For Composite Containers Consisting of Metal Outer Packs With Plastic Liners—Namely, Pails and Drums (Int. Cl. 6).
First use Jan. 25, 1968.

SN 298,213. Eastern Corrugated Container Corporation, Clifton, N.J. Filed May 15, 1968.

AQUA-PEL

For Corrugated Shipping Containers (Int. Cl. 16).
First use Mar. 4, 1968.

SN 298,291. Mohawk Plastics, Inc., Bernardston, Mass. Filed May 16, 1968.

For Flexible Plastic Bags (Int. Cl. 21).
First use at least as early as Feb. 26, 1968.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 280,893. St. Thomas, Incorporated, Gloversville, N.Y. Filed Sept. 21, 1967.

MINI-SPACEMAKER

Applicant disclaims exclusive right to the prefix "Mini" apart from the mark as shown.
For Leather Billfolds, Pocket Secretaries, and Coin Purses (Int. Cl. 18).
First use April 1967.

Class 4 — Abrasives and Polishing Materials

SN 280,772. Diametal AG., Biel, Switzerland. Filed Sept. 20, 1967.

SUPERFIX

For Grindstones Containing Diamonds (Int. Cl. 7).
First use June 4, 1953; in commerce in or about November 1955.

SN 299,535. Simoniz Company, Chicago, Ill. Filed June 3, 1968.

GLEE

Owner of Reg. No. 616,011.
For Furniture Wax (Int. Cl. 3).
First use Apr. 9, 1968.

Class 6 — Chemicals and Chemical Compositions

SN 273,330. Tee-Pak, Inc., Chicago, Ill. Filed June 7, 1967.

SRS

For Cellulose Derivatives—Namely, Cellulose Xanthate Salts and Esters (Int. Cl. 1).
First use Apr. 1, 1967.

SN 278,328. Water-In, Altadena, Calif. Filed Aug. 15, 1967.

For Surfactant, Capable of Breaking Up the Molecular Structure of Water, for Use in Obtaining Thorough Penetration in Soil, Aerating Soil, Wetting Mulch, and Breaking Up Adobe (Int. Cl. 1).
First use Jan. 1, 1963.

SN 285,217. Elsan Limited, London, England. Filed Nov. 20, 1967.

ELSANOL

Owner of British Reg. No. 440,325, dated Sept. 1, 1923.
For Disinfectants (Int. Cl. 5).

SN 286,914. The Diversey Corporation, Chicago, Ill. Filed Dec. 14, 1967.

DICO

Owner of Reg. No. 350,510.
For Chemical Brightener for Stainless Steel and Aluminum (Int. Cl. 1).
First use Sept. 21, 1967.

SN 292,844. Diamond Shamrock Corporation, Cleveland, Ohio. Filed Mar. 11, 1968.

PG GRANULES

The term "Granules" is disclaimed apart from the mark as shown.
For Synthetic Plaster-Based Granules for Use as a Pesticidal Carrier (Int. Cl. 1).
First use Jan. 27, 1967.

Class 7 — Cordage

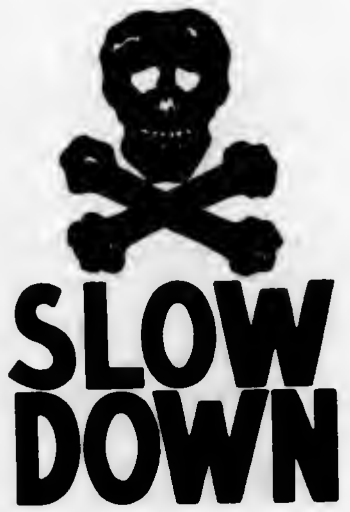
SN 282,598. Milton L. Mintzer, New York, N.Y. Filed Oct. 16, 1967.

EMERALD

For Cordage and Twine (Int. Cl. 22).
First use Nov. 1, 1955.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 284,661. H. A. Haynes, Wichita Falls, Tex. Filed Nov. 13, 1967.



For Cigarette Containers (Int. Cl. 34).
First use Oct. 28, 1967.

SN 297,185. General Cigar Co., Inc., New York, N.Y. Filed May 2, 1968.

GOLDEN GLOVE

For Pouch-Like Containers for Cigars (Int. Cl. 34).
First use about October 1966.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 278,698. International Armament Corporation, Alexandria, Va. Filed Aug. 21, 1967.

INTERARMS

For Rifles, Pistols, and Ammunition Therefor (Int. Cl. 13).
First use May 1967.

SN 287,056. Zebra Distributing Co., Inc., Tacoma, Wash. Filed Dec. 15, 1967.

For Fireworks (Int. Cl. 13).
First use Dec. 14, 1965.

Class 10 — Fertilizers

SN 289,812. Lindauer & Co., San Francisco, Calif. Filed Jan. 29, 1968.

The drawing is lined for the color red.
For Growing Medium Consisting of Pulverized Aged Redwood Sawdust and Other Organic Materials Especially Prepared for Shade Loving Plants (Int. Cl. 1).
First use Jan. 23, 1968.

SN 291,993. Miramul, Incorporated, Diboll, Tex. Filed Feb. 27, 1968.

MIRACLE BARK

Without waiving any common law rights, the exclusive right to use the word "Bark" apart from the mark as shown is disclaimed.
For Soil Conditioner and Mulch (Int. Cl. 1).
First use Sept. 30, 1967.

Class 11 — Inks and Inking Materials

SN 277,746. Wikoff Color Corporation, Charlotte, N.C. Filed Aug. 7, 1967.

DRI-KOTE

For Functional Liquid Coating Which Reduces the Drying Time of Printing Inks (Int. Cl. 1).
First use May 31, 1967.

Class 12 — Construction Materials

SN 267,423. Hambro Forest Products, Inc., Crescent City, Calif. Filed Mar. 23, 1967.

For Particle Board (Int. Cl. 19).
First use Nov. 18, 1965.

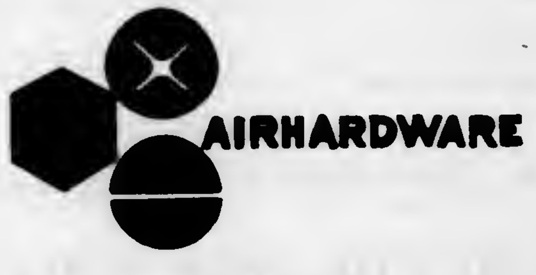
SN 284,499. Powerlock Floors, Inc., Philadelphia, Pa. Filed Nov. 9, 1967.

CHANNEL MASTER

For Wood Flooring and Parts Thereof for Assembly (Int. Cl. 19).
First use Oct. 26, 1967.

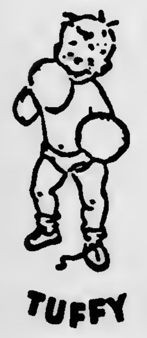
Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 273,014. Airhardware, Inc., Van Nuys, Calif. Filed June 5, 1967.



No claim is made to the showing of the three screw heads except as shown on the drawing.
For Fastening Devices in the Aircraft and Space Industry, Including Screws, Bolts, and Rivets (Int. Cl. 6).
First use Jan. 23, 1959.

SN 276,302. Beneke Corporation, Columbus, Miss. Filed July 19, 1967.



Owner of Reg. No. 607,550.
For Toilet Seats (Int. Cl. 11).
First use January 1953.

SN 277,464. Schlage Lock Company, d.b.a. LCN Closers Division, Princeton, Ill. Filed Aug. 3, 1967.

HYDRA-HOLDER

For Door Check and Door Closer (Int. Cl. 6).
First use about June 23, 1967.

SN 277,465. Schlage Lock Company, d.b.a. LCN Closers Division, Princeton, Ill. Filed Aug. 3, 1967.

NIFTEE

For Door Check and Door Closer (Int. Cl. 6).
First use about June 23, 1967.

SN 277,985. Chrom-Ever Corporation, New York, N.Y. Filed Aug. 10, 1967.

CHROM-EVER

For Canisters, Serving Pieces, and Lazy Susans, All Made of Metal (Int. Cl. 21).
First use May 1, 1967.

SN 281,162. Quality Products, Inc., Bayamon, Puerto Rico. Filed Sept. 26, 1967.

Eco Pak

The term "Pak" is disclaimed apart from the mark as shown.
For Zippers (Int. Cl. 26).
First use April 1966.

SN 282,457. The Gould-Mersereau Co., Inc., New York, N.Y. Filed Oct. 13, 1967.

GOULD CREATES JEWELRY FOR WINDOWS

Owner of Reg. No. 508,667.
For Curtain and Drapery Rods and Fixtures (Int. Cl. 20).
First use May 25, 1967.

SN 285,144. National Lock Co., Rockford, Ill. Filed Nov. 17, 1967.

ENGLISH CLASSIC

Owner of Reg. Nos. 737,740 and 744,284.
For Cabinet Hardware—Namely, Pulls, Knobs, Ball Pulls, and Backplates (Int. Cl. 6).
First use Sept. 20, 1967.

SN 285,920. The Gorman-Rupp Company, Mansfield, Ohio. Filed Nov. 30, 1967.

FDF

For Directional Flow Valves, Accessories Therefor, and Parts Thereof (Int. Cl. 6).
First use Jan. 1, 1960.

SN 285,963. Stephen A. Young Corporation, Flora, Ind. Filed Nov. 30, 1967.

MERRIMAC

For Plumbing Fixtures—Namely, Lavatory Faucets, Pop-Up Valves; and Parts Therefor, Namely, Handles, Escutcheons, Knobs, Lift Rods, Ball Rods, Washers, and Connecting Parts Therefor (Int. Cls. 6 and 11).
First use in or about November 1958.

SN 285,964. Stephen A. Young Corporation, Flora, Ind. Filed Nov. 30, 1967.

MONITOR

For Plumbing Fixtures—Namely, Sink Faucets, Handles, Spouts, Drain Valves; and Parts Therefor, Namely, Aerator Attachments, Hose and Nozzle Attachments, and Washers (Int. Cls. 6 and 11).
First use in or about February 1959.

SN 286,027. Oetiker, Inc., Livingston, N.J. Filed Dec. 1, 1967.

O-CLAMP

For Clamp (Int. Cl. 6).
First use on or about Jan. 1, 1962.

SN 286,029. Oetiker, Inc., Livingston, N.J. Filed Dec. 1, 1967.

MONO-CLAMP

For Clamp (Int. Cl. 6).
First use on or about Jan. 1, 1962.

SN 286,030. Oetiker, Inc., Livingston, N.J. Filed Dec. 1, 1967.

O-GRIPS

For Clamp (Int. Cl. 6).
First use on or about Jan. 1, 1962.

SN 286,327. Crane Co., New York, N.Y. Filed Dec. 6, 1967.

TENNESSEE

Owner of Reg. No. 727,819.
For Bathtubs (Int. Cl. 11).
First use Feb. 16, 1960.

SN 286,432. Kin-Line, Inc., Oakland, Calif. Filed Dec. 7, 1967.

KIN-LINE

For Clamps, Straps, and Hangers for Supporting or Fastening Pipes, Conduits, and Tubing (Int. Cl. 6).
First use Sept. 20, 1967.

SN 286,710. National Lock Co., Rockford, Ill. Filed Dec. 11, 1967.

LOAD-LOK

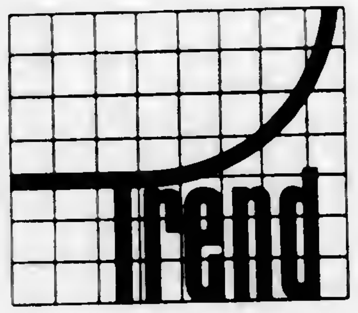
For Bolts, Screws, and Fasteners (Int. Cl. 6).
First use June 1, 1966.

SN 286,843. Republic Steel Corporation, Cleveland, Ohio. Filed Dec. 13, 1967.

E-LIP-LOK

For All-Metal Lock Nut (Int. Cl. 6).
First use Oct. 27, 1966.

SN 286,856. Trend Products Co., Los Angeles, Calif. Filed Dec. 13, 1967.



For Kitchen Ware, Including Pots, Pans, and Oven Racks (Int. Cl. 21).
First use Apr. 6, 1965.

SN 286,857. Trend Products Co., Los Angeles, Calif. Filed Dec. 13, 1967.

TREND

For Kitchen Ware, Including Pots, Pans, and Oven Racks (Int. Cl. 21).
First use Apr. 6, 1965.

SN 294,781. Norse, Inc., Brookfield, Conn. Filed Apr. 3, 1968.

NORSE

For Fasteners, and Parts Thereof (Int. Cl. 6).
First use Oct. 14, 1967.

SN 295,828. Lippert Tile, Inc., Menomonee Falls, Wis. Filed Apr. 17, 1968.

SHELLAV

For Molded Vanity Tops With Integrally Molded Sink Basins in a Specific Shell Shape (Int. Cl. 11).
First use Mar. 15, 1968.

SN 297,812. TA Mfg. Corp., Los Angeles, Calif. Filed May 9, 1968.

FLIP LOC

For Conduit Supporting Clamps (Int. Cl. 6).
First use on or about Apr. 25, 1968.

SN 297,813. TA Mfg. Corp., Los Angeles, Calif. Filed May 9, 1968.

SALLY

For Conduit Supporting Clamps (Int. Cl. 6).
First use on or about Apr. 25, 1968.

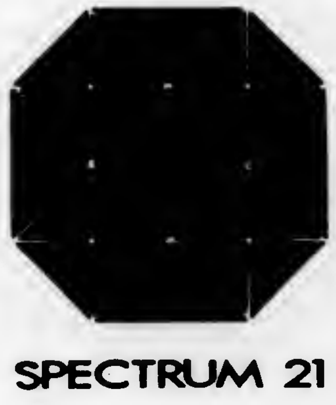
SN 299,184. Clifford E. Holtt, d.b.a. Marine Products & Engineering Company, New York, N.Y. Filed May 28, 1968.

PILGRIM NUT

The word "Nut" is disclaimed apart from the mark as a whole.
For Propeller Nuts for Vessels (Int. Cl. 6).
First use Jan. 28, 1966.

Class 14—Metals and Metal Castings and Forgings

SN 275,422. Alcan Aluminum Corporation, Cleveland, Ohio. Filed July 6, 1967.



For Painted Aluminum Sheet Material (Int. Cl. 6).
First use June 14, 1967.

Class 16—Protective and Decorative Coatings

SN 257,211. United States Rust Control Corporation, Miami, Fla. Filed Oct. 25, 1966.

XP 400 RUST RESIST

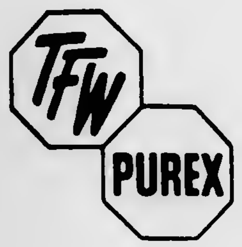
Without relinquishing any of its common law rights, applicant disclaims the words "Rust Resist," apart from the mark as shown.
For Rust and Corrosion Protective Coating (Int. Cl. 2).
First use Nov. 18, 1964.

SN 257,215. United States Rust Control Corporation, Miami, Fla. Filed Oct. 25, 1966.

XP 300 MET-L PRO-TEC

Without relinquishing any of its common law rights, applicant disclaims "Met-L Pro-Tec" apart from the mark as shown.
For Rust and Corrosion Protective Coating With Incidental Lubricating Properties (Int. Cl. 2).
First use Sept. 9, 1964.

SN 273,000. Purex Corporation, Ltd., d.b.a. T. F. Washburn Company, Lakewood, Calif. Filed June 5, 1967.



For Wood Stains; Paint-Like Wood Fillers, Sealers for Walls, Cement, Tile, and Terrazzo Surfaces; Paint-Like Undercoaters and Chemical Resistant Coatings for Machinery and Industrial Equipment; Paint-Like Coatings and Sealers for Paper and Fiberboard Products; and Paint-Like Coatings for Building Products (Int. Cl. 2).
First use Dec. 12, 1965.

Class 18 — Medicines and Pharmaceutical Preparations

SN 256,837. Hoffmann-La Roche Inc., Nutley, N.J. Filed Oct. 20, 1966.

LIBRITABS

For Psychotherapeutic Substance (Int. Cl. 5).
First use Oct. 17, 1966.

SN 271,417. Alcon Laboratories, Inc., Fort Worth, Tex. Filed May 15, 1967.

SULADRIN

For Ethical Ophthalmic Preparation, Promoted Solely for Dispensing on the Prescription of Ophthalmologists (Int. Cl. 5).
First use May 4, 1967.

SN 284,212. Marion Laboratories, Inc., Kansas City, Mo. Filed Nov. 6, 1967.

FLUONID

For Topical Steroid (Int. Cl. 5).
First use Aug. 24, 1967.

SN 297,960. Bristol-Myers Company, New York, N.Y. Filed May 13, 1968.

OPTICIN

For Antibiotic Preparation (Int. Cl. 5).
First use Apr. 5, 1968.

SN 297,965. Bristol-Myers Company, New York, N.Y. Filed May 13, 1968.

GRAMAPEN

For Antibiotic Preparation (Int. Cl. 5).
First use Apr. 5, 1968.

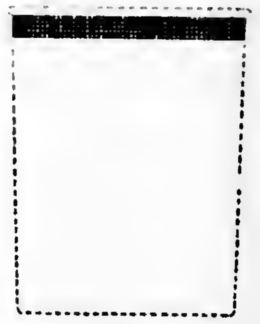
Class 19 — Vehicles

SN 267,233. Cummins Engine Company, Inc., Columbus, Ind. Filed Mar. 21, 1967.

Frigiking

Owner of Reg. Nos. 622,583, 622,584, and 803,770.
For Vehicle Air Coditioning Units, and Parts Thereof (Int. Cl. 11).
First use on or about Jan. 2, 1967.

SN 275,102. The Crest Manufacturing Co., Southfield, Mich. Filed May 22, 1967.



The mark comprises a bright, silver-chrome or gold colored band of a mottled or embossed character encircling the top of the exterior surface of the sidewall of the litter container.
For Litter Baskets for Automobile Use (Int. Cl. 12).
First use during August 1960.

SN 281,163. Ben L. Selig, d.b.a. Esse Radio Company, Indianapolis, Ind. Filed Sept. 26, 1967.

COOT

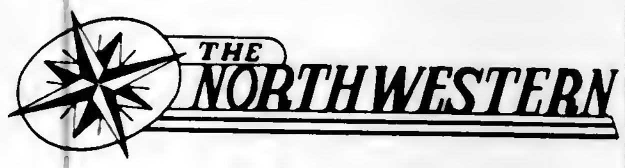
For Off Road Utility Vehicles for Use by Sportsmen (Int. Cl. 12).
First use Sept. 19, 1967.
Subj. to Intf. with SN 282,418.

SN 282,418. Coot Inc., San Francisco, Calif. Filed Oct. 13, 1967.

COOT

For Off the Road Amphibious and General Utility Vehicle (Int. Cl. 12).
First use July 6, 1966.
Subj. to Intf. with SN 281,163.

SN 285,577. Rainway Manufacturing Company, Veradale, Wash. Filed Nov. 24, 1967.



For Mobile Homes (Int. Cl. 12).
First use May 1959; Jan. 3, 1958, in another form.

SN 288,266. Aktiebolaget Westerasmaskiner, Morgongava, Sweden. Filed Jan. 8, 1968.

SNOW-MASTER

Owner of U.S. Reg. No. 841,950.
For Motor-Driven Snow Vehicles (Int. Cl. 12).
First use Sept. 26, 1967; in commerce Sept. 26, 1967.

Class 20 — Linoleum and Oiled Cloth

SN 285,316. Dunlop Semtex Limited, St. James's, London, England. Filed Nov. 21, 1967.

VYNOLAY

For Vinyl Flooring Sheets (Int. Cl. 27).
First use Apr. 20, 1967; in commerce Apr. 20, 1967.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 250,283. LTV Ling Altec, Inc., Anaheim, Calif. Filed July 14, 1966.

ALTEC

Owner of Reg. Nos. 534,754 and 747,304.
For Electrical Equipment—Namely, Attenuators, Switches, Networks, Equalizers, Filters, Transformers, Amplifiers, Audio Controls, Microphones, Microphone Bases and Microphone Extensions (Int. Cl. 9).
First use Aug. 29, 1949.

SN 252,205. Oak Electro/Netics Corp., Crystal Lake, Ill. Filed Aug. 11, 1966.

UNIDEX

For Rotary Switches (Int. Cl. 9).
First use Mar. 1, 1965.

SN 253,389. Winegard Company, Burlington, Iowa. Filed Aug. 29, 1966.

COLOR-CEPTOR

Owner of Reg. No. 424,481.
For Television Antennas (Int. Cl. 9).
First use Jan. 30, 1956.

SN 268,688. Argos Products Company, Inc., Genoa, Ill. Filed Apr. 10, 1967.

SPEECH DIRECTOR

Owner of Reg. Nos. 789,606 and 821,511.
For Loud Speaker Enclosures and Baffles, Including Associated Amplifiers (Int. Cl. 9).
First use Sept. 7, 1965.

SN 269,361. Sunbeam Corporation, Chicago, Ill. Filed Apr. 17, 1967.

DECORATOR

For Electric Toasters (Int. Cl. 11).
First use Jan. 23, 1967.
Subj. to Intf. with SN 270,419.

SN 270,419. Rotron Manufacturing Company, Inc., Woodstock, N.Y. Filed May 1, 1967.

DECORATOR

For Desk and Table Top Electric Motor Driven Air Circulating Fans (Int. Cl. 11).
First use on or about Apr. 6, 1966.
Subj. to Intf. with SN 269,361.

SN 271,284. Plas-Steel Products, Inc., Walkerton, Ind. Filed May 11, 1967.

ZIP-GLAS

For Spreaders for Cubical Quad Antennas (Int. Cl. 9).
First use Mar. 10, 1967.

SN 271,535. Security Systems, Incorporated, Kansas City, Mo. Filed May 15, 1967.

protecton

For Electric and Electronic Burglar, Prowler and Fire Alarm Systems, and Parts and Components Thereof (Int. Cl. 9).
First use Jan. 2, 1967.

SN 271,621. Industrial Electric Reels, Inc., Omaha, Nebr. Filed May 16, 1967.

POWEREEL

Owner of Reg. No. 825,642.
For Automatic Take-Up Reels for Electrical Cords and Cables (Int. Cl. 9).
First use at least as early as Dec. 26, 1961.

SN 274,293. Purex Corporation, Ltd., d.b.a. Pullman Vacuum Cleaner Corporation, Lakewood, Calif. Filed June 20, 1967.

PULLMAN

Owner of Reg. No. 658,994.
For Electric Floor Cleaning, Maintenance and Polishing Machines, and Parts and Accessories Therefor, Including Brushes, Buffing and Polishing Bonnets, Sanding Discs, Steel Wool Pads, and Liquid Tank Attachments for Dispensing Scrubbing Liquids (Int. Cl. 7).
First use December 1962.

SN 274,902. Tennessee Continental Corporation, Centerville, Tenn. Filed June 27, 1967.

TENCON

The drawing is lined for the color red. No claim is made to any particular color of any portion of the mark.
For Outdoor Electric Signs (Int. Cl. 9).
First use May 4, 1967.

SN 276,559. Holophane Company, Inc., New York, N.Y. Filed Sept. 1, 1967.

PRISMATITE

Owner of Reg. No. 652,754.
For Luminaires for Fluorescent Lighting Fixtures, and Components Thereof (Int. Cl. 11).
First use Aug. 9, 1967.

SN 279,628. Colonial Electric & Specialty Co., Inc., Northridge, Calif. Filed Sept. 5, 1967.

CON-WIPE

For Push Button Control Stations for Use as Actuating Switches in Association With Electrical Contactors (Int. Cl. 9).
First use on or about Aug. 17, 1967.

SN 279,821. Haveg Industries, Inc., Wilmington, Del. Filed Sept. 7, 1967.

POWER MOLD

Without waiver of common law or other rights, no registration rights are claimed in the word "Mold" apart from the mark as shown.

For Pole Riser Molding—Namely, Sheaths, Jackets and Other Protective Coverings Enclosing Electrical Cables on Telephone Poles and Electric Poles (Int. Cl. 9).

First use Jan. 19, 1967.

SN 280,422. Jerrold Electronics Corporation, Philadelphia, Pa. Filed Sept. 15, 1967.

ULTRA VISTA

For UHF to VHF Converters (Int. Cl. 9).

First use on or about Dec. 27, 1962.

SN 287,406. TRW, Inc., New York, N.Y. Filed Dec. 22, 1967.

DO-T

For Miniature Transformers (Int. Cl. 9).

First use Jan. 2, 1956.

SN 287,597. Torwico Electronics, Inc., Lakewood, N.J. Filed Dec. 26, 1967.

TINYMAG

For Electronic Components—Namely, Relays (Int. Cl. 9).

First use July 1957.

SN 287,599. Torwico Electronics, Inc., Lakewood, N.J. Filed Dec. 26, 1967.

TINYMAX

For Electronic Components—Namely, Transformers (Int. Cl. 9).

First use April 1957.

SN 288,643. Red Dog Inc., Mattapan, Boston, Mass. Filed Jan. 11, 1968.

RED DOG

For Electrically Operated Horn for Boats (Int. Cl. 9).

First use on or about July 15, 1967.

SN 290,277. General Electric Company, Plainville, Conn. Filed Feb. 5, 1968.

CLB

For Electric Circuit Breaker (Int. Cl. 9).

First use Jan. 30, 1967.

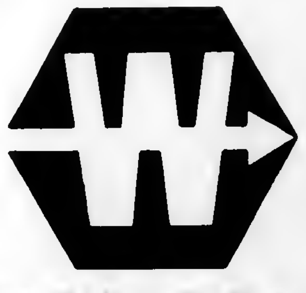
SN 290,278. General Electric Company, Plainville, Conn. Filed Feb. 5, 1968.

TRI-BREAK

For Electric Circuit Breakers (Int. Cl. 9).

First use Mar. 15, 1966.

SN 292,519. The Weatherhead Company, Cleveland, Ohio. Filed Mar. 5, 1968.



Owner of Reg. Nos. 832,388, 837,465, and others.

For Pressure Actuated Switches for Closing an Electrical Circuit To Indicate Pressure in a Hydraulic or Pneumatic System; Electro-Hydraulic Servo Valves for Use in Fluid Systems (Int. Cl. 9).

First use at least as early as December 1967.

SN 296,492. Vikoa, Incorporated, Hoboken, N.J. Filed Apr. 25, 1968.

PROTECT-A-TAP

For Tamper-Proof Electrical Terminators and Plus Assemblies (Int. Cl. 9).

First use Mar. 15, 1968.

SN 297,127. Ametek, Inc., New York, N.Y. Filed May 2, 1968.

AMETEK

The drawing is lined for the color red. Owner of Reg. Nos. 744,348, 794,058, and others.

For Electric Motors; Electric Motor Actuators; Synchro Transducers; Electric Conduit Sleeves; and Floor Conduits for Electric Cables (Int. Cls. 7 and 9).

First use Mar. 20, 1967, on electric motors.

SN 297,635. Santa Clause Industries, Inc., d.b.a. Creative Specialty Manufacturers, Waterloo, Iowa. Filed May 8, 1968.

AD'-A-MATION

For Electric Advertising Signs (Int. Cl. 9).

First use Mar. 26, 1968.

SN 297,741. Standard Oil Company, Flemington, N.J. Filed May 9, 1968.

EDCO

For Storage Batteries (Int. Cl. 9).

First use Apr. 17, 1968.

Class 22—Games, Toys, and Sporting Goods

SN 257,967. Lakeside Industries, Inc., Minneapolis, Minn. Filed Nov. 4, 1966.

CRAZY MAZE

For Equipment Comprising a Marble and a Maze-Type Game Apparatus, Sold as a Unit (Int. Cl. 28).

First use Mar. 28, 1966.

SN 273,164. Milton Bradley Company, Springfield, Mass. Filed June 6, 1967.

BATTLESHIP

For Apparatus Sold as a Unit for Playing a Board Game Having Movable Pieces (Int. Cl. 28).

First use Feb. 27, 1967.

SN 273,534. Southern Tackle Distributors, Inc., Miami, Fla. Filed June 9, 1967.

DORADO

Owner of Reg. No. 793,610.

For Fishing Tackle (Int. Cl. 28).

First use May 15, 1967.

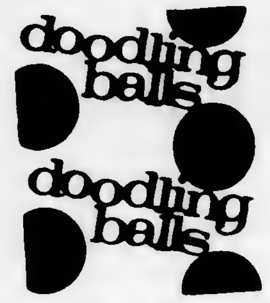
SN 275,665. Hollywood Recreation Research, Inc., Hollywood, Calif. Filed July 10, 1967.

ASTROSLIDE

For Slide-Type Commercial Amusement Ride Apparatus (Int. Cl. 28).

First use May 31, 1967.

SN 277,029. Doodling Balls AG, Zurich, Switzerland. Filed July 28, 1967.



Reserving all common law rights, applicant disclaims the word "Balls" apart from the mark as shown. Owner of Swiss Reg. No. 219,943, dated Aug. 30, 1966.

For Magnetic Balls for Use as Toys (Int. Cl. 28).

First use Dec. 16, 1966; in commerce Mar. 9, 1967.

SN 282,450. Ray Feaster & Associates, d.b.a. Dolphin, Garden Grove, Calif. Filed Oct. 13, 1967.

DOLPHIN

For Planing Fish Lure With Scent Dispenser (Int. Cl. 28).

First use July 17, 1967.

SN 284,407. Duncan Tong, d.b.a. Reliance Trading Corporation, Hong Kong. Filed Nov. 8, 1967.

HI-FUN

For Dolls, Plastic and Metal Toys (Mechanical, Friction and Battery-Operated) (Int. Cl. 28).

First use Oct. 31, 1967; in commerce Oct. 31, 1967.

SN 287,798. The Carlton Tyre Saving Company Limited, Saffron Walden, Essex, England. Filed Dec. 29, 1967.

4 POINT 1

For Rackets, Especially Badminton Rackets (Int. Cl. 28).

First use April 1967; in commerce July 1967.

SN 287,799. The Carlton Tyre Saving Company Limited, Saffron Walden, Essex, England. Filed Dec. 29, 1967.

4 POINT 3

For Rackets, Especially Badminton Rackets (Int. Cl. 28).

First use May 1967; in commerce June 1967.

SN 287,800. The Carlton Tyre Saving Company Limited, Saffron Walden, Essex, England. Filed Dec. 29, 1967.

3 POINT 7

For Rackets, Especially Badminton Rackets (Int. Cl. 28).

First use April 1967; in commerce April 1967.

SN 293,447. Wham-O Mfg. Co., San Gabriel, Calif. Filed Mar. 18, 1968.

AIR ZAPPER

For Toy Hand Gun for Propelling Compressed Fluid Projectiles (Int. Cl. 28).

First use Feb. 26, 1968.

SN 294,787. Wham-O Mfg. Co., San Gabriel, Calif. Filed Apr. 3, 1968.

ITTY-AUTOS

For Printed Plastic Sheets Containing Illustrations of Various Type Automobiles, and Other Design Subject Matter Pertaining Thereto, for Children's Use as Toys and Other Items of Amusement (Int. Cl. 28).

First use Feb. 26, 1968.

SN 296,612. Berkley & Company, Inc., Spirit Lake, Iowa. Filed Apr. 26, 1968.

BLUE LAKE

For Monofilament Nylon Fishing Line (Int. Cl. 28).

First use on or about Aug. 1, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 202,105. Litton Business Systems, Inc., New York, N.Y., by assignment, merger and change of name from Royal McBee Corporation, New York, N.Y. Filed Sept. 17, 1964.

ROYAL ELECTRESS

Owner of Reg. Nos. 61,674, 142,117, and others.

For Electric Office Typewriter (Int. Cl. 16).

First use Oct. 3, 1962.

SN 254,912. Bagat Bros., Forest Park, Ill. Filed Sept. 22, 1966.

BAGAT BROS.

For Flatware Composed of or Coated With Non-Precious Metals (Int. Cl. 8).
First use on or before Aug. 12, 1955.

SN 266,463. Schwinn Bicycle Company, Chicago, Ill. Filed Mar. 10, 1967.

"MAG"

For Bicycle Parts—Namely, Sprockets (Int. Cl. 12).
First use Dec. 22, 1966.

SN 268,478. Efdyn Corporation, Chicago, Ill. Filed Apr. 6, 1967.

SHOK-BLOC

For Hydraulic Shock Absorbers for Machinery and Other Industrial Uses (Int. Cl. 7).
First use Feb. 21, 1967.

SN 270,996. Wilton Corporation, Schiller Park, Ill. Filed May 8, 1967.

SUPRCAP

For Power Driven Arbor Saws (Int. Cl. 7).
First use Apr. 13, 1967.

SN 271,626. The International Silver Company, Meriden, Conn. Filed May 16, 1967.

NAVAHO

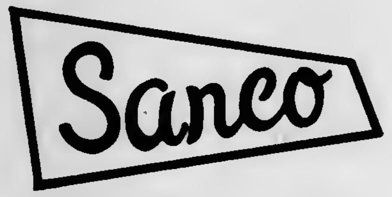
For Flatware Made of Non-Precious Material (Int. Cl. 8).
First use Mar. 21, 1967.

SN 273,997. Southern Suction & Equipment Corp., Charlotte, N.C. Filed June 15, 1967.

MICRO-CARD

For Suction Cleaning Apparatus for Textile Machines, Including Carding Machines (Int. Cl. 7).
First use June 8, 1967.

SN 274,097. Sanco Corporation, Winston-Salem, N.C. Filed June 16, 1967.



For Street Vacuum Cleaners (Int. Cl. 7).
First use in or about February 1967.

SN 274,335. Milo Harding Company, Monterey Park, Calif. Filed June 20, 1967.

TEMPO-TRONIC

Owner of Reg. Nos. 293,678, 726,740, and others.
For Duplicating Stencil Cutting Apparatus (Int. Cl. 16).
First use Dec. 23, 1966.

SN 275,308. Societe Maxime Girard, Monnerie-le-Montel, Puy-de-Dome, France. Filed July 3, 1967.

SABATIER

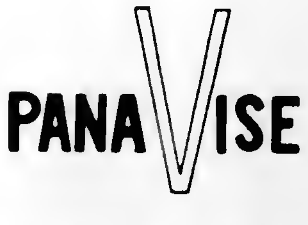
Owner of U.S. Reg. No. 833,083.
For Cutting Hand Tools and Edge Tools; Cutlery—Namely, Forks, Spoons and Knives; Side Arms—Namely, Sabres, Swords, and Stilettos (Int. Cl. 8).
First use September 1931; in commerce September 1931.

SN 276,543. Daybrook-Ottawa Corporation, Detroit, Mich. Filed July 21, 1967.

LOAD-N-FOLD

For Lifting Gates for Trucks (Int. Cl. 12).
First use Aug. 22, 1966.

SN 279,170. Colbert Die Casting Company, South Gate, Calif. Filed Aug. 28, 1967.



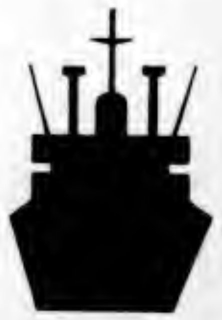
For Small Precision Bench Vise (Int. Cl. 6).
First use Sept. 7, 1960.

SN 279,661. The Maltby Company, Culver City, Calif. Filed Sept. 5, 1967.

MEKANIKS PAK

For Snap Rings (Int. Cl. 7).
First use May 15, 1967.

SN 280,209. Columbia Enterprises, Inc., Portland, Oreg. Filed Sept. 13, 1967.



COLUMBIA

For Hydraulic Truck Cranes, Self-Propelled Cranes, and Cable Truck Cranes (Int. Cl. 7).
First use Nov. 3, 1966.

SN 280,294. Astem-Hill Mfg. Company, Philadelphia, Pa. Filed Sept. 14, 1967.

UNISEAMER

For Hand-Operated Tool To Mesh Hooks To Effect a Lacing or Closing of Hooks Imbedded in Each End of Dryer Felts To Form an Endless Belt (Int. Cl. 8).
First use Sept. 8, 1967.

SN 280,466. The Schriber Company, Dayton, Ohio. Filed Sept. 15, 1967.

SCHRIBER

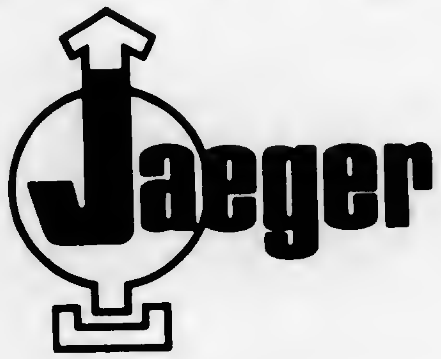
Owner of Reg. No. 810,601.
For Business Forms Printing and Bindery Equipment—Namely, Presses, Collators, Folders, Coaters, Carbon Processors, Interleavers, Crimps, Imprinters, and Staplers (Int. Cl. 7).
First use Aug. 17, 1962.

SN 281,877. Elgin Sweeper Company, Elgin, Ill. Filed Oct. 5, 1967.

PELICAN

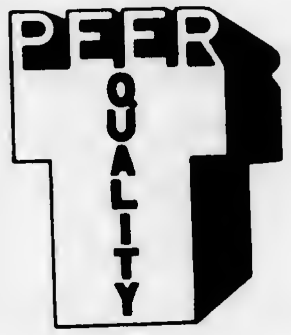
Owner of Reg. No. 789,026.
For Street Sweeping Machines and Parts Thereof (Int. Cl. 7).
First use June 9, 1964.

SN 282,091. The Jaeger Machine Company, Columbus, Ohio. Filed Oct. 9, 1967.



Owner of Reg. Nos. 304,000 and 510,544.
For Hydraulic Powered Mobile Concrete Pump Assembly (Int. Cl. 7).
First use Aug. 15, 1967.

SN 283,582. Serva Tool Corporation, Dayton, Ohio. Filed Oct. 27, 1967.



Applicant disclaims use of the words "Quality Tool" apart from the mark as shown.
For Metal Cutting Tools—Namely, Hole-Threading Taps for Hand or Machine Use (Int. Cls. 7 and 8).
First use July 7, 1967.

SN 283,791. Fedtro, Inc., Rockville Centre, N.Y. Filed Oct. 31, 1967.

For Mechanical Device for Stropping and Sharpening Double Edge Razor Blades (Int. Cl. 8).
First use on or about Oct. 24, 1967.

SN 288,011. FMC Corporation, Chicago, Ill. Filed Jan. 3, 1968.

TRUKVEYOR

For Floor Type and Overhead Type Conveyor Apparatus for Propelling Floor Supported Vehicles, and Parts Thereof (Int. Cl. 7).
First use on or about Nov. 29, 1957.

SN 288,027. Ornapress AG, Schwerzenbach, Switzerland. Filed Jan. 3, 1968.

ORNAMAT

Owner of Swiss Reg. No. 219,208, dated July 20, 1966.
For Machines for the Automatic Decoration, Ornamentation or Inscription of Plastic Objects During Their Production (Int. Cl. 7).

SN 288,447. Newaygo Engineering Company, Newaygo, Mich. Filed Jan. 9, 1968.

FEEDARATOR

For Foundry Equipment, Particularly Sand Handling Apparatus (Int. Cl. 7).
First use on or about Apr. 8, 1967.

SN 288,796. Crawford Fitting Company, Solon, Ohio. Filed Jan. 15, 1968.

Owner of Reg. Nos. 791,278, 835,359, and others.
For Tube Benders (Int. Cl. 7).
First use Nov. 13, 1967.

SN 288,799. Deschner Corporation, Inglewood, Calif. Filed Jan. 15, 1968.

CUSHIONETTE

Owner of Reg. No. 767,092.
For Hydraulic Stopping and Impact Absorbing Devices for Industrial Machinery (Int. Cl. 7).
First use Jan. 9, 1968.

SN 289,178. Engel Equipment, Inc., St. Louis, Mo. Filed Jan. 19, 1968.

DUCTMASTER

For Duct Fabricating Machines for Air Conditioning and the Like (Int. Cl. 7).
First use at least as early as Feb. 14, 1957.

SN 292,962. Rodney Hunt Company, Orange, Mass. Filed Mar. 11, 1968.

HUE-MASTER

For Textile Machinery—Namely, Machinery for Dyeing Fabric Under Pressure (Int. Cl. 7).
First use May 31, 1967.

SN 296,739. Clear-A-Tor Corporation, Chicago, Ill. Filed Apr. 29, 1968.

LAKE-CLEAR-A-TOR

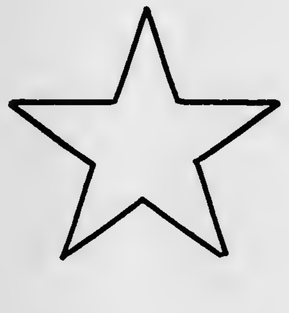
For Motor Driven Agitator for Removing Pollutants From Bodies of Water by Aeration (Int. Cl. 7).
First use on or about Apr. 2, 1968.

SN 298,774. The International Silver Company, Meriden, Conn. Filed May 22, 1968.

CARINO

For Flatware Made of Non-Precious Material (Int. Cl. 8).
First use at least as early as Apr. 8, 1968.

SN 298,903. Locke Manufacturing Companies, Inc., Huntington, Ind. Filed May 23, 1968.



For Sprocket-Chains and Driving-Chains for Agricultural and Other Machinery and Apparatus (Int. Cl. 7).
First use Oct. 31, 1918.

Class 24 — Laundry Appliances and Machines

SN 267,984. Lear Siegler, Inc., Santa Monica, Calif., assignee, by mesne assignment, of Seymour Industries, Inc., Seymour, Ind. Filed Mar. 30, 1967.

TOUCHUP

For Ironing Tables (Int. Cl. 21).
First use Mar. 14, 1967.

SN 297,129. Ametek, Inc., New York, N.Y. Filed May 2, 1968.

AMETEK

The drawing is lined for the color red. Owner of Reg. Nos. 744,348, 794,058, and others.
For Garment Presses; Ironing Presses; Dry Cleaning Machines; Garment Finishing Tables; Shirt Finishing Machines; Laundry Washing Machines; Laundry Liquid Extracting Machines; Laundry Washer-Extractors; Laundry Ironers; Laundry Folding Machines; and Drying Tumblers (Int. Cl. 7).
First use Mar. 23, 1967, on dry cleaning machines.

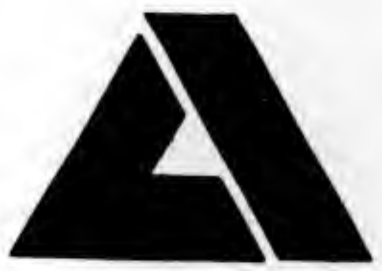
Class 26 — Measuring and Scientific Appliances

SN 257,890. Ramcor Incorporated, Huntington, N.Y. Filed Nov. 3, 1966.

DENSIOMETER

For Meter for Measuring Radiated Microwave Energy (Int. Cl. 9).
First use May 31, 1962.

SN 265,597. Associated Testing Laboratories, Inc., Wayne, N.J. Filed Feb. 28, 1967.



The mark consists of design simulating letter "A."
For Environmental and Reliability Testing Equipment—Namely, Environmental Test Chambers and Components Therefor, and Impact Simulators (Int. Cl. 9).
First use about Dec. 19, 1966, on environmental test chambers.

SN 273,936. Control Data Corporation, Minneapolis, Minn., assignee of Automatic Control Company, St. Paul, Minn. Filed June 15, 1967.

AUTO-MOD

For Solid State Circuit for Use for Automatic Electrical Controls for Liquid Distribution and Supply Systems for Sewage Systems, Automatic Electrical Apparatus for Measurement and Control of Fluid Pressure and Liquid Level, Automatic Electrical Protective Alarm and Detection Systems, Alternators for Controlling the Sequence of Operation of Electrical Equipment and Electrical Apparatus for Monitoring and Transmitting Electrical Impulses Used in Conjunction With the Above Described Controls and Systems (Int. Cl. 9).
First use Feb. 3, 1967.

SN 276,822. Crossbow, Inc., Cincinnati, Ohio. Filed July 26, 1967.

THE MARKSMAN

For Measuring Cup for Liquids (Int. Cl. 21).
First use June 13, 1967.

SN 277,927. Oakite Products, Inc., Berkeley Heights, N.J. Filed Aug. 9, 1967.

SOLUTION MINDER

For Proportioner Device Consisting of a Level and Mix Control Unit That Automatically Maintains in a Tank a Precise Mixture of Cleaning Material and Water (Int. Cl. 9).
First use Mar. 14, 1967.

SN 278,280. Bristoline Inc., New York, N.Y. Filed Aug. 15, 1967.

BRISTOLINE

For Microscopes, and Micro Cover Glasses (Int. Cl. 9).
First use Aug. 17, 1961.

SN 279,276. Conforma Laboratories, Inc., Norfolk, Va. Filed Aug. 29, 1967.

MINI-THIN

For Contact Lenses (Int. Cl. 9).
First use Mar. 7, 1967.

SN 281,696. GCA Corporation, Bedford, Mass. Filed Oct. 3, 1967.

Owner of Reg. No. 801,818.
For Optical Equipment Including Photorepeaters, Alignment Instruments, Cameras, Comparators, Photoelectric Setting Devices, Microdensitometers, and Lens Benches (Int. Cl. 9).
First use Apr. 23, 1965, on comparators.

SN 282,421. Accu-Rite Granite Surface Plate Co., Hawthorne, Calif. Filed Oct. 13, 1967.

ACCU-CHEK

For Granite Dial Comparators (Int. Cl. 9).
First use Aug. 11, 1967.

SN 282,422. Accu-Rite Granite Surface Plate Co., Hawthorne, Calif. Filed Oct. 13, 1967.

ACCU RITE

For Granite Surface Plates Used To Provide an Accurately Flat Plane Surface for Use as a Reference in Inspection and Layout Work (Int. Cl. 9).
First use July 22, 1966.

SN 285,180. Allied Impex Corporation, New York, N.Y. Filed Nov. 20, 1967.

MIRANDA

For Photographic Cameras, Projectors, Lenses, Filters, Filter Holders, Shutters, Photographic Enlargers, Film Splicers, Film Transparency Viewers, Film Winders, Projection Screens, Exposure Meters, Film Printing and Developing Apparatus; Developing Tanks, Film Magazines, Tripods, Light Sensitive Photographic Paper and Films, Photographic Printers, Camera Carrying Cases Sold With the Cameras, Accessory Cases Sold With the Cameras, Electronic Flash Lighting Apparatus, Incandescent Flash Attachments for Cameras, and Film Editing Apparatus (Int. Cl. 9).
First use June 15, 1957.

SN 285,414. Giddings & Lewis, Inc., Fond du Lac, Wis. Filed Nov. 22, 1967.

NUMERIREAD

For Electrical Measuring Apparatus for Determining Linear and/or Angular Displacement Between Relatively Moveable Machine Tool Elements, and Parts Therefor (Int. Cl. 9).
First use Apr. 24, 1967.

SN 286,128. Claud S. Gordon Company, Richmond, Ill. Filed Dec. 4, 1967.

XACTOHM

Owner of Reg. Nos. 423,567, 811,285, and others.
For Resistance Temperature Detectors and Thermometers (Int. Cl. 9).
First use on or about July 28, 1967.

SN 287,313. Richard E. Oswald, d.b.a. Reotemp Instrument Company, Van Nuys, Calif. Filed Dec. 20, 1967.

For Bi-Metallic Dial Thermometers (Int. Cl. 9).
First use on or before Sept. 1, 1965.

SN 287,517. The Budrich Company, San Diego, Calif. Filed Dec. 26, 1967.

OP-TITES

For Temple Tensioners (Int. Cl. 9).
First use Oct. 20, 1967.

SN 288,241. Sunbeam Corporation, Chicago, Ill. Filed Jan. 5, 1968.

SUNBEAM

For Aircraft Attitude Indicators; Navigational Aids Including Navigational Instruments for Response to Radio Beacons To Provide Ground Speed, Drift Angle, Bearing, Distance and Heading Indications; Computers for Converting Distance and Bearing Information Received by Aircraft Radio Equipment to Distance and Bearing Indicating Signals; Computers for Providing Continuous Aircraft Flight Information as to Fuel Range Remaining, Distance to Destination, and Time and Cruise Ceiling for Various Modes of Operation in Response to Information Concerning Flight Conditions, Such as True Air Speed, Temperature, Fuel Weight and Altitude (Int. Cl. 9).
First use in or about January 1964.

SN 288,242. Sunbeam Corporation, Chicago, Ill. Filed Jan. 5, 1968.

SUNBEAM

For Instruments for Measuring and/or Providing a Remote Indication or Display of Engine Operating Information, Such at Temperature, Pressure, or Rate of Fuel Flow (Int. Cl. 9).
First use in or about January 1964.

SN 288,498. The Eastern Company, Naugatuck, Conn. Filed Jan. 10, 1968.

ORION

For Marine Compasses (Int. Cl. 9).
First use Dec. 15, 1967.

SN 288,767. Astra Corporation, Hatboro, Pa. Filed Jan. 15, 1968.

ASTRA

For Fluid Pressure Measuring Instruments (Int. Cl. 9).
First use Oct. 9, 1959.

SN 288,950. Goodyear Aerospace Corporation, Akron, Ohio. Filed Jan. 16, 1968.

CORRELICON

For Electronic Tubes (Int. Cl. 9).
First use Oct. 6, 1967.

SN 297,130. Ametek, Inc., New York, N.Y. Filed May 2, 1968.

AMETEK

The drawing is lined for the color red. Owner of Reg. Nos. 744,348, 794,058, and others.

For Cable Terminal Pull Testing Machines; Wire Fatigue Testing Machines; Pressure Gauge Dead Weight Testers; Pressure Gauges and Parts Therefor; Beverage Measuring Dispensers; Ammeters; Voltmeters; Therometers; Process Control and Recording Instruments; Timing and Pressure Actuated Mechanisms for Opening Parachutes; Compasses; Instruments for Detecting Organic Matter on Surfaces of Glass or Textiles; Material Testing Machines and Parts Therefor; Temperature Control Instruments; and Navigational Automatic Pilots (Int. Cl. 9).

First use Mar. 21, 1967, on cable terminal pull testing machines.

SN 298,676. Polaroid Corporation, Cambridge, Mass. Filed May 21, 1968.

BIG SWINGER

Owner of Reg. Nos. 828,518 and 844,142.

For Photographic Camera Carrying Cases (Int. Cl. 9).

First use Mar. 4, 1968; July 1965 as to "Swinger."

Class 27 — Horological Instruments

SN 289,907. Montres Rolex S.A., Geneva, Switzerland. Filed Jan. 30, 1968.

SEA-DWELLER

Owner of Swiss Reg. No. 215,610, dated Jan. 31, 1966.

For Watches and Clocks, and Parts Thereof (Int. Cl. 14).

First use June 9, 1967; in commerce June 9, 1967.

SN 289,908. Montres Rolex S.A., Geneva, Switzerland. Filed Jan. 30, 1968.

SPACE-DWELLER

Owner of Swiss Reg. No. 215,615, dated Feb. 16, 1966.

For Watches and Clocks, and Parts Thereof (Int. Cl. 14).

First use July 7, 1967.

SN 290,310. Montre de Sport Geneve S.A., Geneva, Switzerland. Filed Feb. 5, 1968.

WHITE WHALE

Priority claimed under Sec. 44(d) on Swiss Reg. No. 227,992, dated Oct. 13, 1967.

For Divers' Watches (Int. Cl. 14).

SN 290,311. Montre de Sport Geneve S.A., Geneva, Switzerland. Filed Feb. 5, 1968.

BLUE WHALE

Priority claimed under Sec. 44(d) on Swiss Reg. No. 227,990, dated Oct. 13, 1967.

For Divers' Watches (Int. Cl. 14).

SN 291,962. Bulova Watch Company, Inc., Flushing, N.Y. Filed Feb. 27, 1968.

SEA LAB

Owner of Reg. Nos. 380,471, 700,158, and others.

For Watches and Parts Thereof (Int. Cl. 14).

First use Jan. 29, 1968.

Class 28 — Jewelry and Precious-Metal Ware

SN 274,896. The Spencer Co., Cranston, R.I. Filed June 27, 1967.

LADY NERA

The mark is fanciful and does not identify any known living individual.

For Jewelry (Int. Cl. 14).

First use on or about June 12, 1967.

SN 279,122. Union Carbide Corporation, New York, N.Y. Filed Aug. 25, 1967.

THE QUINTESSA COLLECTION

Owner of Reg. No. 850,996.

For Jewelry (Int. Cl. 14).

First use on or about July 18, 1967.

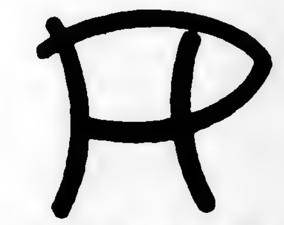
SN 281,860. Anson Incorporated, Providence, R.I. Filed Oct. 5, 1967.

LINDOR

For Cuff Links, Key Chains, Bracelets, Pendants, and Insignia (Int. Cl. 14).

First use Mar. 14, 1966.

SN 284,100. Henry Petzal, New Shrewsbury, N.J. Filed Nov. 3, 1967.



The mark consists of a monogram of the letters "HP."

For Hand Wrought Silver Holloware (Int. Cl. 14).

First use Dec. 27, 1958.

SN 289,813. Peter Lindeman, Inc., New York, N.Y. Filed Jan. 29, 1968.

TURNIT

For Rings (Int. Cl. 14).

First use Jan. 19, 1968.

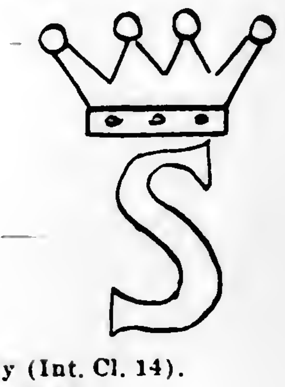
SN 290,201. Towle Manufacturing Company, Newburyport, Mass. Filed Feb. 2, 1968.

LAUREATE

For Sterling Silver Flatware (Int. Cl. 8).

First use Jan. 9, 1968.

SN 291,400. International Cultured Pearl Co., Inc., d.b.a. International Jewelry Creations, New York, N.Y. Filed Feb. 19, 1968.



For Gold Jewelry (Int. Cl. 14).

First use Oct. 10, 1967.

SN 291,878. Fred C. Krasner and Helen Krasner (joint owners), d.b.a. Helli Company, Lincolnwood, Ill. Filed Feb. 26, 1968.

Suit-Links

For Cuff Links (Int. Cl. 14).

First use Oct. 10, 1967.

Class 29 — Brooms, Brushes, and Dusters

SN 272,881. Yardley of London, Inc., Totowa, N.J. Filed June 1, 1967.

MINI-BRUSH

For Cosmetic Make-Up Brush (Int. Cl. 21).

First use May 24, 1967.

Class 30 — Crockery, Earthenware, and Porcelain

SN 266,163. Geo. Zoltan Lefton Co., Chicago, Ill. Filed Mar. 7, 1967.

Lefton

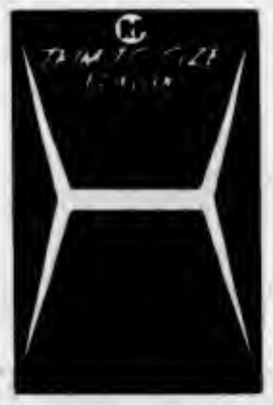
Owner of Reg. No. 643,047.

For Chinaware, Earthenware and Porcelain Items—Namely, Dinnerware, Mugs, Tea Pots, Coffee Pots, Pitchers, Bowls, Trays, Salt and Pepper Shakers, and Planters (Int. Cl. 21).

First use 1953.

Class 31 — Filters and Refrigerators

SN 267,848. Research Products Corporation, Madison, Wis. Filed Mar. 29, 1967.



Owner of Reg. Nos. 390,640, 822,846, and others.

For Air Filter Panels (Int. Cl. 11).

First use on or about Feb. 17, 1966.

SN 280,947. Henry J. Hall, Southfield, Mich. Filed Sept. 22, 1967.

CELLAR KOOL

Applicant disclaims the exclusive right to the use of the word "Kool," apart from the mark as shown.

For Portable, Refrigerated Storage Cabinets, and Parts Thereof (Int. Cl. 11).

First use June 1, 1967.

SN 297,132. Ametek, Inc., New York, N.Y. Filed May 2, 1968.

AMETEK

The drawing is lined for the color red. Owner of Reg. Nos. 744,348, 794,058, and others.

For Liquid Filters and Parts Therefor—Namely, Filter Cloths for Filters; and Brine Tanks for Water Softening Systems (Int. Cls. 11 and 24).

First use Mar. 29, 1967, on filter cloth for filters.

SN 297,742. Standard Oil Company, Flemington, N.J. Filed May 9, 1968.

EDCO

For Oil Filters and Oil Filter Elements (Int. Cl. 12).

First use Apr. 17, 1968.

Class 32 — Furniture and Upholstery

SN 269,315. American Hospital Supply Corporation, Evanston, Ill., assignee of Institutional Industries, Inc., Cincinnati, Ohio. Filed Apr. 17, 1967.

iii

For Bedside Cabinets, Foot Stools, Overbed Tables, and Infant Bassinets (Int. Cl. 20).

First use in or before November 1962.

SN 273,883. Freeman & Gossage, Inc., San Francisco, Calif. Filed June 14, 1967.

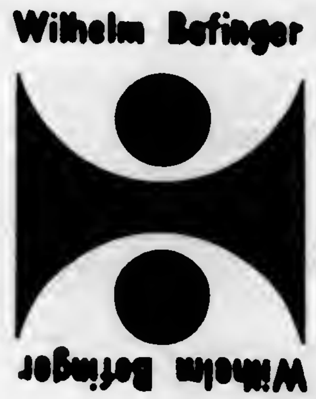
INTRINSICS

Owner of Reg. No. 825,328.

For Stools (Int. Cl. 20).

First use about Sept. 1, 1966.

SN 274,799. Wilhelm Bofinger, Ilsfeld, Wurttemberg, Germany. Filed June 26, 1967.



"Wilhelm Bofinger" is the name of the late owner of applicant firm. Owner of German Reg. No. 709,949, dated Oct. 17, 1956.

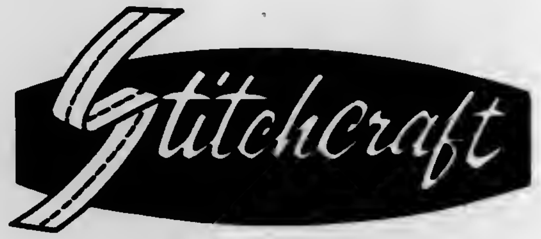
For Bedroom Furniture, Living Room Furniture, Kitchen Furniture, and Office Furniture (Int. Cl. 20).

SN 275,829. Brunswick Corporation, Chicago, Ill. Filed July 12, 1967.

JET FLOW

For Bowling Alley Furniture—Namely, Score Tables, Chairs, Settees, Bowling Alley Service Units, and Combinations of These (Int. Cl. 20).
First use June 5, 1967.

SN 277,388. Stitchcraft Corporation, Forest City, Iowa. Filed Aug. 2, 1967.



For Upholstered Furniture, Hassocks, Cushions, Davenports, Lounges, Chairs, Mattresses, Pillows, Love Seats, and Cafe Booths (Int. Cl. 20).
First use May 1, 1962.

SN 282,497. The Valtronic Corporation, Bronx, N.Y. Filed Oct. 13, 1967.

CENTRON

For Desks, Tables, Credenzas, Storage Cabinets, Bookcases, File Cabinets, and Parts and Accessories Therefor (Int. Cl. 20).
First use Sept. 1, 1967.

SN 282,677. Caravan, Incorporated, High Point, N.C. Filed Oct. 17, 1967.

CARAVAN

For Chairs, Sofas, Couches, Convertible Sofas, Desks, Chests, and Tables (Int. Cl. 20).
First use Apr. 1, 1966.

SN 285,255. Pop Arts, Inc., New York, N.Y. Filed Nov. 20, 1967.

POP-ARTS

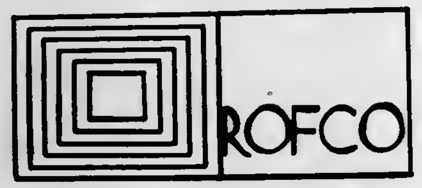
For Pillows in Simulation of a Known Object (Int. Cl. 20).
First use July 12, 1967.

SN 285,451. National Furniture Manufacturing Co., Inc., Evansville, Ind. Filed Nov. 22, 1967.

VIBRO-MASSAGE

For Vibrator Unit Sold as a Component of an Upholstered Rocker-Recliner Chair (Int. Cl. 20).
First use during July 1967.

SN 285,581. Roger Office Furniture Co., Inc., Denver, Colo. Filed Nov. 24, 1967.



For Office Furniture (Int. Cl. 20).
First use Sept. 30, 1965.

SN 285,743. Lear Siegler, Inc., Santa Monica, Calif. Filed Nov. 28, 1967.

MULTILASTIC

Owner of Reg. No. 774,980.
For Spring Units for Mattresses, Box Springs, and Furniture (Int. Cl. 20).
First use Mar. 22, 1963.

SN 286,350. Kasparians, Inc., Los Angeles, Calif. Filed Dec. 6, 1967.

X-ALUM

For Chairs, Sofas, Multiple Seating Units, Stools, Tables, and Benches, for Both Office and Home Use (Int. Cl. 20).
First use on or about Jan. 1, 1962.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 210,545. Enterprise Development Corporation, Indianapolis, Ind. Filed Jan. 25, 1965.

ENDECO

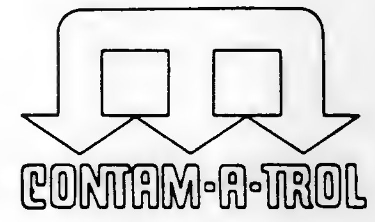
For Desoldering Tool (Int. Cl. 9).
First use Mar. 30, 1962.

SN 262,927. Dielectric Products Engineering Company, Inc., Littleton, Mass. Filed Jan. 20, 1967.

DRY-PAK

For Dehydrators for Continuous Drying and Purification of Compressed Air (Int. Cl. 11).
First use May 26, 1965.

SN 271,126. CRS Industries, Inc., Dresher, Pa. Filed May 10, 1967.



Owner of Reg. No. 813,453.
For Portable Clean Rooms (Int. Cl. 11).
First use Apr. 27, 1967.

SN 274,488. Bernzomatic Corporation, Rochester, N.Y. Filed June 22, 1967.

PORTA LIGHT

The word "Light" is disclaimed apart from the mark as shown.
For Portable Propane Lanterns (Int. Cl. 11).
First use Nov. 1, 1965.

SN 274,584. Bernzomatic Corporation, Rochester, N.Y. Filed June 28, 1967.

PORTA CHEF

For Portable Propane Cookstoves (Int. Cl. 11).
First use 1954.

SN 277,037. Eutectic Welding Alloys Corporation, Flushing, N.Y. Filed July 28, 1967.

MINIFLUX

For Welding and/or Brazing Alloys—Namely, Welding Electrodes and Rods, and Welding Wire (Int. Cls. 6 and 9).
First use Nov. 29, 1965.

SN 280,139. Aero-Flow Dynamics, Inc., Linden, N.J. Filed Sept. 12, 1967.

THERMO-SHIELD

For Space Heaters for Mounting Overhead at Doorways (Int. Cl. 11).
First use June 17, 1966.

SN 282,154. Weller Electric Corporation, Easton, Pa. Filed Oct. 9, 1967.

WELLER

Owner of Reg. No. 635,105.
For Soldering Guns and Parts Therefor, Soldering Irons and Soldering Machines (Int. Cls. 7 and 9).
First use May 1945 on soldering guns.

SN 283,171. Strait & Richards, Inc., Newark, N.J. Filed Oct. 23, 1967.

BRANCH FIRE

The word "Fire" is disclaimed apart from the mark as shown.
For Gas Logs (Int. Cl. 11).
First use Jan. 3, 1967.

SN 286,563. Glenwood Range Company, Taunton, Mass., assignee of The Sunray Stove Company, Delaware, Ohio. Filed Dec. 8, 1967.

CHARCOMATIC

For Gas Cooking Stoves (Int. Cl. 11).
First use May 18, 1967.

SN 287,645. General Electric Company, Louisville, Ky. Filed Dec. 27, 1967.

VERSATRONIC

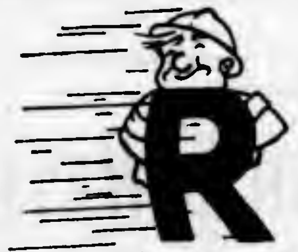
For Range With an Electronic Oven (Int. Cl. 11).
First use Oct. 28, 1966.

SN 288,284. Controls Company of America, Melrose Park, Ill. Filed Jan. 8, 1968.

ION-ITION

For Control for Regulating Gaseous Fuel Flow and Spark Ignition of the Gaseous Fuel, for Use in Heating Units and Other Gas Burning Units (Int. Cl. 9).
First use Apr. 18, 1967.

SN 288,448. Robinson Ventilating Company, Zelienople, Pa. Filed Jan. 9, 1968.



For Industrial Fans, Blowers, and Exhausters (Int. Cl. 11).
First use on or about Jan. 1, 1962.

SN 288,485. Air Reduction Company, Incorporated, New York, N.Y. Filed Jan. 10, 1968.

LITTLE DIPPER

For Wire Feeders for Electric Arc Welding Apparatus (Int. Cl. 9).
First use June 9, 1967.

SN 289,467. American Standard Inc., New York, N.Y. Filed Jan. 24, 1968.

UNI-CENTRAL

For Room Air Conditioners (Int. Cl. 11).
First use Sept. 22, 1967.

SN 297,131. Ametek, Inc., New York, N.Y. Filed May 2, 1968.

AMETEK

The drawing is lined for the color red. Owner of Reg. Nos. 744,348, 794,058, and others.
For Air Volume Controllers for Water Pressure Systems, Industrial Type Fans, and Duct Work for Ventilation Use (Int. Cls. 9 and 11).
First use Apr. 18, 1967, on air volume controllers for water pressure systems.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 265,783. Aristovoulos George Petzetakis, Moschaton, Piraeus, Greece. Filed Mar. 2, 1967.

GEN-LINE

For Helically Reinforced Hose for Industrial Purposes (Int. Cl. 17).
First use June 8, 1966; in commerce July 7, 1966.

SN 284,189. The Gates Rubber Company, Denver, Colo. Filed Nov. 6, 1967.

TUFFLEX

For Industrial Hose for Material Handling (Int. Cl. 17).
First use on or about Oct. 11, 1967.

SN 292,775. Federal-Mogul Corporation, Southfield, Mich. Filed Mar. 8, 1968.

VELBOND

For Gaskets and More Specifically Gaskets With Adhesive Coating on One or Two Sides (Int. Cl. 17).
First use Jan. 28, 1966.

SN 299,063. American Felt Company, Glenville, Conn. Filed May 27, 1968.

AFCO

Owner of Reg. Nos. 520,627 and 702,567.
For Gaskets and Dust Seals (Int. Cl. 17).
First use Dec. 11, 1958.

Class 36 — Musical Instruments and Supplies

SN 269,047. Americom Corporation, New York, N.Y. Filed Apr. 13, 1967.

MINASONIC

For Phonograph Records (Int. Cl. 9).
First use Jan. 3, 1967.

SN 269,048. Americom Corporation, New York, N.Y. Filed Apr. 13, 1967.

MINSONIC

For Phonograph Records (Int. Cl. 9).
First use Jan. 3, 1967.

SN 269,049. Americom Corporation, New York, N.Y. Filed Apr. 13, 1967.

POCK-A-DISC

For Phonograph Records (Int. Cl. 9).
First use Jan. 3, 1967.

SN 269,050. Americom Corporation, New York, N.Y. Filed Apr. 13, 1967.

PORTODISC

For Phonograph Records (Int. Cl. 9).
First use Jan. 3, 1967.

SN 270,194. Columbia Broadcasting System, Inc., New York, N.Y. Filed Apr. 28, 1967.

JAGUAR

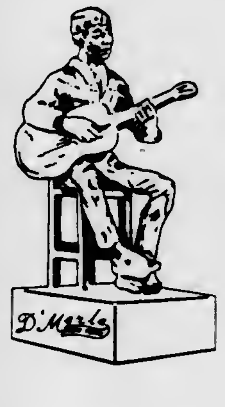
For Electric Guitars (Int. Cl. 15).
First use in or about 1962.
Subj. to Intf. with SN 278,137.

SN 278,137. Thomas Organ Company, Sepulveda, Calif. Filed Aug. 11, 1967.

JAGUAR

For Electronic Organs (Int. Cl. 15).
First use Oct. 25, 1966.
Subj. to Intf. with SN 270,194.

SN 283,110. D'Merle Guitars, Inc., Huntington Station, N.Y. Filed Oct. 23, 1967.



Applicant disclaims the words "New York" and the representation of the guitar, apart from the mark as shown.
For Guitars; and Packaged Strings for Guitars, Banjos, Ukuleles, Mandolins, and Electric Bass Instruments (Int. Cl. 15).
First use March 1965.

SN 284,618. Columbia Broadcasting System, Inc., New York, N.Y. Filed Nov. 13, 1967.

LESLIE

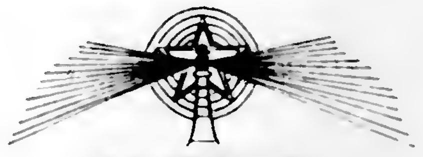
Owner of Reg. No. 668,284.
For Mutes Designed To Be Connected to the Electrical Circuits of Musical Instruments Such as Organs and Guitars (Int. Cl. 15).
First use Aug. 9, 1963.

SN 291,403. Jackson-Guldan, Inc., Columbus, Ohio. Filed Feb. 19, 1968.

ADJUSTOMATIC

For Musical Instruments, Specifically Guitars and Parts Thereof (Int. Cl. 15).
First use in or about 1962.

SN 292,118. National Gramophon Works Corporation, Mount Kisco, N.Y. Filed Feb. 28, 1968.



PANTON

For Phonograph Records and Albums (Int. Cl. 9).
First use Feb. 21, 1968.

Class 37 — Paper and Stationery

SN 276,738. Curwood, Inc., New London, Wis. Filed July 25, 1967.

CURPOLENE "200"

Owner of Reg. No. 773,683.
For Laminated Packaging Film (Int. Cl. 16).
First use January 1963.

SN 280,043. Gary Industries, Inc., d.b.a. Acco Products, Chicago, Ill. Filed Sept. 11, 1967.

ACCODATA

Owner of Reg. No. 802,271 and others.
For File Folders and Looseleaf Binders (Int. Cl. 16).
First use Aug. 2, 1967.

SN 290,882. The Quik-Stik Co., Baltimore, Md. Filed Feb. 12, 1968.

QUIK-SET

For Stencils Consisting of Interlocking Die-Cut Letters and Numbers (Int. Cl. 16).
First use Jan. 10, 1968.

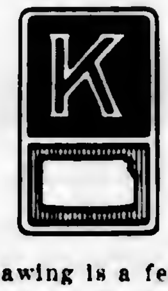
Class 38 — Prints and Publications

SN 117,494. Hayden Publishing Company, Inc., New York, N.Y. Filed Apr. 10, 1961.

MICROWAVES

For Trade Magazine and a Section of a Trade Magazine (Int. Cl. 16).
First use Nov. 23, 1960.

SN 253,638. Eugene Dietzgen Co., Chicago, Ill. Filed Sept. 1, 1966.



The lining on the drawing is a feature of the mark and is not lined for color. Applicant disclaims the representation of the map of Kansas apart from the mark as shown.
For Maps—Namely, City Maps, County Maps Showing Land and Mineral Interest Ownership, and Plats (Int. Cl. 16).
First use in or about 1928.

SN 254,789. Ivan Obolensky, Inc., New York, N.Y. Filed Sept. 20, 1966.

OBOLENSKY

For Books (Int. Cl. 16).
First use at least as early as December 1961.

SN 257,929. Business Incentives, Inc., Minneapolis, Minn. Filed Nov. 4, 1966.

Sure-Cash

For Game Contest Cards To Be Used by Retail Outlets in Promoting the Sale of Their Goods and/or Services Through a Customer Participation Game (Int. Cl. 16).
First use Oct. 17, 1966.

SN 264,419. Jackdaw Publications Limited, London, England. Filed Feb. 10, 1967.

JACKDAW

Priority claimed under Sec. 44(d) on British Reg. No. 898,339, dated Aug. 12, 1966.
For Printed Matter—Namely, Printed Texts, Questions, Notes, Brochures, and Catalogues; Photocopy Prints, Photographic Prints; Facsimile Reproductions—Namely, Exact and Detailed Copies of Original Historical, Scientific, Political and the Like Documents, Books, Paintings, Maps and Charts Made by Photographic, Photostatic and Other Photocopying Processes; Teaching Material (Other Than Apparatus)—Namely, Printed Documents, Pamphlets, Book Extracts, and Newspaper Cuttings; Charts, Maps and Pictorial Displays—Namely, Visual Processes of Pictorial and Text Material in the Form of Charts, Posters, Montages, and Display Sheets (Int. Cl. 16).

SN 267,435. Jack E. Meier, d.b.a. Lantern Lane Gallery, Houston, Tex. Filed Mar. 23, 1967.

mini-MASTER

For Miniature Paintings and Reproductions of Paintings (Int. Cl. 16).
First use Jan. 25, 1967.

SN 275,679. McGraw-Hill, Inc., New York, N.Y. Filed July 10, 1967.

CHICAGO CONSTRUCTION NEWS

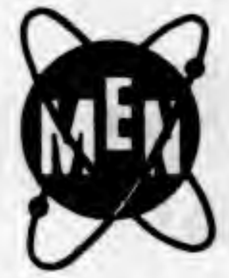
For Daily Newspaper (Int. Cl. 16).
First use Mar. 29, 1946.

SN 276,684. Phillips Drill Company, Michigan City, Ind. Filed July 24, 1967.

THE RED HEADLINER

The drawing is lined for the color red, but without limitation thereto.
For House Organ (Int. Cl. 16).
First use on or about Mar. 8, 1963.

SN 277,263. Chilton Company, Philadelphia, Pa. Filed Aug. 1, 1967.



For Periodical Publication in the Nature of a Business or Trade Magazine, Relating to the Electronic/Medical Field (Int. Cl. 16).
First use Mar. 24, 1961.

SN 277,671. Jay Emanuel Publications, Inc., Philadelphia, Pa. Filed Aug. 7, 1967.

MOTION PICTURE EXHIBITOR

For Weekly Trade Paper (Int. Cl. 16).
First use Apr. 21, 1954.

SN 294,907. Andeck Industries Inc., Temple City, Calif. Filed Apr. 4, 1968.

KRAZY DAZIES

For Flower Designs for Application to Various Articles Such as Cars, Boats, Clothes, Furniture, Windows, Sporting Goods, and the Like (Int. Cl. 16).
First use Sept. 29, 1967.

Class 39 — Clothing

SN 271,301. Wellco Re-Search Industries, Inc., Waynesville, N.C. Filed May 11, 1967.

WELLCO WELT

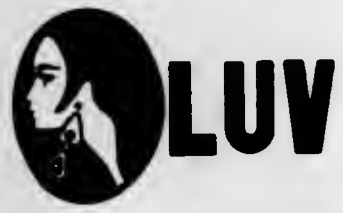
The word "Welt" is disclaimed apart from the mark as shown. Owner of Reg. No. 393,645.
For Shoes, Boots, and Other Footwear in General (Int. Cl. 25).
First use Dec. 29, 1966.

SN 271,391. Shoe Corporation of America, Columbus, Ohio. Filed May 12, 1967.

DUX

Owner of Reg. No. 713,212.
For Tennis Shoes (Int. Cl. 25).
First use Apr. 21, 1967.

SN 271,945. Harold Koenig, Coral Gables, Fla. Filed May 19, 1967.



LUV

For Women's Dresses, Sportswear, Slacks, Blouses, Skirts, Sweaters, Bermuda Shorts and Shorts, Jump Suits and Suits, Bathing Suits, and Evening Gowns (Int. Cl. 25).
First use Dec. 10, 1965.

SN 277,073. Serbin, Inc., Miami, Fla. Filed July 28, 1967.

LUIGI
OF NAPLES

Applicant disclaims the words "of Naples" apart from the mark as shown.
For Dresses and Sportswear—Namely, Shorts, Bathing Suits, and Playclothes (Int. Cl. 25).
First use July 20, 1967.

SN 283,241. The Excel Company, Minneapolis, Minn. Filed Oct. 24, 1967.

WEATHER COAT GUILD LTD.

For Men's Coats (Int. Cl. 25).
First use Feb. 1, 1967.

SN 284,455. Daytona Sports Co., Reseda, Calif. Filed Nov. 9, 1967.

DAYTONA

For Protective Helmets (Int. Cl. 9).
First use August 1963.

SN 287,882. J. W. Bray Company, Inc., Dalton, Ga. Filed Jan. 2, 1968.

MAGIC WANDERS

For Slippers (Int. Cl. 25).
First use Nov. 24, 1967.

SN 290,335. Sears, Roebuck and Co., Chicago, Ill. Filed Feb. 5, 1968.

NEATNIK

For Women's Robes (Int. Cl. 25).
First use on or about Aug. 29, 1967.

SN 291,310. Blue Bell, Inc., Greensboro, N.C. Filed Feb. 19, 1968.

SCHOONERS

For Men's and Boys' Jeans (Int. Cl. 25).
First use Feb. 12, 1968.

Class 40—Fancy Goods, Furnishings, and Notions

SN 275,072. The Nu-Look Fashion Inc., Columbus, Ohio. Filed June 29, 1967.

Nu-Look

For Wigs Made of Human Hair (Int. Cl. 26).
First use Mar. 1, 1964.

SN 279,493. Pentapco, Inc., d.b.a. Penn Products Co., Elizabeth, N.J. Filed Aug. 31, 1967.

Fashion-Mode

Owner of Reg. Nos. 780,651 and 811,073.
For Woven Elastic Braid (Int. Cl. 26).
First use Mar. 4, 1966.

SN 283,918. Charlotte McElwain, New York, N.Y. Filed Nov. 1, 1967.

● STOP and ● GO

For Hand Knitting Needles (Int. Cl. 26).
First use July 5, 1967.

SN 291,413. Master Trading Corporation, New York, N.Y. Filed Feb. 19, 1968.

ZENITH

For Wigs, Wiglets, and Hairpieces (Int. Cl. 26).
First use on or about Jan. 11, 1968.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 275,083. J. P. Stevens & Co., Inc., New York, N.Y. Filed June 29, 1967.

FORSTMANN WOOLENS

Applicant disclaims exclusive right in the word "Woolens" apart from the mark as shown. Owner of Reg. Nos. 432,786, 520,220, and 789,758.
For Woolen Piece Goods (Int. Cl. 24).
First use Oct. 1, 1945.

SN 291,055. Fieldcrest Mills, Inc., Eden, N.C. Filed Feb. 14, 1968.

ADMOREAU

For Textile Rugs and Carpeting (Int. Cl. 27).
First use Dec. 27, 1967.

SN 291,056. Fieldcrest Mills, Inc., Eden, N.C. Filed Feb. 14, 1968.

Beauté

For Textile Rugs and Carpeting (Int. Cl. 27).
First use Dec. 21, 1967.

SN 291,057. Fieldcrest Mills, Inc., Eden, N.C. Filed Feb. 14, 1968.

Plumeau

For Textile Rugs and Carpeting (Int. Cl. 27).
First use Dec. 27, 1967.

Class 43—Thread and Yarn

SN 298,897. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed May 23, 1968.

STRYCE

For Yarns of Man Made Fibers (Int. Cl. 23).
First use May 15, 1968.

SN 298,898. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed May 23, 1968.

QIANA

For Yarns of Man Made Fibers (Int. Cl. 23).
First use May 15, 1968.

Class 44—Dental, Medical, and Surgical Appliances

SN 267,695. Veterinary Supply Depot Incorporated, Dallas, Tex. Filed Mar. 27, 1967.

MEDI-BOOT

For Plastic Protective Boots for Horses, for Therapeutic Purposes (Int. Cl. 10).
First use Dec. 20, 1966.

SN 271,112. American Marketing Institute, Inc., Dallas, Tex. Filed May 10, 1967.

EQUI-BOOT

For Plastic Protective Boots for Horses, for Therapeutic Purposes (Int. Cl. 10).
First use Dec. 15, 1966.

SN 273,391. General Electric Company, Milwaukee, Wis. Filed June 8, 1967.

FLUORICON

For X-Ray Image Intensifier Apparatus, for Medical Use (Int. Cl. 10).
First use on or before Dec. 4, 1960.

SN 278,631. A. F. Dormeyer Manufacturing Company, Chicago, Ill. Filed Aug. 21, 1967.

AF Dormeyer

A. F. Dormeyer is president of applicant corporation.
For Vibrators and Massagers for Use on the Human Body, Vaporizers of the Type for Issuing Water Vapor Into the Atmosphere of a Room, and Facial Saunas of the Type for Treating the Face of a Person (Int. Cl. 10).
First use July 1966.

SN 279,294. Hospital Marketing Services Co., Inc., Fairfield, Conn. Filed Aug. 29, 1967.

UMBILICLAMP

For Sterile, Disposable Clamp/Cutter for Medical Uses, Such as Clamping and Severing Umbilical Cords and Arteries (Int. Cl. 10).
First use June 22, 1966.

SN 280,527. A.C.R. Electronics Corp., New York, N.Y. Filed Sept. 18, 1967.

MEDI PAK

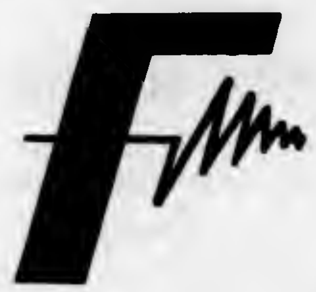
The term "Pak" is disclaimed apart from the mark as shown, without disclaiming applicant's comomn law rights thereto.
For First Aid Kits—Namely, Bandages, Soap-Type Cleansing Materials, and Iodine Tinctures (Int. Cl. 5).
First use Aug. 31, 1967.

SN 283,432. Dragerwerk, Heinr. & Bernh. Drager, Lubeck, Germany. Filed Oct. 26, 1967.

SPIROMAT

Owner of German Reg. No. 698,434, dated Apr. 3, 1956.
For Devices for Supplying, or for Facilitating the Supplying, of Air or Other Gases to Human Beings or Other Air Breathing Mammals—Namely, Resuscitators, Iron Lungs, Inhalators, and Gaseous Anesthesia Administering Devices (Int. Cl. 10).

SN 284,186. Fidelity Electronics, Ltd., Chicago, Ill. Filed Nov. 6, 1967.



For Hearing Aids; Hearing Aid Accessories Consisting of Air Receiver, Bone Oscillator, Battery Holder, Battery Charger, Body Aid Cord, Eyeglass Adapter, TV Attachment, and Pocket Battery Carrier; and Audiometers (Int. Cl. 10).
First use Jan. 2, 1961.

SN 284,444. Burnett Instrument Co., Inc., Lawrence, Kans. Filed Nov. 9, 1967.

THERMO-PAK

For Cabinets for Heating Therapeutic Heat Compresses, Compresses, and Covers for Compresses (Int. Cl. 10).
First use July 1, 1967.

SN 289,557. Medical Plastics Corporation of America, Greensboro, N.C. Filed Jan. 25, 1968.

MEDI-GARD

Owner of Reg. No. 829,172.
For Cubicle Curtains and Shower Curtains for Hospital and Sick Room Use (Int. Cl. 24).
First use Feb. 8, 1967.

Class 45 — Soft Drinks and Carbonated Waters

SN 284,854. The Welch Grape Juice Company, Inc., Westfield, N.Y. Filed Nov. 14, 1967.

WELCHBERRY

Owner of Reg. Nos. 109,970, 125,112, and others.
For Fruit Juice Drink Containing Water (Int. Cl. 32).
First use Oct. 16, 1967.

Class 46 — Foods and Ingredients of Foods

SN 241,254. Jewel Companies, Inc., Melrose Park, Ill., by change of name from Jewel Tea Co., Inc., Melrose Park, Ill. Filed Mar. 17, 1966.

TENDERLOCK

For Frozen Cuts of Meat (Int. Cl. 29).
First use Oct. 19, 1965.

SN 255,612. Gabriel Mario Pech (h), Buenos Aires, Argentina. Filed Oct. 3, 1966.

IBERÁ

Owner of Argentine Reg. No. 502,500, dated Mar. 26, 1963.
For Tea (Int. Cl. 30).

SN 258,395. Lucille Rinck Mercurio, Belleville, Ill. Filed Nov. 10, 1966.

MRS. RINCK'S

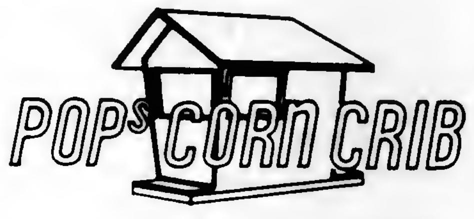
For Barbecue Sauce With Cooked Meat (Int. Cl. 29).
First use February 1958; March 1956 as to "Rinck's."

SN 267,770. Schluderberg-Kurdle Company, Inc., Baltimore, Md. Filed Mar. 28, 1967.

RACE TRACK

For Frankfurters (Int. Cl. 29).
First use Feb. 17, 1936.

SN 269,076. Harold S. Hughes, d.b.a. Pops Corn Crib, Crystal Lake, Ill. Filed Apr. 13, 1967.



The word "Corn" is disclaimed apart from the mark as shown, but without waiver of common law rights.
For Popcorn (Int. Cl. 30).
First use Aug. 1, 1966.

SN 269,231. Sugardale Foods, Inc., Canton, Ohio, by change of name from The Sugardale Provision Company, Canton, Ohio. Filed Apr. 14, 1967.

FLAVOR LOCKED

For Packaged Regular Sliced, Thin Sliced, and Thick Sliced Bacon (Int. Cl. 29).
First use on or about Mar. 9, 1967.
Subj. to Intf. with SN 270,600.

SN 270,600. National Tea Co., Chicago, Ill. Filed May 3, 1967.

FLAVOR-LOK

For Fresh Meats, Frozen Meats, and Prepared Meat Products (Int. Cl. 29).
First use Feb. 16, 1967.
Subj. to Intf. with SN 269,231.

SN 271,929. Essex Foods, Inc., d.b.a. Essex Club Foods, Methuen, Mass. Filed May 19, 1967.

ESSEX CLUB

For Sauces—Namely, Hollandaise Sauce, Bearnaise Sauce, Brandy Hard Sauce; Mustards—Namely, New England Style Mustard, Chinese Style Mustard; Creamed Fish—Namely, Creamed Finnan Haddie, Creamed Haddock; Prepared Foods—Namely, Welsh Rarebit, and Welsh Rarebit With Sherry (Int. Cls. 29 and 30).
First use February 1963.

SN 276,297. American Dairy Queen Corporation, Minneapolis, Minn. Filed July 19, 1967.

MR. MISTY KISS

Owner of Reg. Nos. 813,437 and 822,978.
For Frozen Flavored Confection in Molded Tube Form (Int. Cl. 30).
First use June 1, 1967.

SN 276,323. Lakeside, Inc., Royal Oak, Mich. Filed July 19, 1967.

MINI-FRIES

For Pre-Cut, Unfried Frozen Potatoes (Int. Cl. 29).
First use on or about Apr. 28, 1967.

SN 279,537. Edward S. Corey, d.b.a. Fuzzy's Hobo Cafe and Drive-In, Alexandria, La. Filed Sept. 1, 1967.

FUZZY'S HOBO

For Sandwiches (Int. Cl. 29).
First use in 1952.

SN 279,538. Edward S. Corey, d.b.a. Fuzzy's Hobo Cafe and Drive-In, Alexandria, La. Filed Sept. 1, 1967.

FUZZYBURGER

For Sandwiches (Int. Cl. 29).
First use on or about Mar. 18, 1962.

SN 282,107. Lauritzen and Company, Inc., Chicago, Ill. Filed Oct. 9, 1967.

ABCOLAC

Owner of Reg. No. 642,392.
For Food Product in Powder Form, Containing Milk Serums and Vegetable Extracts and Used in Commercial Baking; Said Food Product Being Packaged and Sold in Bags (Int. Cl. 30).
First use July 6, 1965.

SN 282,280. Krown Foods, Inc., Hazelcrest, Ill. Filed Oct. 11, 1967.

KWIK MAKE

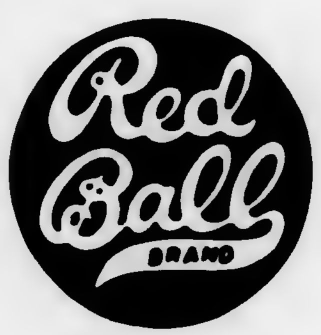
For Frozen Pancake Batter (Int. Cl. 30).
First use Feb. 15, 1967.

SN 282,577. H & H Poultry Company, Inc., Selbyville, Del. Filed Oct. 16, 1967.

PICK ME UP

For Frozen Fowl, Turkeys, and Chickens (Int. Cl. 29).
First use August 1967.

SN 283,102. Consolidated Companies, Incorporated, New Orleans, La. Filed Oct. 23, 1967.



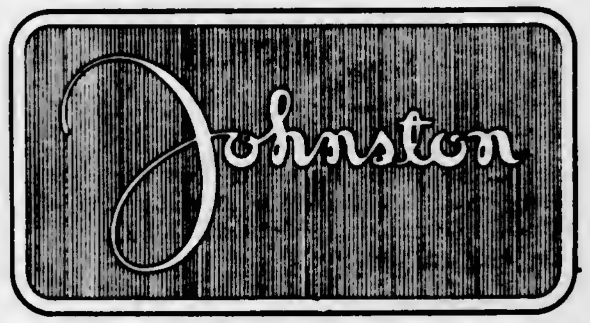
No exclusive claim is made to the word "Brand" apart from the mark as shown. Owner of Reg. Nos. 134,487, 584,460, and others.
For Canned Fruits, Not Including Canned Citrus Fruits; Canned Vegetables; Canned Fruit Juices, Not Including Canned Citrus Fruit Juices, and Grape Juice; Canned Vegetable Juices; Canned Figs; Canned Soup; Salad Oils; Alimentary Paste; Canned Pork and Beans; Tomato Sauce; Tomato Paste; Pepper Sauce; Canned Evaporated Milk; Mayonnaise; Salad Dressing; Coffee; Canned Fish; Canned Oysters; Canned Shrimp; Table Syrup; Salt; Black Pepper; Red Pepper; Sandwich Spread; Sugar; Rice; Macaroni; Spaghetti; Flour; Mustard and Gumbo File; and Butter (Int. Cls. 29, 30, and 32).
First use 1914.

SN 284,108. Roman Meal Company, Tacoma, Wash. Filed Nov. 3, 1967.

NATURAL WHOLE GRAIN GOODNESS

Owner of Reg. No. 769,738.
For Bread, Cereal, Muffin Mix, and Pancake Mix (Int. Cl. 30).
First use Sept. 26, 1962.

SN 284,669. Robert A. Johnston Company, Milwaukee, Wis. Filed Nov. 13, 1967.



The drawing is lined for red. Owner of Reg. Nos. 574,231 and 766,026.
For Cookies; Crackers; Pie Crusts in Finished Form; Candy-Like Wafers; Milk Flavorings; Ice Cream Flavorings; Ice Cream Toppings—Namely, Flavored Syrups, Fudge, Marshmallow, and Fruit; Chocolate Liquor; Cocoa; and Cocoa Drink Powder (Int. Cl. 30).
First use on or about Aug. 1, 1957; about 1848 as to "Johnston" in a different form.

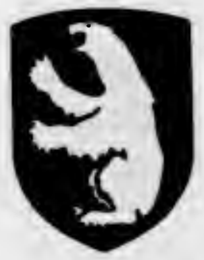
SN 285,022. W. C. Holloway, Mexia, Tex. Filed Nov. 16, 1967.

The W C. Holloways

OUTDOOR - INDOOR

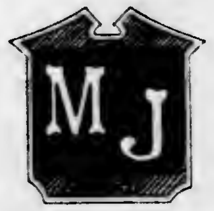
For Barbecue Sauce (Int. Cl. 30).
First use Nov. 2, 1967.

SN 286,105. Den Kongelige Gronlandske Handel (The Royal Greenland Trade Department), Copenhagen, Denmark. Filed Dec. 4, 1967.



For Hermetic, Frozen, Salted, Dried, and Smoked Fish; and Whale Meat, Seal Meat, Shellfish, Shrimps and Prawns, Roe, Fish Oil, Fish Meal, and Fish Liver (Int. Cl. 29).
First use June 1, 1959; in commerce Aug. 13, 1962.

SN 286,541. Mar-Jac, Inc., Gainesville, Ga. Filed Dec. 8, 1967.



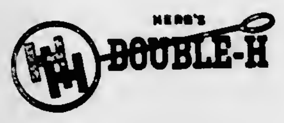
Applicant disclaims the word "Brand" apart from the mark as shown. The drawing is lined for red, brown, and gold.
For Frozen Dressed Poultry Parts (Int. Cl. 29).
First use Aug. 8, 1967.

SN 286,759. Fine Products Company, Inc., d.b.a. Hollingsworth Unusual Candies, Augusta, Ga. Filed Dec. 12, 1967.

PECAN ROYALS

Applicant disclaims the term "Pecan" separate and apart from the mark as shown, reserving unto itself all common law rights which it may have or arise in said term.
For Caramel Flavored Pecan Candy Covered With Milk Chocolate (Int. Cl. 30).
First use Dec. 31, 1963.

SN 288,696. Herbert Halperin Distributing Corp., Cheverly, Md. Filed Jan. 12, 1968.



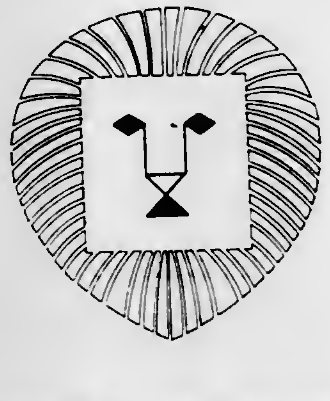
For Sour Cream, Sour Half and Half; Sauerkraut, Pickles, Horseradish; and Package for Making Pizza Containing Sauce, Cheese, and Crust (Int. Cls. 29 and 30).
First use Aug. 22, 1967.

SN 288,749. Mead Johnson & Company, Evansville, Ind. Filed Jan. 15, 1968.

FMF

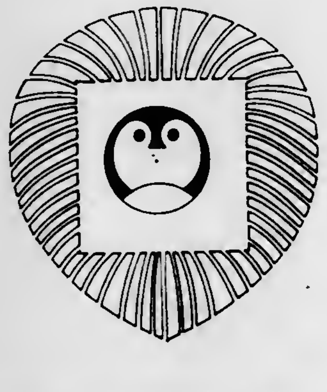
For Nutritional and Dietary Food Preparation Having Controlled Fat Content (Int. Cl. 5).
First use on or prior to Nov. 29, 1967.

SN 288,835. Mar-Ko Company, Topeka, Kans. Filed Jan. 15, 1968.



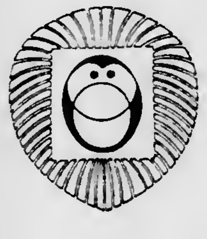
For Food Products for Animals—Namely, Felidae, Canidae, and Hyaenidae (Int. Cl. 31).
First use on or about Nov. 1, 1967.

SN 288,836. Mar-Ko Company, Topeka, Kans. Filed Jan. 15, 1968.



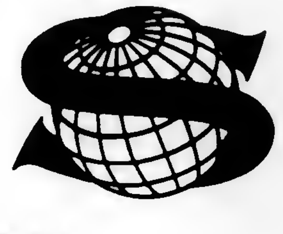
For Food Products for Animals—Namely, Marmosets and Tamarins (Int. Cl. 31).
First use on or about Nov. 1, 1967.

SN 288,837. Mar-Ko Company, Topeka, Kans. Filed Jan. 15, 1968.



For Food Products for Animals—Namely, Primates (Int. Cl. 31).
First use on or about Nov. 1, 1967.

SN 288,869. Seaboard Allied Milling Corporation, Kansas City, Mo. Filed Jan. 15, 1968.



For Flour (Int. Cl. 30).
First use Nov. 1, 1967.

SN 289,156. Kellogg Company, Battle Creek, Mich. Filed Jan. 19, 1968.

HORN PONES

Without waiver of any common law rights in any feature of its mark, applicant disclaims exclusive right to use of the word "Pones" apart from the mark as shown.
For Pastry Bakery Product That May Be Filled With Fruit, Fruit Preserves, Spices, and Other Flavoring Agents, and Which May Be Covered With a Coating of Sugar or Other Flavoring Material (Int. Cl. 30).
First use Jan. 14, 1968.

SN 289,157. Kellogg Company, Battle Creek, Mich. Filed Jan. 19, 1968.

POP-A-CAKES

For Pastry Bakery Product That May Be Filled With Fruit, Fruit Preserves, Spices, and Other Flavoring Agents, and Which May Be Covered With a Coating of Sugar or Other Flavoring Material (Int. Cl. 30).
First use Jan. 14, 1968.

SN 289,768. Beatrice Foods Co., Chicago, Ill. Filed Jan. 29, 1968.

TROOPER

For Candy (Int. Cl. 30).
First use Dec. 15, 1967.

SN 291,590. Consolidated Foods Corporation, d.b.a. Joe Lowe Company, Englewood, N.J. Filed Feb. 21, 1968.

U.S. JETS

For Frozen Confections on Sticks (Int. Cl. 30).
First use Jan. 25, 1968.

SN 293,117. Feed Service Corporation, Crete, Nebr. Filed Mar. 13, 1968.

MORANOL

For Liquid Feed Supplement Containing Normal Propyl Alcohol (Int. Cl. 31).
First use Apr. 7, 1967.

SN 293,202. Morton International, Inc., Chicago, Ill. Filed Mar. 14, 1968.

CULINOX

For Industrial Grade of Food Processing Salt (Int. Cl. 30).
First use on or about Nov. 1, 1966.

SN 293,614. General Mills, Inc., Minneapolis, Minn. Filed Mar. 19, 1968.

BAR-B-KEWS

For Ready To Eat Snacks, Derived Principally From Potato Flour (Int. Cl. 30).
First use on or prior to Oct. 24, 1967.

SN 293,977. Caravan Seafoods, Inc., New Rochelle, N.Y. Filed Mar. 25, 1968.

QUEEN ANNA

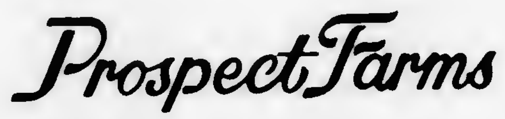
"Queen Anna" is not the name of a particular living individual.
For Preserved Herring (Int. Cl. 29).
First use Mar. 15, 1968.

SN 293,978. Cargill, Incorporated, Minneapolis, Minn. Filed Mar. 25, 1968.

BEEF KWIK-STB-18

Owner of Reg. No. 776,735.
For Cattle Feed (Int. Cl. 31).
First use Feb. 20, 1968.

SN 295,369. Prospect Farms, Inc., Fort Atkinson, Wis. Filed Apr. 10, 1968.



For Pre-Cooked Frozen Chicken (Int. Cl. 29).
First use on or about Jan. 1, 1964.

SN 295,565. Sternco Industries, Inc., Harrison, N.J. Filed Apr. 12, 1968.

TURTLETTES

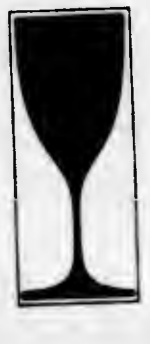
For Turtle Food (Int. Cl. 31).
First use Dec. 4, 1967.

SN 295,607. Bamby Bakers, Inc., Greensboro, N.C. Filed Apr. 15, 1968.

BAMBY

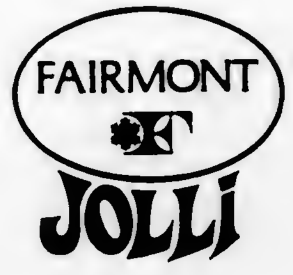
For Bread and Rolls (Int. Cl. 29).
First use 1936.

SN 297,629. Mead Johnson & Company, Evansville, Ind. Filed May 8, 1968.



For Special Food Product of High and Complete Nutritive Value, for Use in Weight Reducing Diets and Where Concentrated and Complete Foods Are Desired, and Consisting Principally of Non-Fat Milk Solids, Soya Flour, Whole Milk Solids, Sucrose, Starch, and Corn Oil, With Added Vitamins and Minerals (Int. Cl. 5).
First use on or prior to Jan. 13, 1960.

SN 297,828. Fairmont Foods Company, Omaha, Nebr. Filed May 10, 1968.



Owner of Reg. Nos. 579,011, 788,804, and others.
For Frozen Novelty Confections in Stick and Bar Form—Namely, Ice Cream, Ice Milk, Sherbet, Water Ices, and Quiescently Frozen Confections (Int. Cl. 30).
First use Apr. 30, 1968.

SN 299,065. American Home Products Corporation, New York, N.Y. Filed May 27, 1968.

NURSOY

For Soy Protein Preparation (Int. Cl. 5).
First use May 7, 1968.

SN 201,115. San Giorgio Macaroni, Inc., Lebanon, Pa. Filed June 28, 1968.

SOUPETTES

For Alimentary Pastes—Namely, Macaroni and Egg Noodle Flakes (Int. Cl. 30).
First use May 6, 1963.
Subj. to Intf. with SN 285,447.

Class 47 — Wines

SN 283,050. Zig-Zag Limited, London, England. Filed Oct. 20, 1967.

ZIG-ZAG

Owner of British Reg. No. 901,218, dated Nov. 3, 1966.
For Vermouth and a Wine-Based Aperitif (Int. Cl. 33).

Class 49 — Distilled Alcoholic Liquors

SN 285,523. Charles Jacquin et Cie., Inc., Philadelphia, Pa. Filed Nov. 24, 1967.

JOSE CORTEZ

"Jose Cortez" is not the name of a particular living individual.
For Tequila (Int. Cl. 33).
First use Apr. 13, 1967.

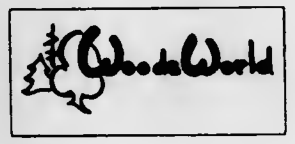
SN 285,583. Seager Evans & Co., Limited, London, England. Filed Nov. 24, 1967.

LORD NELSON

"Lord Nelson" does not identify any particular living individual. Owner of U.S. Reg. No. 600,120.
For Rum (Int. Cl. 33).
First use July 24, 1951; in commerce July 24, 1951.

Class 50—Merchandise Not Otherwise Classified

SN 265,564. Frederick Sparling and Dawn Sparling (joint owners), d.b.a. Woodsworld, Santa Cruz, Calif. Filed Feb. 27, 1967.



For Bird Feeders (Int. Cl. 21).
First use July 12, 1966.

SN 281,564. Ellenville Wood Novelty Co., Inc., Ellenville, N.Y. Filed Oct. 2, 1967.

Ellwood RUSTICWARE

No claim is made to the word "Rusticware" apart from the mark as shown without waiving any common law rights therein. Owner of Reg. No. 435,946.

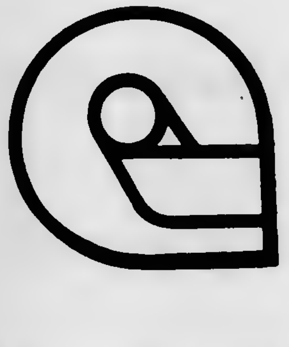
For Wooden Nut Bowls With Mallet and Picks, Sold as a Unit (Int. Cl. 21).
First use on or about Dec. 1, 1945.

SN 284,313. Ketcham & McDougall, Inc., Roseland, N.J. Filed Nov. 7, 1967.

NOTE POSTER

For Paper Holder, in Particular, a Bulletin Board (Int. Cl. 20).
First use May 1962.

SN 285,017. General Steel Industries, Inc., d.b.a. Flex-O-Lite Division, St. Louis, Mo. Filed Nov. 16, 1967.



For Rolls of Reflective Pressure Sensitive Tape (Int. Cl. 20).
First use Oct. 16, 1967.

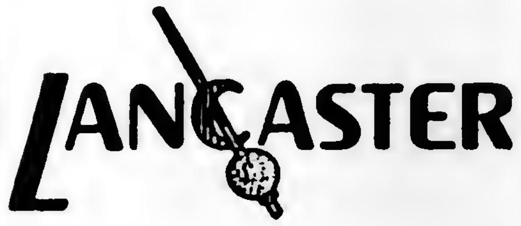
SN 290,649. Reynolds Metals Company, Richmond, Va. Filed Feb. 8, 1968.

RING THING

Applicant claims herein the exclusive right to use the word "Ring" as a part of its mark, but not otherwise.
For Aluminous Metal Can Closures (Int. Cl. 6).
First use at least as early as Feb. 2, 1968.

Class 51—Cosmetics and Toilet Preparations

SN 264,072. Lancaster, Monte Carlo, Monaco. Filed Feb. 6, 1967.



The lining on the drawing is not to indicate color, but is merely a design feature of applicant's trademark. Owner of Monacan Reg. No. 1617/59/1853, dated Mar. 21, 1959.

For Perfumes, Rouge, Toilet Waters, Cologne Waters, Face Powders, Skin Creams, Skin Lotions and Milk Bath, Lipsticks, Nail Lacquers, Hair Waving Lotions and Preparations, Bath Salts, Dentifrices, and After Shave Lotion (Int. Cl. 3).
Subj. to Intf. with SN 282,740.

SN 265,916. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Mar. 3, 1967.

COTY ORIGINALS

Owner of Reg. Nos. 180,540, 517,954, and others.
For Cosmetic Eye Make-Up, and Cosmetic Creams, Powders, and Lotions (Int. Cl. 3).
First use Dec. 9, 1966.

SN 267,508. Del Laboratories, Inc., Farmingdale, N.Y. Filed Mar. 24, 1967.

CONFLICT

For Perfumes, Toilet Water, Bath Powders, and Skin Lotions (Int. Cl. 3).
First use Oct. 15, 1945.

SN 270,755. Clairol Incorporated, New York, N.Y. Filed May 5, 1967.

THREE PROMISES

For Hair Tinting, Dyeing and Coloring Preparation and Hair Conditioner (Int. Cl. 3).
First use Dec. 19, 1966.

SN 271,646. Secret Wand, Inc., Chicago, Ill. Filed May 16, 1967.

SECRET WAND

For Lipstick, Cold Cream, Cleansing Cream, and Foundation Make Up (Int. Cl. 3).
First use Apr. 13, 1967.

SN 275,014. Lanvin-Charles of the Ritz, Inc., New York, N.Y., assignee of Jean Nate, Inc., New York, N.Y. Filed June 29, 1967.

A SPRAY OF NATÉ

Owner of Reg. Nos. 299,041, 824,197, and others.
For Bath and Body Perfume (Int .Cl. 3).
First use on or about June 1, 1967.

SN 276,363. Steven Lewis, d.b.a. Steven Lewis Company, Hollywood, Calif. Filed July 19, 1967.

LSD

For Cologne (Int. Cl. 3).
First use Apr. 1, 1967.
Subj. to Intf. with SN 278,607.

SN 278,237. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Aug. 14, 1967.

ORIGINALS DE COTY

The trademark "Originals de Coty" translates to the English "Coty Originals." Owner of Reg. Nos. 180,540, 517,954, and others.
For Perfume and Toilet Water (Int. Cl. 3).
First use Mar. 10, 1967.

SN 278,607. Parker Laboratories, Inc., d.b.a. Gilmar Laboratories, Inc., d.b.a. Gilmar Laboratories, Newark, N.J. Filed Aug. 18, 1967.

LSD

For Men's and Women's Colognes (Int. Cl. 3).
First use Apr. 6, 1967.
Subj. to Intf. with SN 276,363.

SN 281,671. Avon Products, Inc., New York, N.Y. Filed Oct. 3, 1967.

HONEY RICH

Applicant disclaims the word "Honey" apart from the mark as shown.
For Filled Powder Compact (Int. Cl. 3).
First use Sept. 18, 1967.

SN 281,674. Avon Products, Inc., New York, N.Y. Filed Oct. 3, 1967.

CREMELUCENT

For Eye Shadow (Int. Cl. 3).
First use Sept. 18, 1967.

SN 281,725. Sybil Ives Incorporated, Yonkers, N.Y. Filed Oct. 3, 1967.

MEND 'N CURL

Owner of Reg. No. 791,542.
For Wrapping Lotion (Int. Cl. 3).
First use June 16, 1965.

SN 285,165. Yardley of London, Inc., Totowa, N.J. Filed Nov. 17, 1967.

KHADINE

For Cologne, Cologne Mist, Refreshant, and Amulet Sachet (Int. Cl. 3).
First use June 27, 1967.

SN 285,241. Marie Pigalle Inc., New York, N.Y. Filed Nov. 20, 1967.

WILD LOVE

For Cologne (Int. Cl. 3).
First use April 1967.

SN 285,610. Yardley of London, Inc., Totowa, N.J. Filed Nov. 24, 1967.

SLICKER

Owner of Reg. Nos. 824,581, 824,583, and 825,886.
For Nail Polish (Int. Cl. 3).
First use Nov. 13, 1967.

SN 285,771. Studio Girl-Hollywood, Inc., d.b.a. Studio Girl, Chicago, Ill. Filed Nov. 28, 1967.

LUSTER GLO

For Lipstick (Int. Cl. 3).
First use in or about July 1965.
Subj. to Intf. with SN 282,261.

SN 296,073. Johnson & Johnson, New Brunswick, N.J. Filed Apr. 22, 1968.

BOLD MOVE

Owner of Reg. No. 824,594.
For Shaving Preparation (Int. Cl. 3).
First use Feb. 10, 1968.

Class 52—Detergents and Soaps

SN 298,505. Colgate-Palmolive Company, New York, N.Y. Filed May 20, 1968.

LANCE

Owner of Reg. No. 786,540.
For Hair Shampoo (Int. Cl. 3).
First use May 8, 1968.

SERVICE MARKS

Class 100—Miscellaneous

SN 239,658. Quality Nursing Centers, Inc., Charleston, S.C. Filed Feb. 25, 1966.

Applicant disclaims the word "Quality" apart from the mark as shown.
For Management Services in Organizing and Operating Nursing Homes (Int. Cl. 42).
First use Dec. 26, 1965.

SN 250,346. The Bishop and Babcock Corporation, Toledo, Ohio. Filed July 15, 1966.

THE IMPRESSION THAT LASTS

For Engineering Services in the Field of Industrial Fasteners (Int. Cl. 42).
First use in or about January 1959.

SN 267,817. Country Kitchen Incorporated of Middletown, Ohio, Cincinnati, Ohio. Filed Mar. 29, 1967.

COUNTRY BOY

Owner of Reg. No. 742,443.
For Restaurant Services (Int. Cl. 42).
First use Nov. 27, 1939.

SN 280,001. Allen-Babcock Computing, Inc., Los Angeles, Calif. Filed Sept. 11, 1967.

RUSH

For Computer Time-Sharing Service (Int. Cl. 42).
First use Nov. 15, 1966.

SN 281,035. Chips-First Food Corporation, New York, N.Y. Filed Sept. 25, 1967.

MR. CHIPS

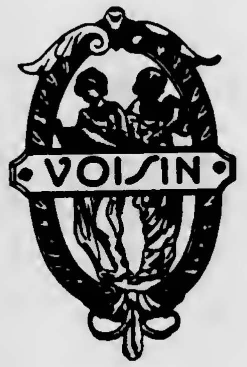
For Restaurant Services (Int. Cl. 42).
First use Dec. 5, 1966.

SN 281,219. Pheasant Run, Inc., St. Charles, Ill. Filed Sept. 26, 1967.

PHEASANT RUN

For Country Club, Lodging, and Restaurant Services (Int. Cl. 42).
First use May 1961.

SN 283,458. Restaurant Voisin, Inc., New York, N.Y. Filed Oct. 26, 1967.



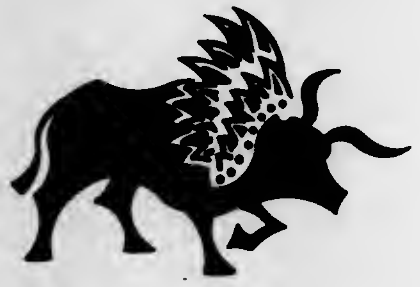
The word "Voisin" is French and may be translated into English as "neighbor."
For Restaurant Services (Int. Cl. 42).
First use Jan. 10, 1935.

SN 284,337. John O. Morris, Hartford, Conn. Filed Nov. 8, 1967.

BEHIND THE WORDS

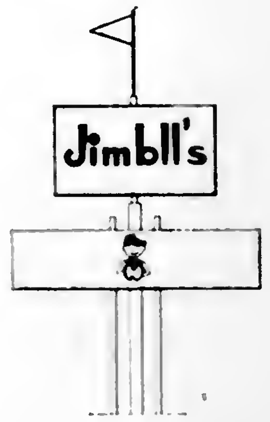
For Consulting Services in the Fields of Oral and Written Communication (Int. Cl. 35).
First use at least as early as Nov. 3, 1967.

SN 292,377. Heap Big Beef, Inc., Hartsdale, N.Y. Filed Mar. 1, 1968.



For Restaurant Services (Int. Cl. 42).
First use Aug. 29, 1967.

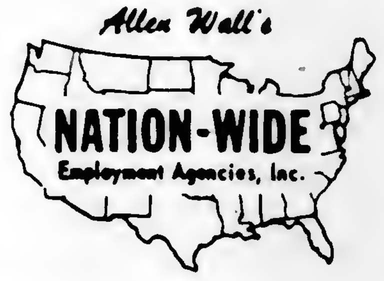
SN 298,290. Mister Softee, Inc., Runnemede, N.J. Filed May 16, 1968.



The lining on the drawing of the mark represents a feature of the mark as used and is not intended to indicate color.
For Restaurant Services (Int. Cl. 42).
First use Aug. 23, 1967.

Class 101 — Advertising and Business

SN 244,843. Nation-Wide Employment Agencies, Inc., Boston, Mass. Filed May 3, 1966.



The words "Nation-Wide Employment Agencies, Inc." and the representation of the map of the United States are disclaimed apart from the mark as shown.
For Employment Agency Services (Int. Cl. 35).
First use Mar. 13, 1966.

SN 256,324. United Auto Brokers, Inc., Brooklyn, N.Y. Filed Oct. 12, 1966.

UAB

For Brokerage Services in the Field of Automobiles (Int. Cl. 35).
First use on or about Dec. 1, 1965.

SN 257,384. Greet Our Babies, Inc., Memphis, Tenn. Filed Oct. 27, 1966.

Greet Our Babies

For Promoting Good Will for Hospitals and Similar Institutions, and for Promoting the Goods and Services of Sponsoring Participants by Presenting a Lifetime Record Book for Each New Baby to Each Mother (Int. Cl. 35).
First use January 1952.

SN 263,556. Fugazy Travel Bureau, Inc., New York, N.Y. Filed Jan. 30, 1967.

meeting dynamics

For Organization of Business Meetings and Conventions (Int. Cl. 35).
First use Nov. 15, 1966.

SN 266,425. Johnny on the Spot Temporary Help Inc., New York, N.Y. Filed Mar. 10, 1967.

JOHNNY ON THE SPOT

For Supplying Temporary Employees to Others (Int. Cl. 35).
First use Apr. 23, 1965.

SN 271,266. Nathan I. Lieberman, Evansville, Ind. Filed May 11, 1967.

ABLE

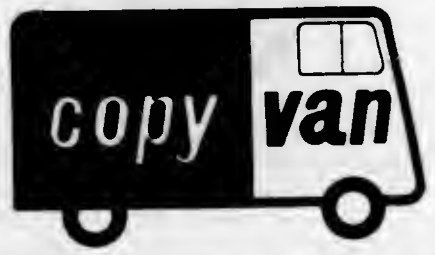
For Services to Accountants and/or Their Professional or Commercial Firms, Through Which the Applicant's Computer Is Programmed To Produce Specific Reports To Meet Particular Requirements of the Accountant, His Firm, or His Client (Int. Cl. 35).
First use Oct. 15, 1965.

SN 272,590. Copy Van, Inc., Richmond, Va., assignee of Copy Van Company, Richmond, Va. Filed May 29, 1967.

COPY VAN

For Reproduction and Mailing of Bills or Statements for Others (Int. Cl. 35).
First use Apr. 10, 1967; Feb. 15, 1964, in a different form.

SN 272,591. Copy Van, Inc., Richmond, Va., assignee of Copy Van Company, Richmond, Va. Filed May 29, 1967.



For Reproduction and Mailing of Bills or Statements for Others (Int. Cl. 35).
First use January 1967.

SN 273,377. Creative Programs Corp., New York, N.Y. Filed June 8, 1967.

CPC
CREATIVE PROGRAMS CORP

For Providing Stock Brokerage Services (Particularly With Respect to the Shares of Management Investment Companies) (Int. Cl. 35).
First use Oct. 11, 1966.

SN 274,235. Profit Index Systems, Inc., Los Angeles, Calif. Filed June 19, 1967.

PISI

For Performance of Cost Accounting and Management Services for Others, Including the Collecting of Data and Information, Checking, Analyzing and Electro Data Processing the Same, and the Rendering of Reports, Summaries, Analyses, Evaluations and Recommendations, and Aiding in Management Planning and Operations (Int. Cl. 35).
First use Dec. 13, 1966.

SN 277,871. Advertising Publications, Inc., Chicago, Ill. Filed Aug. 9, 1967.

DART

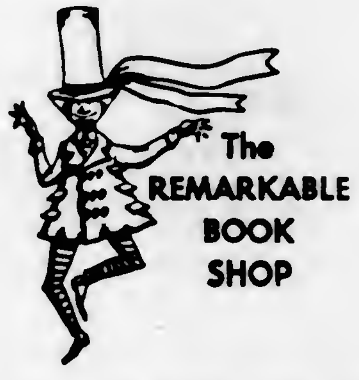
For Publishing Employment Opportunity Advertisements and Furnishing Information to the Advertisers From Persons Responding to the Advertisements (Int. Cl. 35).
First use about Nov. 1, 1966.

SN 277,878. Baird & Warner, Inc., Chicago, Ill. Filed Aug. 9, 1967.

RESET

For Real Estate Brokerage Services Specializing in Employee Transfers (Int. Cl. 35).
First use at least as early as August 1964.

SN 279,092. Remark Corporation, Westport, Conn. Filed Aug. 25, 1967.



The exclusive use of the words "Book" and "Shop" is disclaimed apart from the mark as a whole.
For Locating Rare and Out-of-Print Books and Specially Packaging and Delivering Books (Int. Cl. 35).
First use in or about June 1963.

SN 281,803. Magram Corporation, Burlington, Vt. Filed Oct. 4, 1967.

OPERATION "ACRES OF DIAMONDS"

For Promoting the Interest of the State of Vermont To Attract Industry and Professional Talent by Physical Displays Reflecting the Opportunities Therein (Int. Cl. 35).
First use June 5, 1967.

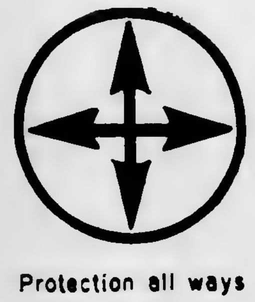
Class 102 — Insurance and Financial

SN 194,732. Lion G. Mason & Company, Atlanta, Ga. Filed June 2, 1964.

THE MASON PLAN

For Financial Services, Particularly Coordinating Financial Affairs, Trusts, Pensions, etc. (Int. Cl. 36).
First use Dec. 31, 1956.

SN 264,848. The North Central Company, St. Paul, Minn. Filed Feb. 16, 1967.



Reserving common law and statutory rights, applicant disclaims the words "Protection All Ways" apart from the mark as shown.

For Insurance Underwriting Services (Int. Cl. 36).

First use on or about Sept. 15, 1966; December 1956 in a different form.

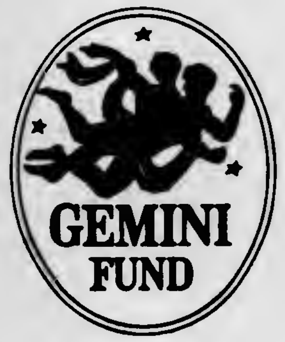
SN 268,835. Wellington Management Company, Claymont, Del. Filed Apr. 10, 1967.

GEMINI

For Fund Investment Services (Int. Cl. 36).

First use Dec. 1, 1966.

SN 268,836. Wellington Management Company, Claymont, Del. Filed Apr. 10, 1967.

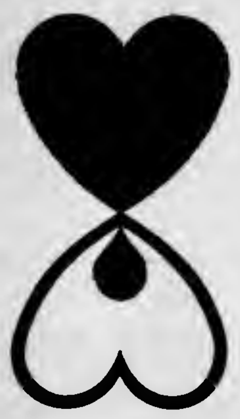


Applicant disclaims the term "Fund" apart from the mark as shown.

For Fund Investment Services (Int. Cl. 36).

First use Dec. 1, 1966.

SN 271,450. Cooperative Blood Replacement Plan, Chicago, Ill. Filed May 15, 1967.

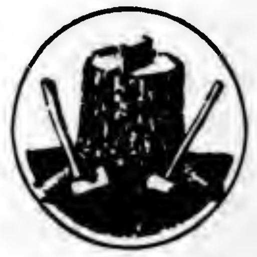


The drawing is lined for red, but no claim is made to color.

For Blood Replacement Insurance Services for Blood Donors and Their Families (Int. Cl. 36).

First use Mar. 21, 1967.

SN 272,658. Woodmen of the World Life Insurance Society and/or Omaha Woodmen Life Insurance Society, Omaha, Nebr. Filed May 29, 1967.

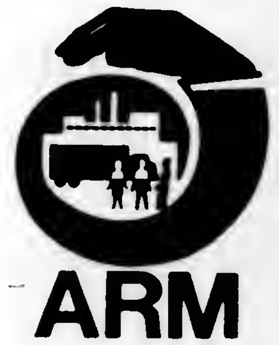


Owner of Reg. No. 659,626.

For Underwriting of Insurance (Int. Cl. 36).

First use Nov. 1, 1965; about 1900 in a slightly different form.

SN 273,222. American Mutual Liability Insurance Company, Wakefield, Mass. Filed May 8, 1967.



For Business Insurance Services (Int. Cl. 36).

First use Jan. 18, 1967.

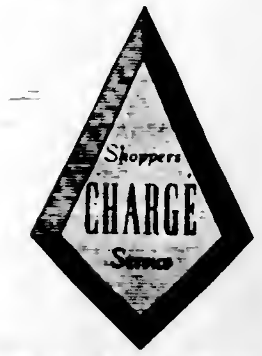
SN 274,757. Lamborn & Company, Inc., New York, N.Y. Filed June 26, 1967.

LAMBORN

For Sugar Brokerage Service (Int. Cl. 36).

First use July 1, 1905.

SN 275,750. Economy Finance Corporation, Indianapolis, Ind. Filed July 11, 1967.



No claim of exclusive right is made to the words "Shoppers Charge Service" for the services recited. The drawing is lined for blue, but color is not claimed as a feature of the mark.

For Extending Credit to Customers of Subscribing Merchants Through Use of Credit Cards (Int. Cl. 36).

First use Dec. 1, 1958.

SN 277,693. Nationwide Mutual Insurance Company, Columbus, Ohio. Filed Aug. 7, 1967.

THE MAN FROM
NATIONWIDE
IS ON YOUR SIDE

Owner of Reg. Nos. 713,962 and 733,565.

For Underwriting and Sale of All Lines of Insurance, Including, but Not Limited to, Fire, Life, and Casualty (Int. Cl. 36).

First use May 1, 1966.

Class 103 — Construction and Repair

SN 266,031. Glam-O-Rama, Incorporated, Benson, N.C. Filed Mar. 6, 1967.

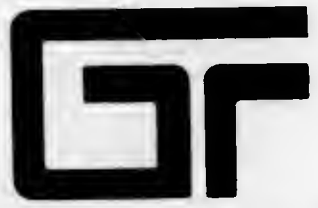
YOUR PRESTIGE CLEANER

Without waiving its common law rights and for purposes of this registration only, applicant makes no claim to the word "Cleaner" apart from the mark as shown.

For Standard and Coin-Operated Laundry and Dry Cleaning Services (Int. Cl. 37).

First use Nov. 10, 1962.

SN 277,359. Glitech Corporation, St. Paul, Minn. Filed Aug. 2, 1967.

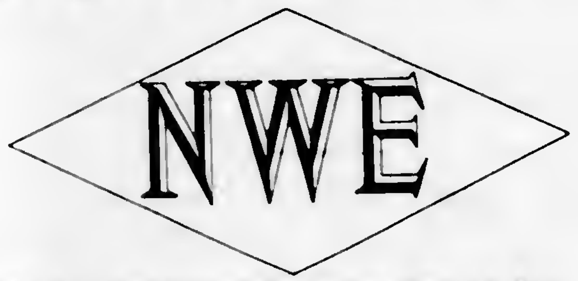


The mark consists of a fanciful showing of the letters "GT."

For Custom Manufacturing of Integrated Packaging Systems (Int. Cl. 37).

First use Apr. 3, 1967.

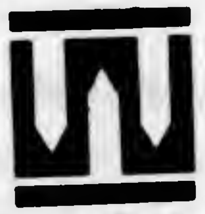
SN 281,997. Northwestern Engineering Co., Rapid City, S. Dak. Filed Oct. 6, 1967.



For Highway Construction Services (Int. Cl. 37).

First use April 1962.

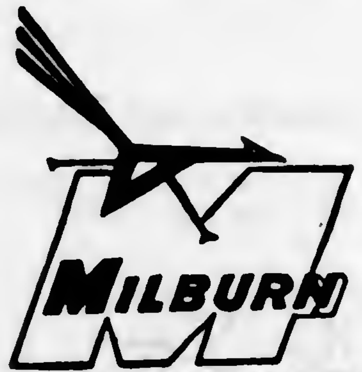
SN 284,571. Automated Building Components, Inc., Miami, Fla. Filed Nov. 13, 1967.



For Custom Construction of Wooden Trusses (Int. Cl. 37).

First use May 24, 1967.

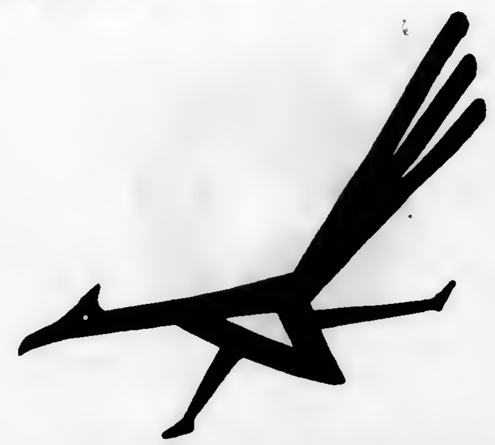
SN 286,699. Milburn Brothers, Inc., Mount Prospect, Ill. Filed Dec. 11, 1967.



For Construction Services—Namely, Pavement Grading, Concrete and Asphalt Paving, Installation of Curbs and Gutters, Site Improvement, and Installation of Sanitary and Storm Sewers (Int. Cl. 37).

First use Dec. 21, 1960; prior to 1916 as to the mark "Milburn."

SN 286,700. Milburn Brothers, Inc., Mount Prospect, Ill. Filed Dec. 11, 1967.



For Construction Services—Namely, Pavement Grading, Concrete and Asphalt Paving, Installation of Curbs and Gutters, Site Improvement, and Installation of Sanitary and Storm Sewers (Int. Cl. 37).

First use Dec. 21, 1960.

SN 288,850. Petroleum Pipe Inspectors, Inc., Lafayette, La. Filed Jan. 15, 1968.

For Inspecting and Repairing, When Necessary, the Pipes or Pipe Lines of Others (Int. Cl. 37).

First use June 6, 1966.

Class 104 — Communication

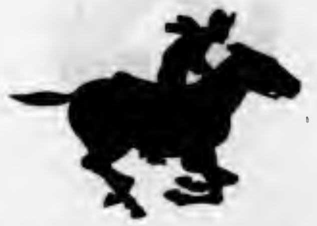
SN 269,320. The Journal Company, Milwaukee, Wis. Filed Apr. 17, 1967.

TUNEABLE

For Radio and Television Broadcasting (Int. Cl. 38).

First use Feb. 23, 1967.

SN 284,153. Baker Industries, Inc., Newark, N.J. Filed Nov. 6, 1967.

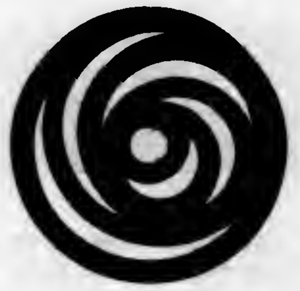


Owner of Reg. Nos. 708,531 and 708,532.

For Central Station Protective Services Employing Communication to Monitoring Personnel (Int. Cl. 38).

First use Oct. 31, 1967.

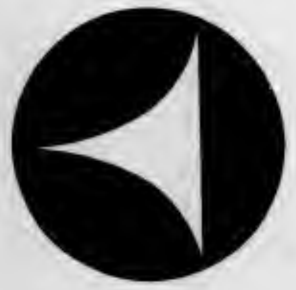
SN 298,988. American Broadcasting Companies, Inc., New York, N.Y. Filed May 24, 1968.



For Radio Broadcasting (Int. Cl. 38).

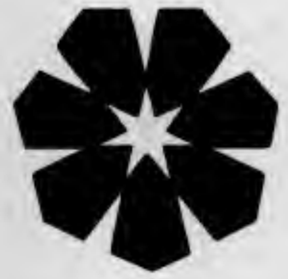
First use Dec. 14, 1967.

SN 298,989. American Broadcasting Companies, Inc., New York, N.Y. Filed May 24, 1968.



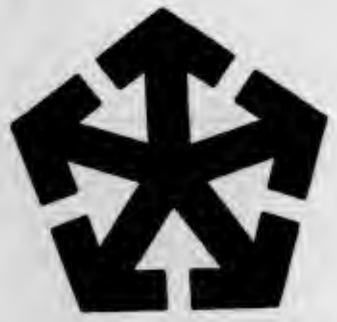
For Radio Broadcasting (Int. Cl. 38).
First use Dec. 14, 1967.

SN 298,990. American Broadcasting Companies, Inc., New York, N.Y. Filed May 24, 1968.



For Radio Broadcasting (Int. Cl. 38).
First use Dec. 14, 1967.

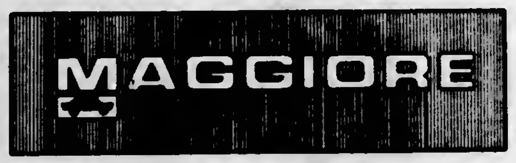
SN 298,991. American Broadcasting Companies, Inc., New York, N.Y. Filed May 24, 1968.



For Radio Broadcasting (Int. Cl. 38).
First use Dec. 14, 1967.

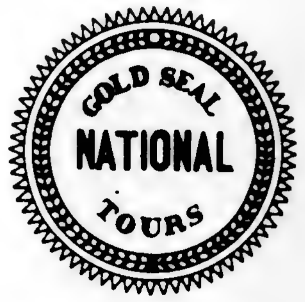
Class 105 — Transportation and Storage

SN 257,328. Autoservizi Maggiore S.p.A., Rome, Italy. Filed Oct. 13, 1966.



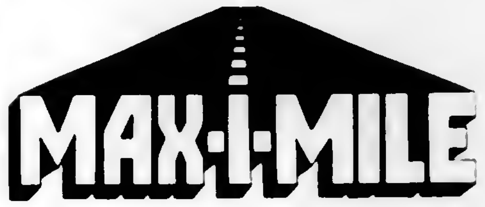
The Italian word "Maggiore" means, in English, "major." The red lining shown on the drawing is for background only, and is not a part of the mark.
For Renting and Leasing of Automobiles (Int. Cl. 39).
First use January 1961; in commerce January 1961.

SN 268,360. NYTC Corp., New York, N.Y. Filed Apr. 5, 1967.



Applicant disclaims the word "Tours" apart from the mark as shown. Owner of Reg. No. 826,253.
For Travel Agency Services (Int. Cl. 39).
First use Dec. 19, 1966.

SN 284,256. Voyageplan, Inc., New York, N.Y. Filed Nov. 6, 1967.



For Travel Agency Services (Int. Cl. 39).
First use Mar. 15, 1967.

SN 285,594. Trans World Airlines, Inc., New York, N.Y. Filed Nov. 24, 1967.

UP UP AND AWAY

For Air Transportation of Persons, Property, and Mail (Int. Cl. 39).
First use Nov. 7, 1967.

Class 106 — Material Treatment

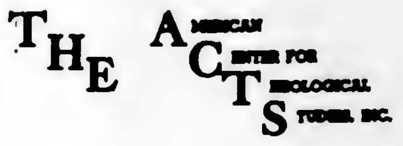
SN 277,944. Union Carbide Corporation, New York, N.Y. Filed Aug. 9, 1967.

UCAR

Owner of Reg. Nos. 696,264, 844,130, and others.
For Applying Metal and Ceramic Coatings to Various Substrates (Int. Cl. 40).
First use on or about Feb. 1, 1967.

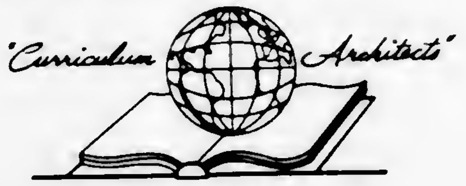
Class 107 — Education and Entertainment

SN 239,859. The American Center for Theological Studies, Inc., New York, N.Y. Filed Mar. 1, 1966.



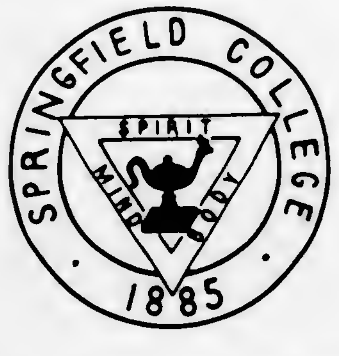
For Conducting Courses in Theology (Int. Cl. 41).
First use Sept. 1, 1958.

SN 256,615. Vocational Horizons, Inc., Long Island City, N.Y. Filed Oct. 17, 1966.



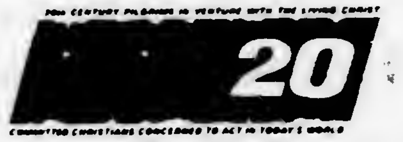
The word "Curriculum" is disclaimed apart from the mark as shown.
For Educational Services—Namely, Job-Oriented Courses of Study and Instructional Material Associated Therewith (Int. Cl. 41).
First use Aug. 25, 1966.

SN 275,560. Springfield College, Springfield, Mass. Filed July 7, 1967.



For College Educational Services (Int. Cl. 41).
First use 1891.

SN 279,837. Kansas Southern Baptist Foundation, Wichita, Kans. Filed Sept. 7, 1967.



For Conducting of Religious Services on College and University Campuses (Int. Cl. 41).
First use Aug. 19, 1967.

SN 285,499. Marine Studios, Incorporated, St. Augustine, Fla. Filed Nov. 24, 1967.

MARINELAND

Owner of Reg. Nos. 382,018 and 382,019.
For Providing the Public With Opportunities Both To View Various Forms of Aquatic Life in an Environment That Closely Simulates Their Native Habitat, and To View Trained Performances by Aquatic Creatures (Int. Cl. 41).
First use August 1938.

SN 290,368. Lion Country Safari, Inc., West Palm Beach, Fla. Filed Feb. 6, 1968.

LION COUNTRY SAFARI

For Public Recreational Services—Namely, Making Available to Tourists a Simulated Jungle With Animals, African Dancers, a Replica of an African Village, Rides, Refreshments, and Shops (Int. Cl. 41).
First use Aug. 1, 1967.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

855,740. FRONT LAWN. Better Turf Seed Company, Inc. SN 258,776. Pub. 6–18–68. Filed 11–16–66.

855,741. OLECOAT. Avisun Corporation. SN 262,752. Pub. 6–18–68. Filed 1–18–67.

855,742. MISCELLANEOUS DESIGN. Rex Asbestwerke, Graf von Rex K.G. MULTIPLE CLASS (Classes 1 and 43). SN 270,953. Pub. 6–18–68. Filed 5–8–67.

855,743. SCOTTY PACK. Scotty-Pack Products, Inc. SN 274,465. Pub. 6–18–68. Filed 6–21–67.

855,744. CASCADE. Stribling's Nurseries, Inc. SN 274,899. Pub. 6–18–68. Filed 6–27–67.

855,745. CRUSADER (DESIGN). Benjamin E. Dibble. SN 276,316. Pub. 6–18–68. Filed 7–19–67.

Class 2 — Receptacles

855,746. MOPTOP. Corrosion Products, Inc. SN 269,860. Pub. 6–18–68. Filed 4–24–67.

855,747. ACCALAC. David Douglas & Co., Inc. SN 276,825. Pub. 6–18–68. Filed 7–26–67.

855,748. ROMA-WARE. David Douglas & Co., Inc. SN 282,781. Pub. 6–18–68. Filed 10–18–67.

855,749. PARTEE-SERV. Harford E. Goings. SN 285,543. Pub. 6–18–68. Filed 11–24–67.

855,750. SEELYE ETC. AND DESIGN. Seelye Plastic-Fab, Inc. SN 285,584. Pub. 6–18–68. Filed 11–24–67.

855,751. TOWER TEAR AND DESIGN. Tower Packaging Company. SN 286,735. Pub. 6–18–68. Filed 12–11–67.

855,752. POWER-STAK. Collin Box & Supply Co. SN 287,005. Pub. 6–18–68. Filed 12–15–67.

855,753. UNILOY. Hoover Ball and Bearing Company. SN 287,063. Pub. 6–18–68. Filed 12–18–67.

855,754. TARGET. Target Stores, Inc. SN 287,968. Pub. 6–18–68. Filed 1–2–68.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

855,755. TOTE-A-TOT. Jack C. Abert, d.b.a. Mechanical Products Company. SN 256,908. Pub. 6–18–68. Filed 10–21–66.

855,756. ATLANTIC AND DESIGN. Atlantic Products Corporation (Delaware corporation), assignee of Atlantic Products Corporation (New Jersey corporation). MULTIPLE CLASS (Classes 3 and 22). SN 282,230. Pub. 6–18–68. Filed 10–11–67.

855,757. THE ARRANGEMENT. Hogar Industries, Inc. SN 282,801. Pub. 6–18–68. Filed 10–18–67.

855,758. SOVEREIGN. Samsonite Corporation. SN 282,824. Pub. 6–18–68. Filed 10–18–67.

Class 4 — Abrasives and Polishing Materials

855,759. GODDARD'S SHINE MAKER. J. Goddard & Sons Limited. SN 270,568. Pub. 6–18–68. Filed 5–3–67.

855,760. CUREALL. Masury-Columbia Co. SN 276,328. Pub. 6–18–68. Filed 7–19–67.

855,761. BLACO-POLISH. Baron Blakeslee. SN 286,877. Pub. 6–18–68. Filed 12–14–67.

Class 5 — Adhesives

855,762. PANEL FAST. The Borden Company. SN 269,850. Pub. 6–18–68. Filed 4–24–67.

855,763. CAMACO. Casting Materials Company, Inc. SN 284,447. Pub. 6–18–68. Filed 11–9–67.

Class 6 — Chemicals and Chemical Compositions

855,764. STELCO. The Steel Company of Canada Limited. MULTIPLE CLASS (Classes 6, 12, 13, 14, 22, 23, and 35). SN 253,253. Pub. 6–18–68. Filed 8–29–66.

855,765. MINUET. Staff Supermarket Associates, Inc. SN 258,259. Pub. 6–18–68. Filed 11–8–66.

855,766. MILUBE. Atlas Chemical Industries, Inc. SN 268,014. Pub. 6–18–68. Filed 3–31–67.

855,767. IDENTI-DISC. Microbiological Associates Incorporated. SN 274,082. Pub. 6–18–68. Filed 6–16–67.

855,768. HISTO-TEST. Colab Laboratories, Inc. SN 274,858. Pub. 6–18–68. Filed 6–27–67.

855,769. AQUAGEL. Parker Laboratories, Inc. SN 277,375. Pub. 6–18–68. Filed 8–2–67.

855,770. SEA GARDEN. Avon Products, Inc. SN 277,786. Pub. 6–18–68. Filed 8–8–67.

855,771. FANTASTIK. Texize Chemicals, Inc. SN 280,489. Pub. 6–11–68. Filed 9–15–67.

855,772. SALON. Kohn Enterprises, Inc. SN 280,957. Pub. 6–18–68. Filed 9–22–67.

855,773. GOOSEGREASE. Fycon Engineering Corporation. SN 281,063. Pub. 6–18–68. Filed 9–25–67.

855,774. LETTERFLEX. W. R. Grace & Co. SN 281,075. Pub. 6–18–68. Filed 9–25–67.

855,775. NITROL. Monsanto Company. SN 281,094. Pub. 6–18–68. Filed 9–25–67.

855,776. SHACKLE. Monsanto Company. SN 281,099. Pub. 6–18–68. Filed 9–25–67.

855,777. KLEAROW. Triangle Chemical Company. SN 281,137. Pub. 6–18–68. Filed 9–25–67.

855,778. BAL-TYNT. Bausch & Lomb Incorporated. SN 281,434. Pub. 6–18–68. Filed 9–29–67.

855,779. TARGET. Target Stores, Inc. SN 287,969. Pub. 6–18–68. Filed 1–2–68.

855,780. ENDIMAL. International Dioxcide, Inc. SN 289,443. Pub. 6–18–68. Filed 1–24–68.

855,781. SIMONIZ. Simoniz Company. MULTIPLE CLASS (Classes 6 and 52). SN 290,228. Pub. 6–18–68. Filed 2–5–68.

855,782. PHENOLENE. Geigy Chemical Corporation. SN 293,985. Pub. 6–18–68. Filed 3–25–68.

Class 8 — Smokers' Articles, Not Including Tobacco Products

855,783. REAMZALL. S. M. Frank & Co., Inc. SN 262,156. Pub. 6–18–68. Filed 1–9–67.

855,784. DORCHESTER. Shields, Inc. of Attleboro, Mass. SN 293,315. Pub. 6–18–68. Filed 3–14–68.

855,785. ROLLAGAS, Alfred Dunhill Limited. SN 293,774. Pub. 6–18–68. Filed 3–21–68.

855,786. TOBACCOLAND. Tobaccoland of Cherry Hill, Inc. MULTIPLE CLASS (Classes 8 and 17). SN 294,110. Pub. 6–18–68. Filed 3–26–68.

855,787. CUTLASS. Swank, Inc. SN 294,219. Pub. 6–18–68. Filed 3–26–68.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

855,788. RAMADA INN. Ramada Inns, Inc. SN 258,147. SN 6–18–68. Filed 11–7–66.

855,789. BUGLER (DESIGN). Ramada Inns, Inc. SN 258,149. Pub. 6–18–68. Filed 11–7–66.

855,790. MISCELLANEOUS DESIGN. Olin Mathieson Chemical Corporation. SN 280,523. Pub. 6–18–68. Filed 9–18–67.

Class 10 — Fertilizers

855,791. SUNSHINE BRAND AND DESIGN. Western Peat Moss Ltd. SN 266,963. Pub. 6–18–68. Filed 2–13–67.

855,792. FLORALTONE, Amchem Products, Inc. SN 289,759. Pub. 6–18–68. Filed 1–29–68.

855,793. MARINURE. Wilfrid Smith (Horticultural) Limited. SN 290,343. Pub. 6–18–68. Filed 2–5–68.

Class 12 — Construction Materials

855,764. (See Class 6 for this trademark.)

855,794. CITYPROOF. S-G Steel Glide Mfg. Corp. SN 265,456. Pub. 6–18–68. Filed 2–16–67.

855,795. SOLARSPAN. Burnham Corporation. SN 268,380. Pub. 6–18–68. Filed 4–5–67.

855,796. FLUOROPAD. John L. Doré Co. SN 269,300. Pub. 6–18–68. Filed 4–17–67.

855,797. GROUT FAST. Ranco Industrial Products Corporation. SN 269,451. Pub. 6–18–68. Filed 4–18–67.

855,798. HYDRO-PLUG. The Camp Company, Inc. SN 269,500. Pub. 6–18–68. Filed 4–19–67.

855,799. ALLISON. American Can Company. SN 272,459. Pub. 6–18–68. Filed 5–26–67.

855,800. WIN-CON ETC. AND DESIGN. Win-Con, Inc. SN 273,709. Pub. 6–18–68. Filed 6–12–67.

855,801. WC ETC. AND DESIGN. Window Conversions, Inc. SN 273,710. Pub. 6–18–68. Filed 6–12–67.

855,802. MONOGARD. The Union Metal Manufacturing Company. SN 274,552. Pub. 6–18–68. Filed 6–22–67.

855,803. ALPET. The Safety Tread Limited. SN 279,498. Pub. 6–18–68. Filed 8–31–67.

855,804. ALLITE. The Safety Tread Limited. SN 279,499. Pub. 6–18–68. Filed 8–31–67.

855,805. ALFAB. The Safety Tread Limited. SN 279,500. Pub. 6–18–68. Filed 8–31–67.

855,806. THERMO-PANEL ETC. AND DESIGN. Winnebago Industries, Inc. SN 281,735. Pub. 6–18–68. Filed 10–3–67.

855,807. T/NA-MS. General Aniline & Film Corporation. SN 281,884. Pub. 6–18–68. Filed 10–5–67.

855,808. KOLOR-KAP. Johns-Manville Corporation. SN 285,431. Pub. 6–18–68. Filed 11–22–67.

855,809. LEAF-LITE. Luminous Ceilings, Inc. SN 287,926. Pub. 6–18–68. Filed 1–2–68.

855,810. TERRA VITRA. American Olean Tile Company. Inc. SN 289,466. Pub. 6–18–68. Filed 1–24–68.

855,811. USM FOAM-GRID. United States Mineral Products Company. SN 293,207. Pub. 6–18–68. Filed 3–14–68.

855,812. TAP ROOT. Locke Manufacturing Company. SN 293,837. Pub. 6–18–68. Filed 3–21–68.

855,813. SOUNDWICH. Tool Research and Engineering Corporation, d.b.a. Stresskin Products Co. SN 293,960. Pub. 6–18–68. Filed 3–22–68.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

855,764. (See Class 6 for this trademark.)

855,814. DRESSER AND DESIGN. Dresser Industries, Inc. MULTIPLE CLASS (Classes 13, 21, 23, and 26). SN 265,234. Pub. 6–18–68. Filed 2–23–67.

855,815. MODECRAFT. Modecraft Company, Inc. MULTIPLE CLASS (Classes 13, 32, and 44). SN 272,779. Pub. 6–18–68. Filed 6–1–67.

855,816. YORK. Falcon Lock Co. SN 274,196. Pub. 6–18–68. Filed 6–19–67.

855,817. AMWAY. Amway Corporation. SN 275,503. Pub. 6–18–68. Filed 7–7–67.

855,818. LAMPHUGGER. Swiveller Company, Inc. SN 275,561. Pub. 6–18–68. Filed 7–7–67.

855,819. FLASH-GUARD. The Harris Calorific Company. SN 276,133. Pub. 6–18–68. Filed 7–17–67.

855,820. MANU-KWIK. FMC Corporation. SN 277,644. Pub. 6–18–68. Filed 8–7–67.

855,821. RAFTGO. C. J. Hendry Company. SN 277,836. Pub. 6–18–68. Filed 8–8–67.

Class 14 — Metals and Metal Castings and Forgings

855,764. (See Class 6 for this trademark.)

855,822. YOLEC. The Youngstown Sheet and Tube Company. SN 263,639. Pub. 6–18–68. Filed 1–30–67.

855,823. CU. Eaton Yale & Towne Inc. SN 264,530. Pub. 6–18–68. Filed 2–13–67.

855,824. ETCHMU. Magnetic Metals Company. SN 271,820. Pub. 6–18–68. Filed 5–18–67.

855,825. CSF #10. Foote Mineral Company, assignee of Vanadium Corporation of America. SN 273,541. Pub. 6–18–68. Filed 6–9–67.

855,826. BALDWIN HI-CASE. Baldwin Steel Company. SN 275,218. Pub. 6–18–68. Filed 7–3–67.

855.827. TUNGSITE. Alloys Unlimited, Inc. SN 275,994. Pub. 6–18–68. Filed 7–14–67.

855,828. VAL METAL. Huron Valley Steel Corp. SN 277,048. Pub. 6–18–68. Filed 7–28–67.

855,829. MISCELLANEOUS DESIGN. Cameron Iron Works, Inc. SN 282,173. Pub. 6–18–68. Filed 10–10–67.

855,830. HYMET. Combustion Engineering, Inc. SN 287,347. Pub. 6–18–68. Filed 12–21–67.

855,831. CU-MINIBRIQ. Diversified Metals Corporation. SN 288,197. Pub. 6–18–68. Filed 1–5–68.

855,832. AL-MINIBRIQ. Diversified Metals Corporation. SN 288,198. Pub. 6–18–68. Filed 1–5–68.

855,833. ARCAST 67. Arwood Corporation. SN 292,835. Pub. 6–18–68. Filed 3–11–68.

855,834. ARCAST. Arwood Corporation. SN 292,836. Pub. 6–18–68. Filed 3–11–68.

Class 15 — Oils and Greases

855,835. MAYFLOWER. F. Marty Candle Co., Inc. SN 294,355. Pub. 6–18–68. Filed 3–28–68.

Class 16—Protective and Decorative Coatings

855,836. BALL. Ball Brothers Company Incorporated. SN 263,248. Pub. 6–18–68. Filed 1–25–67.

855,837. AMER FAB. The Scott & Fetzer Company, assignee of American-Lincoln Corporation. SN 275,904. Pub. 5–28–68. Filed 7–13–67.

855,838. JW JENNISON-WRIGHT. The Jennison-Wright Corporation. SN 278,387. Pub. 6–18–68. Filed 8–16–67.

Class 17—Tobacco Products

855,786. (See Class 8 for this trademark).

855,839. CONTROLLED PROFILE. Philip Morris Incorporated. SN 292,860. Pub. 6–18–68. Filed 3–11–68.

855,840. PROFILE. Philip Morris Incorporated. SN 292,861. Pub. 6–18–68. Filed 3–11–68.

855,841. LUCKY FILTERS. The American Tobacco Company. SN 293,216. Pub. 6–18–68. Filed 3–14–68.

855,842. BIG WHEEL. Conwood Corporation. SN 293,805. Pub. 6–18–68. Filed 3–21–68.

855,843. GOLDEN MOCCA. Lane Limited. SN 293,934. Pub. 6–18–68. Filed 3–22–68.

Class 18—Medicines and Pharmaceutical Preparations

855,844. MYELOVAC. Norden Laboratories, Inc. SN 269,555. Pub. 6–18–68. Filed 4–19–67.

855,845. OXYSENTIN. Ciba Limited. SN 276,224. Pub. 6–18–68. Filed 7–18–67.

855,846. MOBILAMIDE. Dartell Laboratories, Inc., d.b.a. Dartell Laboratories. SN 276,539. Pub. 6–18–68. Filed 7–21–67.

855,847. LACTO-SYL. Dartell Laboratories, Inc., d.b.a. Dartell Laboratories. SN 276,541. Pub. 6–18–68. Filed 7–21–67.

855,848. MACH II. Bristol-Myers Company. SN 276,812. Pub. 6–18–68. Filed 7–26–67.

855,849. HEP-A-STAT. Ciba Corporation, d.b.a. The Gland-O-Lac Company. SN 276,818. Pub. 6–18–68. Filed 7–26–67.

855,850. FEMINONE. The Upjohn Company. SN 276,884. Pub. 6–18–68. Filed 7–26–67.

855,851. PRODONA. The Upjohn Company. SN 276,893. Pub. 6–18–68. Filed 7–26–67.

855,852. KARTA. Warren-Teed Pharmaceuticals Inc. SN 276,971. Pub. 6–18–68. Filed 7–27–67.

855,853. ESTROVARIN. Warren-Teed Pharmaceuticals Inc. SN 276,972. Pub. 6–18–68. Filed 7–27–67.

855,854. PEKTAMALT. Warren-Teed Pharmaceuticals Inc. SN 276,974. Pub. 6–18–68. Filed 7–27–67.

855,855. RABTECT. Affiliated Laboratories Corporation. SN 277,119. Pub. 6–18–68. Filed 7–31–67.

855,856. PENBRITIN-S. Beecham Group Limited, d.b.a. Beecham Research Laboratories. SN 277,135. Pub. 6–18–68. Filed 7–31–67.

855,857. SLEEPRIN. Carter-Wallace, Inc. SN 277,260. Pub. 6–18–68. Filed 8–1–67.

855,858. THRESHOLD. Warner-Lambert Pharmaceutical Company. SN 277,321. Pub. 6–18–68. Filed 8–1–67.

855,859. GLUCOTRANSIN. Carter-Wallace, Inc. SN 277,538. Pub. 6–18–68. Filed 8–4–67.

855,860. NORMENON. Syntex Laboratories, Inc. SN 277,574. Pub. 6–18–68. Filed 8–4–67.

855,861. DUALACTRIN. Warner-Lambert Pharmaceutical Company. SN 277,812. Pub. 6–18–68. Filed 8–8–67.

855,862. JUV-EQUINE. Veterinary Research Institute, assignee of Veterinary Supply Depot Incorporated. SN 278,050. Pub. 6–18–68. Filed 8–10–67.

855,863. FIRMADIL. Ciba Limited. SN 278,090. Pub. 6–18–68. Filed 8–11–67.

855,864. JENEEN. The Norwich Pharmacal Company. SN 278,988. Pub. 6–18–68. Filed 8–24–67.

855,865. ORTHO-NOVUM 1/80. Ortho Pharmaceutical Corporation. SN 285,798. Pub. 2–27–68. Filed 11–29–67.

855,866. RIZEN. E. R. Squibb & Sons, Inc. SN 287,592. Pub. 6–18–68. Filed 12–26–67.

855,867. NATALINS BASIC. Mead Johnson & Company. SN 291,674. Pub. 6–18–68. Filed 2–23–68.

855,868. NATALINS PLUS. Mead Johnson & Company. SN 291,676. Pub. 6–18–68. Filed 2–23–68.

855,869. MISCELLANEOUS DESIGN. American Home Products Corporation. SN 293,613. Pub. 6–18–68. Filed 3–19–68.

855,870. DANTAMACRIN. The Norwich Pharmacal Company. SN 294,233. Pub. 6–18–68. Filed 3–27–68.

855,871. DESICLEAR. Mead Johnson & Company. SN 294,708. Pub. 6–18–68. Filed 4–2–68.

Class 19—Vehides

855,872. SAE CO. AND DESIGN. Standard Aircraft Equipment Company, Inc. MULTIPLE CLASS (Classes 19 and 103). SN 242,871. Pub. 8–15–67. Filed 4–7–66.

855,873. CARGO PAX. Brownline Corporation. SN 258,279. Pub. 6–18–68. Filed 11–9–66.

855,874. AUTO LOK. Unarco Industries, Inc. SN 260,104. Pub. 4–30–68. Filed 12–5–66.

855,875. DESIGN INCLUDING SS AND MAP. Standard Supply Company, Inc. MULTIPLE CLASS (Classes 19 and 23). SN 260,893. Pub. 6–18–68. Filed 12–15–66.

855,876. BUG (DESIGN). The Crest Manufacturing Co. SN 264,303. Pub. 6–18–68. Filed 2–9–67.

855,877. ANGEVINIERE AND DESIGN. Societe Industrielle l'Angeviniere et Joue-les-Tours. SN 266,795. Pub. 6–18–68. Filed 3–15–67.

855,878. HOMEDALE. Detroiter Mobile Homes, Inc. SN 270,362. Pub. 6–18–68. Filed 5–1–67.

855,879. NO-TOW AND DESIGN. Notow Products, Inc. SN 270,407. Pub. 6–18–68. Filed 5–1–67.

855,880. GOODYEAR. The Goodyear Tire & Rubber Company. SN 274,203. Pub. 6–18–68. Filed 6–19–67.

855,881. DYNAFLYTE. Coliform Company. SN 274,954. Pub. 6–18–68. Filed 6–28–67.

855,882. CHATEAU TRAVELER. Cavalier Industries, Inc. SN 280,016. Pub. 6–18–68. Filed 9–11–67.

855,883. KELSTAR. Kelsey-Hayes Company. SN 281,989. Pub. 6–18–68. Filed 10–6–67.

855,884. AEROSTAR. Ted Smith Aircraft Co., Inc. SN 282,403. Pub. 6–18–68. Filed 10–12–67.

855,885. WISCRAFT. Wiscraft, Inc. SN 282,412. Pub. 6–18–68. Filed 10–12–67.

855,886. DARE DEVIL. Mozingo's Tire Company, Incorporated. SN 282,712. Pub. 6–18–68. Filed 10–17–67.

855,887. MONITOR. Monitor Coach Co., Inc. SN 284,218. 6–18–68. Filed 11–6–67.

Class 20—Linoleum and Oiled Cloth

855,888. GAF. General Aniline & Film Corporation. SN 293,434. Pub. 6–18–68. Filed 3–18–68.

Class 21—Electrical Apparatus, Machines, and Supplies

855,814. (See Class 13 for this trademark.)

855,889. ENEREX. National Automotive Parts Association. SN 243,007. Pub. 6–18–68. Filed 4–8–66.

855,890. WILD ONE. Dallas Richard Wilder, d.b.a. Wilder Engineering Products. SN 245,265. Pub. 6–18–68. Filed 5–9–66.

855,891. AC AND DESIGN. Audio Craft Company. MULTIPLE CLASS (Classes 21, 26, and 36). SN 252,065. Pub. 6–18–68. Filed 8–10–66.

855,892. TELESCRIBER. Data-Com Corporation, assignee of Telescriber Corporation. SN 255,832. Pub. 3–26–68. Filed 10–5–66.

855,893. ELECTRO-GUARD. Westinghouse Air Brake Company. SN 257,322. Pub. 6–18–68. Filed 10–26–66.

855,894. PARALOG PLUS. Jerrold Electronics Corporation, assignee of The Jerrold Corporation. SN 258,117. Pub. 6–18–68. Filed 11–7–66.

855,895. MULTIMIXER. Sterling Multi-Products Inc. SN 263,854. Pub. 6–18–68. Filed 2–2–67.

855,896. DYNAMATIC. Eaton Yale & Towne Inc. SN 264,531. Pub. 6–18–68. Filed 2–13–67.

855,897. VUFINDER. Jerrold Electronics Corporation. SN 265,634. Pub. 6–18–68. Filed 2–28–67.

855,898. CAMPER COM. John A. Tate, d.b.a. Tate & Sons. SN 265,931. Pub. 6–18–68. Filed 3–3–67.

855,899. GO-MATIC. R. P. Scholfield Enterprises, Inc. SN 268,231. Pub. 6–18–68. Filed 4–3–67.

855,900. "IT GOES TO SHOW YOU." R. P. Scholfield Enterprises, Inc. SN 268,232. Pub. 6–18–68. Filed 4–3–67.

855,901. SOUNDETTE. Sound-Craft Systems, Incorporated. SN 269,577. Pub. 6–11–68. Filed 4–19–67.

855,902. ELECTROSIST. Hurletron Incorporated. SN 270,128. Pub. 6–18–68. Filed 4–27–67.

855,903. MISCELLANEOUS DESIGN. Lauderdale Electronic Labs, Inc. SN 270,585. Pub. 6–18–68. Filed 5–3–67.

855,904. ELECTRATONE. Import Associates of America, Inc. SN 272,063. Pub. 6–18–68. Filed 5–22–67.

855,905. PLUSLIGHT. Rinn Corporation. SN 275,394. Pub. 6–18–68. Filed 7–5–67.

855,906. LAMPLIGHTER. Venture II, Inc. SN 275,711. Pub. 6–18–68. Filed 7–10–67.

855,907. S SURRETTE STORAGE BATTERY AND DESIGN. Surrette Storage Battery Co., Inc. SN 277,483. Pub. 6–18–68. Filed 8–3–67.

855,908. MON-X. Monsanto Company. SN 277,685. Pub. 5–28–68. Filed 8–7–67.

855,909. CATABOND. NVF Company. SN 278,900. Pub. 6–18–68. Filed 8–23–67.

855,910. RED-HAT AND DESIGN. Automatic Switch Co. SN 281,265. Pub. 6–18–68. Filed 9–27–67.

855,911. SOUND AND DESIGN. Sound Electronics Corporation. SN 281,927. Pub. 6–11–68. Filed 10–5–67.

855,912. GVI AND DESIGN. Great Valley Industries, Inc. SN 293,001. Pub. 6–18–68. Filed 3–12–68.

Class 22—Games, Toys, and Sporting Goods

855,756. (See Class 3 for this trademark.)

855,764. (See Class 6 for this trademark.)

855,913. SECRET PRINT PUTTY. Colorforms. SN 242,114. Pub. 6–18–68. Filed 3–29–66.

855,914. THE BOMB. Brunswick Corporation. SN 267,007. Pub. 6–18–68. Filed 3–17–67.

855,915. HOOP-T-DO. CPM Corporation. SN 272,009. Pub. 6–18–68. Filed 5–22–67.

855,916. CHALLENGER EASTERN SURFBOARDS AND DESIGN. Carl West, d.b.a. Challenger Eastern Surfboards. SN 273,821. Pub. 6–18–68. Filed 6–13–67.

855,917. LUNKERLANDER. W. B. Bell. SN 276,788. Pub. 6–18–68. Filed 7–21–67.

855,918. CYCLETTE. S.p.A. Teodoro Carnielli & C. SN 277,221. Pub. 6–18–68. Filed 7–31–67.

855,919. WING ARCHERY COMPANY AND DESIGN. Wing Archery Company. SN 282,504. Pub. 6–18–68. Filed 10–13–67.

855,920. MIRAGE. Jack Nethercutt. SN 286,546. Pub. 6–18–68. Filed 12–8–67.

855,921. CARLTON PUT THOUGHT INTO SPORT. The Carlton Tyre Saving Company Limited. SN 287,275. Pub. 6–18–68. Filed 12–20–67.

855,922. GOT-CHA AND DESIGN. William G. Schultz, d.b.a. Midwest Distributors. SN 287,465. Pub. 6–18–68. Filed 12–22–67.

855,923. TOG'L. Mattel, Inc. SN 287,861. Pub. 6–11–68. Filed 1–2–68.

855,924. BABY BOLTS. Ideal Toy Corporation. SN 291,120. Pub. 6–18–68. Filed 2–15–68.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

855,764. (See Class 6 for this trademark.)

855,814. (See Class 13 for this trademark.)

855,875. (See Class 19 for this trademark.)

855,925. COBRA'S. Cobra Products, Inc. SN 250,092. Pub. 6–18–68. Filed 7–12–66.

855,926. NORTHEAST. John Wood Company. MULTIPLE CLASS (Classes 23 and 34). SN 254,959. Pub. 6–18–68. Filed 9–22–66.

855,927. CONELEC. Conelec, Inc. SN 258,671. Pub. 6–18–68. Filed 11–15–66.

855,928. ECONO DUMP. Loyd R. Fulton. SN 260,245. Pub. 6–18–68. Filed 12–7–66.

855,929. GAS GENIE AND DESIGN. Pine Island Boats, Inc. SN 260,955. Pub. 2–20–68. Filed 12–16–66.

855,930. W AND DESIGN. Wisconsin Drill Head Co. SN 261,695. Pub. 6–18–68. Filed 12–23–66.

855,931. COPALOY AND DESIGN. Diamond Tool and Horseshoe Co. SN 262,408. Pub. 6–18–68. Filed 1–12–67.

855,932. BURGESS AND DESIGN. Burgess Vibrocrafters, Inc. SN 262,852. Pub. 6–18–68. Filed 1–19–67.

855,933. FIRE SLOT AND DESIGN. Arthur W. Alexander and Elsie M. Alexander (joint owners), d.b.a. Crank Shaft Co. SN 264,004. Pub. 6–18–68. Filed 2–6–67.

855,934. DUTCH'S AIR KIT. Emil Dachtler. SN 264,522. Pub. 6–18–68. Filed 2–13–67.

855,935. FF. Gray Company, Inc. SN 265,063. Pub. 6–18–68. Filed 2–20–67.

855,936. PORTA-SHOP AND DESIGN. Porta-Shop, Inc. SN 266,172. Pub. 6–18–68. Filed 3–7–67.

855,937. CLEVELAND. Eaton Yale & Towne Inc. SN 266,517. Pub. 6–18–68. Filed 3–13–67.

855,938. ALIMAK. Alimak-Verken Aktiebolag. SN 266,713. Pub. 6–18–68. Filed 3–15–67.

855,939. CHORD-LOC. Pennsalt Chemicals Corporation. SN 269,783. Pub. 6–18–68. Filed 4–21–67.

855,940. TRI-PACT. Pennsalt Chemicals Corporation. SN 269,784. Pub. 6–18–68. Filed 4–21–67.

855,941. M-C AND DESIGN. Mid-Continent Pipeline Equipment Co. SN 270,593. Pub. 6–18–68. Filed 5–3–67.

855,942. AUTO-DOX. Yeomans Brothers Company. SN 271,881. Pub. 6–18–68. Filed 5–18–67.

855,943. SNOW CHAMP. Sunbeam Corporation. SN 273,538. Pub. 6–18–68. Filed 6–9–67.

855,944. TOMATO KING. Restaurant Equipment Design Co. SN 273,790. Pub. 6–18–68. Filed 6–13–67.

855,945. NEW ERA AND CIRCULAR DESIGN. Powers & Eaton Industries, Inc. SN 274,655. Pub. 6–18–68. Filed 6–23–67.

855,946. NEW ERA AND DESIGN. Powers & Eaton Industries, Inc. SN 274,656. Pub. 6–18–68. Filed 6–23–67.

855,947. REMOMET. Buehler Ltd. SN 274,708. Pub. 6–18–68. Filed 6–26–67.

855,948. MAT FORK. Nu-Way Manufacturing Company, Inc. SN 274,827. Pub. 6–18–68. Filed 6–26–67.

855,949. AMWAY. Amway Corporation. SN 275,501. Pub. 6–18–68. Filed 7–7–67.

855,950. PRO-DUX. Professional Products Company. SN 276,170. Pub. 6–18–68. Filed 7–17–67.

855,951. GUIBERSON AND DESIGN. Dresser Industries, Inc. SN 277,031. Pub. 6–18–68. Filed 7–28–67.

855,952. TJ (DESIGN). Petrol Injection Limited. SN 277,205, Pub. 6–18–68. Filed 7–31–67.

855,953. MATCH-BLOMATIC. Pettibone Mulliken Corporation. SN 277,845. Pub. 6–18–68. Filed 8–8–67.

855,954. BOOM FORK AND DESIGN. Midwest Industries, Inc. SN 278,121. Pub. 6–18–68. Filed 8–11–67.

855,955. REXON. Hamilton Kent Manufacturing Co. SN 278,209. Pub. 6–18–68. Filed 8–14–67.

855,956. TRIANGLE. Triangle Package Machinery Company. SN 278,326. Pub. 6–18–68. Filed 8–15–67.

855,957. POSTACOUNT. Data-Link Corporation. SN 280,150. Pub. 6–18–68. Filed 9–12–67.

855,958. AUTOMAZING AND DESIGN. Industrial Concepts Incorporated. SN 280,165. Pub. 6–18–68. Filed 9–12–67.

855,959. ARSCO. American Railroad Supply Company. SN 280,534. Pub. 6–18–68. Filed 9–18–67.

855,960. HYDRA-LITE. Boyar-Schultz Corporation. SN 280,545. Pub. 6–18–68. Filed 9–18–67.

855,961. DOBOY AND DESIGN. Doughboy Industries, Inc. SN 284,535. Pub. 6–18–68. Filed 11–13–67.

Class 26—Measuring and Scientific Appliances

855,814. (See Class 13 for this trademark.)

855,891. (See Class 21 for this trademark.)

855,962. SERVODYNAMIC. Servo Corporation of America. SN 226,383. Pub. 6–18–68. Filed 8–24–65.

855,963. COLOR CODER. Automatic Control Devices, Inc. SN 244,875. Pub. 6–18–68. Filed 5–4–66.

855,964. SE AND DESIGN. The Superior Electric Company. SN 245,990. Pub. 6–18–68. Filed 5–18–66.

855,965. SLO-SYN. The Superior Electric Company. SN 245,991. Pub. 6–18–68. Filed 5–18–66.

855,966. CZ (DESIGN). Contraves A.G. SN 246,540. Pub. 6–18–68. Filed 5–25–66.

855,967. AURASENSOR. Industrionics Controls, Inc. SN 263,272. Pub. 6–18–68. Filed 1–25–67.

855,968. 1001. Hersey-Sparling Meter Company. SN 264,416. Pub. 6–18–68. Filed 2–10–67.

855,969. KS KRUSE STORKE AND DESIGN. Kruse Storke Electronics. SN 266,769. Pub. 6–18–68. Filed 3–15–67.

855,970. CLAY ADAMS AND DESIGN. Becton, Dickinson and Company, by merger from Clay-Adams, Inc. SN 267,015. Pub. 6–11–68. Filed 3–17–67.

855,971. TACK-O-SCOPE. Rudolph Meijer's Drukinktfabriek N.V. SN 271,289. Pub. 6–18–68. Filed 5–11–67.

855,972. IDENTI-PROOF. R.D. Products, Inc. SN 272,632. Pub. 6–18–68. Filed 5–29–67.

855,973. DIGIFLO. F. W. Dwyer Mfg. Co., Inc. SN 280,030. Pub. 6–18–68. Filed 9–11–67.

855,974. ACCUMAT. Shintron Company, Inc. SN 280,468. Pub. 6–18–68. Filed 9–15–67.

855,975. P PHYSMET CORPORATION AND DESIGN. Physmet Corporation. SN 281,489. Pub. 6–18–68. Filed 9–29–67.

855,976. AUDIT-ON-LOCATION. Johnson Fare Box Company. SN 281,986. Pub. 6–18–68. Filed 10–6–67.

855,977. MONOFUGE. Dade Reagents, Inc. SN 282,776. Pub. 6–18–68. Filed 10–18–67.

855,978. STAN PAK AND DESIGN. Standard Packaging Corporation. SN 288,378. Pub. 6–18–68. Filed 1–8–68.

Class 27—Horological Instruments

855,979. SEAPEARL. Enicar S.A. Manufacture d'Horlogerie. SN 282,692. Pub. 6–18–68. Filed 10–17–67.

Class 29—Brooms, Brushes, and Dusters

855,980. K LINE AND DESIGN. Spartans Industries, Inc. SN 271,292. Pub. 6–18–68. Filed 5–11–67.

Class 31—Filters and Refrigerators

855,981. DYNA-KOOL. Dynalectron Corporation. SN 242,891. Pub. 6–18–68. Filed 4–7–66.

855,982. AQUANATOR. The Meadowbrook Company. SN 264,284. Pub. 6–18–68. Filed 2–9–67.

855,983. CELLULO AND DESIGN. The Cellulo Company, SN 268,022. Pub. 6–18–68. Filed 3–31–67.

855,984. CRISPADEAN. Dean Products, Inc. SN 279,284. Pub. 6–18–68. Filed 8–29–67.

Class 32—Furniture and Upholstery

855,815. (See Class 13 for this trademark.)

855,985. CAREFREE CRUISE AND DESIGN. John Winkler's Sons Incorporated. MULTIPLE CLASS (Classes 32 and 105). SN 256,896. Pub. 6–18–68. Filed 10–21–66.

855,986. ARCHON. Associated Design Group, Inc., assignee of Associated Design Group, Limited. SN 258,861. Pub. 6–18–68. Filed 11–17–66.

855,987. FORMFAC. Formfac Aktiebolag. SN 264,151. Pub. 6–18–68. Filed 2–7–67.

855,988. SHUR-LOK AND DESIGN. National Guard Products, Inc. SN 266,564. Pub. 5–7–68. Filed 3–13–67.

855,989. SLUMBERLAND. N. Sumergrade & Sons, Inc. SN 271,749. Pub. 6–18–68. Filed 5–18–67.

Class 33—Glassware

855,990. CLARIDGE AND DESIGN. Aimcee Wholesale Corporation. SN 285,484. Pub. 6–18–68. Filed 11–24–67.

Class 34—Heating, Lighting, and Ventilating Apparatus

855,926. (See Class 23 for this trademark.)

855,991. DOCSQUARE. American Precision Industries, Inc. SN 256,051. Pub. 6–18–68. Filed 10–10–66.

855,992. ORBIT ARC. Navan Incorporated. SN 256,302. Pub. 3–12–68. Filed 10–12–66.

855,993. FLOR-FLO. Liebert Corporation. SN 261,855. Pub. 6–18–68. Filed 1–3–67.

855,994. TAM. Todd Shipyards Corporation. SN 277,943. Pub. 6–18–68. Filed 8–9–67.

855,995. FLEMINATOR. Fleming Devices, Inc. SN 278,293. Pub. 6–18–68. Filed 8–15–67.

855,996. CHARM. Geo. D. Roper Corporation. SN 278,421. Pub. 6–18–68. Filed 8–11–67.

855,997. AXIFLO. Westinghouse Electric Corporation. SN 278,839. Pub. 6–18–68. Filed 8–22–67.

855,998. CRISPADEAN. Dean Products, Inc. SN 279,283. Pub. 6–18–68. Filed 8–29–67.

855,999. ROTO-BACHI. Fred Roberts Company. SN 279,568. Pub. 6–18–68. Filed 9–1–67.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

855,764. (See Class 6 for this trademark.)

856,000. STAFF GASKET MFG. CORP. AND DESIGN. Staff Gasket Mfg. Corp. SN 268,998. Pub. 6–18–68. Filed 4–12–67.

Class 36—Musical Instruments and Supplies

855,891. (See Class 21 for this trademark.)

856,001. MINITRONIC. W. G. Eavestaff & Sons Limited. SN 273,877. Pub. 6–18–68. Filed 6–14–67.

856,002. CAR AND DESIGN. Continental American Recording Company. SN 275,835. Pub. 6–18–68. Filed 7–12–67.

856,003. GRT (DESIGN). General Recorded Tape, Inc. SN 277,275. Pub. 6–18–68. Filed 8–1–67.

856,004. KANAKA AND DESIGN. Makaha Records, Inc. SN 278,718. Pub. 6–18–68. Filed 8–21–67.

856,005. EMERALD. Morhan Exporting Corporation. SN 280,242. Pub. 6–18–68. Filed 9–13–67.

856,006. TEAM. Team Central Incorporated. SN 280,667. Pub. 1–2–68. Filed 9–19–67.

856,007. DOK AND DESIGN. Denki Onkyo Kabushiki Kaisha. SN 281,559. Pub. 6–18–68. Filed 10–2–67.

Class 37—Paper and Stationery

856,008. CHARTER 98. The Northwest Paper Company. SN 266,352. Pub. 6–18–68. Filed 3–9–67.

856,009. CC-FORM BOND. P. H. Glatfelter Company. SN 271,615. Pub. 6–18–68. Filed 5–16–67.

856,010. WHITE CAP. Allied Paper Corporation. SN 272,458. Pub. 6–18–68. Filed 5–26–67.

856,011. NOPACO. Noland Paper Company, Inc. SN 276,946. Pub. 6–18–68. Filed 7–27–67.

856,012. HEY, LUV. Scripto, Inc. SN 277,072. Pub. 6–18–68. Filed 7–28–67.

856,013. SNO-BRITE. Philip A. Wooster, d.b.a. Acorn Paper Company. SN 278,551. Pub. 6–18–68. Filed 8–17–67.

856,014. HI-SPOT. Longlife Pen Company. SN 281,992. Pub. 6–18–68. Filed 10–6–67.

856,015. CONCEL. Concel Inc., by change of name from Consolidated Cellulose Products, Inc. SN 282,684. Pub. 6–18–68. Filed 10–17–67.

856,016. STENORACE. Eberhard Faber Inc. SN 282,791. Pub. 6–18–68. Filed 10–18–67.

856,017. CRAZY HEADS. Scripto, Inc. SN 282,826. Pub. 6–18–68. Filed 10–18–67.

Class 38—Prints and Publications

856,018. MICHIGAN OUT-OF-DOORS. Michigan United Conservation Clubs. SN 242,625. Pub. 6–18–68. Filed 4–4–66.

856,019. FUN MAP AND DESIGN. Barbara R. Jones, d.b.a. Merchants Greeting Service. SN 254,292. Pub. 6–18–68. Filed 9–12–66.

856,020. NEW COLOR HORIZONS. Rust-Oleum Corporation. SN 255,463. Pub. 6–18–68. Filed 9–29–66.

856,021. BRUCE'S SIMPLE TAX SAVING SYSTEM OF TAXPOCKETS AND DESIGN. Wiechers Enterprises, Inc. SN 260,980. Pub. 6–18–68. Filed 12–16–66.

856,022. MEN'S HAIRSTYLIST & BARBER'S JOURNAL. Service Publications, Inc. SN 261,883. Pub. 6–18–68. Filed 1–3–67.

856,023. BARBER BOOK OF KNOWLEDGE. Service Publications, Inc. SN 261,884. Pub. 6–18–68. Filed 1–3–67.

856,024. PROFESSIONAL BEAUTY BOOK OF KNOWLEDGE. Service Publicatons, Inc. SN 261,885. Pub. 6–18–68. Filed 1–3–67.

856,025. EENT AND DESIGN. The Professional Press, Inc. SN 266,361. Pub. 6–18–68. Filed 3–9–67.

856,026. ASTROGLAZE. Commercial Decal, Inc. SN 267,129. Pub. 6–18–68. Filed 3–20–67.

856,027. WHERE IN THE WORLD? United Feature Syndicate, Inc. SN 269,705. Pub. 6–18–68. Filed 4–20–67.

856,028. PARACHROME AND DESIGN. The Paramount Line, Inc. SN 272,743. Pub. 6–18–68. Filed 5–31–67.

856,029. PLAYMAKES. Norcross, Inc. SN 273,664. Pub. 6–18–68. Filed 6–12–67.

856,030. LIGHTNING LETTERS. Norcross, Inc. SN 273,666. Pub. 6–18–68. Filed 6–12–67.

856,031. WEE WISDOM. Unity School of Christianity. SN 274,678. Pub. 6–18–68. Filed 6–23–67.

856,032. INTERBANK. McLarren Industrial Associates, Inc. SN 277,599. Pub. 6–18–68. Filed 8–7–67.

856,033. 21. Monogram Publications, Inc. SN 278,398. Pub. 6–18–68. Filed 8–16–67.

856,034. FAX FILE. Kahn Communications Corporation. SN 293,667. Pub. 6–18–68. Filed 3–20–68.

856,035. PACKASCOPE. McGraw-Hill, Inc. SN 293,780. Pub. 6–18–68. Filed 3–21–68.

Class 39—Clothing

856,036. SATURN BY KNOX. Hat Corporation of America. SN 251,681. Pub. 6–18–68. Filed 8–4–66.

856,037. GIRL-LAND. Bobbie Associates, Inc., by change of name from Max Siegel Associates, Inc. SN 258,200. Pub. 6–18–68. Filed 11–8–66.

856,038. MISS PAPER. Mitchell Bros. Inc. SN 262,799. Pub. 6–18–68. Filed 1–18–67.

856,039. MINI-BABI. Fingar & Weiss, Inc. SN 263,552. Pub. 6–18–68. Filed 1–30–67.

856,040. BACK CARE. Flexnit Company, Inc. SN 264,314. Pub. 6–18–68. Filed 2–9–67.

856,041. NO TAB. Sears, Roebuck and Co. SN 267,189. Pub. 6–18–68. Filed 3–20–67.

856,042. BURNT BUK. E. E. Taylor Corporation. SN 267,453. Pub. 6–18–68. Filed 3–23–67.

856,043. FANTASIA. Groff Importers, Inc. SN 268,181. Pub. 6–18–68. Filed 4–3–67.

856,044. KRAUS AND DESIGN. Kraus Originals, Inc. SN 268,200. Pub. 6–18–68. Filed 4–3–67.

856,045. BATMAN. National Periodical Publications, Inc. SN 268,519. Pub. 6–18–68. Filed 4–6–67.

856,046. MOSSANT AND DESIGN. Mossant. SN 269,335. Pub. 6–18–68. Filed 4–17–67.

856,047. VISCOUNT. B. Kuppenheimer & Co., Inc. SN 269,432. Pub. 6-18-68. Filed 4-18-67.

856,048. YOUNG LOVE. Figure Builders Foundations, Inc. SN 269,957. Pub. 6-18-68. Filed 4-25-67.

856,049. THORNWOOD. Eugene Potter Thornton. SN 270,720. Pub. 6-18-68. Filed 5-4-67.

856,050. RO-FLEX. Brown Shoe Company, Inc. SN 272,017. Pub. 6-18-68. Filed 5-22-67.

856,051. MIN-KNEE. Serbin, Inc. SN 273,696. Pub. 6-18-68. Filed 6-12-67.

856,052. LANCOME. Lancome S.A. SN 274,218. Pub. 6-18-68. Filed 6-19-67.

856,053. MR. PAYITO OF MIAMI. Leila Fashions, Inc. SN 274,281. Pub. 6-18-68. Filed 6-2-67.

856,054. SOCK PORT. Armored Hosiery Corp. SN 274,300. Pub. 6-18-68. Filed 6-20-67.

856,055. DESIGN OF GRECIAN COLUMNS. The Christie Brothers Fur Corp. SN 274,412. Pub. 6-18-68. Filed 6-21-67.

856,056. MARCO VELLO. Ph. Horowitz, Inc. SN 277,567. Pub. 6-18-68. Filed 8-4-67.

856,057. VAN ARDEN. Andrew Geller, Inc. SN 279,986. Pub. 6-18-68. Filed 9-11-67.

856,058. SO VERY SAN FRANCISCO. Consolidated Millinery Company. SN 280,301. Pub. 6-18-68. Filed 9-14-67.

856,059. LADY TAN. Thorlo, Inc. SN 282,223. Pub. 6-18-68. Filed 10-10-67.

856,060. GAY TOPS. S. D. Arrowood & Company, Inc. SN 282,972. Pub. 6-18-68. Filed 10-20-67.

856,061. NAZARETH AND DESIGN. Nazareth Mills, Incorporated. MULTIPLE CLASS (Classes 39 and 42). SN 283,055. Pub. 6-18-68. Filed 10-23-67.

856,062. WILD! WOOLLEYS. Robert Woolley Shoe Company Ltd. SN 284,261. Pub. 6-18-68. Filed 11-6-67.

856,063. MARAFIBRE. Countess Mara, Inc. SN 288,285. Pub. 6-18-68. Filed 1-8-68.

856,064. ENTRANCEMENT. Robert Miles Sherman, d.b.a. De Martel, Dressmaker. SN 288,478. Pub. 6-18-68. Filed 1-10-68.

Class 40 — Fancy Goods, Furnishings, and Notions

856,065. BRENTLON. Brentwood Hair Products, Inc. SN 267,912. Pub. 6-18-68. Filed 3-30-67.

856,066. FANTASIA. Groff Importers, Inc. SN 268,726. Pub. 6-18-68. Filed 4-10-67.

856,067. SLIDE N' SET. Gaylord Products, Incorporated. SN 282,569. Pub. 6-18-68. Filed 10-16-67.

856,068. NAUGHTY EYES. Product Applications, Inc. SN 283,156. Pub. 6-18-68. Filed 10-23-67.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

856,061. (See Class 39 for this trademark.)

856,069. AMERICAN HOSPITAL SUPPLY A AND DESIGN. American Hospital Supply Corporation. SN 260,389. Pub. 6-18-68. Filed 12-9-66.

856,070. POLY 8. Commercial Carpet Corporation. SN 267,319. Pub. 6-18-68. Filed 3-22-67.

856,071. NYLON 360 D. Commercial Carpet Corporation. SN 267,320. Pub. 6-18-68. Filed 3-22-67.

856,072. CAVELLA. Collins & Aikman Corporation. SN 271,226. Pub. 6-18-68. Filed 5-11-67.

856,073. SABICORT. Sabino Silvestre. SN 273,529. Pub. 6-18-68. Filed 6-9-67.

856,074. KANEBO SYMPHONY. Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd. SN 277,672. Pub. 6-18-68. Filed 8-7-67.

856,075. AVRIL. FMC Corporation. SN 284,180. Pub. 6-18-68. Filed 11-6-67.

Class 43 — Thread and Yarn

855,742. (See Class 1 for this trademark.)

856,076. ENFANT DO. Filatures Prouvost Masurel & Cie-La Lainiere de Roubaix. SN 270,482. Pub. 6-18-68. Filed 5-2-67.

856,077. KAY CARVILLE, LTD. Carvill Combing Company, Inc. SN 279,804. Pub. 6-18-68. Filed 9-7-67.

856,078. TEX-SET AND DESIGN. Texlon Corporation. SN 284,754. Pub. 6-18-68. Filed 11-13-67.

Class 44 — Dental, Medical, and Surgical Appliances

855,815. (See Class 13 for this trademark.)

856,079. PROP. Julius Aderer, Inc. SN 262,469. Pub. 6-18-68. Filed 1-13-67.

856,080. SPACE MAINTAINERS LABORATORY AND DESIGN. Selane Products, Inc., d.b.a. Space Maintainers Laboratory. SN 273,532. Pub. 6-18-68. Filed 6-9-67.

856,081. LUMIN. Vita Zahnfabrik H. Rauter KG. SN 274,796. Pub. 6-18-68. Filed 6-26-67.

856,082. METALITE. The Foregger Company, Inc. SN 276,550. Pub. 6-18-68. Filed 7-21-67.

856,083. ASTRO-PAK. ESB Incorporated. SN 276,929. Pub. 6-18-68. Filed 7-27-67.

856,084. PAPCYTE. Becton Dickinson and Company, by merger from Clay-Adams, Inc. SN 281,968. Pub. 5-28-68. Filed 10-6-67.

856,085. AUTOHALER. Rexall Drug and Chemical Company, d.b.a. Riker Laboratories. SN 283,927. Pub. 6-18-68. Filed 11-1-67.

856,086. ACTIVAIR. Rexall Drug and Chemical Company, d.b.a. Riker Laboratories. SN 283,928. Pub. 6-18-68. Filed 11-1-67.

Class 45 — Soft Drinks and Carbonated Waters

856,087. ME-2. Oil Center Research, Inc. SN 275,456. Pub. 6-18-68. Filed 7-6-67.

856,088. MAN WEARING WESTERN HAT (DESIGN). Big Daddy's Enterprises, Inc., assignee of Robert M. Napp and Murray L. Handwerker (joint owners), d.b.a. Big Daddy's Drive In Restaurants. MULTIPLE CLASS (Classes 45, 46, and 100). SN 275,806. Pub. 6-18-68. Filed 8-23-67.

Class 46 — Foods and Ingredients of Foods

856,088. (See Class 45 for this trademark.)

856,089. MANIKIN (DESIGN). N. K. Hurst Company, Inc. SN 244,489. Pub. 6-18-68. Filed 4-28-66.

856,090. LA HABANERA. Eduardo Hernandez. SN 245,310. Pub. 6-18-68. Filed 5-10-66.

856,091. DINA-MITE. California Leaf Company, d.b.a. Dina-Mite Food Company. SN 249,248. Pub. 6-18-68. Filed 6-29-66.

856,092. CUBB-PAC. Cubb-Pac Corporation. SN 252,076. Pub. 6-18-68. Filed 8-10-66.

856,093. PORTION PERFECT. Armour and Company, d.b.a. Pfaelzer Brothers. SN 254,911. Pub. 6-18-68. Filed 9-22-66.

856,094. HAMIES. National Biscuit Company. SN 259,456. Pub. 6-18-68. Filed 11-25-66.

856,095. "EL ACUEDUCTO DE SEGOVIA" AND DESIGN. Felix Postigo Herranz, S.A. SN 262,147. Pub. 6-18-68. Filed 1-9-67.

856,096. COMPET. Pet Incorporated. SN 263,107. Pub. 12-26-67. Filed 1-23-67.

856,097. P.B.G's. Fairmont Foods Company. SN 264,533. Pub. 6-18-68. Filed 2-13-67.

856,098. REPRESENTATION OF A GIRL'S HEAD. C & G. SN 264,909. Pub. 6-18-68. Filed 2-17-67.

856,099. CHEF'S PRIDE. Wilsey-Bennett Co. SN 266,123. Pub. 5-7-68. Filed 3-6-67.

856,100. SMOKEHOUSE. Riviana Foods Inc. SN 266,258. Pub. 6-18-68. Filed 3-8-67.

856,101. CLEARJEL. National Starch and Chemical Corporation. SN 269,089. Pub. 6-18-68. Filed 4-13-67.

856,102. INSTANT CLEARJEL. National Starch and Chemical Corporation. SN 269,090. Pub. 6-18-68. Filed 4-13-67.

856,103. SWEET SURPRISE. Carnation Company. SN 269,628. Pub. 6-18-68. Filed 4-20-67.

856,104. GLOSETTES. Walter M. Lowney Company Limited. SN 269,765. Pub. 6-18-68. Filed 4-21-67.

856,105. DESIGN OF SHIELD. B. F. Trappey's Sons, Inc. SN 270,438. Pub. 6-18-68. Filed 5-1-67.

856,106. BINGHAM FARMS. Hollywood Super Markets, assignee of Thomas Fanos, d.b.a. Bingham Farms Co. SN 272,179. Pub. 4-9-68. Filed 5-23-67.

856,107. VERSA-LO. Standard Brands Incorporated, d.b.a. Clinton Corn Processing Company. SN 273,323. Pub. 6-18-68. Filed 6-7-67.

856,108. REX. Laddie Boy Dog Foods, Inc. SN 275,276. Pub. 4-23-68. Filed 7-3-67.

856,109. C AND DESIGN. Calavo Growers of California, d.b.a. Calavo. SN 276,533. Pub. 6-18-68. Filed 7-21-67.

856,110. VEND WHIP. Carnation Company. SN 279,269. Pub. 6-18-68. Filed 8-29-67.

856,111. VR. The Veterinary Research Co., Inc. SN 280,115. Pub. 6-18-68. Filed 9-11-67.

856,112. RANDY'S FAVORITE AND DESIGN. South Coast Rice Milling Company, Inc. SN 280,979. Pub. 6-18-68. Filed 9-22-67.

856,113. THE MAGIC TOUCH OF CRYSTAL SWEET ! AND DESIGN. American Crystal Sugar Company. SN 281,021. Pub. 6-18-68. Filed 9-25-67.

856,114. PRIME VARIETY. General Foods Corporation. SN 281,287. Pub. 6-18-68. Filed 9-27-67.

856,115. RIVER CHICKEN. Robert F. Kane. SN 281,375. Pub. 6-18-68. Filed 9-26-67.

856,116. BASIC. Basic Vegetable Products, Inc. SN 281,433. Pub. 6-18-68. Filed 9-29-67.

856,117. FOY'S AND DESIGN. Dodds' Sauce Co., Inc. SN 281,462. Pub. 6-18-68. Filed 9-29-67.

856,118. PLANTERS. Standard Brands Incorporated. SN 281,724. Pub. 6-18-68. Filed 10-3-67.

856,119. CLARKIES. Philip Morris Incorporated, d.b.a. Clark Gum Co. SN 281,810. Pub. 6-18-68. Filed 10-4-67.

856,120. SUNSET GOLD. Piggly Wiggly Corporation. SN 281,818. Pub. 6-18-68. Filed 10-4-67.

856,121. BARRINGTON HALL. Hygrade Food Products Corporation. SN 281,983. Pub. 6-18-68. Filed 10-6-67.

856,122. MILADY'S Pet Incorporated. SN 282,129. Pub. 6-18-68. Filed 10-9-67.

856,123. INSIDER. National Biscuit Company. SN 282,294. Pub. 6-18-68. Filed 10-11-67.

856,124. MI SECRETO. International Minerals & Chemical Corporation. SN 284,545. Pub. 6-18-68. Filed 11-13-67.

856,125. CANNON BRAND AND DESIGN. H. P. Cannon & Son, Incorporated. SN 285,289. Pub. 6-18-68. Filed 11-21-67.

856,126. DEX-LO. Baxter Laboratories, Inc. SN 285,520. Pub. 6-18-68. Filed 11-24-67.

856,127. BIRDS EYE AND DESIGN. General Foods Corporation. SN 285,538. Pub. 6-18-68. Filed 11-24-67.

856,128. COLORETTES. Virginia Dare Extract Co., Inc. SN 285,687. Pub. 6-18-68. Filed 11-27-67.

856,129. BALI-HAI. National Biscuit Company. SN 285,933. Pub. 6-18-68. Filed 11-30-67.

856,130. SOUTH SEAS. National Biscuit Company. SN 285,934. Pub. 6-18-68. Filed 11-30-67.

856,131. HEAD FOR THE HILLS! AND DESIGN. Hills Bros. Coffee, Inc. SN 286,142. Pub. 6-18-68. Filed 12-4-67.

856,132. YOKEHAM. N. K. Hurst Company, Inc. SN 286,428. Pub. 6-18-68. Filed 12-7-67.

856,133. MISCELLANEOUS DESIGN. Russell Stover Candies, Inc. SN 287,043. Pub. 6-18-68. Filed 12-15-67.

856,134. NEW IDEA. Libby, McNeill & Libby. SN 287,076. Pub. 6-18-68. Filed 12-18-67.

856,135. COOLMINT. Warner-Lambert Pharmaceutical Company. SN 287,327. Pub. 6-18-68. Filed 12-20-67.

856,136. MARGARITAS. King Candy Company. SN 287,366. Pub. 6-18-68. Filed 12-21-67.

856,137. SUPER SUPPER. Usen Products Company. SN 287,392. Pub. 6-18-68. Filed 12-21-67.

856,138. SOMETHIN' SPECIAL. Usen Products Company. SN 287,393. Pub. 6-18-68. Filed 12-21-67.

856,139. HOT LINE AND DESIGN. Pronto Food Corporation, d.b.a. Hot Line Foods Company. SN 287,672. Pub. 6-18-68. Filed 12-27-67.

856,140. JOLLY JOES. Just Born, Inc. SN 287,742. Pub. 6-18-68. Filed 12-28-67.

856,141. GULF CREST. De Jean Packing Company, d.b.a. Gulf Shellfish Products Co. SN 288,431. Pub. 6-18-68. Filed 1-9-68.

856,142. MAXWELL HOUSE. General Foods Corporation. SN 288,612. Pub. 6-18-68. Filed 1-11-68.

856,143. MAX. General Foods Corporation. SN 288,613. Pub. 6-18-68. Filed 1-11-68.

856,144. KNACKS. Hunt-Wesson Foods, Inc. SN 288,620. Pub. 6-18-68. Filed 1-11-68.

856,145. COMMENT COFFEE. R. C. Bigelow Inc. SN 288,771. Pub. 6-18-68. Filed 1-15-68.

856,146. OLD FORT AND DESIGN. Associated Wild Rice Producers, Inc. SN 289,259. Pub. 6-18-68. Filed 1-22-68.

856,147. OMEGA AND DESIGN. H. C. Cole Milling Company. SN 292,998. Pub. 6-18-68. Filed 3-12-68.

856,148. YOEMAN. CAI Research & Development Company. SN 293,430. Pub. 6-18-68. Filed 3-18-68.

856,149. SOUTH POLE AND DESIGN. N. A. Pricola. SN 293,441. Pub. 6-18-68. Filed 3-18-68.

856,150. N.A.P. N. A. Pricola. SN 293,442. Pub. 6-18-68. Filed 3-18-68.

856,151. MARATHON. Mars Limited. SN 293,670. Pub. 6-18-68. Filed 3-20-68.

856,152. SHOW OFF AND DESIGN. Salinas Marketing Cooperative. SN 293,782. Pub. 6-18-68. Filed 3-21-68.

856,153. TLF ETC. AND DESIGN. Tillie Lewis Foods, Inc. SN 293,888. Pub. 6-18-68. Filed 3-22-68.

856,154. COOKIE CUTTER. National Biscuit Company. SN 294,146. Pub. 6-18-68. Filed 3-26-68.

856,155. COOKIE BREAK. National Biscuit Company. SN 294,232. Pub. 6-18-68. Filed 3-27-68.

856,156. ALL PRO. Ralston Purina Company. SN 294,713. Pub. 6-18-68. Filed 4-2-68.

Class 47 — Wines

856,157. CHATEAU DES FRERES. De La Salle Institute. SN 277,451. Pub. 6-18-68. Filed 8-3-67.

856,158. RESERVE DU DOMAINE. Charles Jacquin et Cie., Inc. SN 282,242. Pub. 6–18–68. Filed 10–11–67.

856,159. COAT OF ARMS (DESIGN). Leonard Kreusch. SN 293,668. Pub. 6–18–68. Filed 3–20–68.

Class 49 — Distilled Alcoholic Liquors

856,160. CROWN (DESIGN). Societe Anonyme de Etablissements Louis Regnier. SN 236,204. Pub. 6–18–68. Filed 1–11–66.

856,161. SOHO. Simon Levi Company, Ltd., d.b.a. Simon Levi Co. Ltd. SN 293,445. Pub. 6–18–68. Filed 3–18–68.

Class 50 — Merchandise Not Otherwise Classified

856,162. PROTECTO-CLEAR. Natco Products Corporation. SN 274,884. Pub. 6–18–68. Filed 6–27–67.

856,163. RIDG U STAK AND DESIGN. Ridg-U-Rak, Inc. SN 280;971. Pub. 6–18–68. Filed 9–22–67.

856,164. K MART AND DESIGN. S. S. Kresge Company. SN 282,104. Pub. 6–18–68. Filed 10–9–67.

856,165. SSK AND DESIGN. S. S. Kresge Company. SN 282,106. Pub. 6–18–68. Filed 10–9–67.

856,166. POLY AND DESIGN. Therachemie Chemisch Therapeutische GmbH, d.b.a. Therachemie GmbH. MULTIPLE CLASS (Classes 51 and 52). SN 254,202. Pub. 6–18–68. Filed 9–9–66.

Class 51 — Cosmetics and Toilet Preparations

856,166. (See Class 51 for this trademark.)

856,167. GALATEE DE LANCOME AND DESIGN. Lancôme S.A. SN 264,430. Pub. 6–18–68. Filed 2–10–67.

856,168. INSTANT RD. Yar Research Corporation. SN 264,629. Pub. 6–18–68. Filed 2–13–67.

856,169. ROYAL BAIN DE CHAMPAGNE. Caron Corporation. SN 268,290. Pub. 6–18–68. Filed 4–4–67.

856,170. HAZEL BISHOP. Bishop Industries Inc., by change of name from Hazel Bishop Inc. SN 272,275. Pub. 6–18–68. Filed 5–24–67.

856,171. SUDDEN SUMMER. Clairol Incorporated. SN 273,255. Pub. 4–30–68. Filed 6–7–67.

856,172. BRECK BASIC CONDITIONER. John H. Breck, Inc. SN 276,217. Pub. 6–18–68. Filed 7–18–67.

856,173. BEAUTY KISS. L.B. Laboratories, Inc. SN 276,237. Pub. 6–18–68. Filed 7–18–67.

856,174. LUSTY LEATHER. The Mennen Company. SN 276,567. Pub. 6–18–68. Filed 7–21–67.

856,175. HAIR ARTISTS. John H. Breck, Inc. SN 276,733. Pub. 6–18–68. Filed 7–25–67.

856,176. SURFESSENCE. Clairol Incorporated. SN 277,346. Pub. 6–18–68. Filed 8–2–67.

856,177. A.C.T.S. Hugh H. Gough, d.b.a. Gough Products. SN 277,833. Pub. 6–18–68. Filed 8–8–67.

856,178. PRECIOUS DEW. Mi-Lo, Inc. SN 279,665. Pub. 6–18–68. Filed 9–5–67.

856,179. PRECIOUS DROPS. Mi-Lo, Inc. SN 279,670. Pub. 6–18–68. Filed 9–5–67.

856,180. ETERNALLY EVE. Carter-Wallace, Inc. SN 279,715. Pub. 6–18–68. Filed 9–6–67.

856,181. FINGER FASHIONS. Richard Hudnut. SN 280,061. Pub. 6–18–68. Filed 9–11–67.

856,182. FINGER PAINTS. Richard Hudnut. SN 281,703. Pub. 6–18–68. Filed 10–3–67.

856,183. SUDDEN SUMMER. Clairol Incorporated. SN 285,394. Pub. 4–30–68. Filed 11–22–67.

856,184. ARTISTRY. Amway Corporation. SN 288,487. Pub. 6–18–68. Filed 1–10–68.

856,185. FIRMATROL. The Procter & Gamble Company. SN 293,204. Pub. 6–18–68. Filed 3–14–68.

Class 52 — Detergents and Soaps

855,781. (See Class 6 for this trademark.)

856,186. BLUE MAGIC. Blue Magic Co. of Ohio, Inc., assignee of Triple-X Chemical Laboratories, Incorporated. SN 235,139. Pub. 3–7–67. Filed 12–22–65.

856,187. ULTRAMARINE-PLUS. Colgate-Palmolive Company. SN 266,304. Pub. 6–18–68. Filed 3–7–67.

856,188. BUTCHER-DRI. Lowe's, Inc. SN 275,948. Pub. 6–18–68. Filed 7–13–67.

856,189. TOP FORM. The Realistic Company. SN 276,174. Pub. 6–18–68. Filed 7–17–67.

856,190. TISKET-TASKET. Avon Products, Inc. SN 277,772. Pub. 6–18–68. Filed 8–8–67.

856,191. FIRST STAR. Avon Products, Inc. SN 277,778. Pub. 6–18–68. Filed 8–8–67.

856,192. GOOD NEIGHBOR. Gojer, Inc. SN 277,999. Pub. 6–18–68. Filed 8–10–67.

856,193. BC–4. Calgon Corporation (Delaware corporation), assignee of Calgon Corporation (Pennsylvania corporation). SN 278,343. Pub. 6–18–68. Filed 7–25–67.

856,194. STAMPEDE. Texize Chemicals, Inc. SN 278,538. Pub. 6–18–68. Filed 8–17–67.

856,195. MECHANDY. Madison Chemical Corporation. SN 279,310. Pub. 6–18–68. Filed 8–29–67.

856,196. HAN-D. Del Chemical Corporation. SN 280,303. Pub. 6–18–68. Filed 9–14–67.

856,197. BOND 4. Sybil Ives Incorporated. SN 281,728. Pub. 6–18–68. Filed 10–3–67.

856,198. LES GIRLS. Bristol-Myers Company. SN 282,045. Pub. 6–18–68. Filed 10–9–67.

856,199. PROBE. Colgate-Palmolive Company. SN 283,101. Pub. 6–18–68. Filed 10–23–67.

856,200. INTER-SAN. Ramrod-Polytran, Inc. SN 283,359. Pub. 6–18–68. Filed 10–25–67.

Service Marks

Class 100 — Miscellaneous

856,088. (See Class 45 for this trademark.)

856,201. THE BRASS HYDRANT AND DESIGN. Arnold J. Stein and Donna Lee Stein (joint owners), d.b.a. Brass Hydrant. SN 245,112. Pub. 6–18–68. Filed 5–6–66.

856,202. WEIGHT WATCHERS. Weight Watchers International, Inc. SN 249,694. Pub. 6–18–68. Filed 7–6–66.

856,203. BRETTEL BERG INN AND DESIGN. Grant I. Gaeth. SN 266,028. Pub. 6–18–68. Filed 3–6–67.

856,204. M-C AND DESIGN. Mid-Continent Pipeline Equipment Co. SN 270,592. Pub. 6–18–68. Filed 5–3–67.

856,205. MISCELLANEOUS DESIGN. Transportation Consultants Inc. SN 273,215. Pub. 6–18–68. Filed 6–6–67.

856,206. WASSP. Teledyne Industries, Inc., d.b.a. Geotech—A Teledyne Company. SN 278,535. Pub. 6–18–68. Filed 8–17–67.

856,207. TACO BELL AND DESIGN. Taco Bell. SN 279,691. Pub. 6–18–68. Filed 9–5–67.

856,208. JUMPIN' BEAN AND DESIGN. Jumpin' Bean Restaurants, Inc. SN 281,082. Pub. 6–18–68. Filed 9–25–67.

856,209. AMERICANA. Americana Nursing Centers, Inc. SN 288,738. Pub. 6–18–68. Filed 1–15–68.

856,210. A QUIET LITTLE TABLE IN THE CORNER. A Quiet Little Table in the Corner, Ltd. SN 291,806. Pub. 6–18–68. Filed 2–26–68.

856,211. MISCELLANEOUS DESIGN. St. Anthony's Hospital, Inc., d.b.a. St. Anthony's Blood Bank. SN 292,162. Pub. 6–18–68. Filed 2–19–68.

Class 101 — Advertising and Business

856,212. SKILMASTERS. Ballou Services, d.b.a. Skilmasters. SN 266,498. Pub. 6–18–68. Filed 3–13–67.

856,213. MISCELLANEOUS DESIGN. Armstrong & Associates, Inc. SN 268,374. Pub. 6–18–68. Filed 4–5–67.

856,214. POPPER AND DESIGN. Industrial Welding Equipment Company. SN 269,896. Pub. 6–18–68. Filed 4–24–67.

856,215. FLASH AND DESIGN. Industrial Welding Equipment Company. SN 269,897. Pub. 6–18–68. Filed 4–24–67.

856,216. TAX TELLER. Tax Teller, Inc. SN 272,227. Pub. 6–18–68. Filed 5–23–67.

856,217. EMI. Electronic Marketing Intelligence, Inc. SN 273,051. Pub. 6–18–68. Filed 6–5–67.

856,218. WESTERN. Western Publishing Company Inc. SN 276,268. Pub. 6–18–68. Filed 7–18–67.

856,219. MID-AMERICAN. Mid-American Companies, Inc. SN 276,939. Pub. 6–18–68. Filed 7–27–67.

856,220. W. Western Publishing Company Inc. SN 277,094. Pub. 6–18–68. Filed 7–28–67.

856,221. TEAM. Team Central Incorporated, by change of name from Electronic Distributing Co. SN 277,155. Pub. 6–18–68. Filed 7–31–67.

856,222. JOKERS WILD. Bard Advertising, Inc. SN 283,851. Pub. 6–18–68. Filed 11–1–67.

856,223. BELLINGRATH GARDENS. The Bellingrath-Morse Foundation. SN 290,217. Pub. 6–18–68. Filed 2–5–68.

856,224. TOBACCOLAND. Tobaccoland of Cherry Hill, Inc. SN 294,149. Pub. 6–18–68. Filed 3–26–68.

Class 102 — Insurance and Financial

856,225. NO-BOUNCE ACCOUNT. First Western Bank and Trust Company. SN 263,554. Pub. 6–18–68. Filed 1–30–67.

856,226. ACCENT ON EXCELLENCE AND DESIGN. Pan-American Life Insurance Company. SN 273,523. Pub. 6–18–68. Filed 6–9–67.

856,227. BANK-A-TRIP. Eastern Air Lines, Inc. SN 277,852. Pub. 6–18–68. Filed 8–9–67.

856,228. MISCELLANEOUS DESIGN. The American National Bank. SN 290,235. Pub. 6–18–68. Filed 2–5–68.

856,229. MISCELLANEOUS DESIGN. Berkshire Life Insurance Company. SN 293,074. Pub. 6–18–68. Filed 3–13–68.

856,230. EAGLE DESIGN. American National Bank of Jacksonville. SN 294,225. Pub. 6–18–68. Filed 3–27–68.

Class 103 — Construction and Repair

855,872. (See Class 19 for this trademark.)

856,231. GLAM-O-RAMA YOUR PRESTIGE CLEANER AND DESIGN. Glam-O-Rama, Incorporated. SN 266,032. Pub. 6–18–68. Filed 3–6–67.

856,232. MISCELLANEOUS DESIGN. Sensefex, Inc. SN 271,647. Pub. 6–18–68. Filed 5–16–67.

856,233. PROFESSIONAL KILLER. E. L. Bruce Co. (Incorporated), d.b.a. Bruce-Terminix, Bruce-Terminix Co., Terminix Div. E. L. Bruce Co. SN 272,914. Pub. 6–18–68. Filed 6–2–67.

856,234. EXTERMITAL. Extermital Chemicals, Inc. SN 281,281. Pub. 6–18–68. Filed 9–27–67.

856,235. MISCELLANEOUS DESIGN. Earl Scheib, Inc. SN 283,461. Pub. 6–18–68. Filed 10–26–67.

Class 105 — Transportation and Storage

855,985. (See Class 82 for this trademark.)

856,236. 5 AND 5 RENT A CAR SYSTEM AND DESIGN. Ashbaugh Auto Rental Service, Inc. SN 257,573. Pub. 6–18–68. Filed 12–12–66.

856,237. ACBL AND DESIGN. American Commercial Barge Line Company. SN 265,381. Pub. 6–18–68. Filed 2–24–67.

856,238. GULF ATLANTIC. Gulf Atlantic Warehouse Co. SN 280,778. Pub. 6–18–68. Filed 9–20–67.

856,239. CARTAN. Cartan Travel Bureau, Inc. SN 281,551. Pub. 6–18–68. Filed 10–2–67.

Class 106 — Material Treatment

856,240. CORAK. Coral Chemical Company. SN 264,518. Pub. 6–18–68. Filed 2–13–67.

856,241. ENTER THE "CHROME AGE" THROUGH SUPERCHROME AND DESIGN. Superchrome Plating & Engineering Co., Inc. SN 293,206. Pub. 6–18–68. Filed 3–14–68.

Class 107 — Education and Entertainment

856,242. MISCELLANEOUS DESIGN. S. H. Lynch & Company, Inc. SN 261,857. Pub. 6–18–68. Filed 1–3–67.

856,243. TAILORED MUSIC. S. H. Lynch & Company, Inc. SN 261,858. Pub. 6–18–68. Filed 1–3–67.

856,244. COLT LEAGUE AND DESIGN. Boys Baseball, Inc. SN 269,969. Pub. 6–18–68. Filed 4–25–67.

856,245. BRONCO LEAGUE AND DESIGN. Boys Baseball, Inc. SN 269,970. Pub. 6–18–68. Filed 4–25–67.

856,246. BOYS BASEBALL INC. AND DESIGN. Boys Baseball, Inc. SN 269,971. Pub. 6–18–68. Filed 4–25–67.

856,247. XICOM INCORPORATED. Xicom Incorporated. SN 271,090. Pub. 6–18–68. Filed 5–9–67.

856,248. RANGERETTES. Kilgore Junior College District. SN 271,809. Pub. 6–18–68. Filed 5–18–67.

856,249. RANGERETTES AND DESIGN. Kilgore Junior College District. SN 271,811. Pub. 6–18–68. Filed 5–18–67.

856,250. THE DRAUGHT HOUSE. Jeffrey Walter, d.b.a. Draught House Enterprises. SN 272,527. Pub. 6–18–68. Filed 5–26–67.

856,251. FANCIFUL REPRESENTATION OF THE LETTERS CR. Conceptual Research, Inc. SN 272,918. Pub. 6–18–68. Filed 6–2–67.

856,252. 50-50 CLUB. Avco Broadcasting Corporation. SN 277,011. Pub. 6–18–68. Filed 7–28–67.

856,253. THE YORKSHIRE PUDDIN. Dellwood Music Co., Inc., d.b.a. Dellwood Records. SN 281,042. Pub. 6–18–68. Filed 9–25–67.

856,254. THE VARIATIONS. Variations, Inc. SN 281,337. Pub. 6–18–68. Filed 9–11–67.

856,255. GRID. Scientific Methods, Inc. SN 284,044. Pub. 6–18–68. Filed 11–2–67.

856,256. AUERBACH AND DESIGN. Auerbach Electronics Corporation, d.b.a. Auerbach Corporation. SN 284,145. Pub. 6–18–68. Filed 11–6–67.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

856,261. J. H. Fenner & Co. Limited, Marfleet, Hull, England. SN 263,983. Filed P.R. 2-7-67; Am. S.R. 4-30-68.

HAINSWORTH

Owner of British Reg. No. 858,836, dated Jan. 11, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Power Transmission Systems—Namely, Variable Speed Drives; Worm Gear Reducers for Power Transmission; Pulleys; and Parts and Fittings for All the Aforesaid Wares (Int. Cl. 7).

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Belts and Belting for Power Transmission (Int. Cl. 7).

SECTION 2

Class 2 — Receptacles

856,257. T.F.H. Publications, Inc., Jersey City, N.J. SN 265,123. Filed P.R. 2-20-67; Am. S.R. 7-2-68.

BADER

For Aquarium Tanks (Int. Cl. 16).
First use March 1964.

856,258. Union Carbide Corporation, New York, N.Y. SN 288,894. Filed P.R. 1-15-68; Am. S.R. 6-26-68.

TILT-N-WHEEL

For Plastic Utility and Waste Containers (Int. Cl. 21).
First use on or about July 1, 1966.

Class 10 — Fertilizers

856,259. Patco Products, Inc., Moonachie, N.J. SN 272,301. Filed P.R. 5-24-67; Am. S.R. 7-3-68.

Gives your lawn that rich green English look

For Lawn Fertilizer (Int. Cl. 1).
First use Feb. 17, 1966.

Class 21 — Electrical Apparatus, Machines, and Supplies

856,260. Preco, Inc., Los Angeles, Calif. SN 292,612. Filed 3-6-68.

PowerBrush

For Vacuum Actuated Brush Attachment for Vacuum Cleaners (Int. Cl. 9).
First use on or about May 1965; Jan. 29, 1958, in another form.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

856,261. See Section 1 (Combined Certificate).

Class 32 — Furniture and Upholstery

856,262. Corrado Nursery Furniture Mfg. Co., Inc., New York, N.Y. SN 281,460. Filed P.R. 9-29-67; Am. S.R. 6-20-68.

CORRADO

For Cribs; Chests; Nite Tables; Chests for Holding Toys; Desks; Double Dressers; Head Boards (Int. Cl. 20).
First use Dec. 1, 1931.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

856,261. See Section 1 (Combined Certificate).

Class 37 — Paper and Stationery

856,263. Jerry M. Collins, Eastland, Tex. SN 265,798. Filed P.R. 3-2-67; Am. S.R. 4-2-68.

TEXAS DOODLE PAD

For Advertising Novelty—Namely, a Folder With Currency Enclosed Therein To Simulate a Scratch Pad (Int. Cl. 16).
First use Dec. 15, 1966.

856,264. West Chemical Products, Inc., Long Island City, N.Y. SN 272,771. Filed P.R. 5-31-67; Am. S.R. 6-3-68.

WEST AQUA-SPUNGE

For Paper Towels (Int. Cl. 16).
First use May 10, 1967.

Class 38 — Prints and Publications

856,265. J. I. Case Company, Racine, Wis. SN 252,540. Filed P.R. 8-17-66; Am. S.R. 6-25-68.

OPTIMUM TILLAGE

For Series of Booklets (Int. Cl. 16).
First use Apr. 1, 1964.

856,266. Pottersign, Inc., Peabody, Mass. SN 263,606. Filed P.R. 1-30-67; Am. S.R. 7-15-68.

MARKINGS FOR INDUSTRY

For Printed Paper Signs, Labels and Decals (Int. Cl. 16).
First use at least as early as Jan. 31, 1965.

856,267. Edwin Finkelstein, New York, N.Y. SN 270,561. Filed P.R. 5-3-67; Am. S.R. 6-27-68.

CRITICS' GUIDE

For Booklet Featuring Critics' Reports and Reviews of Plays, Musical Records, Tapes, Books, Art Shows, Movies, Operas, Dances and Concerts (Int. Cl. 16).
First use Apr. 1, 1966.

856,268. Eutectic Welding Alloys Corporation, Flushing, N.Y. SN 276,657. Filed P.R. 7-24-67; Am. S.R. 6-26-68.

WELDING IN YOUR ENTERPRISE

For Company Trade Magazine Published at Indefinite Intervals (Int. Cl. 16).
First use Apr. 24, 1967.

856,269. Bobit Publishing Company, Glenview, Ill. SN 291,705. Filed 2-23-68.

FLEET DISTRIBUTION

For Monthly Magazine (Int. Cl. 16).
First use Jan. 19, 1967.

Class 39 — Clothing

856,270. R. J. Toomey Company, Worcester, Mass. SN 273,813. Filed P.R. 6-13-67; Am. S.R. 6-26-68.

MINI-COLLAR

For Collars for Clerical Garments (Int. Cl. 25).
First use May 18, 1967.

Class 40 — Fancy Goods, Furnishings, and Notions

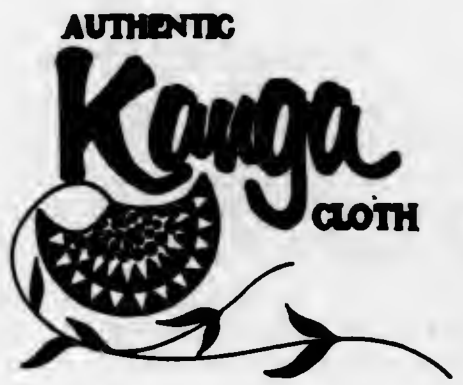
856,271. Garlen G. Eubanks, d.b.a. Getta Hairpiece Co., Fort Worth, Tex. SN 282,790. Filed P.R. 10-18-67; Am. S.R. 6-24-68.

Fashioned by
Top Piece for Men

For Men's Hairpieces (Int. Cl. 26).
First use Nov. 19, 1962.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

856,272. Brian Locksley Goodin, New York, N.Y. SN 257,615. Filed P.R. 10-31-66; Am. S.R. 6-3-68.



For Printed Cloth, Including Border Printed, by the Yard (Int. Cl. 24).
First use November 1963.

Class 44 — Dental, Medical, and Surgical Appliances

856,273. Breath Control, Inc., Pittsburgh, Pa. SN 256,920. Filed P.R. 10-21-66; Am. S.R. 6-4-68.

BRETH-KON-TROL

For Apparatus for Treating the Mouth and Throat With an Oral Antiseptic (Int. Cl. 10).
First use Oct. 2, 1966.

Service Marks

Class 101 — Advertising and Business

856,274. Dial-Dictation, Inc., Cranston, R.I. SN 252,080. Filed P.R. 8-10-66; Am. S.R. 7-3-68.

PRIVATE SECRETARY

For Rendering Stenographic Services to Subscribers Who Telephone to Applicant Information To Be Transcribed and Delivered (Int. Cl. 35).

First use July 15, 1966.

856,275. The Financial Relations Board, Inc., Chicago, Ill. SN 253,299. Filed P.R. 8-29-66; Am. S.R. 11-16-67.

FINANCIAL RELATIONS BOARD

For Financial Relations Work, Including Dispensing and Circulating of Financial Data of Companies (Int. Cl. 35).

First use on or before Dec. 28, 1961.

TRADEMARK REGISTRATIONS RENEWED

71,833. "DOUBLE-ENDER" ENCLOSED BY RECTANGULAR DESIGN. Cl. 23 (Int. Cl. 8). 12-15-08.
71,902. PAT-A-CAKE. Cl. 46 (Int. Cl. 30). 12-22-08.
32,109. "S.S.P. CO. PURITAS ET CURA" AND REPRESENTATION OF EAGLE, SHIELD AND LION. Cl. 46 (Int. Cls. 3, 29, and 30). 11-1-98.
240,969. TREET. Cl. 23 (Int. Cl. 8). 4-10-28.
243,871. GAINSBOROUGH. Cl. 16 (Int. Cl. 2). 7-3-28.
243,955. G. Cl. 13 (Int. Cls. 6 and 11). 7-3-28.
243,976. HEIDE'S. Cl. 46 (Int. Cl. 30). 7-3-28.
244,170. "FIDELIS ET CONSTANS" AND DESIGN. Cl. 42 (Int. Cls. 24 and 27). 7-17-28.
244,175. CHENALURE. Cl. 42 (Int. Cl. 24). 7-17-28.
244,207. "PINEE" AND DESIGN. Cl. 18 (Int Cl. 5). 7-17-28.
244,357. "MHS" AND DESIGN. Cl. 23 (Int. Cl. 7). 7-17-28.
244,378. SUMMUM. Cl 43 (Int. Cl. 28). 7-17-28.
245,507 NYACO. Cl. 50 (Int. Cl. 22). 8-14-28.
245,737. PEDIGREE. Cl. 19 (Int. Cl 12). 8-21-28.
246,030. STAR. Cl. 3 (Int. Cls. 6 and 18). 8-28-28.
246,219. REPRESENTATION OF AN ANVIL. Cl. 23 (Int. Cl 7). 9-4-28.
246,507. BETA PHI SIGMA. Cl. 28 (Int. Cl. 14). 9-11-28.
247,095. BABY PEPPERELL. Cl. 42 (Int. Cl. 24). 9-18-28.
247,141. LADY PEPPERELL. Cl. 42 (Int. Cl. 24). 9-18-28.
247,712. "WIDMER'S" ETC. AND DESIGN. Cl. 45 (Int. Cl. 32). 10-2-28.
248,090. "CIRCLE-C" AND CIRCLE DESIGN. Cl. 39 (Int. Cl. 25). 10-16-28.
248,525. SHOECRAFT. Cl. 44 (Int. Cl. 10). 10-23-28.
249,043. STOCKAID. Cl. 6 (Int. Cl. 5). 11-6-28.
249,263. ACIDINE. Cl. 18 (Int. Cl. 5). 11-13-28.
249,567. "FANTREY." Cl. 39 (Int. Cl. 25). 11-20-28.
249,719. "JANYTH ROY JR" AND DESIGN. Cl. 39 (Int. Cl. 25). 11-20-28.
250,234. GREENVUE. Cl. 1 (Int. Cl. 31). 12-4-28.
250,492. BRITEWEST. Cl. 46 (Int. Cl. 29). 12-11-28.
250,523. SCHOPEDIC. Cl. 44 (Int. Cl. 10). 12-11-28.
250,745. BESTWEST. Cl. 46 (Int. Cl. 29). 12-18-28.
250,760. CROWN. Cl. 37 (Int. Cl. 16). 12-18-28.
250,800. ROKEACH. Cl. 46 (Int. Cls. 29 and 30). 12-18-28.
250,918. ROKEACH. Cl. 4 (Int. Cl. 3). 12-18-28.
438,251. DENTALETS. Cl. 51 (Int. Cl. 3). 4-13-48.
439,368. DICTATOR. Cl. 13 (Int. Cl. 6). 6-22-48.
439,563. SYNTILON. Cl. 42 (Int. Cl. 17). 7-6-48.
439,573. TRANSET. Cl. 26 (Int. Cl. 9). 7-6-48.
440,010. TWI-LITE. Cl. 15 (Int. Cl. 4). 8-3-48.
440,027. INDOIL. Cl. 15 (Int. Cl. 4). 8-3-48.
440,279. PYRAMID AND DESIGN. Cl. 23 (Int. Cl. 6). 8-24-48.
440,929. MIST O' GOLD. Cl. 46 (Int. Cls. 29 and 32). 10-12-48.
440,929. MIST O' GOLD. Cl. 46 (Int. Cl. 29). 10-12-48.
441,015. BASIMIX. Cl. 12 (Int. Cl. 19). 10-19-48.
441,080. ODK AND DESIGN. Cl. 38 (Int. Cl. 16). 10-19-48.
441,296. WEATHERWATCHER. Cl. 26 (Int. Cl. 9). 11-16-48.
441,377. METAFILTER. Cl. 31 (Int. Cl. 11). 11-23-48.
441,407. MIKRO-COLLECTOR. Cl. 31 (Int. Cl. 11). 11-23-48.
441,509. EVER-TOP. Cl. 15 (Int. Cl. 4). 11-30-48.
441,665. CAP-D. Cl. 18 (Int. Cl. 5). 12-21-48.
441,735. PALTER DELISO AND DESIGN. Cl. 39 (Int. Cl. 25). 12-28-48.
500,179. PICOT. Cl. 18 (Int. Cl. 5). 5-11-48.
500,316. DR. MERRICK'S. Cl. 18 (Int. Cl. 5). 5-11-48.
500,801. CRYSTALLOSE. Cl. 18 (Int. Cl. 1). 7-6-48.
500,807. LOZAMID. Cl. 18 (Int. Cl. 5). 7-6-48.
500,846. OK AND DESIGN. Cl. 7 (Int. Cl. 22). 7-6-48.
500,898. KEY TAINER. Cl. 3 (Int. Cl. 18). 7-6-48.
501,019. MUSTEROLE. Cl. 18 (Int. Cl. 5). 7-13-48.
501,130. ALADDIN. Cl. 2 (Int. Cl. 21). 7-27-48.
501,151. UNILETS. Cl. 21 (Int. Cls. 9 and 11). 7-27-48.
501,317. INCOINK. Cl. 11 (Int. Cl. 2). 8-3-48.
501,425. CORREA RIBEIRO. Cl. 47 (Int. Cl. 33). 8-3-48.
501,900. FASCO. Cl. 34 (Int. Cl. 11). 8-31-48.
502,258. SANTODEX. Cl. 6 (Int. Cl. 1). 9-21-48.
502,315. TONI. Cl. 50 (Int. Cl. 3). 9-21-48.
502,318. GLOLON. Cl. 42 (Int. Cl. 24). 9-21-48.
502,531. ZENITH. Cl. 1 (Int. Cl. 18). 9-28-48.
502,686. KADOL. Cl. 52 (Int. Cl. 3). 10-5-48.
502,815. PHIL-MAID. Cl. 39 (Int. Cl. 25). 10-12-48.
502,843. LORAIN. Cl. 23 (Int. Cl. 7). 10-12-48.
503,118. EDGEMONT BOND. Cl. 37 (Int. Cl. 16). 10-19-48.
503,207. IRCO. Cl. 52 (Int. Cls. 1 and 2). 10-19-48.
503,440. CORNELL. Cl. 35 (Int. Cl. 12). 10-26-48.
503,508. GYCOCIDE. Cl. 6 (Int. Cl. 5). 10-26-48.
503,534. VIRATOL. Cl. 51 (Int. Cls. 3 and 4). 10-26-48.
503,584. ELF FIGURE. Cl. 38 (Int. Cl. 16). 11-2-48.
503,758. GAMMANOL. Cl. 6 (Int. Cl. 1). 11-9-48.
503,936. FLASH. Cl. 21 (Int. Cl. 9). 11-16-48.
504,144. REPRESENTATION OF PECAN PETE. Cl. 46 (Int. Cl. 30). 11-23-48.
504,145. CARBO-DUR. Cl. 1 (Int. Cl. 1). 11-23-48.
504,198. EAGLEKNIT. Cl. 39 (Int. Cl. 25). 11-23-48.
504,237. HEART OF CALIFORNIA ETC. AND DESIGN. Cl. 1 (Int. Cl. 31). 11-23-48.
504,292. STRAUBEL. Cl. 37 (Int. Cl. 16). 11-30-48.
504,332. FIG LEAF AND DESIGN. Cl. 39 (Int. Cl. 25). 11-30-48.
504,350. HOUPOID. Cl. 15 (Int. Cl. 4). 11-30-48.
504,351. MISCELLANEOUS DESIGN. Cl. 7 (Int. Cl. 22). 11-30-48.
504,378. DUCTILLITE. Cl. 14 (Int. Cl. 6). 11-30-48.
504,390. KENTUCKY CLUB. Cl. 17 (Int. Cl. 34). 11-30-48.
504,474. OSHKOSH. Cl. 3 (Int. Cl. 18). 11-30-48.
504,516. MARUSKA. Cl. 46 (Int. Cl. 31). 11-30-48.
504,555. CHAMFICO. Cl. 37 (Int. Cl. 16). 12-7-48.
504,580. PEPPERELL PRINCESS. Cl. 42 (Int. Cl. 24). 12-7-48.
504,758. TALON. Cl. 42 (Int. Cl. 24). 12-14-48.
504,774. DUKE'S. Cl. 46 (Int. Cl. 29). 12-14-48.
504,811. COBCUT. Cl. 46 (Int. Cl. 29). 12-14-48.
504,835. MEAD'S. Cl. 46 (Int. Cls. 5, 29, and 30). 12-14-48.
504,860. JAN. Cl. 21 (Int. Cl. 9). 12-14-48.
504,917. DESIGN OF ELF. Cl. 38 (Int. Cl. 16). 12-21-48.
504,993. ANDREWS. Cl. 1 (Int. Cl. 31). 12-21-48.
504,999. KLICKETY KLICK. Cl. 46 (Int. Cl. 31). 12-21-48.
505,051. ELECTRICAL EQUIPMENT. Cl. 38 (Int. Cl. 16). 12-21-48.
505,163. FOOT COMFORT. Cl. 44 (Int. Cl. 5). 12-28-48.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued July 17, 1962

734,374. PAK-RAT. Cl. 1.
734,377. MICO. Cl. 1.
734,378. JET ELKHORN ETC. AND DESIGN. Cl. 1.
734,380. MOORE MALES—MORE PROFITS "CHESTY" AND DESIGN. Cl. 1.
734,383. ANILPAT. Cl. 1.
734,388. FOAM TONE. Cl. 6.
734,391. LIFE GUARD. Cl. 6.
734,392. AQUALIN. Cl. 6.
734,396. BI-ZYME. Cl. 6.
734,411. HURRI-GREEN. Cl. 6.
734,412. POLYMIN. Cl. 10.
734,413. HEPTAMIN. Cl. 10.
734,418. CAPITOL AND REPRESENTATION OF THE CAPTOL. Cl. 12.
734,422. PERMA-K. Cl. 12.
734,423. GOLDEN TRAIL. Cl. 12.
734,428. ABSONIC. Cl. 12.
734,429. FLEXIBILD. Cl. 12.
734,430. W AND DESIGN. Cl. 12.
734,435. UNICALOR. Cl. 15.
734,436. ROLZ-ON. Cl. 15.
734,443. SPUTNIK (IN RUSSIAN LANGUAGE) AND DESIGN. Cl. 17.
734,444. BOGATYR (IN RUSSIAN LANGUAGE) AND DESIGN. Cl. 17.
734,445. LAIKA (IN RUSSIAN LANGUAGE) AND DESIGN. Cl. 17.
734,446. LENINGRAD (IN RUSSIAN LANGUAGE) AND DESIGN. Cl. 17.
734,454. FERRAQUAR-B. Cl. 18.
734,455. UNIQUAR-AM. Cl. 18.
734,461. NT-BLEN. Cl. 18.
734,463. VERNOPASTE. Cl. 18.
734,464. PBR/12. Cl. 18.
734,465. RELEVITE. Cl. 18.
734,466. RELESERP. Cl. 18.
734,471. BUTURETIC. Cl. 18.
734,472. DIGIPERSANTIN. Cl. 18.
734,477. PED-A-COFF. Cl. 18.
734,478. LOCYBIN. Cl. 18.
734,479. UTIP. Cl. 18.
734,482. COMET. Cl. 21.
734,487. MICRO-CON. Cl. 21.
734,488. ULTAMAG. Cl. 21.
734,489. SENTINEL. Cl. 21.
734,494. REPRESENTATION OF A TENNIS PLAYER. Cl. 22.
734,495. MASTER GRIP. Cl. 22.
734,496. HONEY COMB PUPPET AND DESIGN. Cl. 22.
734,497. "KOWEEKA." Cl. 22.
734,498. LEVEL HEAD. Cl. 22.
734,499. YANKEE DOODLE DANDI. Cl. 22.
734,500. WILD TURKEY AND DESIGN. Cl. 22.
734,501. PAN-KAI. Cl. 22.
734,502. TRAVEL-TOYS. Cl. 22.
734,505. STYLINE. Cl. 22.
734,510. ACE SKYLARK. Cl. 22.
734,511. ACE LANER. Cl. 22.
734,512. ACE SHAMROCK. Cl. 22.
734,516. ACE REDWINO. Cl. 22.
734,518. AMPAC. Cl. 23.
734,519. SAFE D MOUNT. Cl. 23.
734,521. HERCULES FIGURE. Cl. 23.
734,530. ETU. Cl. 26.
734,533. SLYDE A DRAPE. Cl. 32.
734,535. CI DESIGNS AND DESIGN. Cl. 32.
734,537. LADY DE. Cl. 32.
734,538. CRP CO. AND DESIGN. Cl. 37.
734,542. SUBURBAN/RYTEX. Cl. 37.
734,545. PHONETTE. Cl. 37.
734,547. POLLOCOTE. Cl. 37.
734,554. MENTALGRAMS. Cl. 38.
734,555. TEEN TIME. Cl. 38.
734,556. TCI WITHIN RECTANGLE DESIGN. Cl. 38.
734,557. INTERNATIONAL SHOE COMPANY AND DESIGN. Cl. 38.
734,559. PLAYGRAM. Cl. 38.
734,561. FORAGE GROWER'S DIGEST. Cl. 38.
734,562. ANS-R-FAX. Cl. 38.
734,563. OSCAR. Cl. 38.
734,566. TOM THUMB. Cl. 38.
734,568. ALL ABOUT ART. Cl. 38.
734,571. THE TECHNICAL STOCK REVIEW. Cl. 38.
734,572. UNDERWATER. Cl. 38.
734,573. EATERS DIGEST. Cl. 38.
734,578. PRACTICAL HOME ECONOMICS. Cl. 38.
734,582. EDUCATIONAL EXECUTIVES OVERVIEW. Cl. 38.
734,585. TAKE IT FROM KATHY. Cl. 38.
734,594. BOL-SLAX. Cl. 39.
734,595. COMBATER. Cl. 39.
734,596. CALPAC. Cl. 39.
734,598. THRONE KING AND DESIGN. Cl. 42.
734,599. BELAIR. Cl. 42.
734,612. BAKORN. Cl. 46.
734,613. SWEET BISCUIT. Cl. 46.
734,616. ALLIGATOR AND DESIGN. Cl. 46.
734,622. YOGI BREAD. Cl. 46.
734,624. FRANK STEAK BRAND. Cl. 46.
734,631. FUL VALU. Cl. 46.
734,632. KINGS HOUSE. Cl. 46.
734,633. ROMA-IMPERO BRAND. Cl. 46.
734,636. DANUTS. Cl. 46.
734,642. CONREDO. Cl. 46.
734,643. PENTASETS. Cl. 46.
734,653. LITTLE KING. Cl. 46.
734,660. POL-ETS. Cl. 46.
734,663. TREASURE GROVE. Cl. 46.
734,668. GRAHAM'S PORT WINE PORTUGAL. Cl. 47.
734,673. AKDOV. Cl. 49.
734,676. ILONA AND DESIGN. Cl. 51.
734,678. CHEVET AND DESIGN. Cl. 51.
734,684. COLOR MOD. Cl. 51.
734,687. CHIK T'SUN. Cl. 51.
734,690. LADY SHARON. Cl. 51.
734,700. M-M-M MAKE ME A MEMBER. Cl. 101.
734,701. MCL AND DESIGN. Cl. 101.
734,703. GREEN SHIELD. Cl. 102.
734,704. NMA IN REPRESENTATION OF A BOX. Cl. 102.
734,715. TAPEOGRAPHY. Cl. 107.
734,717. THE HATFIELDS ARE COMING. Cl. 107.
734,718. STRETCH-TY. Cl. 7.
734,719. JET-GAZ AND DESIGN. Cl. 13.
734,726. WHITNEY. Cl. 26.
734,727. STA-SOFT. Cl. 29.
734,730. SCARF-N-HOOD. Cl. 39.

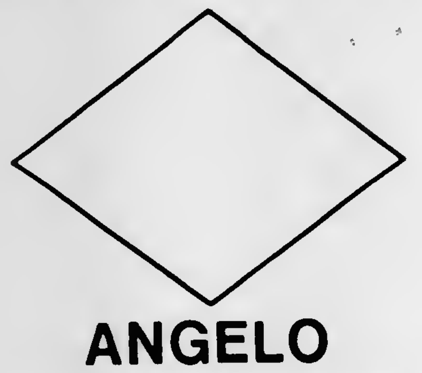
Section 18

595,256. DI MARE'S HOLIDAY. Cl. 46. 9-14-54.
740,159. BARATRON. Cl. 1. 11-6-62.
756,641. G-66. Cl. 6. 9-17-63.
807,878. STAINLESS. Cl. 51. 5-3-66.
826,029. KENWOOD. Cl. 21. 3-21-67.
830,387. FLEX-TIE. Cl. 7. 6-13-67.
831,660. THE SOFTEST SOCK ON TWO FEET. Cl. 39. 7-4-67.
837,291. AVC NETWARK. Cl. 101. 10-17-67.
838,360. EXECUTRON. Cl. 27. 11-7-67.

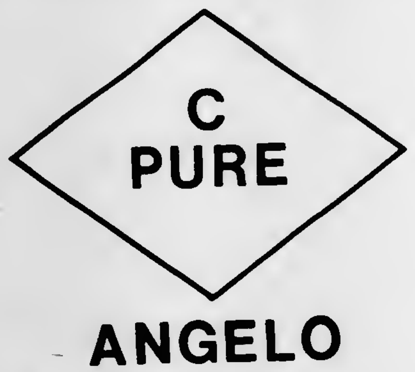
TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

230,969. SANTONE. Cl. 39. 8–9–27. The Juvenile Manufacturing Company, Incorporated, San Antonio, Tex. Corrected: In the certificate, lines 3 and 17, in the heading, signature and in the statement, column 1, line 1, "Mfg. Co." should be deleted and *Manufacturing Company, Incorporated* should be inserted.

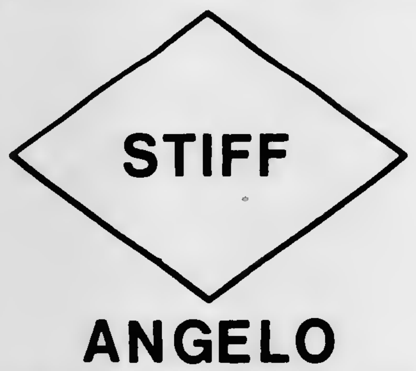
243,527. ANGELO AND DESIGN. Cl. 1. 6–26–28. Angelo Bros. Limited, Calcutta, India. Amended to appear:



243,528. ANGELO C PURE AND DESIGN. Cl. 1. 6–26–28. Angelo Bros. Limited, Calcutta, India. Amended to appear:



243,530. ANGELO STIFF AND DESIGN. Cl. 1. 6–26–28. Angelo Bros. Limited, Calcutta, India. Amended to appear:



501,129. AIRESEARCH. Cl. 34. 7–27–48. The Garrett Corporation (Airesearch Manufacturing Company Division). The Garrett Corporation, Los Angeles, Calif. Amended: In the statement, column 1, lines 8 through 12, the description of goods is deleted and *aircraft cabin heating equipment* is inserted.

550,222. CREEP-A-LONG. Cl. 39. 10–30–51. The Juvenile Manufacturing Company, Incorporated, San Antonio, Tex. Corrected: In the statement, column 1, line 1, "Mfg. Co., Inc." should be deleted and *Manufacturing Company, Incorporated* should be inserted.

619,519. LUCKY STAR BY SANTONE AND DESIGN. Cl. 39. 1–17–56. The Juvenile Manufacturing Company, Incorporated, San Antonio, Tex. Corrected: In the certificate, lines 4 and 15, in the statement, column 1, line 1, "Mfg. Co., Inc." should be deleted and *Manufacturing Company, Incorporated* should be inserted.

668,817. FLA. Cl. 1. 10–28–58. The Dow Chemical Company, assignee of Dowell Incorporated. The Dow Chemical Company, Midland, Mich. Amended to appear:

FLA

708,438. SANTONE AND DESIGN. Cl. 39. 12–13–60. The Juvenile Manufacturing Company, Incorporated, San Antonio, Tex. Corrected: In the statement, column 1, line 1, "Mfg. Co., Inc." should be deleted and *Manufacturing Company, Incorporated* should be inserted.

724,767. STROKE-MASTER. Cl. 22. 12–5–61. Plymouth Golf Ball Sales Company, Plymouth Meeting, Pa. Corrected: In the statement, column 1, line 1, "Pennsylvania" should be deleted and *Delaware* should be inserted.

770,848. JUVENELLE. Cl. 39. 6–2–64. The Juvenile Manufacturing Company, Incorporated, San Antonio, Tex. Corrected: In the statement, column 1, line 1, "Mfg. Co. Inc." should be deleted and *Manufacturing Company, Incorporated* should be inserted.

792,603. PRISS-TEENS. Cl. 39. 7–13–65. The Juvenile Manufacturing Company, Incorporated, San Antonio, Tex. Corrected: In the statement, column 1, line 1, "Mfg. Co., Inc." should be deleted and *Manufacturing Company, Incorporated* should be inserted.

801,919. TONY KENT. Cl. 39. 1–11–66. The Juvenile Manufacturing Company, Incorporated, San Antonio, Tex. Corrected: In the statement, column 1, line 1, "Mfg. Co., Inc." should be deleted and *Manufacturing Company, Incorporated* should be inserted.

811,961. VIDENE. Cl. 12. 8–2–66. The Goodyear Tire & Rubber Company, Akron, Ohio. Corrected: In the statement, column 2, line 1, before "doors" *panels,* should be inserted.

826,359. ILDAMEN. Cl. 18. 3–28–67. Chemiewerk Homburg Zweigniederlassung der Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany. Corrected: In the statement, column 1, lines 1 through 3 should be deleted and *Chemiewerk Homburg Zweigniederlassung der Deutsche Gold- und Silber-Scheideanstalt vormals Roessler (German corporation)* should be inserted.

830,459. FURADAN. Cl. 6. 6–20–67. FMC Corporation, New York, N.Y. Amended: In the statement, column 2, line 1, "insecticides" is deleted and *agricultural insecticides for spraying growing crops, such as potatoes, broccoli, lettuce, cotton, seed alfalfa and seed clover* is inserted.

832,210. CAMEL AND DESIGN. Cl. 35. 7–18–67. H. B. Egan Manufacturing Company, Muskogee, Okla. Corrected: In the statement, column 1, line 1, "Oklahoma" should be deleted and *Delaware* should be inserted.

841,520. SEDA-ILDAMEN. Cl. 18. 1–2–68. Chemiewerk Homburg Zweigniederlassung der Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany. Corrected: In the statement, column 1, line 1, should be deleted and *Chemiewerk Homburg Zweigniederlassung der Deutsche Gold- und Silber-Scheideanstalt vormals Roessler* should be inserted.

847,381. THIS IS MY LIFE AND DESIGN. Cl. 37. 4–9–68. Greet Our Babies, Inc., Memphis, Tenn. Corrected: In the statement, column 2, line 1, "dairy" should be deleted and *diary* should be inserted.

852,165. H–N. Cl. 13. 7–9–68. Standard-Thomson Corporation, Waltham, Mass. Corrected: In the statement, column 1, line 1, "Thompson" should be deleted and *Thomson* should be inserted.

852,451. ASTOUND. Cl. 52. 7–9–68. Armour and Company, Chicago, Ill. Corrected: In the statement, column 2, line 1, "spin" should be deleted and *a skin* should be inserted.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 6 — Chemicals and Chemical Compositions

251,078. Dec. 25, 1928. Addie E. Smith, d.b.a. Smith Bros., Berkeley and Oakland, Calif. Pub. by Norman C. Buckhart, Jr., Oakland, Calif.

M·A·C·

For Preparation for Use in the Treatment of Dyspepsia.

438,219. Apr. 13, 1948. Abril Corporation (Great Britain) Limited, London, England. Pub. by Abril Industrial Waxes Limited, London, England.

ABRIL

For Waxes for Use in the Manufacture of Polishes, etc.

Class 12 — Construction Materials

246,875. Sept. 18, 1928. The Union Products Company, Cleveland, Ohio. Pub. by Hooker Chemical Corporation, Niagara Falls, N.Y.

**LIFEKOTE
UNICRETE**

For Asphalt Compounds for Use as a Floor Covering, Roofing, and Wall Protection, and To Be Incorporated With Portland Cement and the Like for Use as a Flooring Material, etc. (Int. Cl. 19).

Class 16 — Protective and Decorative Coatings

439,675. July 13, 1948. Cook Paint & Varnish Company, Kansas City, Mo. Pub. by registrant.

LEATHERTEX

For Lacquers and Paint in Paste or Semi-Paste Form (Int. Cl. 2).

440,992. Oct. 12, 1948. Red Spot Paint & Varnish Co., Inc., Evansville, Ind. Pub. by registrant.

LACCO

For Nitrocellulose Lacquers (Int. Cl. 2).

Class 29 — Brooms, Brushes, and Dusters

438,260. Apr. 13, 1948. John Freeman & Company Limited, Chesham, England. Pub. by SPA Brushes Limited, Chesham, England.

Spa

For Tooth and Toilet Brushes (Int. Cl. 21).

Class 34 — Heating, Lighting, and Ventilating Apparatus

242,217. May 15, 1928. Grinnell Company, Inc., Providence, R.I. Pub. by Grinnell Corporation, Providence, R.I.

THERMOLIER

For Radiators for Use in Steam or Hot-Water Heating Systems (Int. Cl. 11).

430,749. June 24, 1947. Vent-Axia Limited, Crawley, England. Pub. by registrant.

VENT-AXIA

For Ventilating Apparatus of the Airscrew or Propeller Fan Type Adapted for Installation in Walls or Windows.

Class 38 — Prints and Publications

245,755. Aug. 21, 1928. Piggly Wiggly Corporation, Jacksonville, Fla. Pub. by registrant.

TURNSTILE

For Title of a House Organ (Int. Cl. 16).

Class 39 — Clothing

245,045. Aug. 7, 1928. A. J. Izod, Limited, London, England. Pub. by David Crystal, Inc., New York, N.Y.

Dozi

For Sport Shirts (Int. Cl. 25).

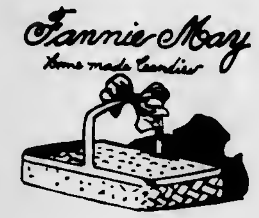
Class 46 — Foods and Ingredients of Foods

230,523. July 26, 1927. Fannie May Candy Co. Inc., Washington, D.C. Pub. by Illinois Fannie May Candy Co., Chicago, Ill.

Fannie May
Home made Candies

For Candy.

231,651. Aug. 23, 1927. Fannie May Candy Co. Inc., Washington, D.C. Pub. by Illinois Fannie May Candy Co., Chicago, Ill.



For Candy.

438,754. Rit Products Corporation, Chicago, Ill. Pub. by Corn Products Company, New York, N.Y.

RIT

For Colors for Foods, Beverages, etc. (Int. Cl. 2).

Class 51 — Cosmetics and Toilet Preparations

113,884. Nov. 7, 1916. Ferd. T. Hopkins & Son, New York, N.Y. Pub. by Ferdinand T. Hopkins, d.b.a. Ferd. T. Hopkins & Son, New York, N.Y.

Gouraud

For Face Creams.

123,943. Dec. 24, 1918. McKesson & Robbins, New York, N.Y. Pub. by J. Floris Ltd., London, England.

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Dodds' Sauce Co., Inc., Columbus, Ga. 856,117, pub. 6–18–68. Cl. 46.
Dolge, C. B., Co., The, Destport, Conn. 502,686, ren. 9–3–68. Cl. 52.
Dore, John L., Co., Houston, Tex. 855,796, pub. 6–18–68. Cl. 12.
Doughboy Industries, Inc., New Richmond, Wis. 855,961, pub. 6–18–68. Cl. 23.
Douglas, David, & Co., Inc., Manitowoc, Wis. 855,747–8, pub. 6–18–68. Cl. 2.
Dow Chemical Co., The, assignee of Dowell Inc., to The Dow Chemical Co., Midland, Mich. 668,817. Am. 7(d). Cl. 1.
Draught House Enterprises: *See—*
  Walter, Jeffrey.
Dresser Industries, Inc., Dallas, Tex. 855,814, pub. 6–18–68. Multiple Class (Classes 13, 21, 23, and 26).
Dresser Industries, Inc., Dallas, Tex. 855,951, pub. 6–18–68. Cl. 23.
Dulcich Brothers, to John Dulcich, d.b.a. John Dulcich & Sons, Earlimart, Calif. 504,516, ren. 9–3–68. Cl. 46.
Dulcich, John: *See—*
  Dulcich Brothers.
Dulcich, John, & Sons: *See—*
  Dulcich Brothers.
Dunhill, Alfred, Ltd., London, England. 855,785, pub. 6–18–68. Cl. 8.
Dwyer, F. W., Mfg. Co., Inc., Michigan City, Ind. 855,973, pub. 6–18–68. Cl. 26.
Dynalectron Corp., Washington, D.C. 855,981, pub. 6–18–68. Cl. 31.
E.L.H. Associates, Inc., Harrisburg, Pa. 734,571, canc. Cl. 38.
ESB Inc., Philadelphia, Pa. 856,083, pub. 6–18–68. Cl. 44.
Eagle Knitting Mills, Inc., Milwaukee, Wis., to Zwicker Knitting Mills, Appleton, Wis. 504,198, ren. 9–3–68. Cl. 39.
Eastern Air Lines, Inc., New York, N.Y. 856,227, pub. 6–18–68. Cl. 102.
Eaton Yale & Towne Inc., Cleveland, Ohio. 855,823, pub. 6–18–68. Cl. 14.
Eaton Yale & Towne Inc., Cleveland, Ohio. 855,896, pub. 6–18–68. Cl. 21.
Eaton Yale & Towne Inc., Cleveland, Ohio. 855,937, pub. 6–18–68. Cl. 23.
Eavestaff, W. G., & Sons Ltd., London, England. 856,001, pub. 6–18–68. Cl. 36.
Eberhard Faber Inc., Wilkes-Barre, Pa. 856,016, pub. 6–18–68. Cl. 37.
Egan, H. B., Mfg. Co., Muskogee, Okla. 832,210, cor. Cl. 35.
Electronic Distributing Co.: *See—*
  Team Central Inc.
Electronic Marketing Intelligence, Inc., Tulsa, Okla. 856,217. pub. 6–18–68. Cl. 101.
Enicar S.A. Manufacture D'Horlogerie, Bienne, Switzerland. 855,979, pub. 6–18–68. Cl. 27.
Essex Wire Corp., Fort Wayne, Ind. 734,374, canc. Cl. 1.
Eubanks, Garlen G., d.b.a. Getta Hairpiece Co., Fort Worth, Tex. 856,271. Cl. 40.
Eutectic Welding Alloys Corp., Flushing, N.Y. 856,268. Cl. 38.
Extermital Chemicals, Inc., Dayton, Ohio. 856,234, pub. 6–18–68. Cl. 103.
FMC Corp., New York, N.Y. 830,459. Am. 7(d). Cl. 6.

FMC Corp., San Jose, Calif. 855,820, pub. 6–18–68. Cl. 13.
FMC Corp., Philadelphia, Pa. 856,075, pub. 6–18–68. Cl. 42.
Fairmont Foods Co., Omaha, Nebr. 856,097, pub. 6–18–68. Cl. 46.
Falcon Lock Co., South Gate, Calif. 855,816, pub. 6–18–68. Cl. 13.
Fannie May Candy Co. Inc., Washington, D.C., by Illinois Fannie May Candy Co., Chicago, Ill. 230,523, 12(c) pub. 9–3–68. Cl. 46.
Fannie May Candy Co. Inc., Washington, D.C., by Illinois Fannie May Candy Co., Chicago, Ill. 231,651, 12(c) pub. 9–3–68. Cl. 46.
Fanos, Thomas: *See—*
  Hollywood Super Markets.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 734,479, canc. Cl. 18.
Fasco Industries, Inc.: *See—*
  Smith, F. A., Mfg. Co., Inc.
Fenner, J. H., & Co. Ltd., East Yorkshire, England. 856,261. Multiple Class (Classes 23 and 35).
Figure Builders Foundations, Inc., New York, N.Y. 856,048, pub. 6–18–68. Cl. 39.
Filatures Prouvost Masurel & Cie-Le Lainiere de Roubaix, Roubaix (Nord), France. 856,076, pub. 6–18–68. Cl. 43.
Filler Products, Inc., Atlanta, Ga. 734,612, canc. Cl. 46.
Financial Relations Board, Inc., The, Chicago, Ill. 856,275. Cl. 101.
Fine-Glo, Inc., New York, N.Y. 734,533, canc. Cl. 32.
Fingar & Weiss, Inc., New York, N.Y. 856,039, pub. 6–18–68. Cl. 39.
Finkelstein, Edwin, New York, N.Y. 856,267. Cl. 38.
First Texas Chemical Mfg. Co., to First Texas Pharmaceuticals, Inc., Dallas, Tex. 441,665, ren. 9–3–68. Cl. 18.
First Texas Pharmaceuticals, Inc.: *See—*
  First Texas Chemical Mfg. Co.
First Western Bank & Trust Co., Los Angeles, Calif. 856,225, pub. 6–18–68. Cl. 102.
Fleming Devices, Inc., South Portland, Maine. 855,995, pub. 6–18–68. Cl. 34.
Flexnit Co., Inc., New York, N.Y. 856,040, pub. 6–18–68. Cl. 39.
Floris, J., Ltd.: *See—*
  McKesson & Robbins.
Foote Mineral Co., Exton, Pa., from Vanadium Corp. of America, New York, N.Y. 855,825, pub. 6–18–68. Cl. 14.
Foregger Co., Inc., The, Roslyn Heights, N.Y. 856,082, pub. 6–18–68. Cl. 44.
Formfac Aktiebolag, Malmo, Sweden. 855,987, pub. 6–18–68. Cl. 32.
Frank, S. M., & Co., Inc., New York, N.Y. 855,783, pub. 6–18–68. Cl. 8.
Frank Steak Co. Inc., Valley Stream, N.Y. 734,624, canc. Cl. 46.
Freeman, John, & Co. Ltd., to SPA Brushes Ltd., Chesham, England. 438,260, 12(c) pub. 9–3–68. Cl. 29.
Fricke, J. E., Co., The, Philadelphia, Pa. 504,351, ren. 9–3–68. Cl. 7.
Fry, Oscar L., d.b.a. Throne King, San Francisco, Calif. 734,598, canc. Cl. 42.
Fulton, Loyd R., Seattle, Wash. 855,928, pub. 6–18–68. Cl. 23.
Fycon Engineering Corp., Charlotte, N.C. 855,773, pub. 6–18–68. Cl. 6.
Gaeth, Grant I., Denver, Colo. 856,203, pub. 6–18–68. Cl. 100.
Garrett Corp. (Airesearch Mfg. Co. Division), The, to The Garrett Corp., Los Angeles, Calif. 501,129. Am. 7(d). Cl. 34.
Gaylord Products, Inc., Chicago, Ill. 856,067, pub. 6–18–68. Cl. 40.
Geigy Chemical Corp.: *See—*
  Geigy Co., Inc.
  Rex Research Corp.
Geigy Chemical Corp., Ardsley, N.Y. 855,782, pub. 6–18–68. Cl. 6.
Geigy Co., Inc., New York, to Geigy Chemical Corp., Ardsley, N.Y. 503,508, ren. 9–3–68. Cl. 6.
Geller, Andrew, Inc., Brooklyn, N.Y. 856,057, pub. 6–18–68. Cl. 39.
General Aniline & Film Corp., New York, N.Y. 855,807, pub. 6–18–68. Cl. 12.
General Aniline & Film Corp., New York, N.Y. 855,888, pub. 6–18–68. Cl. 20.
General Electric Co., Pittsfield, Mass. 734,530, canc. Cl. 26.
General Foods Corp., White Plains, N.Y. 856,114, pub. 6–18–68. Cl. 46.
General Foods Corp., White Plains, N.Y. 856,127, pub. 6–18–68. Cl. 46.
General Foods Corp., White Plains, N.Y. 856,142–3, pub. 6–18–68. Cl. 46.
General Magnetics, Inc., Minneapolis, Minn. 734,489, canc. Cl. 21.
General Recorded Tape, Inc., Sunnyvale, Calif. 856,003, pub. 6–18–68. Cl. 36.
General Telemetry, Inc., Watchung, N.J. 734,487, canc. Cl. 21.
Geotech—A Teledyne Co.: *See—*
  Teledyne Industries, Inc.
Germain's, Inc., Los Angeles, Calif. 830,387, canc. Cl. 7.
Getta Hairpiece Co.: *See—*
  Eubanks, Garlen G.
Gianandrea, N., d.b.a. Valley Growers Exchange, San Jose, Calif. 504,999, ren. 9–3–68. Cl. 46.
Gillette Co., The: *See—*
  Toni Co., The.
Glam-O-Rama, Inc., Benson, N.C. 856,231, pub. 6–18–68. Cl. 103.
Gland-O-Lac Co., The: *See—*
  Ciba Corp.
Glasgo Ltd., Inc., Lansdale, Pa. 734,596, canc. Cl. 39.

Glatfelter, P. H., Co., Spring Grove, Pa. 856,009, pub. 6–18–68. Cl. 37.

Goddard, J., & Sons Ltd., Leicester, England. 855,759, pub. 6–18–68. Cl. 4.

Goings, Harford E., Washington, D.C. 855,749, pub. 6–18–68. Cl. 2.

Gojer, Inc., Akron, Ohio. 856,192, pub. 6–18–68. Cl. 52.

Golan Import Co., North Hollywood, Calif. 734,673, canc. Cl. 49.

Goodin, Brian L., New York, N.Y. 856,272. Cl. 42.

Goodrich, B. F., Co., The, Akron, Ohio. 734,428, canc. Cl. 12.

Goodyear Tire & Rubber Co., The, Akron, Ohio. 811,961, cor. Cl. 12.

Goodyear Tire & Rubber Co., The, Akron, Ohio. 855,880, pub. 6–18–68. Cl. 19.

Gough, Hugh H., d.b.a. Gough Products, Port Charlotte, Fla. 856,177, pub. 6–18–68. Cl. 51.

Gough Products : *See—*
Gough, Hugh H.

Governor & Co. of Adventurers of England Trading Into Hudson's Bay, The, d.b.a. Hudson's Bay Co., Winnipeg, Manitoba, Canada. 734,497, canc. Cl. 22.

Grace, W. R., & Co. : *See—*
Whitney-Eckstein Seed Co.

Grace, W. R., & Co., New York, N.Y. 855,774, pub. 6–18–68. Cl. 6.

Graham, William & John, & Co., Vila Nova de Gaia, Portugal. 734,668, canc. Cl. 47.

Gray Co., Inc., Minneapolis, Minn. 855,935, pub. 6–18–68. Cl. 23.

Great Valley Industries, Inc., Wayne, Pa. 855,912, pub. 6–18–68. Cl. 21.

Greet Our Babies, Inc., Memphis, Tenn. 847,381, cor. Cl. 37.

Griffin Chemical Co., San Francisco, Calif., to Diamond Shamrock Corp., Cleveland, Ohio. 503,758, ren. 9–3–68. Cl. 6.

Grinnell Co., Inc., to Grinnell Corp., Providence, R.I. 243,955, ren. 9–3–68. Cl. 13.

Grinnell Corp. : *See—*
Grinnell Co., Inc.

Grinnell Co., Inc., by Grinnell Corp., Providence, R.I. 242,217, 12(c) pub. 9–3–68. Cl. 34.

Groff Importers, Inc., San Diego, Calif. 856,043, pub. 6–18–68. Cl. 39.

Groff Importers, Inc., San Diego, Calif. 856,066, pub. 6–18–68. Cl. 40.

Grumbacher, M., Inc. : *See—*
Grumbacher, M.

Grumbacher, M., to M. Grumbacher, Inc., New York, N.Y. 243,871, ren. 9–3–68. Cl. 16.

Gulf Atlantic Warehouse Co., Houston, Tex. 856,238, pub. 6–18–68. Cl. 105.

Gulf Shellfish Products Co. : *See—*
De Jean Packing Co.

Gymer, Frederick E., Cleveland, Ohio. 734,700, canc. Cl. 101.

Hallmark Cards, Inc., Kansas City, Mo. 734,496, canc. Cl. 22.

Haltwelen Co., Monrovia, Calif. 734,500, canc. Cl. 22.

Hamilton Kent Mfg. Co., Kent, Ohio. 855,955, pub. 6–18–68. Cl. 23.

Hanes Corp. : *See—*
Hanes, P. H., Knitting Co.

Hanes, P. H., Knitting Co., to Hanes Corp., Winston-Salem, N.C. 504,332, ren. 9–3–68. Cl. 39.

Harris Calorific Co., The, Cleveland, Ohio. 855,819, pub. 6–18–68. Cl. 13.

Hat Corp. of America, New York, N.Y. 856,036, pub. 6–18–68. Cl. 39.

Hatfields, The, Kalamazoo, Mich. 734,717, canc. Cl. 107.

Hawley Fuel Corp., Inc., New York, N.Y. 734,378, canc. Cl. 1.

Health Laboratories : *See—*
Walker, W. & H., Inc.

Heide, Henry, Inc., New Brunswick, N.J. 243,976, ren. 9–3–68. Cl. 46.

He-Man Products, Inc., Waban, from Bernard E. Mendelsohn, Dorchester, Mass. 807,878, canc. Cl. 51.

Hendry, C. J., Co., San Francisco, Calif. 855,821, pub. 6–18–68. Cl. 13.

Hercules Powder Co., Wilmington, Del. 734,521, canc. Cl. 23.

Hernandez, Eduardo, New York, N.Y. 856,090, pub. 6–18–68. Cl. 46.

Herranz, Felix Postigo, S.A., Segovia, Spain. 856,095, pub. 6–18–68. Cl. 46.

Hersey-Sparling Meter Co., Dedham, Mass. 855,968, pub. 6–18–68. Cl. 26.

Heyden Chemical Corp., to Tenneco Chemicals, Inc., New York, N.Y. 500,801, ren. 9–3–68. Cl. 18.

Hills Bros. Coffee, Inc., San Francisco, Calif. 856,131, pub. 6–18–68. Cl. 46.

Hogar Industries, Inc., Los Angeles, Calif. 855,757, pub. 6–18–68. Cl. 3.

Hollywood Super Markets, Troy, from Thomas Fanos, d.b.a. Bingham Farms Co., Southfield, Mich. 856,106, pub. 4–9–68. Cl. 46.

Hooker Chemical Corp. : *See—*
Union Products Co., The.

Hoover Ball & Bearing Co., Saline, Mich. 855,753, pub. 6–18–68. Cl. 2.

Hopkins, Ferd. T., & Son, by Ferdinand T. Hopkins, d.b.a. Ferd. T. Hopkins & Son, New York, N.Y. 113,884, 12(c) pub. 9–3–68. Cl. 51.

Hopkins, Ferdinand T. : *See—*
Hopkins, Ferd. T., & Son.

Horowitz, Ph., Inc., New York, N.Y. 856,056, pub. 6–18–68. Cl. 39.

Hot Line Foods Co. : *See—*
Pronto Food Corp.

Houghton, E. F., & Co., Philadelphia, Pa. 504,350, ren. 9–3–67, Cl. 15.

Hudnut, Richard, Morris Plains, N.J. 856,181–2, pub. 6–18–68. Cl. 51.

Hudson's Bay Co. : *See—*
Governor & Co. of Adventurers of England Trading Into Hudson's Bay, The.

Hunt-Wesson Foods, Inc., Fullerton, Calif. 856,144, pub. 6–18–68. Cl. 46.

Hurletron Inc., Danville, Ill. 855,902, pub. 6–18–68. Cl. 21.

Huron Valley Steel Corp., Belleville, Mich. 855,828, pub. 6–18–68. Cl. 14.

Hurri-Green Chemicals : *See—*
Re-Mark Chemical Co., Inc.

Hurst, N. K., Co., Inc., Indianapolis, Ind. 856,089, pub. 6–18–68. Cl. 46.

Hurst, N. K., Co., Inc., Indianapolis, Ind. 856,132, pub. 6–18–68. Cl. 46.

Hygrade Food Products Corp., Detroit, Mich. 856,121, pub. 6–18–68. Cl. 46.

Ideal Publishing Corp. : *See—*
Romance Publishing Corp.

Ideal Toy Corp., Hollis, N.Y. 855,924, pub. 6–18–68. Cl. 22.

Illinois Fannie May Candy Co. : *See—*
Fannie May Candy Co. Inc.

Ilona de Lehoczky, d.b.a. Ilona Scientific Facial Clinic, Chicago, Ill. 734,676, canc. Cl. 51.

Ilona Scientific Facial Clinic : *See—*
Ilona de Lehoczky.

Import Associates of America, Inc., Chicago, Ill. 855,904, pub. 6–18–68. Cl. 21.

Inco Co., The, Cleveland, Ohio. 501,317, ren. 9–3–68. Cl. 11.

Industrial Concepts Inc., Bernardsville, N.J. 855,958, pub. 6–18–68. Cl. 23.

Industrial Welding Equipment Co., Houston, Tex. 856,214–5, pub. 6–18–68. Cl. 101.

Industrionics Controls, Inc., New York, N.Y. 855,967, pub. 6–18–68. Cl. 26.

International Designers Group, Inc., New York, N.Y. 734,545, canc. Cl. 37.

International Dioxcide, Inc., New York, N.Y. 855,780, pub. 6–18–68. Cl. 6.

International Harvester Co., to International Harvester Co., Chicago, Ill. 500,846, ren. 9–3–68. Cl. 7.

International Minerals & Chemical Corp., Skokie, Ill. 856,124, pub. 6–18–68. Cl. 46.

International Rustproof Corp., Cleveland, to The Lubrizol Corp., Wickliffe, Ohio. 503,207, ren. 9–3–68. Cl. 52.

International Shoe Co., St. Louis, Mo. 734,557, canc. Cl. 38.

Irwin, Neisler & Co., Decatur, Ill. 734,562, canc. Cl. 38.

Ives, Sybil, Inc., Yonkers, N.Y. 856,197, pub. 6–18–68. Cl. 52.

Izod, A. J., Ltd., London, England, by David Crystal Inc., New York, N.Y. 245,045, 12(c) pub. 9–3–68. Cl. 39.

Jacks Mfg. Co., St. Paul, Minn. 734,396, canc. Cl. 6.

Jacquin, Charles, et Cie., Inc., Philadelphia, Pa. 856,158, pub. 6–18–68. Cl. 47.

Jennison-Wright Corp., The, Toledo, Ohio. 855,838, pub. 6–18–68. Cl. 16.

Jerrold Corp., The : *See—*
Jerrold Electronics Corp.

Jerrold Electronics Corp., from The Jerrold Corp., Philadelphia, Pa. 855,894, pub. 6–18–68. Cl. 21.

Jerrold Electronics Corp., Philadelphia, Pa. 855,897, pub. 6–18–68. Cl. 21.

Jet-Aer Corp., Paterson, N.J. 756,641, canc. Cl. 6.

Johns-Manville Corp., New York, N.Y. 855,808, pub. 6–18–68. Cl. 12.

Johnson Fare Box Co., Chicago, Ill. 855,976, pub. 6–18–68. Cl. 26.

Jones, Barbara R., d.b.a. Merchants Greeting Service, Greenville, S.C. 856,019, pub. 6–18–68. Cl. 38.

Jumpin' Bean Restaurants, Inc., Phoenix, Ariz. 856,208, pub. 6–18–68. Cl. 100.

Just Born, Inc., Bethlehem, Pa. 856,140, pub. 6–18–68. Cl. 46.

Juvenile Mfg. Co., Inc., The, San Antonio, Tex. 230,969, cor. Cl. 39.

Juvenile Mfg. Co., Inc., The, San Antonio, Tex. 550,222, cor. Cl. 39.

Juvenile Mfg. Co., Inc., The, San Antonio, Tex. 619,519, cor. Cl. 39.

Juvenile Mfg. Co., Inc., The, San Antonio, Tex. 708,438, cor. Cl. 39.

Juvenile Mfg. Co., Inc., The, San Antonio, Tex. 770,848, cor. Cl 39.

Juvenile Mfg. Co., Inc., The, San Antonio, Tex. 792,603, cor. Cl. 39.

Juvenile Mfg. Co., Inc., The, San Antonio, Tex. 801,919, cor. Cl. 39.

Kahn Communications Corp., New York, N.Y. 856,034, pub. 6–18–68. Cl. 38.

Kane, Robert F., Roslyn Heights, N.Y. 856,115, pub. 6–18–68. Cl. 46.

Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd., Osaka, Japan. 856,074, pub. 6–18–68. Cl. 42.

Kanegafuchi Spinning Co., Ltd. : *See—*
Kanegafuchi Boseki Kabushiki Kaisha.

Kellogg, Spencer, & Sons, Inc. : *See—*
Textron, Inc.

Kelsey-Hayes Co., Romulus, Mich. 855,883, pub. 6–18–68. Cl. 19.

Kentucky Club : *See—*
Penn Tobacco Co.

Kenwood Mfg. (Woking) Ltd., New Lane, Havant, England. 826,029, canc. Cl. 21.

Kilgore Junior College District, Kilgore, Tex. 856,248–9, pub. 6–18–68. Cl. 107.

King Candy Co., Fort Worth, Tex. 856,136, pub. 6–18–68. Cl. 46.

King Kullen Grocery Co., Inc., Westbury, N.Y. 734,653, canc. Cl. 46.

Koehring Co. : *See—*
Thew Shovel Co., The.

Kohn Enterprises, Inc., Chicago, Ill. 855,772, pub. 6–18–68. Cl. 6.

Kraus Originals, Inc., Los Angeles, Calif. 856,044, pub. 6–18–68. Cl. 39.

Kresge, S. S., Co., Detroit, Mich. 856,164–5, pub. 6–18–68. Cl. 50.

Kreusch, Leonard, Trier, Germany. 856,159, pub. 6–18–68. Cl. 47.

Kruse Storke Electronics, Mountain View, Calif. 855,969, pub. 6–18–68. Cl. 26.

Kuppenheimer, B., & Co., Inc., Chicago, Ill. 856,047, pub. 6–18–68. Cl. 39.

L.B. Laboratories, Inc., Glendale, Calif. 856,173, pub. 6–18–68. Cl. 51.

L & M Laboratories, Inc., Berlin, Md. 734,461, canc. Cl. 18.

Laddie Boy Dog Foods, Inc., Philadelphia, Pa. 856,108, pub. 4–23–68. Cl. 46.

Lancome S.A., Seine, France. 856,052, pub. 6–18–68. Cl. 39.

Lancome S.A., Paris, France. 856,167, pub. 6–18–68. Cl. 51.

Lane Ltd., New York, N.Y. 855,843, pub. 6–18–68. Cl. 17.

Laquar Pharmaceuticals, Inc., Nutley, N.J. 734,454–5, canc. Cl. 18.

Lauderdale Electronic Labs, Inc., Fort Lauderdale, Fla. 855,903, pub. 6–18–68. Cl. 21.

Leila Fashions, Inc., Miami, Fla. 856,053, pub. 6–18–68. Cl. 39.

Level Head Putter Co., Milwaukee, Wis. 734,498, canc. Cl. 22.

Levi, Simon, Co., Ltd., d.b.a. Simon Levi Co. Ltd., Los Angeles, Calif. 856,161, pub. 6–18–68. Cl. 49.

Lewis Mfg. Co., Bay City, Mich. 734,429, canc. Cl. 12.

Lewis, Tillie, Foods, Inc., Stockton, Calif. 856,153, pub. 6–18–68. Cl. 46.

Libby, McNeill & Libby, Chicago, Ill. 856,134, pub. 6–18–68. Cl. 46.

Liebert Corp., Columbus, Ohio. 855,993, pub. 6–18–68. Cl. 34.

Lines Bros. Ltd., London, England. 245,737, ren. 9–3–68. Cl. 19.

Locke Mfg. Co., Lodi, Ohio. 855,812, pub. 6–18–68. Cl. 12.

Londen, Jack W., Boulder, Colo. 734,703, canc. Cl. 102.

Longlife Pen Co., Monrovia, Calif. 856,014, pub. 6–18–68. Cl. 37.

Lowe's, Inc., Cassopolis, Mich. 856,188, pub. 6–18–68. Cl. 52.

Lowney, Walter M., Co. Ltd., Sherbrooke, Quebec, Canada. 856,104, pub. 6–18–68. Cl. 46.

Lubrizol Corp., The : *See—*
International Rustproof Corp.

Lucky Tiger Mfg. Co., Kansas City, Mo. 734,690, canc. Cl. 51.

Luminous Ceilings, Inc., Chicago, Ill. 855,809, pub. 6–18–68. Cl. 12.

Lynch, S. H., & Co., Inc., Dallas, Tex. 856,242–3, pub. 6–18–68. Cl. 107.

M & O Co., Inc. : *See—*
McDonald & Olliff, Inc.

MSL Plastics, Inc. : *See—*
Oshkosh Trunks & Luggage.

M.T. & D. Co., Cleveland, Ohio. 734,495, canc. Cl. 22.

Mace Corp. : *See—*
Military & Computer Electronics, Inc.

MacGregor Sport Products Inc., Cincinnati, Ohio. 734,494, canc. Cl. 22.

Madison Chemical Corp., Maywood, Ill. 856,195, pub. 6–18–68. Cl. 52.

Magnetic Metals Co., Camden, N.J. 855,824, pub. 6–18–68. Cl. 14.

Makaha Records, Inc., Honolulu, Hawaii. 856,004, pub. 6–18–68. Cl. 36.

Margo & Larry's Health Foods, San Luis Obispo, Calif. 734,678, canc. Cl. 51.

Mars Ltd., Slough, Bucks, England. 856,151, pub. 6-18–68. Cl. 46.

Martin-Marietta Corp., Chicago, Ill., from American-Marietta Co., Milwaukee, Wis. 734,518, canc. Cl. 23.

Martin's Uniforms, Tampa, Fla. 734,594, canc. Cl. 39.

Marty, F., Candle Co., Inc., Oshkosh, Wis. 855,835, pub. 6–18–68. Cl. 15.

Masury-Columbia Co., Melrose Park, Ill. 855,760, pub. 6–18–68. Cl. 4.

Mattel, Inc., Hawthorne, Calif. 855,923, pub. 6–11–68. Cl. 22.

McDonald & Olliff, Inc., to M & O Co., Inc., Wauchula, Fla. 440,929, ren. 9–3–68. Cl. 46.

McGraw-Hill, Inc., New York, N.Y. 856,035, pub. 6–18–68. Cl. 38.

McKesson & Robbins, New York, N.Y., by J. Floris Ltd., London, England. 123,943, 12(c) pub. 9–3–68. Cl. 51.

McLarren Industrial Associates, Inc., Washington, D.C. 856,032, pub. 6–18–68. Cl. 38.

McNeil Laboratories, Inc., Fort Washington, Pa. 734,471, canc. Cl. 18.

Mead Johnson & Co., to Mead Johnson & Co., Evansville, Ind. 504,835, ren. 9–3–68. Cl. 46.

Mead Johnson & Co., Evansville, Ind. 855,867–8, pub. 6–18–68. Cl. 18.

Mead Johnson & Co., Evansville, Ind. 855,871, pub. 6–18–68. Cl. 18.

Meadowbrook Co., The, Edina, Minn. 855,982, pub. 6–18–68. Cl. 31.

Mechanical Handling Systems Inc., Detroit, Mich., to American Chain & Cable Co., Inc., Bridgeport, Conn. 244,357, ren. 9–3–68. Cl. 23.

Mechanical Products Co. : *See—*
Abert, Jack C.

Meijer's, Rudolph, Drukinktfabriek N.V., Amsterdam, Netherlands. 855,971, pub. 6–18–68. Cl. 26.

Mendelsohn, Bernard E. : *See—*
He-Man Products, Inc.

Mennen Co., The, Morristown, N.J. 856,174, pub. 6–18–68. Cl. 51.

Merchants Greeting Service : *See—*
Jones, Barbara R.

Metafiltration Co. Ltd., The, Hounslow, to Stella-Meta Filters Ltd., Laverstroke, England. 441,377, ren. 9–3–68. Cl. 31.

Michigan United Conservation Clubs, Lansing, Mich. 856,018, pub. 6–18–68. Cl. 38.

Microbiological Associates Inc., Bethesda, Md. 855,767, pub. 6–18–68. Cl. 6.

Mid-American Cos., Inc., Muncie, Ind. 856,219, pub. 6–18–68. Cl. 101.

Mid-Continent Leasing Corp., from Mid-Continent Leasing Corp., Chicago, Ill. 734,701, canc. Cl. 101.

Mid-Continent Pipeline Equipment Co., Houston, Tex. 855,941, pub. 6–18–68. Cl. 23.

Mid-Continent Pipeline Equipment Co., Houston, Tex. 856,204, pub. 6–18–68. Cl. 100.

Midwest Distributors : *See—*
Schultz, William G.

Midwest Industries, Inc., Ida Grove, Iowa. 855,954, pub. 6–18–68. Cl. 23.

Midwest Insulations, Inc., Wabash, Ind. 734,418, canc. Cl. 12.

Military & Computer Electronics, Inc., d.b.a. Mace Corp., Fort Lauderdale, Fla. 734,488, canc. Cl. 21.

Mi-Lo, Inc., Denver, Colo. 856,178–9, pub. 6–18–68. Cl. 51.

Minnesota & Ontario Paper Co., Minneapolis, Minn. 734,423, canc. Cl. 12.

Mitchell Bros. Inc., New York, N.Y. 856,038, pub. 6–18–68. Cl. 39.

Modecraft Co., Inc., Brooklyn, N.Y. 855,815, pub. 6–18–68. Multiple Class (Classes 13, 32, and 44).

Modern Manifold Specialties & Printing, Inc., West Columbia, Tex. 734,573, canc. Cl. 38.

Monitor Coach Co., Inc., Wakarusa, Ind. 855,887, pub. 6–18–68. Cl. 19.

Monogram Publications, Inc., Inglewood, Calif. 856,033, pub. 6–18–68. Cl. 38.

Monsanto Chemical Co., to Monsanto Co., St. Louis, Mo. 502,258, ren. 9–3–68. Cl. 6.

Monsanto Co. : *See—*
Monsanto Chemical Co.

Monsanto Co., St. Louis, Mo. 855,775–6, pub. 6–18–68. Cl. 6.

Monsanto Co., St. Louis, Mo. 855,908, pub. 5–28–68. Cl. 21.

Moore Farms, Inc., Lancaster, Pa. 734,380, canc. Cl. 1.

Morhan Exporting Corp., New York, N.Y. 856,005, pub. 6–18–68. Cl. 36.

Morris, Philip, Inc. : *See—*
Treet Safety Razor Corp.

Morris, Philip, Inc., New York, N.Y. 855,839–40, pub. 6–18–68. Cl. 17.

Morris, Philip, Inc., d.b.a. Clark Gum Co., New York, N.Y. 856,119, pub. 6–18–68. Cl. 46.

Mossant, Drome, France. 856,046, pub. 6–18–68. Cl. 39.

Movado Watch Agency, Inc., New York, N.Y. 838,360, canc. Cl. 27.

Mozingo's Tire Co., Inc., Charlotte, N.C. 855,886, pub. 6–18–68. Cl. 19.

Musterole Co., The, Cleveland, Ohio, to Plough, Inc., Memphis, Tenn. 501,019, ren. 9–3–68. Cl. 18.

Mutual Ice Co., Alexandria, Va. 734,377, canc. Cl. 1.

N.V. Nederlandsche Kunstzijdefabriek, Arnhem, Netherlands, to Algemene Kunstzijde Unie N.V., Arnhem, Holland. 244,378, ren. 9–3–68. Cl. 43.

N.V. Maatschappij Antradex, d.b.a. Antradex Co. Ltd., Willemstad, Curacao, Netherlands Antilles. 734,643, canc. Cl. 46.

NVF Co. : *See—*
Parsons Paper Co.

NVF Co., Wilmington, Del. 855,909, pub. 6–18–68. Cl. 21.

Naamlooze Vennootschap Dictator Deursluiter Maatschappij, Emmeloord, Netherlands. 439,368, ren. 9–3–68. Cl. 13.

Napp, Robert M., and Murray L. Handwerker : *See—*
Big Daddy's Enterprises, Inc.

Natco Products Corp., West Warwick, R.I. 856,162, pub. 6–18–68. Cl. 50.

National Automotive Parts Association, Chicago, Ill. 855,889, pub. 6–18–68. Cl. 21.

National Biscuit Co., New York, N.Y. 856,094, pub. 6–18–68. Cl. 46.

National Biscuit Co., New York, N.Y. 856,123, pub. 6–18–68. Cl. 46.

National Biscuit Co., New York, N.Y. 856,129–30, pub. 6–18–68. Cl. 46.

National Biscuit Co., New York, N.Y. 856,154–5, pub. 6–18–68. Cl. 46.

National Guard Products, Inc., Memphis, Tenn. 855,988, pub. 5–7–68. Cl. 32.

National Mercantile Agency, Inc., New Haven, Conn. 734,704, canc. Cl. 102.

National Periodical Publications, Inc., New York, N.Y. 856,045, pub. 6–18–68. Cl. 39.

National Starch & Chemical Corp., New York, N.Y. 856,101–2, pub. 6–18–68. Cl. 46.

Navan, Inc., El Segundo, Calif. 855,992, pub. 3–12–68. Cl. 34.

Nazareth Mills, Inc., New York, N.Y. 856,061, pub. 6–18–68. Multiple Class (Classes 39 and 42).

Nethercutt, Jack, Los Angeles, Calif. 855,920, pub. 6–18–68. Cl. 22.

Neuville & Co., Inc., New York, N.Y. 831,660, canc. Cl. 39.

New York Awning Co. Inc., New York, N.Y. 245,507, ren. 9–3–68. Cl. 50.

Newspaper Enterprise Association, Inc., Cleveland, Ohio. 734,585, canc. Cl. 38.

Nicholas Freres, S.A., Chatou, Seine et Oise, France. 734,684, canc. Cl. 51.

Nicholson File Co., Providence, R.I. 71,833, ren. 9–3–68. Cl. 23.
Noland Paper Co., Inc., Buena Park, Calif. 856,011, pub. 6–18–68. Cl. 37.
Norcross, Inc., New York, N.Y. 856,029–30, pub. 6–18–68. Cl. 38.
Norden Laboratories, Inc., Lincoln, Nebr. 855,844, pub. 6–18–68. Cl. 18.
North & Judd Mfg. Co., to North & Judd Mfg. Co., New Britain, Conn. 246,030, ren. 9–3–68. Cl. 3.
Northern Electric Co., Chicago, Ill. 734,482, canc. Cl. 21.
Northwest Paper Co., The, Cloquet, Minn. 856,008, pub. 6–18–68. Cl. 37.
Norwich Pharmacal Co., The, Norwich, N.Y. 855,864, pub. 6–18–68. Cl. 18.
Norwich Pharmacal Co., The, Norwich, N.Y. 855,870, pub. 6–18–68. Cl. 18.
Notow Products, Inc., Brookfield, Wis. 855,879, pub. 6–18–68. Cl. 19.
Nu-Way Mfg. Co., Inc., Barnard, Kans. 855,948, pub. 6–18–68. Cl. 23.
Ogus, Rabinovich & Ogus, Inc., New York, N.Y. 249,567, ren. 9–3–68. Cl. 39.
Ogus, Rabinovich & Ogus, Inc., New York, N.Y. 249,719, ren. 9–3–68. Cl. 39.
Oil Center Research, Inc., Lafayette, La. 856,087, pub. 6–18–68. Cl. 45.
Olin Mathieson Chemical Corp., New York, N.Y. 855,790, pub. 6–18–68. Cl. 9.
Omicron Delta Kappa Society, The, Cincinnati, Ohio. 441,080, ren. 9–3–68. Cl. 38.
Ortho Pharmaceutical Corp., Raritan, N.J. 855,865, pub. 2–27–68. Cl. 18.
Oshkosh Trunks & Luggage, Oshkosh, Wis., to MSL Plastics, Inc., Franklin Park, Ill. 504,474, ren. 9–3–68. Cl. 3.
O'Toole, Eric, Baltimore, Md. 734,595, canc. Cl. 39.
Palter De Liso, Inc., New York, N.Y., to Samuels Shoe Co., St. Louis, Mo. 441,735, ren. 9–3–68. Cl. 39.
Pan-American Life Insurance Co., New Orleans, La. 856,226, pub. 6–18–68. Cl. 102.
Par Sales Co., Inc., Hollywood, Calif. 734,519, canc. Cl. 23.
Paramount Line, Inc., The, Pawtucket, R.I. 856,028, pub. 6–18–68. Cl. 38.
Parker Laboratories, Inc., Newark, N.J. 855,769, pub. 6–18–68. Cl. 6.
Parsons Paper Co., Holyoke, Mass., to NVF Co., Wilmington, Del. 503,118, ren. 9–3–68. Cl. 37.
Patch, E. L., Co., The, Stoneham, Mass., to Smith, Miller & Patch, Inc., New York, N.Y. 500,807, ren. 9–3–68. Cl. 18.
Patco Products, Inc., Moonachie, N.J. 856,259. Cl. 10.
Peek, Frean & Co., Ltd., London, England. 71,902, ren. 9–3–68. Cl. 46.
Penn Tobacco Co., Wilkes-Barre, Pa., to The Bloch Bros. Tobacco Co., d.b.a. Kentucky Club, Wheeling, W. Va. 504,390, ren. 9–3–68. Cl. 17.
Pennsalt Chemicals Corp., Philadelphia, Pa. 855,939–40, pub. 6–18–68. Cl. 23.
Pep Boys, Manny, Moe & Jack, The, Philadelphia, Pa. 503,440, ren. 9–3–68. Cl. 35.
Pepperell Mfg. Co., Boston, Mass., to West Point-Pepperell, Inc., West Point, Ga. 247,095, ren. 9–3–68. Cl. 42.
Pepperell Mfg. Co., Boston, Mass., to West Point-Pepperell, Inc., West Point, Ga. 247,141, ren. 9–3–68. Cl. 42.
Pepperell Mfg. Co., Boston, Mass., to West Point-Pepperell, Inc., West Point, Ga. 502,318, ren. 9–3–68. Cl. 42.
Pepperell Mfg. Co., Boston, Mass., to West Point-Pepperell, Inc., West Point, Ga. 504,580, ren. 9–3–68. Cl. 42.
Permutit Co., The, New York, N.Y., to Ritter Pfaudler Corp., Rochester, N.Y. 504,145, ren. 9–3–68. Cl. 1.
Perrigo, L., Co., d.b.a. Supreme Pharmacal Co., Allegan, Mich. 438,251, ren. 9–3–68. Cl. 51.
Pervel Industries, Inc.: *See—*
  Plastic Film Corp.
Pet Inc., St. Louis, Mo. 856,096, pub. 12–26–67. Cl. 46.
Pet Inc., St. Louis, Mo. 856,122, pub. 6–18–68. Cl. 46.
Petrol Injection Ltd., Devon, England. 855,952, pub. 6–18–68. Cl. 23.
Pettibone Mulliken Corp., Chicago, Ill. 855,953, pub. 6–18–68. Cl. 23.
Pfaelzer Brothers: *See—*
  Armour & Co.
Pfaff, George, Inc., Long Island City, N.Y. 440,279, ren. 9–3–68. Cl. 23.
Pfister & Vogel Tanning Co., to Pfister & Vogel Tanning Co., Inc., Milwaukee, Wis. 502,531, ren. 9–3–68. Cl. 1.
Pfister & Vogel Tanning Co., Inc.: *See—*
  Pfister & Vogel Tanning Co.
Phillips Publishers, Inc., Newton, Mass. 734,501, canc. Cl. 22.
Phil-Maid, Inc., Chicago, Ill. 502,815, ren. 9–3–68. Cl. 39.
Physmet Corp., Cambridge, Mass. 855,975, pub. 6–18–68. Cl. 26.
Picot Laboratories, Inc., Mount Vernon, to Richardson-Merrell Interamericas Inc., New York, N.Y. 500,179, ren. 9–3–68. Cl. 18.
Pierce, S. S., Co., Boston, Mass. 32,109, ren. 9–3–68. Cl. 46.
Pietrus, A. J., & Sons Co., Sleepy Eye, Minn. 734,631–2, canc. Cl. 46.
Piggly Wiggly Corp., Jacksonville, Fla. 245,755, 12(c) pub. 9–3–68. Cl. 38.
Piggly Wiggly Corp., Jacksonville, Fla. 856,120, pub. 6–18–68. Cl. 46.
Pine Island Boats, Inc., North Fort Myers, Fla. 855,929, pub. 2–20–68. Cl. 23.
Pinee Chemical Co., The: *See—*
  Thornton, Julian F.
Plastic Film Corp., New York, N.Y., to Pervel Industries, Inc., Plainfield, Conn. 439,563, ren. 9–3–68. Cl. 42.
Plough, Inc.: *See—*
  Musterole Co., The.
Plymouth Golf Ball Sales Co., Plymouth Meeting, Pa. 734,767, cor. Cl. 22.
Poland Brothers, Inc., Baltimore, Md. 734,718, canc. Cl. 7.
Pollen Products Co., Bakersfield, Calif. 734,660, canc. Cl. 46.
Polymin Corp., Houston, Tex. 734,412–13, canc. Cl. 10.
Porta-Shop, Inc., New York, N.Y. 855,936, pub. 6–18–68. Cl. 23.
Pottersign, Inc., Peabody, Mass. 856,266. Cl. 38.
Powers & Eaton Industries, Inc., Hawthorne, N.J. 855,945–6, pub. 6–18–68. Cl. 23.
Preco, Inc., Los Angeles, Calif. 856,260. Cl. 21.
Pricola, N. A., Brawley, Calif. 856,149–50, pub. 6–18–68. Cl. 46.
Procter & Gamble Co., The, Cincinnati, Ohio. 856,185, pub. 6–18–68. Cl. 51.
Product Applications, Inc., Newark, N.J. 856,068, pub. 6–18–68. Cl. 40.
Professional Press, Inc., The, Chicago, Ill. 856,025, pub. 6–18–68. Cl. 38.
Professional Products Co., Dallas, Tex. 855,950, pub. 6–18–68. Cl. 23.
Pronto Food Corp., d.b.a. Hot Line Foods Co., Chicago, Ill. 856,139, pub. 6–18–68. Cl. 46.
Pulverizing Machinery Co.: *See—*
  Ruprecht, Louis.
R.D. Products, Inc., East Rochester, N.Y. 855,972, pub. 6–18–68. Cl. 26.
Ralston Purina Co., St. Louis, Mo. 856,156, pub. 6–18–68. Cl. 46.
Ramada Inns, Inc., Phoenix, Ariz. 855,788–9, pub. 6–18–68. Cl. 9.
Ramrod-Polytran, Inc., Burlingame, Calif. 856,200, pub. 6–18–68. Cl. 52.
Ranco Industrial Products Corp., Cleveland, Ohio. 855,797, pub. 6–18–68. Cl. 12.
Rand McNally & Co., Chicago, to Rand McNally & Co., Skokie, Ill. 503,584, ren. 9–3–68. Cl. 38.
Rand McNally & Co., Chicago, to Rand McNally & Co., Skokie, Ill. 504,917, ren. 9–3–68. Cl. 38.
Realistic Co., The, Cincinnati, Ohio. 856,189, pub. 6–18–68. Cl. 52.
Red Spot Paint & Varnish Co., Inc., Evansville, Ind. 440,992, 12(c) pub. 9–3–68. Cl. 16.
Re-Mark Chemical Co., Inc., d.b.a. Hurri-Green Chemicals, Miami, Fla. 734,411, canc. Cl. 6.
Restaurant Equipment Design Co., Wilmington, Del. 855,944, pub. 6–18–68. Cl. 23.
Rex Asbestwerke, Graf Von Rex K.G., Schwaebisch Hall, Germany. 855,742, pub. 6–18–68. Cl. 1.
Rex Research Corp., Toledo, Ohio, to Geigy Chemical Corp., Ardsley, N.Y. 249,043, ren. 9–3–68. Cl. 6.
Rexall Drug & Chemical Co., d.b.a. Riker Laboratories, Los Angeles, Calif. 856,085–6, pub. 6–18–68. Cl. 44.
Richardson-Merrell Interamericas Inc.: *See—*
  Picot Laboratories, Inc.
Ridg-U-Rak, Inc., North East, Pa. 856,163, pub. 6–18–68. Cl. 50.
Riker Laboratories: *See—*
  Rexall Drug & Chemical Co.
Rinn Corp., Elgin, Ill. 855,905, pub. 6–18–68. Cl. 21.
Rit Products Corp., Chicago, Ill., by Corn Products Co., New York, N.Y. 438,754, 12(c) pub. 9–3–68. Cl. 46.
Ritter Pfaudler Corp.: *See—*
  Permutit Co., The.
Riviana Foods Inc., Houston, Tex. 856,100, pub. 6–18–68. Cl. 46.
Roberts, Fred, Co., San Francisco, Calif. 855,999, pub. 6–18–68. Cl. 34.
Rokeach, I., & Sons, Inc., Brooklyn, to I. Rokeach & Sons, Inc., New York, N.Y. 250,800, ren. 9–3–68. Cl. 46.
Rokeach, I., & Sons, Inc., Brooklyn, to I. Rokeach & Sons, Inc., New York, N.Y. 250,918, ren. 9–3–68. Cl. 4.
Rolz-On, Inc., Milwaukee, Wis. 734,436, canc. Cl. 15.
Roma Packing Co., Chicago, Ill. 734,633, canc. Cl. 46.
Romance Publishing Corp., from Ideal Publishing Corp., New York, N.Y. 734,555, canc. Cl. 38.
Roper, Geo. D., Corp., Kankakee, Ill. 855,996, pub. 6–18–68. Cl. 34.
Ruprecht, Louis, d.b.a. Pulverizing Machinery Co., to Pulverizing Machinery Co., to Slick Industrial Co., Summit, N.J. 441,407, ren. 9–3–68. Cl. 31.
Rust-Oleum Corp., Evanston, Ill. 856,020, pub. 6–18–68. Cl. 38.
Rx Pharmaceuticals, Inc.: *See—*
  Sterling Drug Inc.
Rytex Co., The, Indianapolis, Ind. 734,542, canc. Cl. 37.
S-G Steel Glide Mfg. Corp., New York, N.Y. 855,794, pub. 6–18–68. Cl. 12.
SPA Brushes Ltd.: *See—*
  Freeman, John, & Co. Ltd.
Safety Tread Ltd., The, Old Ford, London, England. 855,803–5, pub. 6–18–68. Cl. 12.
St. Anthony's Blood Bank: *See—*
  St. Anthony's Hospital, Inc.
St. Anthony's Hospital, Inc., d.b.a. St. Anthony's Blood Bank, St. Petersburg, Fla. 856,211, pub. 6–18–68. Cl. 100.
St. Regis Paper Co., New York, N.Y. 734,547, canc. Cl. 37.
Saks & Co., New York, N.Y. 734,499, canc. Cl. 22.
Sandoz, Inc., Hanover, N.J. 734,478, canc. Cl. 18.
Salinas Marketing Cooperative, Salinas, Calif. 856,152, pub. 6–18–68. Cl. 46.
Samsonite Corp., Denver, Colo. 855,758, pub. 6–18–68. Cl. 3.
Samuels Shoe Co.: *See—*
  Palter De Liso, Inc.
Sauer, C. F., Co., The, Richmond, Va. 504,774, ren. 9–3–68. Cl. 46.

Scheib, Earl, Inc., Beverly Hills, Calif. 856,235, pub. 6–18–68. Cl. 103.
Scholastic Magazines, Inc., New York, N.Y. 734,578, canc. Cl. 38.
Scholfield, R. P., Enterprises, Inc., Armonk, N.Y. 855,899–900, pub. 6–18–68. Cl. 21.
School Mfg. Co., Inc., The, Chicago, Ill. 250,523, ren. 9–3–68. Cl. 44.
Scholl Mfg. Co., Inc., The, Chicago, Ill. 505,163, ren. 9–3–68. Cl. 44.
Schultz, William G., d.b.a. Midwest Distributors, Springfield, Ohio. 855,922, pub. 6–18–68. Cl. 22.
Scientific Methods, Inc., Austin, Tex. 856,255, pub. 6–18–68. Cl. 107.
Scott & Fetzer Co., The, Lakewood, from American-Lincoln Corp., Toledo, Ohio. 855,837, pub. 5–28–68. Cl. 16.
Scott-Allison Co., Inc., Hempstead, N.Y. 734,464–6, canc. Cl. 18.
Scotty-Pack Products, Inc., Colgate, Wis. 855,743, pub. 6–18–68. Cl. 1.
Scripto, Inc., Atlanta, Ga. 856,012, pub. 6–18–68. Cl. 37.
Scripto, Inc., Atlanta, Ga. 856,017, pub. 6–18–68. Cl. 37.
Sears, Roebuck & Co.: *See—*
  Allied Stores Corp.
Sears, Roebuck & Co., Chicago, Ill. 856,041, pub. 6–18–68. Cl. 39.
Seelye Plastic-Fab, Inc., Minneapolis, Minn. 855,750, pub. 6–18–68. Cl. 2.
Selane Products, Inc., d.b.a. Space Maintainers Laboratory, Panorama City, Calif. 856,080, pub. 6–18–68. Cl. 44.
Sensefex, Inc., New York, N.Y. 856,232, pub. 6–18–68. Cl. 103.
Serbin, Inc., Miami, Fla. 856,051, pub. 6–18–68. Cl. 39.
Service Publications, Inc., New York, N.Y. 856,022–4, pub. 6–18–68. Cl. 38.
Servo Corp. of America, Hicksville, N.Y. 855,962, pub. 6–18–68. Cl. 26.
Shields, Inc. of Attleboro, Mass., New York, N.Y. 855,784, pub. 6–18–68. Cl. 8.
Sherman, Robert M., d.b.a. De Martel, Dressmaker, New York, N.Y. 856,064, pub. 6–18–68. Cl. 39.
Shilmasters: *See—*
  Ballou Services.
Shintron Co., Inc., Cambridge, Mass. 855,974, pub. 6–18–68. Cl. 26.
Shir, Michael, d.b.a. Tom Thumb World Children's Magazine, Astoria, N.Y. 734,566, canc. Cl. 38.
Shoecraft Shop, Inc., to Shoecraft, Inc., New York, N.Y. 248,525, ren. 9–3–68. Cl. 44.
Shoecraft, Inc.: *See—*
  Shoecraft Shop, Inc.
Shook, Roy E., Sr., Lynwood, Calif. 734,554, canc. Cl. 38.
Siegel, Max, Associates, Inc.: *See—*
  Bobbie Associates, Inc.
Silvestre, Sabino, Buenos Aires, Argentina. 856,073, pub. 6–18–68. Cl. 42.
Simoniz Co., Chicago, Ill. 734,727, canc. Cl. 29.
Simoniz Co., Chicago, Ill. 855,781, pub. 6–18–68. Multiple Class (Classes 6 and 52).
Slick Industrial Co.: *See—*
  Ruprecht, Louis.
Smith, Addie E., d.b.a. Smith Bros., Berkeley, by N. C. Buckhart, Jr., Oakland, Calif. 251,078, 12(c) pub. 9–3–68. Cl. 6.
Smith Bros.: *See—*
  Smith, Addie E.
Smith, F. A., Mfg. Co., Inc., to Fasco Industries, Inc., Rochester, N.Y. 501,900, ren. 9–3–68. Cl. 34.
Smith, Miller & Patch, Inc.: *See—*
  Patch, E. L., Co., The.
Smith, Ted, Aircraft Co., Inc., Northridge, Calif. 855,884, pub. 6–18–68. Cl. 19.
Smith, Wilfrid, (Horticultural) Ltd., Edgware, Middlesex, England. 855,793, pub. 6–18–68. Cl. 10.
Societe Anonyme De Etablissements, Louis Regnier, Cote D'Or, France. 856,160, pub. 6–18–68. Cl. 49.
Societe Industrielle L'Angeviniere Et Joueles-tours, Paris, France. 855,877, pub. 6–18–68. Cl. 19.
Sound-Craft Systems, Inc., Morrilton, Ark. 855,901, pub. 6–11–68. Cl. 21.
Sound Electronics Corp., Mineola, N.Y. 855,911, pub. 6–11–68. Cl. 21.
South Coast Rice Milling Co., Inc., Crowley, La. 856,112, pub. 6–18–68. Cl. 46.
Space Maintainers Laboratory: *See—*
  Selane Products, Inc.
Spartan Industries, Inc., Cincinnati, Ohio. 734,422, canc. Cl. 12.
Spartans Industries, Inc., New York, N.Y. 855,980, pub. 6–18–68. Cl. 29.
Squibb, E. R., & Sons, Inc., New York, N.Y. 855,866, pub. 6–18–68. Cl. 18.
Staff Gasket Mfg. Corp., New York, N.Y. 856,000, pub. 6–18–68. Cl. 35.
Staff Supermarket Associates, Inc., Jericho, N.Y. 855,765, pub. 6–18–68. Cl. 6.
Standard Aircraft Equipment Co., Inc., Garden City, N.Y. 855,872, pub. 8–5–67. Multiple Class (Classes 19 and 103).
Standard Brands Inc., d.b.a. Clinton Corn Processing Co., New York, N.Y. 856,107, pub. 6–18–68. Cl. 46.
Standard Brands Inc., New York, N.Y. 856,118, pub. 6–18–68. Cl. 46.
Standard Oil Co., Whiting, Ind., and Chicago, Ill., to The American Oil Co., Chicago, Ill. 440,010, ren. 9–3–68. Cl. 15.
Standard Oil Co., Whiting, Ind., and Chicago, Ill., to The American Oil Co., Chicago, Ill. 440,027, ren. 9–3–68. Cl. 15.
Standard Packaging Corp., New York, N.Y. 855,978, pub. 6–18–68. Cl. 26.
Standard Supply Co., Inc., Pittsburgh, Pa. 855,875, pub. 6–18–68. Multiple Class (Classes 19 and 23).
Standard-Thomson Corp., Waltham, Mass. 852,165, cor. Cl. 13.
Steel Co. of Canada Ltd., The, Hamilton, Ontario, Canada. 855,764, pub. 6–18–68. Multiple Class (Classes 6, 12, 13, 14, 22, 23, and 35).
Stella-Meta Filters Ltd.: *See—*
  Metafiltration Co. Ltd., The.
Stein, Arnold J., and Donna Lee Stein, d.b.a. Brass Hydrant, Denver, Colo. 856,201, pub. 6–18–68. Cl. 100.
Sterling Drug Inc., New York, N.Y., from Rx Pharmaceuticals, Inc., University City, Mo. 734,477, canc. Cl. 18.
Sterling Multi-Products Inc., Sterling, Ill. 855,895, pub. 6–18–68. Cl. 21.
Stockton District Kidney Bean Growers, Inc., Linden, Calif. 504,237, ren. 9–3–68. Cl. 1.
Stover, Russell, Candies, Inc., Kansas City, Mo. 856,133, pub. 6–18–68. Cl. 46.
Straubel Paper Co., Green Bay, Wis. 504,292, ren. 9–3–68. Cl. 37.
Stresskin Products Co.: *See—*
  Tool Research & Engineering Corp.
Stribling's Nurseries, Inc., Merced, Calif. 855,744, pub. 6–18–68. Cl. 1.
Sullivan Valve & Engineering Co., Butte, Montana. 441,296, ren. 9–3–68. Cl. 26.
Sumergrade, N., & Sons, Inc., New York, N.Y. 855,989, pub. 6–18–68. Cl. 32.
Sunbeam Corp., Chicago, Ill. 855,943, pub. 6–18–68. Cl. 23.
Superchrome Plating & Engineering Co., Inc., Los Angeles, Calif. 856,241, pub. 6–18–68. Cl. 106.
Superior Electric Co., The, Bristol, Conn. 855,964–5, pub. 6–18–68. Cl. 26.
Supreme Pharmacal Co.: *See—*
  Perrigo, L., Co.
Surrette Storage Battery Co., Inc., Salem, Mass. 855,907, pub. 6–18–68. Cl. 21.
Sutton Publishing Co., Inc., White Plains, N.Y. 505,051, ren. 9–3–68. Cl. 38.
Swank, Inc., Attleboro, Mass. 855,787, pub. 6–18–68. Cl. 8.
Swiveller Co., Inc., Nanuet, N.Y. 855,818, pub. 6–18–68. Cl. 13.
Syntex Laboratories, Inc., Palo Alto, Calif. 855,860, pub. 6–18–68. Cl. 18.
T.F.H. Publications, Inc., Jersey City, N.J. 856,257. Cl. 2.
Taco Bell, Torrance, Calif. 856,207, pub. 6–18–68. Cl. 100.
Talbot, H., Co., The, Cincinnati, Ohio. 734,388, canc. Cl. 6.
Talon, Inc., Meadville, Pa. 504,758, ren. 9–3–68. Cl. 42.
Target Stores, Inc., Minneapolis, Minn. 855,754, pub. 6–18–68. Cl. 2.
Target Stores, Inc., Minneapolis, Minn. 855,779, pub. 6–18–68. Cl. 6.
Tate, John A., d.b.a. Tate & Sons, Bellevue, Wash. 855,898, pub. 6–18–68. Cl. 21.
Tate & Sons: *See—*
  Tate, John A.
Tax Teller, Inc., Overland, Mo. 856,216, pub. 6–18–68. Cl. 101.
Taylor, E. E., Corp., Freeport, Maine. 856,042, pub. 6–18–68. Cl. 39.
Taylor Instrument Companies, Rochester, N.Y. 439,573, ren. 9–3–68. Cl. 26.
Taylor Machine Works, Louisville, Miss. 440,854, ren. 9–3–68. Cl. 19.
Team Central Inc., Minneapolis, Minn. 856,006, pub. 1–2–68. Cl. 36.
Team Central Inc., from Electronic Distributing Co., Minneapolis, Minn. 856,221, pub. 6–18–68. Cl. 101.
Technical Communications, Inc., Los Angeles, Calif. 734,556, canc. Cl. 38.
Teledyne Industries, Inc., d.b.a. Geotech—A Teledyne Co., Garland, Tex. 856,206, pub. 6–18–68. Cl. 100.
Telescriber Corp.: *See—*
  Data-Com Corp.
Tenneco Chemicals, Inc.: *See—*
  Heyden Chemical Corp.
Terminix Division E. L. Bruce Co.: *See—*
  Bruce, E. L., Co. (Inc.).
Texize Chemicals, Inc., Greenville, S.C. 855,771, pub. 6–11–68. Cl. 6.
Texize Chemicals, Inc., Greenville, S.C. 856,194, pub. 6–18–68. Cl. 52.
Texlon Corp., Denville, N.J. 856,078, pub. 6–18–68. Cl. 43.
Textron, Inc., Providence, R.I., from Spencer Kellogg & Sons, Inc., Buffalo, N.Y. 734,392, canc. Cl. 6.
Therachemie G.m.b.H.: *See—*
  Therachemie Chemisch Therapeutische G.m.b.H.
Therachemie Chemisch Therapeutische G.m.b.H., d.b.a. Therachemie G.m.b.H., Dusseldorf, Germany. 856,166, pub. 6–18–68. Multiple Class (Classes 51 and 52).
Thew Shovel Co., The, Lorain, Ohio, to Koehring Co., Milwaukee, Wis. 502,843, ren. 9–3–68. Cl. 23.
Thomae, Dr. Karl, G.m.b.H., Biberach an der Riss, Germany. 734,472, canc. Cl. 18.
Thorlo, Inc., Statesville, N.C. 856,059, pub. 6–18–68. Cl. 39.
Thornton, Eugene P., Murrells Inlet, S.C. 856,049, pub. 6–18–68. Cl. 39.
Thornton, Julian F., d.b.a. The Pinee Chemical Co., to Daly-Herring Co., Kinston, N.C. 244,207, ren. 9–3–68. Cl. 18.
Thornton, Rudolph B., Winchester, Mass. 503,936, ren. 9–3–68. Cl. 21.
Throne King: *See—*
  Fry, Oscar L.
Tobaccoland of Cherry Hill, Inc., Cherry Hill, N.J. 855,786, pub. 6–18–68. Multiple Class (Classes 8 and 17).
Tobaccoland of Cherry Hill, Inc., Cherry Hill, N.J. 856,224, pub. 6–18–68. Cl. 101.

Todd Shipyards Corp., New York, N.Y. 855,994, pub. 6–18–68. Cl. 34.
Tom Thumb World Children's Magazine: *See*—
  Shir, Michael.
Toni Co., The, St. Paul, Minn., to The Gillette Co., d.b.a. The Toni Co., Boston, Mass. 502,315, ren. 9–3–68. Cl. 50.
Tool Research & Engineering Corp., d.b.a. Stresskin Products Co., Beverly Hills, Calif. 855,813, pub. 6–18–68. Cl. 12.
Toomey, R. J., Co., Worcester, Mass. 856,270. Cl. 39.
Tower Packaging Co., Wheeling, Ill. 855,751, pub. 6–18–68. Cl. 2.
Transportation Consultants Inc., Washington, D.C. 856,205, pub. 6–18–68. Cl. 100.
Trappey's, B. F., Sons, Inc., New Iberia, La. 856,105, pub. 6–18–68. Cl. 46.
Travel-Toys, Inc., Albuquerque, N. Mex. 734,502, canc. Cl. 22.
Treet Safety Razor Corp., Newark, N.J., to Philip Morris Inc., d.b.a. American Safety Razor Co., New York, N.Y. 240,909, ren. 9–3–68. Cl. 23.
Triangle Chemical Co., Macon, Ga. 855,777, pub. 6–18–68. Cl. 6.
Triangle Package Machinery Co., Chicago, Ill. 855,956, pub. 6–18–68. Cl. 23.
Triple-X Chemical Laboratories, Inc.: *See*—
  Blue Magic Co. of Ohio, Inc.
Unarco Industries, Inc., Chicago, Ill. 855,874, pub. 4–30–68. Cl. 19.
Uncle Ben's, Inc., Houston, Tex. 734,642, canc. Cl. 46.
Underwater Publishing Co., Jacksonville, Fla. 734,572, canc. Cl. 38.
Union Carbide Corp., New York, N.Y. 856,258. Cl. 2.
Union Metal Mfg. Co., The, Canton, Ohio. 855,802, pub. 6–18–68. Cl. 12.
Union Products Co., The, Cleveland, Ohio, by Hooker Chemical Corp., Niagara Falls, N.Y. 246,875, 12(c) pub. 9–3–68. Cl. 12.
United Feature Syndicate, Inc., New York, N.Y. 734,563, canc. Cl. 38.
United Feature Syndicate, Inc., New York, N.Y. 856,027, pub. 6–18–68. Cl. 38.
U.S. Highway Supply Co.: *See*—
  Weiner, Jack H.
U.S. Mineral Products Co., Stanhope, N.J. 855,811, pub. 6–18–68. Cl. 12.
U.S. Plywood-Champion Papers Inc.: *See*—
  Champion Paper & Fibre Co., The.
United States War Department, to Department of the Army, Washington, D.C. 504,860, ren. 9–3–68. Cl. 21.
Unity School of Christianity, Lee's Summit, Mo. 856,031, pub. 6–18–68. Cl. 38.
Universal Oil Products Co., Des Plaines, Ill. 734,435, canc. Cl. 15.
Upjohn Co., The, Kalamazoo, Mich. 855,850–1, pub. 6–18–68. Cl. 18.
Usen Products Co., Woburn, Mass. 856,137–8, pub. 6–18–68. Cl. 46.
Valley Growers Exchange: *See*—
  Gianandrea, N.
Vanadium Corp. of America: *See*—
  Foote Mineral Co.
Variations, Inc., Bristol, Conn. 856,254, pub. 6–18–68. Cl. 107.
Vent-Axia Ltd., Crawley, England. 430,749, 12(c) pub. 9–3–68. Cl. 34.
Venture II, Inc., South Bend, Ind. 855,906, pub. 6–18–68. Cl. 21.
Vercel, Galerie Felix, Inc., New York, N.Y. 734,568, canc. Cl. 38.
Veterinary Research Co., Inc., The, Oceanside, N.Y. 856,111, pub. 6–18–68. Cl. 46.
Veterinary Research Institute, from Veterinary Supply Depot Inc., Dallas, Tex. 855,862, pub. 6–18–68. Cl. 18.
Veterinary Supply Depot Inc.: *See*—
  Veterinary Research Institute.
Videotape Productions of New York, Inc., New York, N.Y. 734,715, canc. Cl. 107.
Virginia Dare Extract Co., Inc., Brooklyn, N.Y. 856,128, pub. 6–18–68. Cl. 46.
Vita Zahnfabrik H. Rauter KG, Sackingen, Germany. 856,081, pub. 6–18–68. Cl. 44.
Vsesojuznoje Exportno-Importnoje Objedinenije "Raznoexport," Moscow, U.S.S.R. 734,443–6, canc. Cl. 17.
Walker, W. & H., Inc., d.b.a. Health Laboratories, Pittsburgh, Pa., to Consolidated Royal Chemical Corp., Chicago, Ill. 249,263, ren. 9–3–68. Cl. 18.
Walter, Jeffrey, d.b.a. Draught House Enterprises, Akron, Ohio. 856,250, pub. 6–18–68. Cl. 107.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 855,858, pub. 6–18–68. Cl. 18.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 855,861, pub. 6–18–68. Cl. 18.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 856,135, pub. 6–18–68. Cl. 46.
Warren-Teed Pharmaceuticals Inc., Columbus, Ohio. 855,852–4, pub. 6–18–68. Cl. 18.
Washington Canners Cooperative, Vancouver, Wash. 250,492, ren. 9–3–68. Cl. 46.
Washington Canners Cooperative: *See*—
  Washington Growers Packing Corp.
Washington Growers Packing Corp., d.b.a. Washington Canners Co-Operative, to Washington Canners Cooperative, Vancouver, Wash. 250,745, ren. 9–3–68. Cl. 46.
Weight Watchers International, Inc., Forest Hills, N.Y. 856,202, pub. 6–18–68. Cl. 100.
Weiner, Jack H., d.b.a. U.S. Highway Supply Co., Chicago, Ill. 441,509, ren. 9–3–68. Cl. 15.
Welsh Panel Co., Longview, Wash. 734,430, canc. Cl. 12.
West, Carl, d.b.a. Challenger Eastern Surfboards, Neptune, N.J. 855,916, pub. 6–18–68. Cl. 22.
West Chemical Products, Inc., Long Island City, N.Y. 856,264. Cl. 37.
West Point-Pepperell, Inc.: *See*—
  Pepperell Mfg. Co.
Westchester Veterinary Products, Inc.: *See*—
  Brookfield Laboratories.
Western Block Co., Lockport, N.Y. 246,219, ren. 9–3–68. Cl. 23.
Western Peat Moss Ltd., New Westminster, British Columbia, Canada. 855,791, pub. 6–18–68. Cl. 10.
Western Publishing Co. Inc., Racine, Wis. 856,218, pub. 6–18–68. Cl. 101.
Western Publishing Co. Inc., Racine, Wis. 856,220, pub. 6–18–68. Cl. 101.
Westinghouse Air Brake Co., Chicago, Ill. 855,893, pub. 6–18–68. Cl. 21.
Westinghouse Electric Corp., Boston, Mass. 855,997, pub. 6–18–68. Cl. 34.
Wheeling Steel Corp., Wheeling, W. Va. 504,378, ren. 9–3–68. Cl. 14.
Whitney Optical Co., Inc., Woodside, N.Y. 734,726, canc. Cl. 26.
Whitney-Eckstein Seed Co., Buffalo, to W. R. Grace & Co., New York, N.Y. 250,234, ren. 9–3–68. Cl. 1.
Widmer's Grape Products Industry, to Widmer's Wine Cellars, Inc., Naples, N.Y. 247,712, ren. 9–3–68. Cl. 45.
Widmer's Wine Cellars, Inc.: *See*—
  Widmer's Grape Products Industry.
Wiechers Enterprises, Inc., South Miami, Fla. 856,021, pub. 6–18–68. Cl. 38.
Wilder, Dallas R., d.b.a. Wilder Engineering Products, Chicago, Ill. 855,890, pub. 6–18–68. Cl. 21.
Wilder Engineering Products: *See*—
  Wilder, Dallas R.
Wilmore Playgram, Inc., The, Palisades Park, N.J. 734,559, canc. Cl. 38.
Wilsey-Bennett Co., San Francisco, Calif. 856,099, pub. 5–7–68. Cl. 46.
Win-Con, Inc., Lake Worth, Fla. 855,800, pub. 6–18–68. Cl. 12.
Window Conversions, Inc., Lake Worth, Fla. 855,801, pub. 6–18–68. Cl. 12.
Winkler's, John, Sons Inc., Far Rockaway, N.Y. 855,985, pub. 6–18–68. Multiple Class (Classes 32 and 105).
Wing Archery Co., Jacksonville, Tex. 855,919, pub. 6–18–68. Cl. 22.
Winnebago Industries, Inc., Forest City, Iowa. 855,806, pub. 6–18–68. Cl. 12.
Wisconsin Drill Head Co., Butler, Wis. 855,930, pub. 6–18–68. Cl. 23.
Wiscraft, Inc., Eau Claire, Wis. 855,885, pub. 6–18–68. Cl. 19.
Wood, John, Co., St. Paul, Minn. 855,926, pub. 6–18–68. Multiple Class (Classes 23 and 34).
Woolley, Robert, Shoe Co. Ltd., Galt, Ontario, Canada. 856,062, pub. 6–18–68. Cl. 39.
Wooster, Philip A., d.b.a. Acorn Paper Co., Emeryville, Calif. 856,013, pub. 6–18–68. Cl. 37.
Wormalds & Walker Ltd., Dewsbury, England. 244,170, ren. 9–3–68. Cl. 42.
Nicom Inc., Tuxedo, N.Y. 856,247, pub. 6–18–68. Cl. 107.
Yar Research Corp., Rockefeller Center, N.Y. 856,168, pub. 6–18–68. Cl. 51.
Yeomans Brothers Co., Melrose Park, Ill. 855,942, pub. 6–18–68. Cl. 28.
Youngstown Sheet & Tube Co., The, Boardman, Ohio. 855,822, pub. 6–18–68. Cl. 14.
Zwicker Knitting Mills: *See*—
  Eagle Knitting Mills, Inc.

U.S. GOVERNMENT PRINTING OFFICE: O——1967

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

September 10, 1968 Volume 854 Number 2

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of June 1968

Examiner affirmed	121
Examiner affirmed in part	14
Examiner reversed	30
Total	165

Dependent Claims

The Notice on dependent claims of June 8, 1966 (828 O.G. 1) is modified as follows:

With particular reference to the second full paragraph, claims dependent on a genus which purport to be dependent but are in fact ultimate species do not qualify as true dependent claims. Exemplary of such claim forms are those which depend on a formula but which recite all variables in such manner that no further specificity is possible as well as those claims which name a specific compound and add, "according to claim 1" which is superfluous as far as the claim content is concerned. In summary, claims to ultimate species are not considered dependent claims. Although accepted for filing, claims of this type will be objected to and not acted on unless made independent by amendment and supported by the appropriate fee.

RICHARD A. WAHL,
Assistant Commissioner.

Aug. 19, 1968.

Disclaimer

3,256,407.—*Keith W. Klein,* Simsbury, Conn. CIRCUIT BREAKER AND ACCESSORY DEVICE COMBINATION. Patent dated June 14, 1966. Disclaimer filed June 11, 1968, by the assignee, *General Electric Company.*

Hereby enters this disclaimer to claim 1 of said patent.

Election of Species

The practice set forth in the Notice of May 4, 1967 (838 O.G. 1223) is made permanent and modified to permit a requirement for election of species in cases involving multiple species whether or not generic claims are present or searched prior to the election. Also, if no claims to species are presented but the generic claim is of the burdensome type referred to in the Notice, a requirement for election of species prior to search of the generic claims should be made.

As in the original Notice, if an election is made pursuant to a telephone requirement, the action should include a full and complete action on the elected species as well as on any generic claims that might be present. If generic claims are found allowable, no change in the practice currently in effect is contemplated.

RICHARD A. WAHL,
Assistant Commissioner.

Aug. 19, 1968.

Public Search Room

Due to budget and personnel limitations which took effect on July 1, 1968, it has become necessary to adopt measures that are consistent with these limitations and that will permit continuance of Patent Office activities and facilities without curtailing their use to the public. Among these measures is the service of returning to the files those patent bundles used by the attorneys and the general public in the Public Search Room.

Beginning August 19, 1968, in order that free access to the stacks may be maintained, persons drawing patent bundles from the search files will be expected to return them to the file slots from which they were withdrawn.

This will enable the personnel in the Public Search Room to concentrate their time and efforts on the necessary updating and storage maintenance for improvement of the integrity of the search files.

RICHARD A. WAHL,
Assistant Commissioner.

Aug. 12, 1968.

Paragraph Requirements for Abstracts

In view of some difficulties experienced in determining the extent of the abstracts, the Patent Office is supplementing the Notice of October 7, 1966 (831 O.G. 1328).

An abstract should usually be limited to a single paragraph, under the heading, "Abstract of the Disclosure" as stated in Rule 72(b) and MPEP 608.01(b).

In unusual circumstances where the application disclosure does not lend itself to a single paragraph abstract, a plural paragraph abstract may be acceptable. An example of these rare situations would be an application having claims to different statutory classes, it being recognized that an abstract of the disclosure should be written to include the advancement in the art.

To avoid errors in printing where a plural paragraph abstract is deemed necessary and appropriate, the complete abstract must be set off by suitable headings to indicate where the abstract begins and ends. Appropriate headings useable between the abstract and the subsequent description are to be found in the "Guidelines for Drafting a Model Patent Application Under the Revised Rules" (832 O.G. 5; MPEP 608.01(a)).

RICHARD A. WAHL,
Assistant Commissioner.

Feb. 16, 1968.

New Applications Received During June 1968

Patents	7469
Designs	383
Plant Patents	5
Reissues	9
Total	7866

Issue—September 10, 1968

Patents	1000	—No. 3,400,406 to No. 3,401,405, incl.
Designs	22	—No. 212,183 to No. 212,204, incl.
Plant Patents	3	—No. 2,831 to No. 2,833, incl.
Reissues	4	—No. 26,452 to No. 26,455, incl.
Total	1029	

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF AUGUST 26, 1968

PATENT EXAMINING OPERATIONS AND GROUPS * Denotes date of oldest application for each Operation.	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	5-04-66	1-16-64
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	5-02-66	*5-24-63
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	6-06-66	1-29-64
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*11-01-65	5-27-63
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	3-28-66	3-12-64
ELECTRICAL EXAMINING OPERATION		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S COLE, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	6-22-66	3-04-64
SECURITY, GROUP 220—S. BOYD, Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	4-10-67	2-11-65
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*8-10-65	*10-10-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	10-11-65	10-15-62
PHYSICS, GROUP 280—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	7-21-66	4-01-65
DESIGNS, GROUP 290—S. BOYD, Director Industrial Arts; Household, Personal and Fine Arts.	11-15-67	3-06-67
MECHANICAL EXAMINING OPERATION		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	3-06-67	9-02-65
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	10-03-66	1-06-65
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	9-15-66	5-25-64
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	7-17-67	7-27-66
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	4-06-67	1-18-65
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	*5-31-66	*5-29-63

Total number of pending applications (excluding Designs)	1[illegible]0.927
Total number of Design applications pending	2,962

Expiration of patents: The patents within the range of numbers indicated below expire during September 1968, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions of 35 U.S.C. 253.

Patents	Numbers 2,566.295 to 2,569,435, inclusive
Plant Patents	Numbers 1,035 to 1,041, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

In the United States Patent Office
Before the Board of Appeals

Ex Parte Reinhold Weiss

Appeal No. 704—11. Decided December 18, 1967

1. Patentability—Foreign Patent Secret—Roschach v Walker Construed.
"*Roschach* v. *Walker* is merely another application of the principle of the *In re Ekenstam and Brooks et al.* v. *Norcross et al.* line of cases referred to in our decision, that a secret patent will not be used as prior art against another. Confusion may arise, perhaps, because the *Roschach* v. *Walker* case involved a procedure now obsolete. Today, a party involved in an interference may bring a motion to dissolve the interference on the ground that the count is unpatentable to his opponent as being anticipated by a patent or publication prior to his opponent's date but not effective against the moving party, and the patent or publication may be that of the moving party himself. If the opponent cannot overcome the effective date of the cited patent or publication the interference will be dissolved, leaving the moving party in possession of the count. At the time of the *Roschach* v. *Walker* case the practice was different when the patent or publication was that of the moving party himself. In such cases, the matter was treated as part of the interference, in the decision on priority, rather than separately in an interlocutory motion to dissolve. In the cited case Roschach 'relied on' his Swiss patent which was prior to Walker's filing date, but secret, to defeat his opponent, Walker. The * * * Commissioner * * * was merely affirming that Roschach's prior secret patent could not defeat Walker's right to a patent."

Appeal from the Examiner (Bernard Ansher) of Group 290. Serial No. 85,460.

DENIED.

McGlew and *Toren* for appellant.

Before Federico, Asp and Lidoff, *Examiners-in-Chief*

Federico, *Examiner-in-Chief*.

On Petition for Reconsideration *

Appellant has requested reconsideration of the decision of September 26, 1967. The grounds are based upon a decision of the Commissioner of Patents, *Roschach* v. *Walker*, 1899 C.D. 157, 88 O.G. 1333, appellant urging that our decision is not in conformity with that prior decision of the Patent Office.

[1] *Roschach* v. *Walker* is merely another application of the principle of the *In re Ekenstam and Brooks et al.* v. *Norcross et al.* line of cases referred to in our decision, that a secret patent will not be used as prior art against another. Confusion may arise, perhaps, because the *Roschach* v. *Walker* case involved a procedure now obsolete. Today, a party involved in an interference may bring a motion to dissolve the interference on the ground that the count is unpatentable to his opponent as being anticipated by a patent or publication prior to his opponent's date but not effective against the moving party, and the patent or publication may be that of the moving party himself. If the opponent cannot overcome the effective date of the cited patent or publication the interference will be dissolved, leaving the moving party in possession of the count. At the time of the *Roschach* v. *Walker* case the practice was different when the patent or publication was that of the moving party himself. In such cases, the matter was treated as part of the interference, in the decision on priority, rather than separately in an interlocutory motion to dissolve. In the cited case Roschach "relied on" his Swiss patent which was prior to Walker's filing date, but secret, to defeat his opponent, Walker. The statement by the Commissioner "When it is sought to invalidate a United States patent under Revised Statutes, sections 4886 and 4920, by an alleged prior foreign patent, it has been repeatedly held that such prior foreign patent must be one that was *open* and accessible to the public, one that is a public and not a secret patent" had reference to the line of cases beginning with *Brooks et al.* v. *Norcross et al.* relating to the use of a prior secret patent to defeat a patent to another and the Commissioner was merely affirming that Roschach's prior secret patent could not defeat Walker's right to a patent. As to the effect of Roschach's prior foreign patent on Roschach's rights in a U.S. Patent, which was not involved in the decision, secrecy would be irrelevant as shown by *Gramme Electrical Co.* v. *Arnoux and Hochhausen Electric Co. et al.*, cited in our decision which dealt with the same type of secrecy involved in the present case and to which appellant does not refer.

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* Original decision published 852 O.G. 255, July 9, 1968.

The matters brought up by appellant's request for reconsideration have been considered but no change is made in the decision of September 26, 1967.

DENIED.

U.S. Court of Customs and Patent Appeals

IN RE SAMUEL EGNOT *v.* ROBERT LOOKER

No. 7845. Decided December 14, 1967

[55 CCPA —; 387 F.2d 680; 156 USPQ 136]

1. INTERFERENCE—PATENT AND APPLICATION—EVIDENCE—BURDEN OF PROOF ON APPLICANT.

With respect to the burden of proof on an applicant (Egnot) who copied the claims of a patent, *Held* that "Under such circumstances Egnot is charged with the burden of proving priority of invention beyond a reasonable doubt. *Conner* v. *Joris*, 44 CCPA 772, 241 F.2d 944, 113 USPQ 56; *Walker* v. *Altorfer*, 27 CCPA 1130, 111 F.2d 164, 45 USPQ 317."

2. SAME—DERIVATION—CONCEPTION.

"We have noted appellant's contention that the sole question in this case is whether Looker derived the invention in issue from Egnot. Suffice it to say that not only is this charge not supported by the evidence but also it is substantially negated by the testimony of Egnot himself. There can be no derivation without prior conception on the part of the party alleging derivation."

APPEAL from the Patent Office. Interference No. 93,815.

AFFIRMED.

John A. Blair, Robert L. Boynton, Harness, Dickey & Pierce for appellant.

George F. Smyth, Richard P. Schulze, Smyth, Roston & Pavitt for appellee.

Before WORLEY, *Chief Judge*, RICH, SMITH, and ALMOND, *Associate Judges*, and WILLIAM H. KIRKPATRICK [1]

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Board of Patent Interferences awarding priority of the subject matter in Interference No. 93,815 to the senior party Looker.

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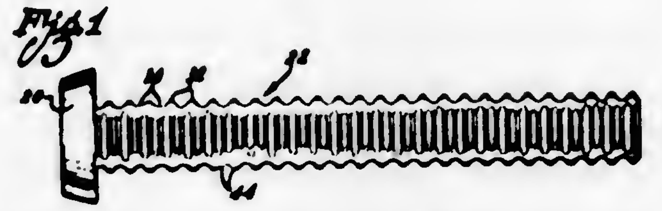
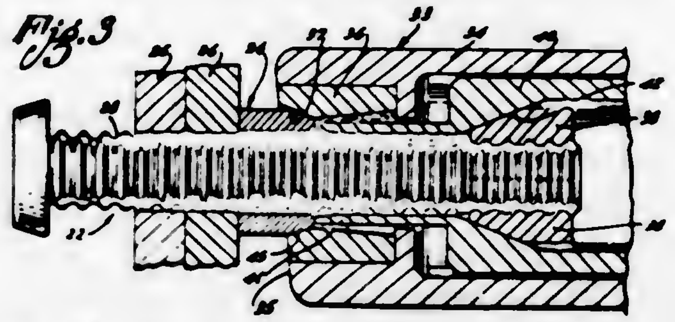
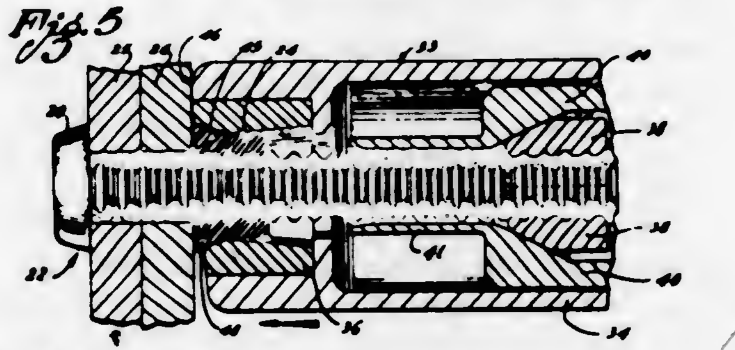
[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

The parties herein are the junior party Samuel Egnot, assignor to Huck Manufacturing Company (hereinafter Huck) and Robert Looker, assignor to Brown-Line Corporation. Herein involved are the Egnot application [2] entitled "Fastener Construction" and the Looker patent [3] entitled "Grooved Pin With Reformable Collar To Accommodate Various Thicknesses."

The invention in issue is a fastener construction using a lockbolt for permanently fastening a plurality of rigid members such as metal plates. The invention is illustrated in FIGURES 1, 3, 5, and 6 of the Looker patent.







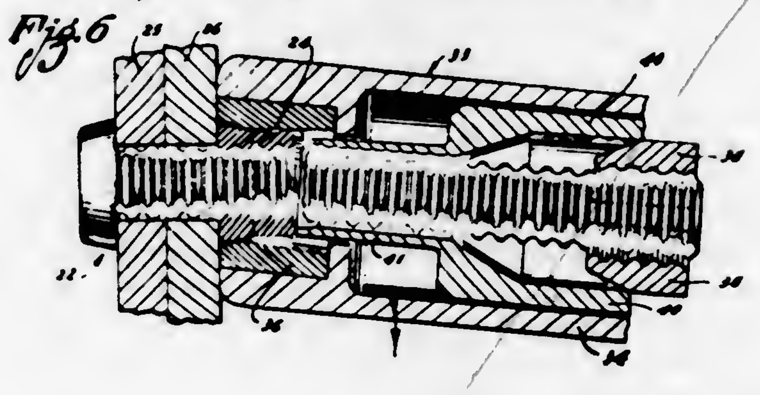


FIGURE 1 shows the lockbolt structure, a pin with a head 20 and a shank 22. The shank has a series of circumferential grooves 30 which are preferably uniformly spaced to form a series of uniform intervening circumferential ribs 32.

The lockbolt is used to fasten two rigid plate members together in the manner illustrated in FIGURES 3, 5 and 6. The lockbolt is inserted through aligned bores in plate members 25 and 26. Deformable collar 24 is slipped over the shank end of the lockbolt (FIG. 3). Driving tool 33 is used to complete the installation. The tool has two sections axially movable relative to each other, one having jaws 38 to engage the end of the pin and, on axial movement, to bring the head of the pin 20 and the collar 24 against the plates (FIG. 5). With further axial movement, an anvil 36 on the other section of the tool swages the deformable collar 24 onto the shank of the pin forcing the collar material into the circumferential grooves of the lockbolt. The end of the shank extending beyond the collar is now broken off at a groove adjacent the end of the collar. This may be accomplished by tilting the tool either by means of a canted nose to cause the tool to pivot about point 46 (FIGS. 5 and 6) or by a canted shoulder on the collar. The pin may also be broken off by a localized radial compressive stress, caused by an added construction on the anvil, acting with a direct pull.

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[2] Serial No. 183,165, filed March 28, 1962.

[3] No. 2,978,946, issued April 11, 1961, application Serial No. 639,474, filed February 11, 1957.

Each groove 30 (FIG. 1) along the shank of the pin has the same minimum diameter to form "a series of frangible breaknecks." This series of breaknecks permits sheets of various thicknesses to be secured together, since their total thickness will bring one of the breaknecks adjacent the outer end of the collar to be broken off. The ribs 32 (FIG. 1) between the breaknecks are of the maximum diameter of the shank to seat snugly into the opening of the sheet and to be engaged by the jaws of the tool means or by the collar when it has been swaged into the breaknecks.

The counts of the interference correspond to the four claims of the Looker patent and were copied by Egnot at the time his application was filed nearly twelve months after the Looker patent issued. Count 1 is reproduced as representative:

> 1. The combination of a plurality of rigid members each having an opening therethrough of a common uniform diameter, said members being adapted to be abutted with said openings aligned, each of said members being of at least a given minimum individual thickness and the combined thickness of said members being within the range of thicknesses extending from a given minimum total thickness to a given maximum total thickness, and a fastening means to extend through said aligned openings to cooperate with a deformable collar for interconnecting the members, said fastening means comprising a pin with a shank and a head on one end of the shank, said shank having a substantially uniform maximum diameter throughout and having a series of axially spaced circumferential grooves, each providing the minimum diameter of the shank and *forming a series of frangible breaknecks* and forming therebetween spaced ribs of said maximum diameter to seat snugly in any of said openings and to be engaged by said collar by swaging of the collar into the breaknecks, said series of breaknecks extending from the second end of the pin to at least a point spaced from said head by said given minimum total thickness so that the collar will engage a rib of the pin adjacent a plurality of the members of said given minimum total thickness as well as adjacent any plurality of said members of greater total thickness within said range, the spacing of said ribs being substantially less than said given minimum individual thickness so that when said series of breaknecks extend through any of said members at least one of the ribs will lie between the planes of the opposite faces of such members to maintain said openings of the members in alignment, said shank being of a length substantially greater than said given maximum total thickness plus the axial dimension of said collar whereby the shank may extend through a plurality of said members of said given maximum total thickness and through and beyond said collar to be engaged by tool means *and whereby in securing together any plurality of said members of a total thickness within said range, the shank may be broken off at a breakneck immediately adjacent the outer end of said collar.* [Emphasis added.]

At the outset, it is pertinent to note that Egnot is here making claim to an invention previously claimed in a patent to Looker. The Looker patent was granted April 11, 1961. On March 28, 1962 Egnot filed his application presenting the claims in issue, accompanied by a letter applying the claims to the disclosure of his application.

[1] Under such circumstances Egnot is charged with the burden of proving priority of invention beyond a reasonable doubt. *Conner* v. *Joris*, 44 CCPA 772, 241 F.2d 944, 113 USPQ 56; *Walker* v. *Altorfer*, 27 CCPA 1130, 111 F.2d 164, 45 USPQ 317.

Egnot worked for Huck Manufacturing Company of Detroit from 1952 or 1953 until September 1962 as a sales engineer. Looker, who was sales manager of the company, became vice-president in charge of sales in 1954, leaving the company in August 1956 and moving to California where he became president and one of the principal owners of the Brown-Line Corporation, his assignee. The witness Dobbe, director of government technical services for Huck, preceded Looker as vice-president in charge of sales. Egnot bases his claim to priority on a drawing which he made and disclosed to Looker and Dobbe in 1954.

Egnot Exhibit 1 is a copy of a patent[4] assigned to Huck which is representative of the prior art in the lockbolt field. This patent discloses a lockbolt in which the shank has three types of grooves. Near the head are "locking grooves," a grooved portion having annular ribs and groove bottoms into which the collar is swaged. At the end of the shank are "pull grooves," a grooved portion adapted to be gripped by jaws of the tool used to pull the pin and collar into place. Between these sets of grooves is a single "breakneck groove" where the end of the pin is broken off by increased pull. The breakneck groove has a smaller diameter than the other grooves, and is the minimum diameter of the shank of the pin. The patent states that it "is the weakest part of the pin so that the pin will break under tension at this location before it will break under tension at any other location."

As to the function of a breakneck groove, Egnot testified:

> Considering all forces of the tool, the swaging of the collar, the breakneck was determined by engineering at Huck to break at a higher load value in tension so that after swaging you would increase the pulling effect on the pin tail section and then a break would occur at the top or in that portion called No. 21 [breakneck], leaving a fastener without a pin tail section.

Relative to the engineering at Huck, Looker on cross-examination more specifically described the characteristics of a breakneck groove:

> A breakneck groove is an annular recess designed to break at a predetermined force, is characterized by exacting design of its diameter with relation to the other diameters and dimensions of the pin itself, its sloped surface angles, the metallurgy of the pin per se, that is, its brittleness, ductility, tensile strength, modulus of elasticity, et cetera, and as such is distinctly characterized from the grooves more commonly known as locking grooves or pull grooves.

The Huck patent discloses that the breakneck groove therein would permit only a limited variation in the total thickness of the plates to be secured together. If the plates were appreciably thinner than shown in Huck FIGURE 2, in the finished lockbolt the end of the pin would extend an undesirable distance beyond the end of the collar. If much thicker than shown, the breakneck would be an undesirable distance within the collar.

Egnot Exhibit 3 is the drawing which is the basis for Egnot's claim to priority. Egnot testified that he completed the drawing on October 8, 1954 and submitted it to Looker and Dobbe on October 18, 1954. When asked about the drawing of Exhibit 3, Egnot stated that his first concept was an "all-grip lockbolt" so that "it would attach thin sheets as well as thick sheets in one operation." It is noted that all of the grooves shown in Egnot Exhibit 3 are of the same construction designed to function as pull grooves in cooperation with the jaws of a tool, or locking grooves in cooperation with a deformable collar, and that the grooves are uniformly spaced from the head to the end of the shank. This being so, there is no groove of less diameter than the others as disclosed in the Huck patent such as the breakneck 21.

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[4] Patent No. 2,531,048, granted November 21, 1950.

Egnot further stated with reference to Exhibit 3:

> This is my first concept of the all-grip lock bolt but then also I became concerned as to the *method of nipping off the remaining portion of the pin tail* that extended beyond the collar, so that by incorporating two ideas to submit to my boss at that time, Mr. Looker, I came up with the sketch as a suggested *method of cutting off the pin as close to the top of the collar as possible.* [Emphasis supplied.]

In order to nip or cut off the pin tail, Egnot provided a pair of jaws in the driving tool which would close about the pin tail immediately adjacent the collar, and notch the pin at that point. When the driving tool was pulled away from the workpiece, the lockbolt would presumably break at the point of the notch.[5] According to Egnot's testimony, the point where the jaws notched the pin was not necessarily at the bottom of the groove, but could be anywhere between the groove and the crest of the rib, even on that crest.

It is significant that Looker's testimony as to his understanding at the time Egnot disclosed to him the drawing does not, in substance, conflict with that of Egnot. Looker testified that his understanding of the Egnot disclosure to him was that there was no breakneck groove provided and that the pin was not intended to be *broken* but was intended to be *cut off* at the top of the collar at the conclusion of the driving operation. He stated specifically that when Egnot came to him prior to October 8, 1954, the date of the drawing, the idea he expressed to Looker was to eliminate the necessity for providing grip-limiting breakneck grooves by use of a device for cutting off the extending pin tail from a partially driven lockbolt.

The drawing made by Egnot shows the jaws cutting into the shank of the pin near a crest. This fact is hard to reconcile with Egnot's opinion that the jaws "could travel downward to the groove and crack and break off at the groove." Further, concerning the grooves of Egnot's concept, Dobbe testified:

> Q12. Then, in accordance with your recollection and looking at Exhibit No. 3, do you recall how many different kinds of grooves the pin had? A. This pin here would have just one type of groove for its entire length. *It would be a combination of a pulling and locking groove* and would only have one type of groove for its entire length. [Emphasis added.]

This testimony strongly supports the conclusion that Egnot Exhibit 3 omitted the breakneck groove 21 of Egnot Exhibit 1 using in lieu thereof a series of grooves of just one type, a combination of pulling and locking grooves.

The Looker patent, on the other hand, affords a clear discussion of the grooves of the Looker embodiment in contradistinction to the Egnot concept:

> A certain problem arises with regard to the function of the circumferential grooves as selective breaknecks. The use of tension stress in the prevalent prior art practices to cause severance of a breakneck portion requires that the breakneck portion be greatly weakened. One reason for greatly weakening the pin at this point is that the single breakneck of the prior art fastener must be the weakest point of the pin by a liberal margin to make sure that the shank breaks off at this particular point in response to the final tensioning of the pin. A second reason for greatly weakening the pin at the breakneck is to keep the required magnitude of tension force within practical limits. Obviously if such a highly weakened point of the shank were positioned in the aligned holes of the plurality of members or were even positioned inside the deformable collar, the effective strength of the installed lockbolt would be reduced to an unacceptable degree. The problem, then, is to provide spaced circumferential grooves that are deep enough for selective use as breaknecks but, nevertheless, provide sufficient strength to carry the tensile load required of the installed lockbolt.
>
> The present invention solves this dilemma by combining two separate forces to break off the pin at circumferential grooves selectively. The first force is the usual tension force for straining the shank longitudinally. The second force is a localized transverse force. The addition of this second transverse force has two advantages. One advantage is that the combining of the two forces makes it possible to break the shank at the axially spaced grooves without requiring that the axially spaced grooves be so deep as to weaken the lockbolt unduly. The second advantage is that the transverse force may be selectively localized to cause the pin to break off at any selected circumferential groove.
>
> The second transversely applied stress may be, for example, either a localized bending stress or a localized transverse compression stress. The compression stress may be, if desired, radial compression applied uniformly around the circumference of the pin shank.
>
> * * * * * * *
>
> It is further to be noted that the grooves 30 are of sufficient depth to permit the pin to be broken off at a selected groove by the application of stress in tension together with the application of a transverse stress as heretofore described. This groove depth, however, is much less than the groove depth required for the breakneck of a conventional pin.

It seems clear, therefore, that Looker discloses a modification of the breakneck groove 21 of Egnot Exhibit 1. The Looker groove is not as deep but sufficiently deep to serve as a breakneck in his invention, described in the count as "forming a series of frangible breaknecks." The Egnot concept distinctly differs in that his combination is a pulling and locking groove, requiring some further device for "nipping off" or "cutting off" the pin close to the collar.

We consider of evidentiary importance in resolving the factual issue here presented the letter dated October 19, 1954, Egnot Exhibit 5, sent by Looker to patent counsel for Huck. This letter transmitted Egnot Exhibit 3 and embraced Looker's comments thereon. The letter described the Egnot bolt or pin as "having only locking grooves with no pull grooves, no shank, or very little shank, and no breakneck." It referred to the device for "cutting off the pin after the fastener had been swaged" by forcing section "B" against the pin. It was stated that the proposed structure "may have a very substantial commercial value" and should be held "until we see if it works."

Looker stated that no determination was made, during the remainder of the time he was employed at Huck, as to whether the proposed Egnot device would work. The reason given was that the invention "appeared to be impractical because of the delicacy and of the probable difficulty of making the little jaws not only cut but stand up in service."

Looker emphatically denied that Egnot had ever disclosed to him "any fastener which formed a series of frangible breaknecks":

> XQ21. Actually, I believe you previously testified he didn't discuss the presence of breakneck grooves in the sense in which you have described a breakneck. A. That is correct, nor did he discuss the severing of the pin *at any groove.* The pin was cut off by an apparently novel useful and new means and the pin per se—correction, and the cutters per se was the invention that Mr. Egnot disclosed to me.

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[5] In answer to a question on cross-examination, Egnot stated: "I wouldn't know where this thing would break. If you did notch at the crest, it would be possible to fracture at that point. However, again, it could travel downward to the groove and crack and break off at the groove. Again, I couldn't say one way or the other. Again, the tool—I don't even know if it even would work; it was just a suggested practice."

We have reviewed the factual details of this sizable record and are persuaded that the gist of the controversy and the proper conclusion have been stated by the Board as follows:

> It will be recalled that when asked if any one of the grooves shown in his Exhibit 3 drawing could or might function as a breakneck Egnot explained that Section B or the "red portion" *might* be located in one of the grooves to make a "notch effect" that would reduce the cross sectional area of the pin * * *. In a sense, this would make the groove deeper to convert *only this one* of the series of grooves into a breakneck, but would not provide "a series of frangible breaknecks," any one of which could be broken by bending or wedging forces. Thus this alleged capability or possibility would not establish that Egnot conceived the invention defined in the count, which recites that the grooves form "a *series* [emphasis present] of frangible breaknecks" whereby the shank may be "broken off" at a breakneck immediately adjacent the outer end of "said collar." These limitations aptly describe Looker's concept, while Egnot's concept involved the use of means for "cutting off" the pin close to the collar. Accordingly, and for the reasons previously stated, we hold that Egnot has not established that he conceived the invention defined by the counts prior to February 11, 1957, Looker's filing date. For similar reasons, we hold that Egnot has not established that he disclosed the invention in issue to Looker prior to that date [citations omitted]. Since Egnot has no actual reduction to practice or diligence as early as Looker's filing date, Looker is entitled to prevail. [Emphasis added.]

[2] We have noted appellant's contention that the sole question in this case is whether Looker derived the invention in issue from Egnot. Suffice it to say that not only is this charge not supported by the evidence but also it is substantially negated by the testimony of Egnot himself. There can be no derivation without prior conception on the part of the party alleging derivation.

We have examined the cases cited and the arguments advanced by counsel but we are not convinced of reversible error on the part of the Board in awarding priority of invention to Looker.

The decision of the Board is affirmed.

AFFIRMED.

SMITH, *J.*, dissenting.

In my opinion, the evidence on behalf of Egnot presented in the record before this court is legally sufficient to prove conception of the invention set forth in the counts of the interference by Egnot prior to Looker. I, therefore, would reverse the decision of the Board.

Evidence of conception must be evaluated according to the objective standard of what it teaches one of ordinary skill in the art. E.g., *Spero* v. *Ringold*, 54 CCPA —, 377 F.2d 652, 153 USPQ 726 (1967); *Townsend* v. *Smith*, 17 CCPA 647, 36 F.2d 292, 4 USPQ 269 (1929). Under the test of the *Spero* case, the evidence of Egnot's conception must be evaluated to determine what Egnot disclosed to Looker and what this disclosure means to one of ordinary skill in the art.

The invention set forth in the counts of the interference includes a fastener having a grooved pin in which *all* of the grooves are of the *same* construction. The pin has a shank which has a substantially uniform maximum diameter throughout. The pin further contains a series of axially-spaced circumferential grooves, *each* of which provides the minimum diameter of the shank. The grooves form a series of "frangible breaknecks." The count recites "spaced ribs of said maximum diameter" formed between the "frangible breaknecks." The count further specifies that the shank *may be broken off* at a "breakneck" immediately adjacent the outer end of a deformable collar.

The record clearly shows that Egnot's pin was conceived with a plurality of grooves, all of which were the same. Both Egnot's testimony and his drawing, completed on October 8, 1954, support that conclusion. Thus, I agree with the appellant that it would be impossible for any *one* groove to perform *only* the singular function of serving as *a* breakneck. Egnot's conception thus clearly meets the structural limitations of the counts of this interference.

Moreover, the evidence clearly shows that Egnot disclosed the "like-groove" concept to others, particularly Looker and Dobbe. Thus, I think that one of ordinary skill in this art would consider that each of a plurality of like grooves would be inherently capable of functioning as a "breakneck" in the device disclosed by Egnot.

I find further support in the record for my conclusion in the Huck '048 patent, where the "breakneck groove" was constructed to be the weakest section of the pin, so that the pin would fracture at that point upon the application of a breaking force. Since all of the grooves of the interference counts are of like construction, no one groove could be singled out as a "breakneck." It therefore follows that one of ordinary skill in this art would consider each of the grooves of the Egnot disclosure to be capable of serving as a "breakneck" in the same manner.

In evaluating this invention, it also seems to me that, since each of the grooves is capable of acting as a "breakneck," selection of *the* particular groove which will act as *the* desired "breakneck" must be determined by some means apart from the pin itself. However, the tool, or "breaking means," which "selects" the particular groove to function as a "breakneck" is not included in the specific language of counts in this interference. The entire invention embodied in the counts in issue, in my opinion, has been disclosed by Egnot, prior to Looker. Those differences which may be present between the "breaking means" of Egnot and the "breaking means" of Looker are of no moment in considering priority as to the specific counts in this interference. In my view, the Board's reference to the tool for performing the breaking function was irrelevant.

Upon an evaluation of the evidence of that which Egnot, in fact, disclosed, in the light of what the disclosure would mean to one of ordinary skill in the art, I would reverse the decision of the Board.

In the United States Patent Office
Before the Board of Patent Interferences

MURRAY *v.* CANNON

Patent Interference No. 95,128. Decided March 25, 1968

1. INTERFERENCE—PRELIMINARY STATEMENT—WAIVER OF INFORMALITIES IN PRELIMINARY STATEMENT—RULE 285(c).

   "Murray's new motion (to restrict Cannon to his filing date for reduction to practice) is not only belated but having filed his first motion (based solely on the fact that Cannon's preliminary statement had no first drawing or description attached) he is deemed to have waived any informalities in the preliminary statement of Cannon which he did not raise in the first motion. See Rule 285(c)(2)."

2. SAME—CONCEPTION OR REDUCTION TO PRACTICE—CORROBORATION.

   "Cannon has no corroborated conception. Cannon has no corroborated reduction to practice. Mere reference for details to a patent application which contains one figure which does not support the count is inadequate to establish by the preponderance of the evidence that the device constructed and tested conformed to the requirements of the count, and is therefore insufficient to establish either conception or actual reduction to practice of the invention in issue."

3. SAME—CONCEPTION—REDUCTION TO PRACTICE—FILING DATE.

"Having failed to prove an actual reduction to practice Cannon must rely on his filing date of April 22, 1963 for conception and reduction to practice."

Before BOYS, WILLIAMS and CAPELLI, *Examiners of Interferences*

CAPELLI, *Examiner of Interferences.*

The single count of the interference relates to a square-wave generator utilizing as a source of power the output signal of another wave generator.

Both parties filed affidavit testimony with accompanying exhibits. Only Murray was represented at the final hearing.

Murray has filed on February 21, 1967 a motion to restrict Cannon to his filing date because he neither alleged a "successful" reduction to practice nor included a brief statement as to the specific nature of the respective acts alleged to constitute a reduction to practice in either his original or amended preliminary statement. On October 27, 1965 Murray filed a similar motion except that it was based solely on the fact that Cannon's preliminary statement had no first drawing or description attached. Cannon filed a motion to amend his preliminary statement to supply the noted deficiencies on November 19, 1965, which motion we granted on January 27, 1966.

[1] Murray's new motion is not only belated but having filed his first motion he is deemed to have waived any informalities in the preliminary statement of Cannon which he did not raise in the first motion. See Rule 285(c)(2).

Murray's motion to restrict Cannon to his filing date for reduction to practice is accordingly denied.

Findings of Fact

1. Cannon asserts that Allison Laboratories had developed an amplifier termed Model 656 in the early part of December 1961.
2. To test this amplifier he built a square wave converter.
3. He asserts that the square wave converter was constructed as shown in FIG. 1 of his application.
4. To establish the date of December 9, 1961 Cannon refers to his affidavit-exhibit 1 and asserts that the generator was constructed and tested six months previous to the date on this exhibit.
5. Affidavit-exhibit 1 is a laboratory notebook page dated 5–9–62 and contains an entry "Equip. Allison Square Wave Gen. (Verns)."
6. The entry of item 5 does not describe any determinate structure.
7. Cannon asserts the construction of two other prototypes but no specific structure is described.
8. Cannon has submitted drawings dated in January, 1963 (Exhibit 1) and a written description.
9. Bruce Cannon (witness) avers that Cannon (inventor) disclosed three handmade prototypes to him subsequent to November 1962 which prototypes were constructed and operated in the manner disclosed in the Cannon application. Bruce Cannon further avers that he used them successfully in performance of tests. Except by relation to the patent application he identifies neither the structure of the "prototypes" nor the tests he performed.
10. Parson avers that in December 1961 Cannon explained and showed to him in operation, a square wave generator and related the structure of the generator to the disclosure of the Cannon application.
11. Parson avers that he saw other prototypes but he did not describe the specific structure of any prototype or subsequent commercial models except to state they had either one or two transistors. He relies on the details of the patent application for disclosure.
12. Neither Bruce Cannon nor Parson makes any reference to the drawings and first description.
13. One modification in the patent application does not show a resistor connected between the rectifier and capacitor and to a transistor collector.
14. Murray avers that on February 5, 1963 he constructed a square wave generator, and demonstrated and described it to Cooper and Klamm.
15. Murray further avers that on February 7, 1963 he prepared an invention disclosure, witnessed by Klamm, which includes a description and circuit diagram of his square wave generator.
16. Cooper and Klamm aver that on February 5, 1963 they saw that the square wave generator of Murray was generating excellent square waves as viewed on an oscilloscope. They further described in detail the structure that they saw in Murray's generator.
17. Klamm further avers that he in fact understood and signed the invention disclosure on February 7, 1963.

Conclusions of Law

[2] 1. Cannon has no corroborated conception.

2. Cannon has no corroborated reduction to practice. Mere reference for details to a patent application which contains one figure which does not support the count is inadequate to establish by the preponderance of the evidence that the device constructed and tested conformed to the requirements of the count, and is therefore insufficient to establish either conception or actual reduction to practice of the invention in issue.

[3] 3. Having failed to prove an actual reduction to practice Cannon must rely on his filing date of April 22, 1963 for conception and reduction to practice.

4. The facts set forth in the clear and convincing affidavits of Cooper and Klamm are proof of conception of the subject matter of the count by Murray by February 5, 1963.

5. Murray's invention disclosure dated February 7, 1963 and corroborated by Klamm is cumulative evidence of prior conception by Murray.

6. The description of operation and test results observed by Cooper and Klamm are adequate to establish an actual reduction to practice of the subject matter of the count by Murray on February 5, 1963.

Priority of invention is awarded to Raymond P. Murray, the junior party.

U.S. Court of Customs and Patent Appeals

IN RE HELMUTH WILLIAM CARLSEN

No. 7817. Decided November 9, 1967

[— CCPA —; 385 F.2d 461; 155 USPQ 519]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"APPARATUS FOR UNLOADING PULVERULENT BULK CARGO FROM SHIPS."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Apparatus for Unloading Pulverulent Bulk Cargo From Ships" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 252,859.

AFFIRMED.

Wenderoth, Lind & Ponack (*John E. Lind*, of counsel) for appellant.

Joseph Schimmel (*Jere Sears*, of counsel) for the Commissioner of Patents.

Before Worley, *Chief Judge*, Rich, Smith, and Almond, *Associate Judges*, and Judge William H. Kirkpatrick *

Kirkpatrick, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals affirming the rejection on prior art of claims 1, 6 and 7 in appellant's application Serial No. 252,859, filed January 21, 1963, entitled "Apparatus for Unloading Pulverulent Bulk Cargo From Ships." Four claims are allowed.

Appellant's invention is stated to be based on "the well-known fact that powder, e.g. cement, can be caused to flow as a liquid and be conveyed through pipelines if it is aerated, that is air is blown into the powder so that the particles become suspended in the air." The main object of the invention is to provide apparatus for pneumatic unloading of pulverulent bulk cargo from ships. Pressure and vacuum are used for producing an air suspension of the powder in the cargo compartment of the ship, sucking up the suspension from the compartment to a separator in which the powder and air are separated, again suspending the powder in air, and then blowing the suspension from the separator to a receiving station on shore.

The apparatus includes an aerator in the bottom of the ship cargo compartment, a separator tank, a pump acting as a pressure pump, a pump acting as a suction pump, and various conduits and valves. Pressure applied to the aerator acts to suspend in air the powdered material in the cargo compartment and the suspension is drawn through a suction conduit to the separator tank. The tank has an inlet for the suspension and an outlet for air. A diffusor in the separator tank reduces the flow velocity of the suspension so that the suspended material falls out of the air stream into the tank. When the tank becomes filled with the material, the mechanism for filling it is inactivated.

In the lower part of the separator tank is an aerator with a pressure conduit connected thereto. Compressed air applied to the aerator through the conduit results in the material in the tank being placed in suspension. When the tank is put under pressure above atmospheric, the suspension is blown out through a pressure conduit and passed to the delivery or receiving point. Control of the operation is effected through valves in the conduits interconnecting the pumps with the aerators, cargo compartment, and separator tank.

In a modified form, two separator tanks are provided along with valving that permits filling one tank from the cargo compartment while material from the other tank is being conveyed to the receiving point.

Claim 1 is representative:

> **1. An apparatus for delivering pulverulent material from transportation means having an open cargo compartment, comprising in combination a first aerator in the bottom portion of said compartment for aerating the material therein, a separator tank, a vacuum source and valve controlled suction conduits for drawing aerated material from said compartment into said tank by drawing air out of said tank, separator means associated with said tank for separating the drawn in material and air and collecting the material in said tank, a second aerator in the bottom portion of said tank for aerating the material collected therein, a pressure source and valve controlled pressure conduits for supplying said aerators and said tank with air under pressure, and a valve controlled discharge conduit connected with said tank.**

Claim 6 is similar to claim 1 with the separating means for the "drawn in material" and air defined as including a "diffusor." Claim 7 calls for two separate tanks.

The references relied on are:

Goebels, 1,935,843, Nov. 21, 1933.
Randall, 2,758,564, Aug. 14, 1956.
Hermanns (Australia), 212,893, Feb. 6, 1958.

Hermanns, the principal reference, discloses reloading apparatus for pulverulent materials. It includes a reloading container from the upper end of which extends a valved suction hose for transfer of material from a location such as the hold of the ship to the container. From the lower end of the container there extends a valved compressed air pipe for discharging material from the container. An air pump is provided with its suction side selectively connectable through a valved pipe to the upper end of the container or to atmosphere. The pressure side of the pump is selectively connectable by a valved pipe either to an annular pipe disposed about the bottom of the container to feed a plurality of spaced hoses communicating with the container or to the atmosphere.

The free end or mouthpiece of the suction hose which extends from the top of Hermanns' container dips into the material to be unloaded and has inserted therein, concentrically with the hose, a thin pipe whose free end is bent over so as to project out of the material into the air. In loading the container, suction from the pump is applied to the container with the valve in the suction hose open so that the stored material is sucked through the mouthpiece and at the same time air is aspirated through the thin pipe therein to entrain the material. The material falls from the hose into the bottom of the container while the air aspirated through the hose passes through the suction pipe from the pump. When the container is filled with material, the valve in the suction hose is closed, suction from the pump is disconnected from the container, the valve in the discharge pipe is opened, and the compressed air side of the pump is placed in communication with the annular pipe and hoses connected thereto. The pump then forces air through the hoses into the container so that the material in the container is loosened up and forced through the discharge pipe to the receiving station.

Randall relates to apparatus for coating webs or strands with dry dust. The coating material is placed in a hopper and is fluidized by air passed up through an "air distributing screen or aerating disk" located at the bottom of the hopper. The material is then entrained through a Venturi mixer having its inlet "directed to face toward the aerating disk" and is passed out of the hopper to a deposition chamber.

Goebels discloses apparatus for conveying pulverulent material which includes two transfer containers. The containers are arranged in parallel and means are provided for successively filling them and alternatively placing them in communication with a discharge pipe so that one container is being filled while the other is discharging.

The sole issue is whether the claimed subject matter is obvious over the prior art under 35 U.S.C. 103. Claims 1 and 6 stand rejected as unpatentable over Hermanns in view of Randall, with claim 7 rejected on the same references further considered with Goebels.

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* Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

The Examiner regarded Hermanns as meeting all of the limitations of claim 1 "except for the aerating means in the bottom of the cargo compartment" and considered it obvious from Randall to use a fluidizing means in the bottom of that compartment. He further considered the "diffusor" for the separator tank recited in claim 6 to be conventional separator structure. He held the use of two separators to be obvious from Goebels.

Appellant states that "the important thing to be decided" is whether it is obvious in view of Randall to use a fluidizing means in the bottom of Hermanns' cargo compartment. We are convinced that such modification is obvious and that the rejection of the claims is proper.

Appellant refers to "essential differences" which he contends make it "extremely improbable that anyone dealing with large-scale powder transportation should search for and find anything in Randall that could be used to supplement and improve Hermanns' apparatus." Although the ultimate purpose of Randall is not the mere transportation of materials, he does move powdered material from a storage compartment to a chamber from which it is deposited on a member to be coated. As noted by the Board, the pick-up function of Hermanns' suction hose is assisted by air introduced through the thin pipe extending from the mouth of the hose. The Board also held, and we think correctly, that such fluidizing action is so analogous to the fluidizing and load introducing action depicted in FIG. 2 of Randall as to make it obvious to provide Hermanns with a bottom connection and pressure fluidizing means of the type shown in the secondary reference.

The Board considered the diffusor recited in claim 6 to be defined in language which embraces the structure present where a pipe such as the suction conduit of Hermanns delivers material to the container. We think the fact that Hermanns states that material sucked into the container falls to its bottom while the air enters the suction pipe to the pump demonstrates that the construction includes means amounting to a "diffusor" meeting the broad language of the claim. Appellant sets forth no significant argument to the contrary.

As to the use of a pair of separator tanks required by claim 7, such feature is unquestionably made obvious by Goebels.

[1] The decision is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE FRANK B. ROSENBERGER AND CORWIN R. BRANDT

No. 7827. Decided December 7, 1967

[—CCPA—; 386 F.2d 1015; 156 USPQ 214]

1. PATENTABILITY—PROCESS—COATED MOLDED RESIN.

We cannot sustain the rejection insofar as it relies on the Varela reference. The Examiner attempted to equate the process steps of the application to those of Varela by considering the sprayed-on mold coating of Varela to be equivalent to the molding resin charge of the application, and the molding resin charge of Varela to be equivalent to the coating resin of the application. This appears to be an extremely strained interpretation of the reference which could only be made by hindsight.

2. SAME—PARTICULAR SUBJECT MATTER—"METHOD OF IMPARTING HIGH GLOSS AND STAIN-RESISTANCE TO THERMOSETTING MOLDED ARTICLES."

The refusal of certain claims in an application entitled "Method of Imparting High Gloss and Stain-Resistance to Thermosetting Molded Articles," as unpatentable over the prior art is reversed as to some of the claims and affirmed as to the remaining claims "which do not appear to define the one feature which distinguishes appellants' invention" from the prior art process.

APPEAL from the Patent Office. Serial No. 30,435.

MODIFIED.

George B. Campbell, Arthur J. Plantamura for appellants.

Joseph Schimmel (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, and ALMOND, *Associate Judges*, and WILLIAM H. KIRKPATRICK [1]

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Board of Appeals affirming the rejection of claims 1–4, 6–11, 13–17, and 19, all of the claims in the application.[2]

Appellants' invention is a method for producing a smooth, glossy, stain-resistant surface on molded plastic dinnerware. The method comprises, briefly, partially curing a preformed charge of a molding compound, placing a second particularly defined granular amine-formaldehyde resin on the surface of the partially cured charge, and molding and curing the charge and the second resin in a manner to cause uniform flow of the second resin over the partially cured charge forming an integral coherent coating.

Claims 1 and 3 are illustrative:

1. A process of producing a molded thermoset object having a glossy, stain-resistant surface that comprises: introducing into a molding zone, a charge comprising a molding compound of a fusible, thermosetting resin of the group consisting of urea- and melamine-aldehyde resins; molding said charge while in said molding zone into a partially cured molded object; introducing, in granular form, on at least one surface of said object, a second, fusible, thermosetting resin of the group consisting of melamine- and benzoguanamine-aldehyde resins and which, as measured by "Flow Time Determination," has a flow time of from 1 to 15 seconds; continuing molding of said charge with said second, fusible, thermosetting resin thereon at a rate to cause flow of said second, fusible, thermosetting resin uniformly over the surface of said object prior to final curing of said charge and said fusible, thermosetting resin thereon; and thereafter continuing molding until said charge and said flowed resin thereon are finally cured as an integral object.

3. A process of producing a molded thermoset object of dished configuration having a glossy, stain-resistant generally concave surface that comprises: introducing into a molding zone a charge comprising a molding compound of a fusible, thermosetting resin of the group consisting of urea- and melamine-aldehyde resins; forming said charge into an object of dished configuration and partially curing the thermosetting resin; introducing, in granular form, on the resulting generally concave surface of the dished object and substantially centrally thereof, a second, fusible, thermosetting resin of the group consisting of melamine- and benzoguanamine-aldehyde resins and which, as measured by "Flow Time Determination," has a flow time of from 1 to 15 seconds; molding said dished object, while the generally concave surface thereof faces upwardly, with said second, fusible, thermosetting resin thereon by applying a downwardly directed force to said surface at a rate to cause flow of said second, fusible, thermosetting resin uniformly over said surface of said object prior to final curing of said charge and said fusible, thermosetting resin thereon; and thereafter, continuing molding of said object until said charge and said flowed resin thereon are finally cured as an integral object.

Claims 9, 10, 11, and 17 are similar to claim 3 but contain the further limitation that a decorative foil is interposed between the partially cured preform and the coating resin. Claim 2 is directed to the product produced by the process of claim 1.

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Serial No. 30,435, filed May 20, 1960, for "Method of Imparting High Gloss and Stain-Resistance to Thermosetting Molded Articles."

The references are:

Nast, 2,244,565, June 3, 1941.
Barlow et al., 2,646,380, July 21, 1953.
Varela et al., 2,781,553, February 19, 1957.

Varela was concerned with the same problem as appellants—the formation of a protective surface on molded dinnerware. In reviewing the prior art, Varela states:

> Among the general methods of applying a surface to molding compositions are dusting, dipping, spraying and placing a pill preform of surfacing compound on a core preform and then molding. The dusting technique is utilized in a two-step molding process for glazing the top surface of fairly non-complex shapes such as plates and table tops. By this method, a suitable core material is partially cured, the mold then opened, a layer of surfacing resin dusted on the surface, and the cure of the material then completed. Such a surface, however, does not have adequate durability to resist cracking during thermal stress. * * * In the pill preform technique the general method is to place a charge in a mold and form a preform. The mold is opened after a set interval and an electronically warmed pill preform is inserted, the mold reclosed and the cure completed. Objects prepared in this manner do not pass the stoving and acid boil test. In the stoving test the object is maintained at an elevated temperature for an extended period, e.g. 77° C. and 8 hours, to test the surface coverage. The acid boil test also tests the surface coverage by placing the object in boiling acid for a certain period, e.g. 1% H_2SO_4 for 10 minutes. Due to the shrinkage difference between the base material and the coating material, cracking of the surfaces results. Also, the entire surfacing of the object is not always accomplished.

Varela claims to have solved these problems by spraying a solution of the coating resin on his mold, allowing the solvent to evaporate and the resultant film to partially cure, and then introducing molding compound into the mold. The molding of this compound with the coating on the mold causes fusion of the base compound and the film to form an integral coated object.

Nast teaches a process for producing molded articles from partially cured layers of thermosetting resin:

> The process of the present invention is distinguished from such prior art process in that the article is produced by a single thermosetting operation, the button, bottle stopper, or similar article being produced in a single mold in which a quantity of synthetic resin of one color is first partially cured, a second layer of synthetic resin of a different color being thereafter placed over the first layer, the heated mold members being brought together so as to cure or set completely the synthetic resin of both layers by heat and pressure. * * *
>
> My novel product may be formed of any suitable material, for instance, any of the well-known synthetic resins, including phenol formaldehyde resin, urea resin, or any other composition material. * * *

Barlow teaches improvements in applying a decorated sheet to a partially cured molded article:

> According to the invention, the method of moulding an article from a thermosetting moulding powder comprises applying the required design to absorbent paper of a thickness of 1.5–7.0 thousandths of an inch, impregnating the decorated paper with a synthetic resin varnish of the same or similar type as the thermosetting moulding powder, passing the impregnated paper between rolls to remove excess resin, drying the impregnated paper, moulding the article, opening the mould before curing is completed, applying the impregnated sheet to the surface to be decorated, replacing the article in the mould, completing the curing of the article, and removing the moulding.

Barlow does not mention placing a second resin over a partially cured decorated article.

The Examiner rejected claims 1–3, 6–8, 13–16, and 19 as unpatentable over Varela or Nast, and claims 9–11 and 17 as unpatentable over Varela or Nast "with the addition of Barlow," and these rejections were affirmed by the Board.

[1] We cannot sustain the rejection insofar as it relies on the Varela reference. The Examiner attempted to equate the process steps of the application to those of Varela by considering the sprayed-on mold coating of Varela to be equivalent to the molding resin charge of the application, and the molding resin charge of Varela to be equivalent to the coating resin of the application. This appears to be an extremely strained interpretation of the reference which could only be made by hindsight.

In his brief, the Solicitor argues:

> Regardless of whether the Examiner was correct in his usage of the term "equivalent," it is clear that the Board affirmed the Examiner because the Board considered that it would be obvious to a person of ordinary skill in the art to use the dusting method disclosed by Varela et al. to be old in the art instead of the spraying method preferred by Varela et al. to apply the coating. * * *

We disagree. This argument assumes that Varela teaches that spraying the mold and dusting the preform are equivalent methods. This is incorrect, for Varela clearly teaches that the dusting and pill preform methods of coating yield unsatisfactory products. The teaching of Varela therefore discourages research in the very field where appellants made their invention. Appellants have shown prima facie by affidavit their products to be superior to those produced by the dusting and pill preform methods disclosed by Varela. They have invented a method for producing an effective protective coating in the face of art which strongly suggests that such a method would produce unacceptable results. This is the very antithesis of obviousness.

The Nast reference presents a different situation. Nast teaches the formation of a molded, partly cured preform, and the deposition of a "layer" of a second material over the preform. While Nast does not specify the physical characteristics of this layer, he does say it is a "like synthetic resin material of a second color," meaning like the first molding material. Since molding materials are commonly supplied in granular form, as evidenced by the Varela and Barlow references, it seems clear that Nast contemplates covering the preform with a granular material and subsequently molding to fuse the two layers. Nast covers his preform with a layer of a second resin, and is not therefore concerned with an outward flow of resin, as are appellants. The flow characteristics of the Nast resin are unimportant as long as that resin is moldable. This being so, the Nast reference contemplates resins of virtually any flow characteristics, including the resins specified by appellants. The only feature of appellants' invention which appears to distinguish it from the Nast process is the deposition of coating resin centrally of the molded preform, and its subsequent outward flow to form an integral coherent coating. This concept is not obvious from the Nast reference, and, as pointed out above, is quite unobvious from the Varela reference.

[2] We, therefore, *reverse* the rejection of claims 3, 4, 6, 7, 8, 9, 10, 11, 15, 16 and 17, all of which express this inventive concept. However, we *affirm* the rejection of claims 1, 2, 13, 14, and 19 which do not appear to define the one feature which distinguishes appellants' invention from the process of Nast.

Claim 2 of appellants' application was also rejected as being an improper product by process claim. Since we find this claim to have been properly rejected on the prior art, it is unnecessary for us to consider this additional rejection.

The decision of the Board of Appeals is modified.

MODIFIED.

U.S. Court of Customs and Patent Appeals

IN RE PETER ZIMMER

No. 7876. Decided January 11, 1968

[55 CCPA —; 387 F.2d 990; 156 USPQ 252]

1. PATENTABILITY—REFERENCE—FOREIGN PATENTS.
   "In our view, however, the Examiner and Board have read nothing into the disclosure and operation of the references which one of ordinary skill in the art would not understand to be implicitly there. The fact that both references are foreign patents is immaterial in that regard. *In re Moreton*, 48 CCPA 875, 288 F.2d 708, 129 USPQ 227."
2. SAME—PARTICULAR SUBJECT MATTER—SCREEN PRINTING CARPETS.
   The decision of the Board of Appeals, refusing certain claims to a process and apparatus for screen printing thick textile material such as carpets as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 298,189.

AFFIRMED.

Wenderoth, Lind & Ponack, John E. Lind for appellant.

Joseph Schimmel (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, and ALMOND, *Associate Judges*, and WILLIAM H. KIRKPATRICK [1]

WORLEY, *Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals affirming the Examiner's rejection of claims 7 and 8 [2] as "unpatentable over" Zimmer [3] under 35 U.S.C. 102 and "unpatentable over" Courtney [4] under 35 U.S.C. 103.

The invention relates to a process and apparatus for screen printing thick textile material, such as carpeting. The process involves applying pressure through a stencil screen placed over the material to be printed shortly before a doctor roller applies printing dye through the image areas of the screen. According to appellant, the purpose of the pressure application is to deaerate the textile material, thereby improving the penetration of the dye. Appellant's apparatus employs a second roller—termed a "pressure roller" and placed just in front of the doctor roller—to apply the pressure, as reflected in claim 8:

> 8. Device for the printing of textiles of great thickness such as carpets comprising a screen stencil to be placed on the material to be treated, a color doctor movable above said screen stencil for the application of a dye to said material and a pressure roller to deaerate the material to be treated moving jointly with and parallel to said doctor thus rolling before said doctor and said dye on said screen stencil, whereby the treated material is deaerated along its entire breadth prior to applying the dye.

The Examiner noted that both Courtney and Zimmer disclose apparatus for screen printing of textiles which employs two rollers for applying ink through the stencil. He thought it apparent that the front or leading roller of the double roller arrangement of either reference "would inherently act as a pressure roller to deaerate a portion of the material to be treated" while the back or trailing roller acts as a doctor roller to apply the dye. The Examiner also observed that Zimmer, like appellant, initially places the dye between the two rollers and that Courtney, in disclosing spraying dye "on the leading side and/or trailing side" of the rollers, rendered initial placement of the dye between the rollers obvious.

The Board agreed, adding:

> Obviously, in both patents it is contemplated that the rollers must be subjected to considerable pressure which would inherently compress the fabric material being printed.

Appellant has presented no argument which convinces us of error in the reasoning of the Examiner and Board. While it is true, as appellant contends, that neither reference expressly discloses that the textile material is "deaerated" prior to the application of the dye by the doctor roller, Courtney does clearly disclosed that his rollers are adjustable to roll over the stencil screen "with a downward pressure according to the depth of penetration [of the dye] required." We have considered appellant's arguments, unsupported by evidence, as to the alleged operation of the apparatus disclosed by those references in practice. **[1]** In our view, however, the Examiner and Board have read nothing into the disclosure and operation of the references which one of ordinary skill in the art would not understand to be implicitly there. The fact that both references are foreign patents is immaterial in that regard. *In re Moreton*, 48 CCPA 875, 288 F.2d 708, 129 USPQ 227.

[2] The decision is affirmed.

AFFIRMED.

SMITH, *J.*, concurring.

While I would affirm the decision of the Board, my difficulty with the majority opinion is that I am unable to determine from it which of the stated rejections are affirmed.

On the present record, three distinct rejections are before the court. Error was properly assigned as to each in appellant's assignment of reasons for appeal, although appellant's brief is primarily directed to the initial two rejections. Under these circumstances it is my belief that the majority should have explicitly set forth the ground or grounds of rejection on which it relies.

A review of these rejections demonstrates the desirability of specifying the precise basis of the majority opinion for several reasons: (1) such a statement assures a careful analysis of the claims and prior art according to the applicable statutory ground of rejection thus enunciated, (2) it governs any further proceedings in the appeal, and (3) it governs further proceedings in the Patent Office should appellant decide to exercise his right to file continuation or continuation-in-part applications.

In his final rejection, the Examiner considered claims 5 and 6 as "unpatentable over each of Zimmer or Courtney." The statutory ground or grounds of rejection were not set forth, nor was language used from which the statutory basis for this rejection could be determined.

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Appearing in Serial No. 298,189, filed July 29, 1963.

[3] British Patent No. 743,850, January 25, 1956.

[4] Australian Patent No. 135,057, November 3, 1949.

In his answer, however, the statement of that rejection is:

> Claims 7 and 8 are rejected under 35 U.S.C. 102 as unpatentable over Zimmer. * * *
>
> Claims 7 and 8 are further rejected under 35 U.S.C. 103 as unpatentable over Courtney. * * *

The Board was less clear. It first stated:

> * * * we find no reversible error in the Examiner's holding that the subject matter of the claims on appeal is made obvious to one ordinarily skilled in the art by the prior art.

Since the "prior art" to which the Board refers is unstated, the only reasonable interpretation is that the Board affirmed the Examiner's rejection under 35 U.S.C. 103 based upon the Courtney reference. In any event, no other reference was cited by the Examiner in support of an "obviousness" rejection.

The Board also agreed with the Examiner that claims 7 and 8 are "unpatentable over Zimmer under 35 U.S.C. 102 * * *." Thus, at this point, both of the grounds of rejection explicitly stated by the Examiner were affirmed.

However, the Board continued:

> * * * In any event, it is obvious that the rollers of FIG. 8 of Zimmer could be machine driven in the manner shown in FIG. 5 of Courtney. Likewise, the ink could be applied only between the rollers of FIG. 5 of Courtney, as taught by Zimmer, instead of being applied by means of a felt pad. Obviously, in both patents it is contemplated that the rollers must be subjected to considerable pressure which would inherently compress the fabric material being printed.

The invention, as claimed in claim 7, is directed to a process, as follows:

> 7. Process for the printing of textiles of great thickness such as carpets comprising disposing a screen stencil on the material to be printed, then compressing said material upon said stencil to deaerate a portion thereof immediately preceding the application of the dye and then applying the dye on said deaerated portion of the material to be treated by means of a color doctor through said screen stencil.

Appellant explains that the tendency of the long-haired or thick webs of materials to inhibit the penetration of the dye is overcome by compressing the material to be dyed along a strip in parallel with the color doctor. Appellant attributes the improved results allegedly achieved by his invention to "deaeration," and states:

> Thus, the material is quasi deaerated before application of the dye so that complete penetration of the color spread by a doctor is guaranteed down to the bottom of the material.

Both of the appealed claims require compression to the point of "deaeration." Appellant here argues that the question involved is whether the references alone or in combination disclose the provision of a deaerated zone immediately before the printing roller.

In my view, the rejection of claims 7 and 8 over Zimmer under 35 U.S.C. 102 cannot be sustained. Zimmer does not contain sufficient disclosure to "anticipate" the invention as claimed, particularly with respect to the compression effecting "deaeration" of the material.

However, it seems clear that the differences between the appealed claims and the Courtney patent are such that, under 35 U.S.C. 103, the claimed invention, considered as a whole, would have been obvious to one of ordinary skill in the art at the time it was made. I would, therefore, affirm the decision of the Board solely on this ground.

U.S. Court of Customs and Patent Appeals

IN RE WALTER S. KAGHAN, WILLIAM J. SCHMITT, AND PERCY M. KAY

No. 7852. Decided December 14, 1967

[55 CCPA —; 387 F.2d 398; 156 USPQ 130]

1. Res Judicata—Waiver by Published Procedures.

   "Recognizing the differences of opinion in this court concerning the right of the Patent Office to make rejections on the basis of *res judicata*, we will in this case follow the lead of appellants and assume without deciding that the Patent Office may, in a proper case, utilize a *res judicata* rejection. The issue we feel dispositive of this case is whether the Patent Office has waived its assumed right to use the *res judicata* rejection by statements made in its published procedures."

2. Same—Continuation Application—Manual of Patent Examining Procedure, Section 201.07—35 U.S.C. 120.

   "It seems to us that the sections of the MPEP relied upon by appellants clearly approve of the practice which was followed by appellants. MPEP section 201.07 allows an applicant to file a continuation application and so establish a right to further examination by the Examiner. Such continuation applications can be filed at any time before the 'termination of proceedings on the first application.' 35 U.S.C. 120. Following a Board of Appeals decision, proceedings are considered terminated 'when the time for appeal to the court or review by civil action has expired and no such appeal or civil action has been filed.' We interpret these passages as establishing the right of an applicant to file a continuation application following an adverse Board of Appeals decision within the time allowed for further appeal, and as establishing his right to have that application examined. A holding of *res judicata* without reliance on any other ground of rejection is not an examination on the merits of the application and so may not be used in such a situation."

3. Same—Same—Manual of Patent Examining Procedure, Section 706.03(w).

   In connection with a holding that "*res judicata* without reliance on any other ground of rejection" may not be applied to a continuation application, further *Held* that "This analysis is completely consistent with MPEP 706.03(w) which instructs the Examiner not to use *res judicata* unless 'the earlier decision was a final, appellate one, such as a Board of Appeals decision where the time limit for further remedies has expired.' "

4. Rules—Rules of Practice Have Force of Law—Manual of Patent Examining Procedure—35 U.S.C. 6.

   "Our reasoning in this case involves not only the statutes and the Rules of Practice, which have the force of law insofar as they are consistent with the statutes (see 35 U.S.C. 6; *Land* v. *Dreyer*, 33 CCPA 1108, 155 F.2d 383, 69 USPQ 602), but also the MPEP. This manual is not provided for expressly in the statutes, but is primarily a set of instructions to the examining corps of the Patent Office from the Commissioner acting in his supervisory capacity."

5. Manual of Patent Examining Procedure—Judicial Notice—Applicant Entitled to Rely on Manual.

   "While the MPEP is primarily published for internal use, it is also made available to patent applicants and their lawyers as well as to the general public through the Superintendent of Documents. We take judicial notice of the fact that the manual is used frequently by patent lawyers and agents in advising applicants and in preparing their various papers for filing in the Patent Office, and also of the fact that examiners frequently cite provisions of the manual in their communications with patent applicants. Under these circumstances, we feel that an applicant should be entitled to rely not only on the statutes and Rules of Practice but also on the provisions of the MPEP in the prosecution of his patent application."

6. Same—Res Judicata—Rejection Waived by Manual.

   "We * * * hold that the Patent Office, by its own published procedures [in the Manual of Patent Examining Procedure], has waived the right to apply a *res judicata* rejection in these circumstances."

7. Appeal to U.S. Court of Customs and Patent Appeals—Matter Before Court—Art Rejection Withdrawn by Examiner.

   "Appellants urge us to declare their invention patentable on the ground that the Examiner's withdrawal of the rejection based upon art should be con-

> sidered 'an acknowledgment that claims 6 and 7 are directed to patentably novel subject matter.' The question of the art rejection was not before the Board, however, and is not before us."

REVERSED.

Robert H. Bachman (*Edward J. Mahler*, of counsel) for appellants.
Joseph Schimmel for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, ALMOND, and SMITH, *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of claims 6 and 7, all of the claims in the application entitled "Method for Improving Electric Glow Discharge Treatment of Plastic Materials." The application before us is Serial No. 184,404 and was filed April 2, 1962 as a continuation-in-part of application Serial No. 602,506, filed August 7, 1956.

The invention involves the corona discharge treatment of polyolefin film in order to make the surface of the film receptive to inks or other coating materials. The novelty of appellants' invention resides in providing a coating of chlorosulfonated polyethylene on one of the electrodes used to produce the corona discharge. The use of polyethylene and polyester coatings on such electrodes is old in the art, but appellants claim "unique and astonishing durability" of the chlorosulfonated polyethylene in this application.

Claim 6 is illustrative:

> 6. In the preparation of a polyolefin film having a surface rendered adherent to coating compositions by treatment with a high energy corona discharge between a pair of closely spaced substantially parallel electrodes one of which is grounded, one of said electrodes being a metallic roll and the other being a narrow elongated electrode, the process comprising providing one of said electrodes with a surface layer 0.05 to 0.25 inch in thickness of vulcanized chlorosulfonated-polyethylene having a non-conductive finely-divided pigment incorporated therein as an essential ingredient establishing a corona discharge at a potential of about 3,000 to 30,000 volts between the said electrodes, and passing said film through said discharge while in contact with the said surface layer.

In the parent application, appellants presented claims to the same process, but of somewhat different scope. The claims of the parent application were finally rejected by the Examiner on the combination of a patent which showed the use of a polyethylene electrode coating in the same apparatus and commercial literature which describes chlorosulfonated polyethylene as having excellent "corona-resistance." The Examiner held it to be obvious in view of this teaching of good corona resistance to substitute the chlorosulfonated polyethylene for the polyethylene coating of the prior art. The Board of Appeals affirmed this rejection.

Before the time for taking an appeal from the Board's decision had expired, appellants, presumably relying on 35 U.S.C. 120 and published procedures of the Patent Office, filed a continuation-in-part application, which is the application now before us. This application contains disclosure not in the parent application and, as noted above, the claims are similar but of different scope.

The Examiner rejected the instant application both on art applied as in the parent application and on the ground of *res judicata*. However, the Examiner's answer before the Board of Appeals stated:

> Claims 6 and 7 stand rejected both on the art and on the ground of res judicata. To simplify the issue, the rejection on art is withdrawn. This leaves claims 6 and 7 rejected on the sole ground of res judicata since there is *no patentable distinction* between these claims and claims 12–15 in the Parent Application 602,506 which went abandoned after the adverse Board decision rendered on January 30, 1962 in Appeal No. 235—63.

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

The Board of Appeals affirmed this rejection, and appellants filed an appeal to this court.

The sole question before us is whether, on these facts, the application of the doctrine of *res judicata* by the Patent Office is proper.

In their brief, appellants do not question whether the Patent Office, as an administrative agency, has the right to invoke the doctrine of *res judicata* in an ex parte proceeding. Rather, appellants assume that the Patent Office has that right, but argue that the use of the rejection on the facts here present constitutes a clear violation of the practices and published procedures of the Patent Office.

Specifically, appellants point to the "Manual of Patent Examining Procedure" section 706.03(w) which currently [2] reads:

> 706.03(w) Res Judicata
>
> A prior adjudication against the inventor on the same or similar claims constitutes a proper ground of rejection as *res judicata*. * * *
>
> The rejection should only be used when the earlier decision was a final, appellate one, such as a Board of Appeals decision *where the time limit for further remedies has expired*, or a decision by the Court of Customs and Patent Appeals. But see 201.11, last paragraph, for a special situation. [Emphasis added.]
>
> "When making a rejection on res judicata, action should ordinarily be made also on the basis of prior art."

See also 201.07 (the reference to 201.07 is to its second paragraph, as follows):

> Where an application has been prosecuted to a final rejection an applicant may have recourse to filing a continuation in order to introduce into the case a new set of claims and *to establish a right to further examination* by the Primary Examiner. [Emphasis added.]

Appellants argue that they filed their new application before the time limit for further appeals had expired, and that this filing prevented the Board of Appeals decision from becoming a "final, appellate one."

[1] Recognizing the differences of opinion in this court concerning the right of the Patent Office to make rejections on the basis of *res judicata*,[3] we will in this case follow the lead of appellants and assume without deciding that the Patent Office may, in a proper case, utilize a *res judicata* rejection. The issue we feel dispositive of this case is whether the Patent Office has waived its assumed right to use the *res judicata* rejection by statements made in its published procedures. See *Overland Motor Company* v. *Packard Motor Company*, 274 U.S. 417 (1926); *In re Fried*, 50 CCPA 954, 312 F.2d 930, 136 USPQ 429; *In re Hitchings*, 52 CCPA 1141, 342 F.2d 80, 144 USPQ 637.

[2] It seems to us that the sections of the MPEP relied upon by appellants clearly approve of the practice which was followed by appellants. MPEP section 201.07 allows an applicant to file a continuation application and so establish a right to further examination by the Examiner. Such continuation applications can be filed at any time before the "termination of proceedings on the first application." 35 U.S.C. 120. Following a Board of Appeals decision, proceedings are considered terminated "when the time for appeal to the court or review by civil action has expired and no such appeal or civil action has been filed." [4] We interpret these passages as establishing the right of an applicant to file a continuation application following an adverse Board of Appeals decision within the time allowed for further appeal, and as establishing his right to have that application examined. A holding of *res judicata* without reliance on any other ground of rejection is not an examination on the merits of the application and so may not be used in such a situation.

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[2] Although this section of the MPEP has been somewhat revised since the date appellants filed their continuation-in-part application, neither party suggests that the changes are pertinent to the issues here involved.

[3] See, for example, the dissenting opinion and Judge Rich's concurring opinion in *In re Herr*, 54 CCPA —, 377 F.2d 610, 153 USPQ 548.

[3] This analysis is completely consistent with MPEP 706.03(w) which instructs the Examiner not to use *res judicata* unless "the earlier decision was a final, appellate one, such as a Board of Appeals decision where the time limit for further remedies has expired."

[4] Our reasoning in this case involves not only the statutes and the Rules of Practice, which have the force of law insofar as they are consistent with the statutes (see 35 U.S.C. 6; *Land* v. *Dreyer*, 33 CCPA 1108, 155 F.2d 383, 69 USPQ 602), but also the MPEP. This manual is not provided for expressly in the statutes, but is primarily a set of instructions to the examining corps of the Patent Office from the Commissioner acting in his supervisory capacity. The Commissioner can and does change portions of these instructions frequently.

[5] While the MPEP is primarily published for internal use, it is also made available to patent applicants and their lawyers as well as to the general public through the Superintendent of Documents. We take judicial notice of the fact that the manual is used frequently by patent lawyers and agents in advising applicants and in preparing their various papers for filing in the Patent Office, and also of the fact that Examiners frequently cite provisions of the manual in their communications with patent applicants. Under these circumstances, we feel that an applicant should be entitled to rely not only on the statutes and Rules of Practice but also on the provisions of the MPEP in the prosecution of his patent application. As this court stated in a footnote to *In re Fried*, supra:

> We here observe that the express provisions of MPEP set forth an established Patent Office policy on which applicants for patents are entitled to rely in good faith in the orderly conduct of their business in the Patent Office.

[6] We therefore hold that the Patent Office, by its own published procedures, has waived the right to apply a *res judicata* rejection in these circumstances.

[7] Appellants urge us to declare their invention patentable on the ground that the Examiner's withdrawal of the rejection based upon art should be considered "an acknowledgment that claims 6 and 7 are directed to patentably novel subject matter." The question of the art rejection was not before the Board, however, and is not before us. Our decision is only that the *res judicata* rejection was erroneous.

During oral argument, appellants and the Solicitor discussed the application of *In re Herr*, supra, note 3, to the facts here presented. That case was handed down after the briefs were filed, and hence was not discussed therein. Since the parties did not have the opportunity to consider that decision in their written briefs, and since we think that reversal of the Board is necessary on the arguments presented in the briefs, we have not considered the possible application of *In re Herr* to these facts.

The decision of the Board of Appeals is reversed.

REVERSED.

WORLEY, *Chief Judge*, and KIRKPATRICK, *J.*, concur in the result.

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[4] Rule 197 (c), Rules of Practice of the United States Patent Office in Patent Cases.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,471,758. (See 2,584,891.)

2,500,864, Preaus and Ross, AWNINGS OF METAL OR SIMILAR MATERIAL, **filed** Jan. 19, 1965, D.C., E.D. Mo. (St. Louis), Doc. 65C24(1), *Charles M. Preaus and The McAlpin Co.* v. *Belair Industries, Inc. et al.* Judgment filed decreeing plaintiff Preaus take nothing and dismissing cause on the merits, Mar. 21, 1968.

2,584,891, C. F. Libby, NARROW WEB WITH LOCKED SELVAGE AND METHOD OF MAKING SAME; **2,471,758**, same, SELVAGE FORMING MECHANISM, **filed** Jan. 25, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C–70, *Libby Family Trusts* v. *Lewis Weiner Engineering Co. et al.* Stipulation discontinuing action, Mar. 21, 1968.

2,671,246, N. Lester, MOLD OVERLOAD COMPENSATOR, **filed** Apr. 19, 1968, D.C., N.D. Ohio (Cleveland), Doc. C68–280, *Lester Engineering Co.* v. *Van Dorn Co.*

2,746,291, R. C. Swengel, FLUID VELOCITY MEASURING SYSTEM, **filed** Apr. 18, 1968, D.C. Md. (Baltimore), Doc. 19419–C, *Robert C. Swengel, Sr.* v. *Westinghouse Electric Corp.*

2,787,782, Rosenblum and Mirkin, GAS-RESPONSIVE SIGNAL ACTUATOR, **filed** Feb. 15, 1967, D.C., S.D.N.Y., Doc. 67–C–651, *William H. Rosenblum et ano.* v. *Union Industrial Equipment Corporation.* Consent judgment, defendant permanently enjoined, Apr. 17, 1968.

2,800,458, B. K. Green, OIL-CONTAINING MICROSCOPIC CAPSULES AND METHOD OF MAKING THEM; **Re. 24,899**, same, **filed** Apr. 18, 1968, D.C. Del. (Wilmington), Doc. 3518, *National Cash Register Company* v. *Minnesota Mining & Manufacturing Company, Inc. and Charles Pfizer & Co.* (*Coty Division*).

2,825,048, H. A. Corbett, PRESERVED FISH FOOD, **filed** Mar. 1, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–333–FW, *Wardley Products Company, Inc.* v. *Frank Adams and Dennis H. Tugwell, doing business as Aquatrol Company.*

2,903,977, I. U. Bronislaus, TRAILER SPOTTING APPARATUS AND TRACTOR, **filed** Aug. 31, 1967, D.C., E.D. Mich. (Detroit), Doc. 30323, *Simplicity Manufacturing Company, Inc.* v. *Yard-Man Incorporated.* Stipulation and order of dismissal with prejudice, Jan. 11, 1968.

2,925,719, Robbins and Linn, REFRIGERATING PACKAGE, **filed** Feb. 6, 1968, D.C., W.D. Wis. (Madison), Doc. 68–C–23(M), *Kwik-Kold, Inc.* v. *Mueller Chemical Company, Inc. and Curt Mueller.*

2,967,440, Junkmann, Kathol and Richter, INJECTABLE HORMONE PREPARATIONS, **filed** Mar. 19, 1968, D.C., M.D.N.C. (Greensboro), Doc. C–32–WS–68, *E. R. Squibb, Inc.* v. *Winston Pharmaceuticals, Inc.*

3,044,415, C. A. Dehne, MECHANISM FOR PROPELLING A LOAD CARRYING VEHICLE BETWEEN MAIN AND BRANCH LINES OF A MATERIAL HANDLING SYSTEM; **3,044,416**, Reibel, Purdon and Pachuta, CONVEYOR TROLLEY WITH RELEASABLE DRIVING DOG; **3,229,645**, C. A. Dehne, POWER AND FREE CONVEYORS; **3,314,377**, same, CONSTRUCTION FOR TRANSFERRING A CONVEYOR CARRIER BETWEEN POWER LINES; **3,347,171**, G. A. Torrance, CARRIER STOP AND TRACK HANGER FOR POWER AND FREE CONVEYORS, **filed** Apr. 10, 1968, D.C., E.D. Mich. (Detroit), Doc. 31133, *Jervis B. Webb Company* v. *American Chain and Cable Company.*

3,044,416. (See 3,044,415.)

3,056,006, J. J. Dozier, IGNITION SYSTEM FOR INTERNAL COMBUSTION ENGINES, **filed** Apr. 2, 1968, D.C., District of Columbia (Washington), Doc. CA810–68, *Tri State Maintenance Corporation* v. *N.E.O. Inc.* **Same, filed** Apr. 2, 1968, D.C., District of Columbia (Washington), Doc. CA811–68. **Same, filed** Apr. 2, 1968, D.C. District of Columbia (Washington), Doc. CA812–68, *Tri State Maintenance Corporation* v. *Washington Marina Company.* **Same, filed** Apr. 2, 1968, D.C. District of Columbia (Washington), Doc. CA813–68. **Same, filed** Apr. 2, 1968, D.C. District of Columbia (Washington), Doc. CA815–68, *Tri State Maintenance Corporation* v. *Wm. J. Little, Inc.*

3,229,645. (See 3,044,415.)

3,257,262, E. N. Epstein, LAMINATED FABRIC, **filed** Apr. 15, 1968, D.C., S.D.N.Y., Doc. 68–C–1521, *Lock-Lined, Inc.* v. *Deering Millikin, Inc. et al.*

3,287,214, Taylor and Prindle, SURFACE DISINFECTANT AND SPACE DEODORANT AEROSOL SPRAY COMPOSITIONS, **filed** Apr. 18, 1968, D.C., E.D. Wis. (Milwaukee), Doc. 68–C–105, *Sterling Drug Inc.* v. *S. C. Johnson & Son, Inc.*

3,314,377. (See 3,044,415.)

3,321,143, V. D. Claiborne, METHOD OF PRODUCING GRANULATED ALUMINUM, **filed** Apr. 18, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–627–HP, *U.S. By-Products Corporation* v. *Cal Crushing Corporation.*

3,347,171. (See 3,044,415.)

Re. 24,899. (See 2,800,458.)

Re. 25,000, F. E. Roland, IMPACT HOLE FORMING METHOD AND MECHANISM THEREFOR, **filed** Dec. 11, 1967, D.C., W.D. Wash. (Tacoma), Doc. 3669, *R and W Construction Company, Inc.* v. *Westbar Company.*

REISSUES

SEPTEMBER 10, 1968

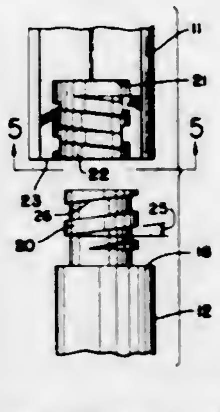
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,452
GUN DRILL

Howard K. Dearborn, 31 Manning Drive,
Berea, Ohio 44017

Original No. 3,153,356, dated Oct. 20, 1964, Ser. No. 245,088, Dec. 17, 1962. This application is a continuation of reissue application Ser. No. 517,177, Dec. 14, 1965. Application for reissue July 12, 1967, Ser. No. 661,143

14 Claims. (Cl. 77—68)



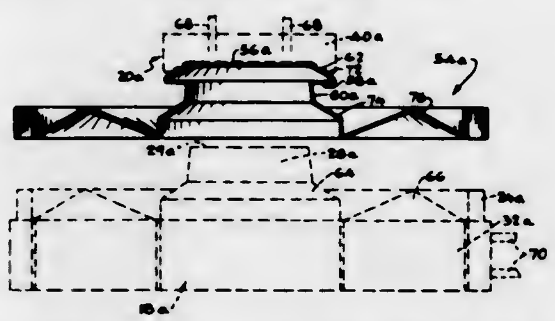
A tool for precision drilling including a shank suitable for use with a wide variety of detachable tips. The tool includes a shank portion including a socket defined therein and at least one longitudinal chip groove. The chip groove intersects the socket to provide a lateral opening therein. The detachable tip portion has an extension thereon of a reduced diameter with respect to the remainder of the tip portion and is adapted to be received in the socket of the shank as by lateral movement of the tip with respect to the shank. Cooperating thread means are defined on the tip and the shank whereby these elements may be coupled together. The thread angle is in the range of from 3° to 9° with respect to a transverse plane normal to the axis of the shank. The tip may be detached from the shank by rotating the tip about 110° with respect to the shank. The tip may then be lifted out laterally through the chip groove. Insertion is performed in a similar manner as the tip and shank are brought into overlying relationship at the chip groove and rotated slightly.

26,453
THIN WALLED PLASTIC CLOSURE

Bryant Edwards, Clarendon Hills, Ill., assignor to Illinois Tool Works, Chicago, Ill., a corporation of Illinois

Original No. 3,105,607, dated Oct. 1, 1963, Ser. No. 109,225, May 10, 1961. Application for reissue Aug. 18, 1965, Ser. No. 484,509

11 Claims. (Cl. 220—42)



The present disclosure sets forth an article made of thermoformed sheet plastic, wherein the sheet material, while in semi-plastic condition is caused to engage a portion of the thermoforming apparatus of predetermined shape, and cooled thereby; the sheet being thereafter subjected to air pressure while the engaged portion of the sheet remains in fixed position, whereby to enable the production of sharp undercuts in the thermoformed plastic sheet, without the use of split molds or the like.

26,454
STAINLESS STEEL STRIP, WIRE, WOVEN WIRE BELTS AND CLOTH, AND METHODS OF MAKING THE SAME

George N. Goller, Towson, Md., assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

No Drawing. Original No. 3,100,729, dated Aug. 13, 1963, Ser. No. 105,878, Apr. 27, 1961. Application for reissue May 4, 1964, Ser. No. 375,685

23 Claims. (Cl. 148—12.3)

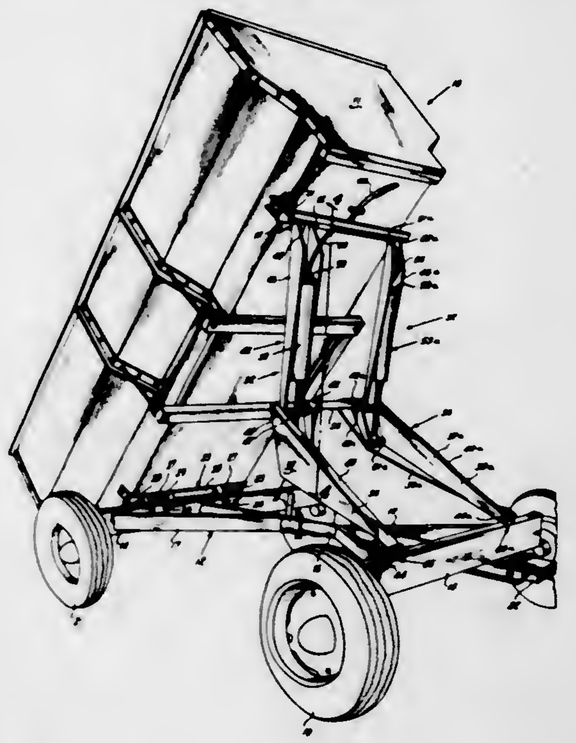
Stainless steel strip, wire and wire products, i.e., Fourdrinier wire, cloth, belt, etc. comprising about 16% to 26% chromium, about 6% to 22% nickel, carbon not exceeding about .25%, with or without about 2% to 3% molybdenum, and remainder principally iron, characterized by a fine equi-axed grain structure, this not exceeding about ASTM 10, and method wherein steel of the composition noted is subjected to drastic cold-reduction (exceeding 80%, and for best results exceeding 85%) and then tempering at a temperature of at least about 1200° F., and for best results at least about 1400° F., but not over 1750° F., for at least about 1/10 minute to achieve recrystallization but not so long as to produce objectionable grain growth.

26,455
BOLSTER HOIST

Eldon D. Jones, Lake Crystal, Minn. 56055

Original No. 3,179,470, dated Apr. 20, 1965, Ser. No. 318,234, Oct. 23, 1963. Application for reissue Mar. 10, 1967, Ser. No. 626,354

5 Claims. (Cl. 298—22)



A bolster hoist for a wagon box mountable on a wagon frame and operable to angularly move the wagon box *between loading and dumping positions. The hoist mechanism comprises an hydraulic cylinder pivotally connected between a pair of link members which are pivoted together at one end and pivoted at their opposite ends to the box and wagon frame, respectively. The pivotal connections between the pair of link members and between the pair of link members and the tiltable frame and the front transverse wagon beam are positioned in substantially the same horizontal plane as the box rear pivotal mounting on the main frame.*

PLANT PATENTS

GRANTED JUNE 4, 1968

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,831
ROSE PLANT
Anthony Perry, Garden Grove, Calif., assignor to Henry A. Conklin, McFarland, Calif.
Filed Dec. 5, 1966, Ser. No. 599,329
1 Claim. (Cl. Plt.—11)

1. The new and distinct variety of rose plant of the class designated as hybrid tea roses, substantially as shown and described, characterized particularly as to novelty by the globular, high centered, large sized blooms that have large petals that are Chinese Coral on the upper side and Azalea Pink on the underside, said blooms borne as single flowers on medium to long stems, by the slight rose fragrance of the blooms that is more noticeable in cooler weather, by the tall, vigorous upright growth of the plant, and by the very large-sized leaflets.

2,832
ROSE PLANT
David L. Armstrong and Herbert C. Swim, Ontario, Calif., assignors to Armstrong Nurseries, Inc., Ontario, Calif., a corporation of California
Filed Feb. 27, 1967, Ser. No. 619,077
1 Claim. (Cl. Plt.—20)

1. A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a moderately vigorous, attractive and upright plant habit, medium sized, dark green leathery and semi-glossy mature foliage, contrasting with attractive dark reddish new growth, relatively few thorns, a floriferous habit, with the flowers generally borne singly on medium length to long stems, attractive urn-shaped buds which develop into high-centered half-open flowers of good form, medium to large sized flowers having good petalage, a distinctive and attractive flower color ranging between Rose Red and Cardinal Red; and a rich, strong and spicy flower fragrance.

2,833
ROSE PLANT
Quinto Mansuino, San Remo, Italy, assignor to Carlton Rose Nurseries, Inc., Carlton, Oreg., a corporation of Oregon
Filed Mar. 1, 1967, Ser. No. 619,878
Claims priority, application Italy, Sept. 7, 1966, 20,410/66
1 Claim. (Cl. Plt.—23)

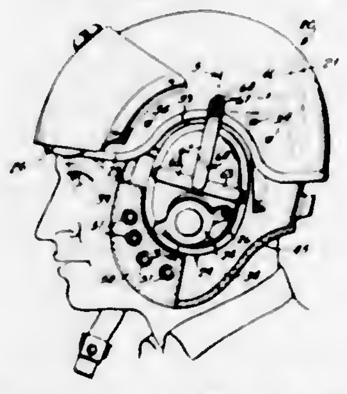
1. A new and distinct variety of rose plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a vigorous, strong, quick-growing, medium tall plant habit, with medium numerous main branches and floral stems and bearing foliage of medium to large size and harmonizing in color with the color of the flowers, good flower productivtiy especially suitable for the commercial production of cut flowers, with the flowers and floral stems being somewhat smaller in size than those of hybrid tea roses that are normally grown for cut flower production but being of harmonious proportion to the remainder of the plant and varying from small to medium size, said flowers having an attractive cup-shaped form but being open or flat at the termination of the bloom, with the outer edges of the flower petals moderately rolled outward and forming moderately acute points about the outline of the corolla, and the flowers being substantially pure white in color but having Chartreuse Green tints at their center, and said flowers having good resistance to adverse weather and good shipping qualities, as well as having long lasting qualities as cut flowers, and being suitable for cultivation both outdoors and in greenhouses for both ornamental purposes and for cut flower production.

PATENTS

GRANTED SEPTEMBER 10, 1968

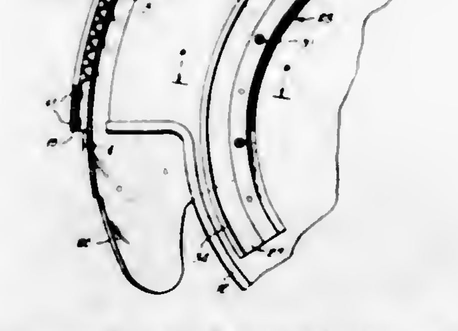
GENERAL AND MECHANICAL

3,400,406
POSITIONING MEANS FOR SOUND ATTENUATING EAR CUPS ON SAFETY HELMETS
Jackson A. Aileo, Carbondale, Pa., assignor to Leonard Peter Frieder, Great Neck, N.Y.
Filed May 17, 1966, Ser. No. 550,679
5 Claims. (Cl. 2—6)



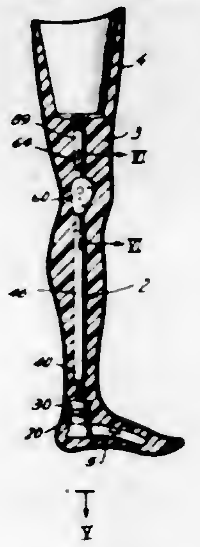
A sound exclusion means for use with a head covering including a rigid shell and rigging means to support the shell on the head of a wearer, employing a leaf spring connected at its upper end to the rigid shell, and formed at its lower end to engage the ear cup and bias its against the ear of the wearer. The leaf spring is pivotable about the point of connection of the rigid shell, so that its bias force may be selectively applied to the ear cup. In another form, an auxiliary leaf spring is employed to supply biasing force to the principal leaf spring, and the auxiliary leaf spring is pivotable about the same point of connection.

3,400,407
HELMET WITH RETRACTABLE VISOR
Jackson A. Aileo, Carbondale, Pa., assignor to Leonard P. Frieder, Great Neck, N.Y.
Filed June 27, 1966, Ser. No. 560,575
9 Claims. (Cl. 2—6)



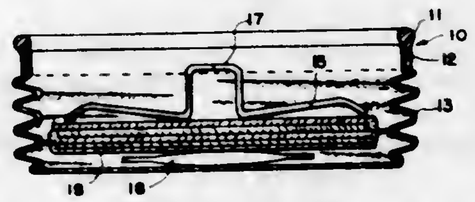
In a protective helmet having a visor movable between a retracted position and an eye-shielding position, a detent arrangement for holding the visor in the retracted position, having interengaging cam and camming surfaces respectively carried by the helmet and the visor and held in engagement by a biasing spring acting on one of them. The biasing force is such as to be overcome by a preselected effective G force acting on the helmet (i.e. occasioned by a blow or shock), permitting disengagement of the camming surface from the cam surface by sliding movement of the camming surface relative to the cam surface, thereby releasing the visor from the retracted position so that it falls into eye-shielding position. Manually adjustable means are provided for varying the biasing force of the spring to select the value of G force required to overcome the biasing force and release the visor.

3,400,408
PROSTHETIC LIMB HAVING AN ELASTIC COVERING
Rafael Villalta Garcia, Calle de los Curas 4, 2° letra B, Torrejon de Ardoz, Madrid, Spain
Filed Oct. 23, 1964, Ser. No. 406,044
8 Claims. (Cl. 3—26)



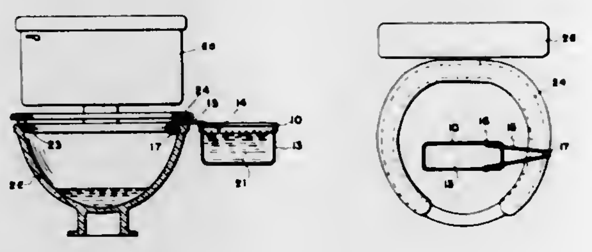
A prosthetic device in which a skeletal structure includes an articulated joint enabling the structure to be pivotally moved between extended and collapsed positions, and an elastic cover surrounding and accommodating the skeletal structure and exerting resilient force on the structure to urge the same towards its exended position.

3,400,409
DISPOSABLE TOILET KIT
Albert T. James, 1057 Bryn Mawr Ave., Youngstown, Ohio 44505
Filed May 27, 1966, Ser. No. 553,541
3 Claims. (Cl. 4—1)



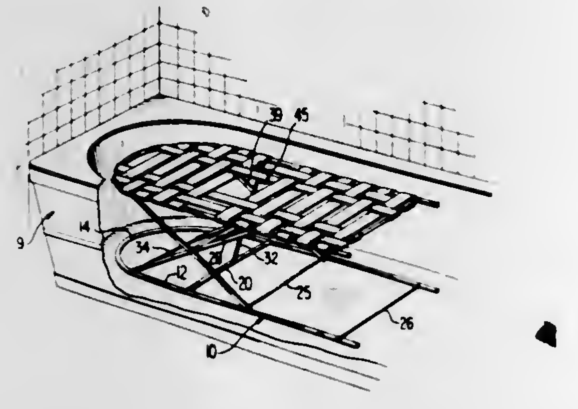
1. A disposable toilet kit adapted to be dispensed in a flat box comprising a rigid frame, a collapsible fluid-impervious bag secured to and depending from said frame, said bag being collapsed in a vertical direction when said frame is horizontally disposed and being adapted to receive and store flat toilet accessories, and a generally flat supporting bracket readily attachable to said frame and being of a size capable of also being stored in said collapsed bag, and said bracket being operative when attached to said frame to support the same in horizontal position from a component of a plumbing fixture, said supporting bracket characterized by an end por-

tion adapted to support said frame in cantilevered outward position and an opposite end portion formed with a hook whereby the bracket may be supported from said fixture.



3,400,410
DIFFERENTIALLY ELEVATABLE BATHTUB DEVICE

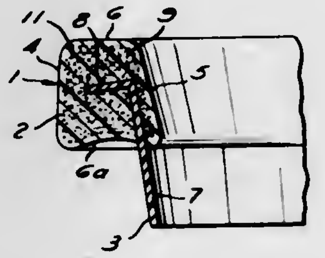
Harry Alvin Sallinger, 7904 Sycamore St., New Orleans, La. 70118
Filed Jan. 17, 1966, Ser. No. 521,026
7 Claims. (Cl. 4—185)



The removable elevatable bathtub device comprises upper and lower U-shaped platforms connected together by a pantographic linkage having a differential elevating screw connected to the linkages and intermediate the sides and ends of the platforms whereby a convalescent on the upper platform can operate the differential elevating device to raise and lower the upper platform relative to the lower platform and within a bathtub.

3,400,411
SEALING GASKET MEANS

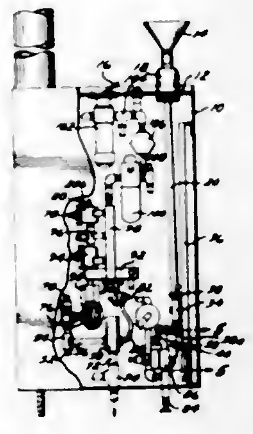
Richard Harvey, Omaha, Nebr., assignor to William H. Harvey Company, Omaha, Nebr., a corporation of Nebraska
Filed Aug. 16, 1966, Ser. No. 572,768
19 Claims. (Cl. 4—252)



1. Sealing means comprising resilient permanent foam means defined by thin walls around open interconnected cells, a substantial proportion of which cells are substantially completely filled by wax.

3,400,412
DENTAL SYSTEM AND APPARATUS FOR USE THEREIN

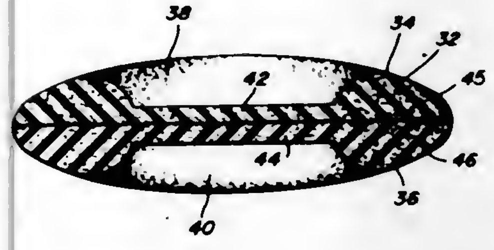
Robert V. Turner, Torrance, Calif.
(187 B Mayhew Way, Walnut Creek, Calif. 94598)
Filed Dec. 3, 1965, Ser. No. 511,544
10 Claims. (Cl. 4—263)



1. A cuspidor system for use with other dental apparatus comprising in combination, an enclosure, a cuspidor unit having a retracted position on said enclosure and being movable therefrom to an operating position, a vacuum conduit and a water conduit connected to said cuspidor unit, an electrically energizable vacuum pump connected to said vacuum conduit to afford a vacuum to said cuspidor unit, a first fluid pressure operated valve interposed between said pump and said cuspidor unit to control the application of vacuum to said cuspidor unit, a fluid pressure operated switch associated with said pump to effect energization thereof in response to predetermined pressure, a source of water under pressure connected to said water conduit and comprising a second fluid pressure operated valve to control the flow of water to said unit in response to predetermined pressure, and means responsive to the position of said cuspidor unit to simultaneously permit fluid flow to both of said valves and to said switch when, but only when, said cuspidor unit is in its operating position.

3,400,413
CONTOUR PILLOW

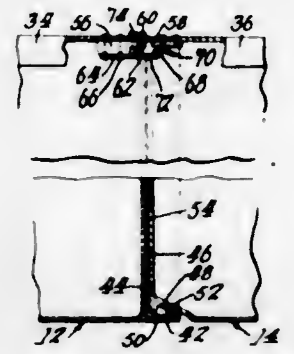
Elinor La Grossa, Chicago, Ill.
(1764 Oakton St., Des Plaines, Ill. 60018)
Filed Dec. 13, 1966, Ser. No. 601,510
2 Claims. (Cl. 5—338)



A contour pillow having an upper side formed with a center depression having a flat bottom wall, and upwardly and outwardly curved side and end walls blending in streamlined fashion with the upper side and being formed either with a substantially flat conventional underside or with an underside having a similar depression, the flat bottom walls of the depressions being in back to back integral relationship.

3,400,414
SECTIONAL BOAT CONSTRUCTION

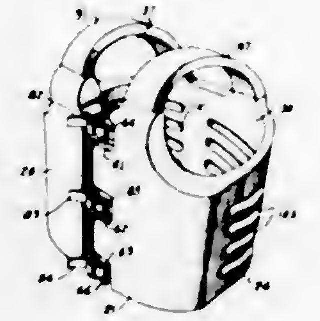
Winfred W. Windle, Sutton, Mass. (℅ W. W. Windle Company, 65 Canal St., Millbury, Mass. 01527)
Filed Feb. 6, 1967, Ser. No. 614,342
9 Claims. (Cl. 9—2)



A sectional boat including a series of separate nesting boat forming sections which are to be connected together, each section having a bottom, side walls, and a front and a rear partition, with means to secure the same substantially rigidly together but in partially spaced relation providing a Venturi effect of induced air which tends to break the suction between the boat bottom and the water as the boat progresses, including the improvement that there are means substantially rigidly connecting the sections together in spite of the Venturi spaces, said means being quickly attachable and detachable for efficient fast set-up and take-down of the boat.

3,400,415
SPORTING EQUIPMENT

Robert S. Scheurer, 4219 Lake Park Drive, Wichita Falls, Tex. 76302
Continuation-in-part of application Ser. No. 548,129, May 6, 1966. This application June 12, 1967, Ser. No. 645,228
12 Claims. (Cl. 9—342)

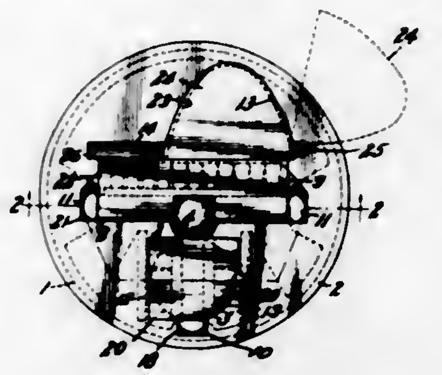


A buoyant jacket formed of a resilient buoyant substance disposable about the chest of the wearer to support the wearer in the water with his head above the water and tilted rearwardly.

3,400,416
COMBINATION GOLF BALL AND CLUB WASHER

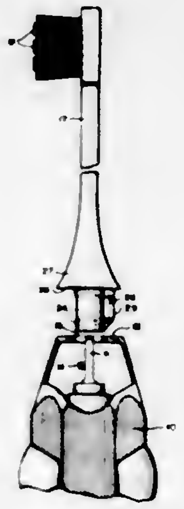
Paul A. Nicholson and Marjorie C. Nicholson, 1012 Broadmont Terrace, Falls Church, Va. 22046
Filed July 14, 1967, Ser. No. 653,511
8 Claims. (Cl. 15—21)

A receptacle for a washing liquid provided with a plunger carrying a ball-holder and a brush-carrying member, brush means having a stationary mounting in the receptacle in ball-brushing proximity to the ball-holder member, and cavity means in the receptacle for supporting a golf club, either a wood or an iron, in brushing proximity to the brush of said brush-carrying member, so that upon reciprocation of said plunger a ball carried by said ball-holder member, or a club supported in said cavity, or both, may be cleaned by the respective brushes.



3,400,417
TOOTHBRUSH ATTACHMENT FOR AN ELECTRIC TOOTHBRUSH

Michel A. Moret, Chene-Bourg, Geneva, Switzerland, assignor to Etablissement AESUP, Vaduz, Liechtenstein, a firm of Liechtenstein
Filed Nov. 1, 1966, Ser. No. 591,309
12 Claims. (Cl. 15—22)

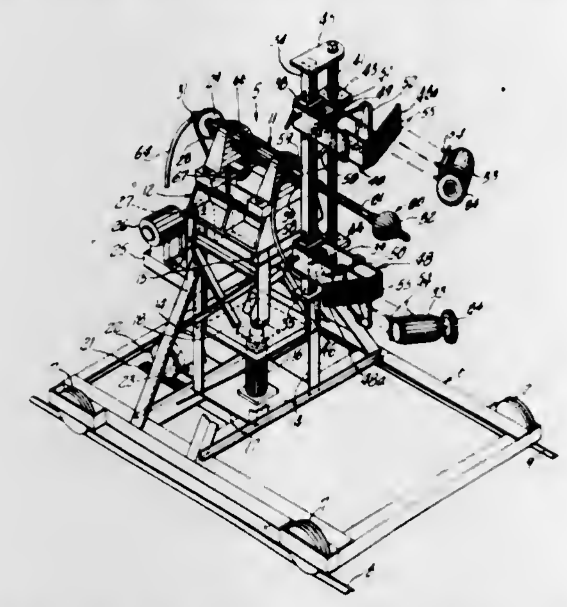


1. A toothbrush attachment which comprises a stem having lateraly extending bristles at one end thereof, a coupling at the other end of said stem having a longitudinally extending socket of non-circular cross-section, a longitudinally extending slot in the wall of said socket and open toward said other end of the stem, the width of the slot being less than the width of the socket in the corresponding direction, opposed transversely extending recesses in the sides of said slot near the open end thereof, and a transversely projecting fin on the wall of said socket in predetermined angular position with respect to said slot, said stem being enlarged at the base of said coupling to extend laterally beyond the wall of said socket.

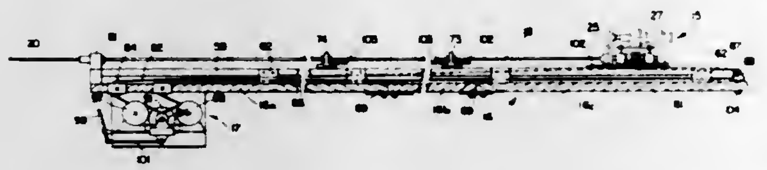
3,400,418
MACHINE FOR FORMING CUT-BACKS IN PIPE COATING

Gar E. Downing, Cleveland, Ohio, assignor, by mesne assignments, to General Steel Industries, Inc., a corporation of Delaware
Filed Feb. 27, 1967, Ser. No. 619,544
11 Claims. (Cl. 15—88)

A machine for stripping coating material from end portions of pipes and for shaping the end of the initial unremoved coating material on a pipe as an annular tapered surface. The machine has horizontally and vertically adjustable portions for supporting and positioning a rotor rotated in coaxial relation with a pipe to be subjected to a cut-back operation, and other portions carried by the rotor for applying rotary brushes to the exterior of the pipe.

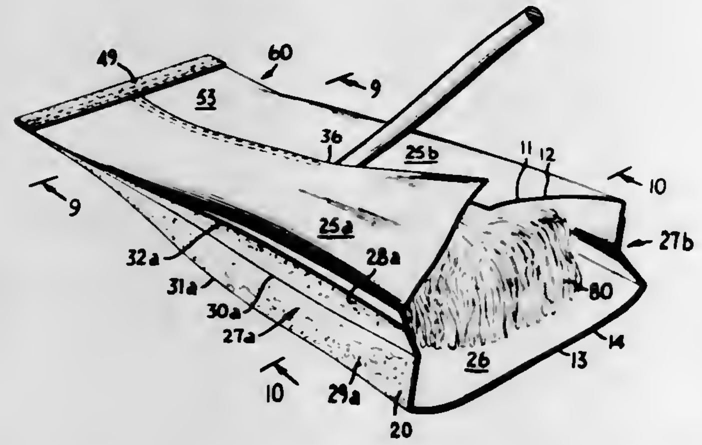


3,400,419
TUBE-CLEANING DEVICE
Joseph C. Fuller, Redondo Beach, Calif.
(2440 Virgo Drive, Colorado Springs, Colo. 80906)
Filed Mar. 21, 1966, Ser. No. 535,755
10 Claims. (Cl. 15—104.1)



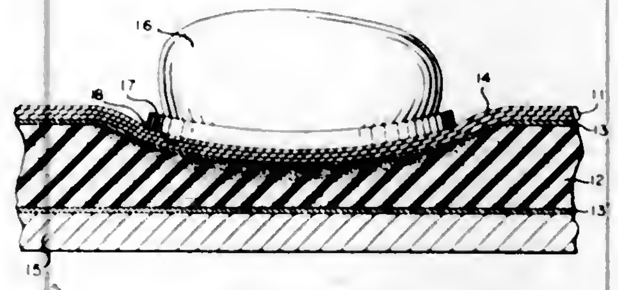
A tube cleaning device including a track, a carriage movable on the track, and an elongated shaft rotatable by a drive unit on the carriage, the elongated shaft having a cutting bit at its outer end. At least one bearing is provided on the track to support the shaft, the bearing means being movable with the carriage during part of the movement of the carriage.

3,400,420
COVERS FOR DUST MOP HEADS
Charles N. Granville, 30 Spoonwood Road, Wilton, Conn. 06897; William P. Daly, 123 Chelsea Road, White Plains, N.Y. 10603; and Oliver L. Pouliot, 233 Prospect Ave., Oradell, N.J. 07649
Filed Mar. 30, 1966, Ser. No. 538,714
17 Claims. (Cl. 15—104.93)



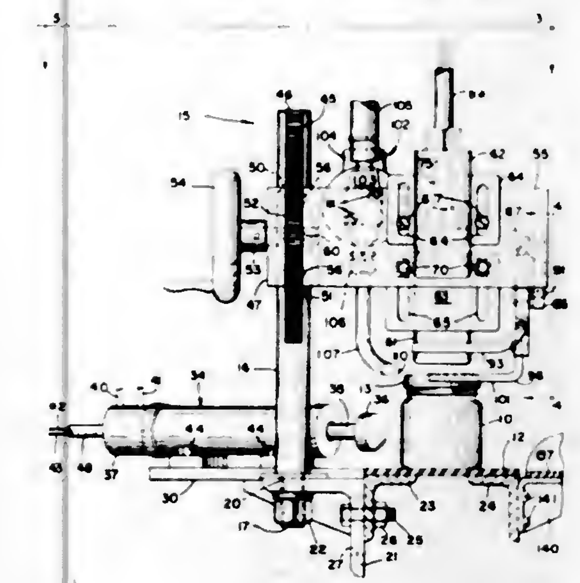
As described herein, there is provided a disposable dust mop cover which comprises an outer tubular liner adapted to fit over the head of a dust mop. The liner is formed from relatively strong paper, and the liner has on its bottom side a dust-collecting facing of cleansing paper.

3,400,421
SHOE SOLE CLEANER
John J. Nappi, 598 Deming Road, Berlin, Conn. 06037, and Charles E. Pfund, West Newton, Mass.; said Pfund assignor to said Nappi
Filed May 19, 1966, Ser. No. 551,393
8 Claims. (Cl. 15—215)



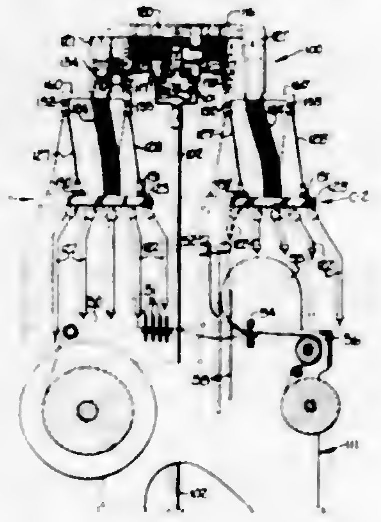
A floor mat of the "tacky mat" type which provides a tread surface of pressure sensitive adhesive to accumulate dirt from the bottom of shoes with the tread surface renewable by peeling the top pressure sensitive sheet in a stack to dispose of the accumulated contaminating material is adapted to provide increased contact area with shoe soles, vehicle wheels and the like as they pass over the mat by using a stack of pressure sensitive sheets such as cloth backed adhesive that is pliable in all directions transverse to the sheets and a compressible, resilient pad such as foam or sponge rubber under the stack which conforms the top surface of the stack to the curvature of the shoe or wheel.

3,400,422
APPARATUS FOR REMOVING MOISTURE FROM THE TOP OF CAPPED JARS
Raul J. Villavicencio, Chicago, and Robert A. Johnson, Park Ridge, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Aug. 24, 1966, Ser. No. 574,797
12 Claims. (Cl. 15—306)



1. Apparatus for cleaning closure caps on filled and capped containers being moved therepast in single file spaced apart order on a conveyor, comprising: closure cap detecting means adjacent the conveyor for detecting and signalling the presence of the cap on a capped container; detecting means adjacent the conveyor for detecting and generating a signal to indicate the presence of a container adjacent the closure cap detecting means; cleaning means operable to perform a cleaning operation on the closure caps; and control means for operating the cleaning means in response to signals received from the detecting means; said control means being responsive to operate the cleaning means to perform a cleaning operation only when a signal is received thereby from the closure detecting means that a cap is present adjacent thereto and from the container detecting means indicating the presence of a container adjacent the cap detecting means.

3,400,423
AIR OUTLET SUSPENSION SYSTEM FOR TEXTILE TRAVELING CLEANERS
Robert L. Black Jr., Charlotte, N.C., assignor to Parks-Cramer Company, Fitchburg, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 574,443, Aug. 23, 1966. This application Oct. 17, 1966, Ser. No. 587,252
9 Claims. (Cl. 15—312)

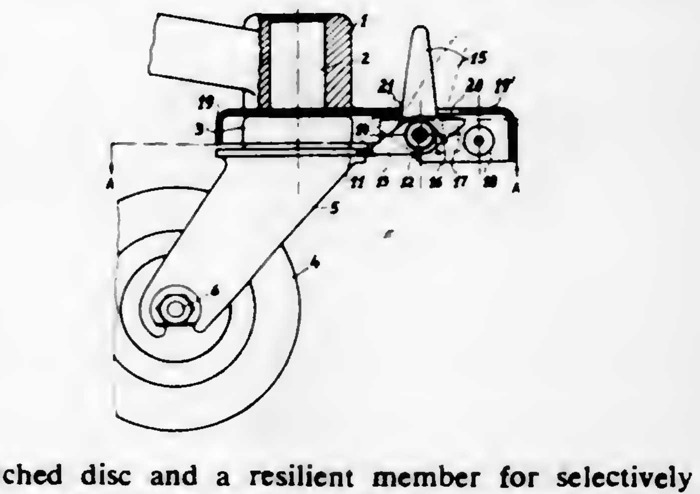


1. Traveling pneumatic cleaning apparatus for removing lint from looms arranged in rows and particularly from horizontally disposed warp yarns thereon and the associated yarn stop motions and other adjacent portions of the looms, and wherein said stop motions of each loom include at least one weftwise row of side-by-side, closely spaced, vertically disposed, flat dropwires; said apparatus comprising:

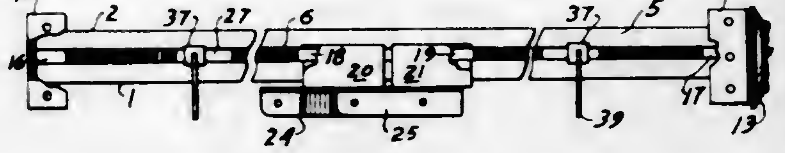
- means providing a source of air under pressure adapted to travel above the looms,
- air outlets communicatively connected to said air source and depending downwardly from above the looms for directing air streams downwardly against said dropwires and other surfaces of the looms,
- means for traveling the air source and said outlets along the row of looms substantially normal to the longitudinal direction of the warp yarns while oscillating said outlets generally parallel to the longitudinal direction of the warp yarns to cause the air streams from said outlets to trace a sinuous path of impingement upon the warp yarns, and said traveling means including means for maintaining each outlet at a respective constant angle relative to the horizontal plane of the warp yarns and to the vertical planes of the dropwires during its travel and oscillatory movement.

3,400,424
FRAMES FOR WARP-TYING OR KNOTTING MACHINES
Alois Altenweger, Uster, Switzerland, assignor to Zellweger Ltd., Uster, Switzerland, a corporation of Switzerland
Filed June 21, 1966, Ser. No. 559,295
Claims priority, application Switzerland, July 14, 1965, 10,121/65
3 Claims. (Cl. 16—35)

A frame for warp-tying or knotting machines including at least one guide roller which can be pivoted about a vertical axis or locked against pivoting by means of a spring biased lever engageable with a stationary slotted or notched disc and a resilient member for selectively maintaining the lever out of engagement with the notched disc against the spring bias.



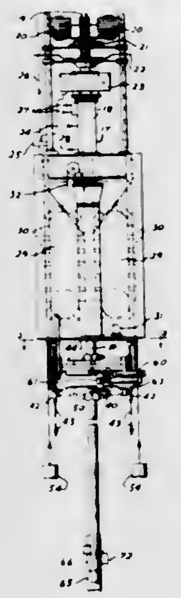
3,400,425
TRAVERSE ROD FOR DRAPES, ETC.
Daniel D. Polizzi, 630 W. 8th St., Upland, Calif. 91786
Filed Jan. 24, 1966, Ser. No. 522,500
6 Claims. (Cl. 16—95)



1. In a traverse means for a supporting and expanding and contracting a drape, the combination of:
- a series of spaced elements for connection to a corresponding series of spaced points of the drape;
- a fixed longitudinal support means in sliding engagement with at least some of the elements to support the elements and thereby support the drape;
- a plurality of screw mechanisms to move all of said elements simultaneously to expand the spacing between the elements to expand the drape or the contract the spacing between the elements to contract the drape;
- each of said screw mechanisms interconnecting two successive elements and being operable in one rotary direction to move the two elements toward each other and operable in the opposite direction to move the two elements away from each other,
- each of said screw mechanisms including at least one nonrotary component in sliding engagement with said longitudinal support means and at least one rotary component; and
- an operating shaft means to actuate all of said rotary components simultaneously to actuate all of the screw mechanisms simultaneously to expand or contract the drape.

3,400,426
CUT-OFF MECHANISM
Le Roy R. Boggs, Bristol, Tenn., assignor, by mesne assignments, to Koppers Company, Inc., Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 21, 1964, Ser. No. 419,770
6 Claims. (Cl. 18—4)

Apparatus for periodically cutting-off finite lengths of a continuously formed article includes at least three cut-off discs or saws that are arranged to rotate in a common plane, perpendicular to the axis of the article, and that are located around the article. The three or more cut-off discs or saws move along lines representing the three sides of a triangle and sever the article as the cut-off discs or saws move linearly with the article during the cutting process. After cutting the article, the cut-off apparatus returns to an initial position.

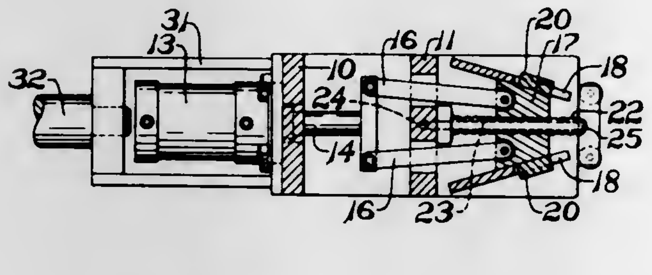


3,400,427
HOSE CURING UNIT

Paul J. Lister, Akron, Ohio, and Alexander Krynytzky, Buffalo, N.Y., assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Original application Mar. 2, 1964, Ser. No. 348,629, now Patent No. 3,241,181, dated Mar. 22, 1966. Divided and this application Sept. 8, 1966, Ser. No. 577,963

6 Claims. (Cl. 18—6)



1. A holding device for use in vulcanizing hose comprising a support, said support having an elongated projection having a longitudinal center line, at least a pair of guide means on said support converging toward one end of said support, work engaging means slidably mounted on each of said guide means for reciprocable movement thereon, and means mounted on said support operatively connected to said work engaging means for moving said work engaging means into work clamping engagement in cooperation with said projection.

3,400,428
METHOD OF AND APPARATUS FOR EXTRUDING HIGH-VISCOUS THERMOPLASTIC PLASTICS MATERIALS

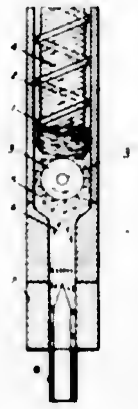
Rudolf Barainsky, Bergisch-Gladbach, Germany, assignor to Firma Dyna-Plastik-Werk G.m.b.H., Bergisch, Germany

Filed July 1, 1964, Ser. No. 379,507

Claims priority, application Germany, July 4, 1963, D 41,906

2 Claims. (Cl. 18—12)

An extrusion apparatus for viscous and thermoplastic materials having a cylindrical casing with a screw-shaped conveyor element therein rotatably mounted in the casing and rotating coaxially therewith. The casing terminates in a space leading to a nozzle for the material, and a rotatable body is mounted on an axis which is at right angles relative to the longitudinal axis of the conveyor element. This movable body homogenizes the material in the space in the casing.



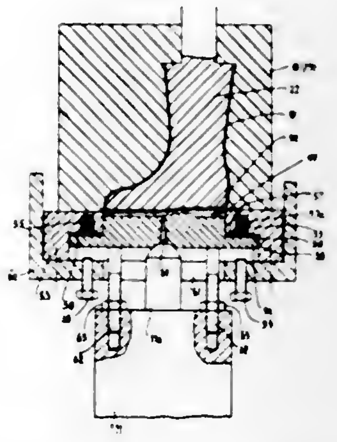
3,400,429
INJECTION MOLDING APPARATUS FOR ARTICLES, ESPECIALLY FOOTWEAR

Herbert Ludwig, Desmastrasse 112, Usen, near Bremen, Germany

Filed Sept. 29, 1966, Ser. No. 583,015

Claims priority, application Germany, Feb. 19, 1966, D 49,404

8 Claims. (Cl. 18—30)



1. Injection molding apparatus comprising a mold having movable mold parts including side members surrounding a last defining a first cavity, and a bottom mold member provided with a sole plate movable between a first position in proximity to the bottom of said last defining a second cavity and a second position at a distance from the bottom of said last defining a third cavity larger than said second cavity, said bottom mold member including a cover movable toward and away from said side members and also pivotally movable with respect to said last.

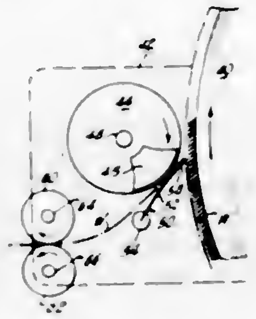
3,400,430
APPARATUS FOR REMOVING A FIBROUS WEB FROM A ROTATABLE SURFACE

Frank Kalwaites, Somerville, N.J., assignor to Johnson & Johnson, a corporation of New Jersey

Filed Apr. 12, 1966, Ser. No. 542,138

5 Claims. (Cl. 19—106)

An apparatus for removing a fibrous web from a rotatable surface comprising a rotatable roll adjacent the rotatable surface and a flexible nip blade in tangential contact with the rotatable roll and extending away from the roll on both sides of the point of tangency and magnetic means for pressing the blade against the rotatable roll at the point of tangency.

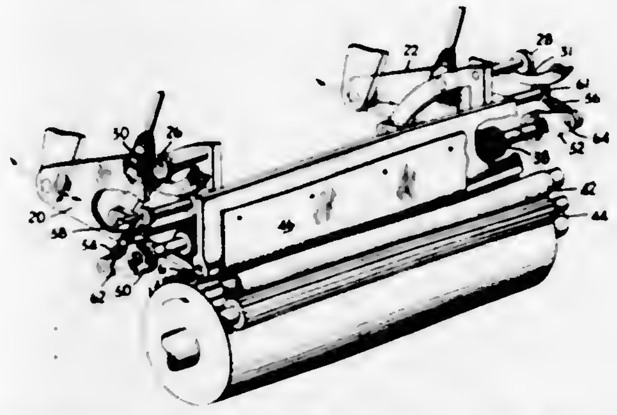


3,400,431
COMBER NIPPER FEED SYSTEM

William B. Strzelewicz, Jr., Webster, Mass., assignor to Whitin Machine Works, Whitinsville, Mass., a corporation of Massachusetts

Filed Jan. 27, 1967, Ser. No. 612,266

3 Claims. (Cl. 19—225)



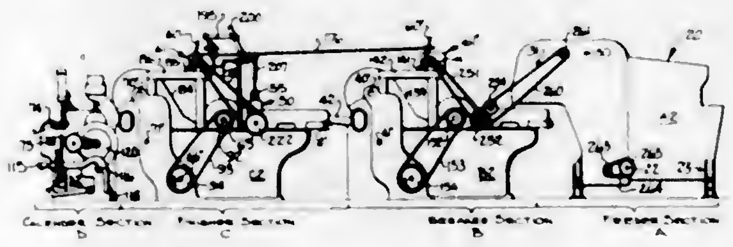
This invention relates to a feed system for fiber combing machines having a reciprocating nipper frame, a nipper knife for gripping a web of fibers, a feed roller for feeding the web by lap form to the knife, and a drive mechanism for rotating the lap-feed roller to advance a web to the nipper knife in both directions of reciprocation of the nipper frame.

3,400,432
TEXTILE PICKER MACHINE DRIVE

John R. Long, Hickory, N.C., assignor to Shuford Mills, Inc., Hickory, N.C., a corporation of North Carolina

Filed Apr. 1, 1966, Ser. No. 539,575

18 Claims. (Cl. 19—240)



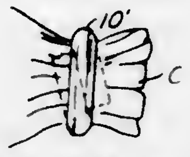
A single process picker machine having rear and front beater sections whose beaters, along with front rotary condenser screens, are driven at constant speed by a primary driving means, and wherein a novel drive arrangement is provided including a pair of secondary driving means which drive the input portions of respective first and second speed variators whose output portions are connected to respective first and second fiber feeding means for feeding fibers to the respective rear and front beaters. The position of interconnected speed regulating members provided on the two variators is varied in accordance with, and under control of, variations in the thickness of the web formed of the fibers by the rear screens.

3,400,433
CLIPPING DEVICE

Karl A. Klenz, Oakland, Calif., assignor to Rheem Manufacturing Company, New York, N.Y., a corporation of California

Filed May 29, 1967, Ser. No. 642,028

7 Claims. (Cl. 24—30.5)



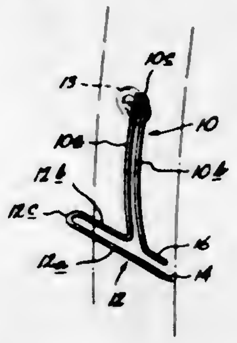
A deformable generally U-shaped sealing clip for providing a tight seal around the neck of a flexible container. The clip is shaped to provide a cross section of optimum strength with a relatively flat side against the material of the container neck.

3,400,434
TIE HOLDER

Chris G. Pazeotopoulos, 442 NE. Knott St., Portland, Oreg. 97212

Filed Mar. 25, 1966, Ser. No. 537,528

6 Claims. (Cl. 24—49)



A tie holder for holding the folds of a four-in-hand necktie in place including a crook with depending arms joined by a reverse bend with such bend adapted to seat on the threads holding a button on a shirt. Tie fold retaining structure extends transversely of the arms at the base of the crook including clamp bar means for clamping on to the rear fold of the tie and a forwardly located pin for pinning the front fold of the tie and holding such front fold together with the rear fold against said clamp bar means.

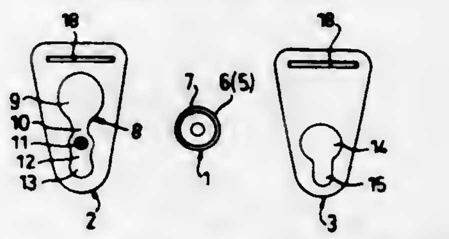
3,400,435
FASTENING DEVICE

Urban Åkesson-Rydin, Fagelbacksgatan 11 D, Malmo, Sweden

Filed May 16, 1967, Ser. No. 638,885

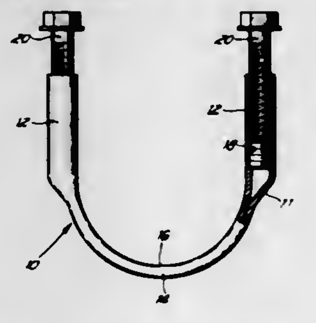
Claims priority, application Sweden, May 17, 1966, 6,769/66

4 Claims. (Cl. 24—247)



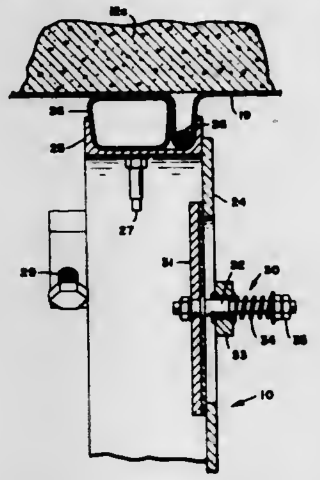
A fastening device preferably for use with garters to secure the stockings thereto, comprising three individual members, viz. a locking member including a central pin and three spaced disks mounted thereon, a holder member with a transverse slot for securing said holder member to a garter and with a longitudinal opening including a portion of large area and two constricted portions with an intermediary wide portion, and an engagement member with a transverse slot for securing the engagement member to the garter and with a keyhole opening. In the assembled state of the fastening device the locking member is inserted with the central pin through the wide portion of the keyhole opening in the engagement member and moved to the narrow portion of said opening so that the locking member will be received by the engagement member with two of its disks interleaved with said engagement member, while the third disk or head of the locking member with the stocking margin placed thereon is inserted in the large area portion of the longitudinal opening in the holder member and moved past the constricted portions of said longitudinal opening so as to be received in an end portion of said opening which surrounds the pin with some clearance.

3,400,436
CLAMPING DEVICE
Edward R. Jablonski, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Oct. 12, 1965, Ser. No. 495,219
6 Claims. (Cl. 24—275)



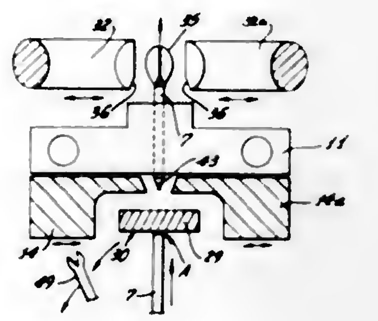
A clamp member comprising a generally U-shaped element formed from a length of tubular material with internally threaded tubular leg portions and a bight portion which has been flattened to present a concave, generally semi-cylindrical bearing surface and a pair of bolts respectively received by the threaded leg portions.

3,400,437
BULKHEAD
Herbert S. Lee, Los Alamitos, and James F. O'Conner, Los Angeles, Calif., assignors to American Pipe and Construction Co., Monterey Park, Calif., a corporation of California
Original application Nov. 20, 1961, Ser. No. 155,531, now Patent No. 3,193,901, dated July 13, 1965. Divided and this application May 10, 1965, Ser. No. 454,569
8 Claims. (Cl. 25—128)



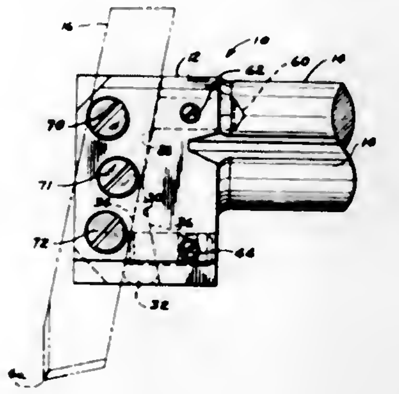
A bulkhead for sealing one end of an inflatable tubular envelope, having a wall member adapted to be inserted in the end of the tubular envelope, and an expansible perimeter mounted on the wall member and adapted to be expanded into engagement with the envelope to seal the end of the envelope.

3,400,438
COMBINATION PUNCH PRESS DIE
Robert L. Montgomery, Diamond Bar, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed Dec. 21, 1966, Ser. No. 603,634
12 Claims. (Cl. 29—1.2)



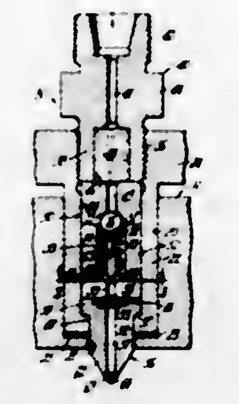
The method of making a flechette comprises feeding the end of a long length of wire to an operating station, forming a pinched-off point in the wire at a distance from the leading end thereof corresponding to the desired length of the article, cutting off the wire beyond the formed point to produce a short length of scrap, then forming a fin-like vane or other head on the leading end, and then feeding in the next desired length of wire for repeated operation. Briefly the apparatus comprises a matching punch and die assembly adapted to be installed in a punch press, the assembly comprising pointing dies, a cut-off blade, and vane-forming dies, all arranged to be cycled once in a predetermined sequence during a single stroke of the punch press. To allow longitudinal movement of the wire article during the vane forming operation, a small scrap piece is removed at an intermediate wire portion when the point is formed.

3,400,439
CUTTER HOLDERS
Gilbert F. Lutz, Chesterland, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 15, 1966, Ser. No. 579,583
13 Claims. (Cl. 29—96)



1. A cutter holder for a machine tool having a tool receiving portion, said tool receiving portion having means for supporting a tool in different inclinations in the holder including a part having a side providing a part of an inclined bearing surface for the cutter of a first inclination when arranged in a first position in the holder and providing part of an inclined bearing surface of a second inclination when arranged in a second position in the holder.

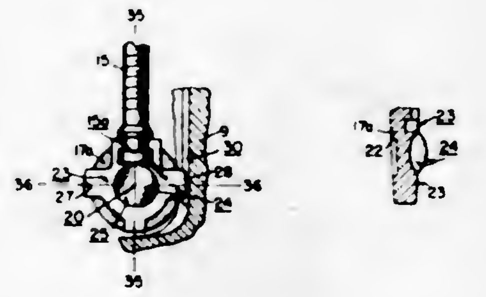
3,400,440
METHOD OF MAKING AND RECONDITIONING BALL VALVES
Ray L. Carlson, Rolling Hills, Calif. (% Lavette Engineering & Manufacturing Co., 1400 240th St., Harbor City, Calif. 90710)
Filed Mar. 18, 1964, Ser. No. 352,836
4 Claims. (Cl. 29—157.1)



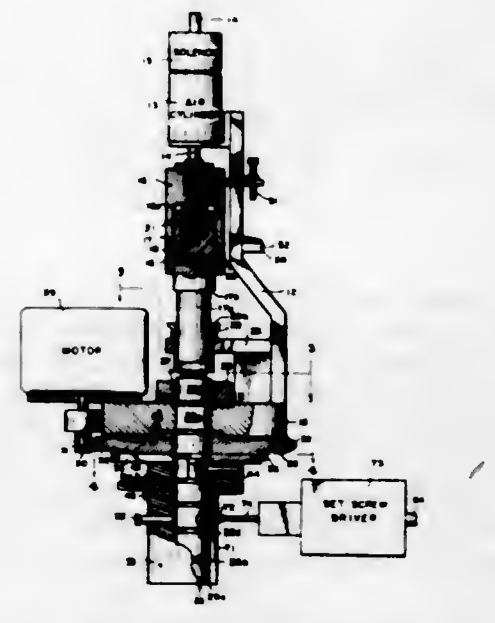
2. The process of reconditioning a worn, annular, centrally apertured, valve seat and a mating and correspondingly worn, fluid-pressure-responsive, dome-headed valve of the type disposable within a fluid conduit in association with spring-urged guide means for longitudinal reciprocation along the conduit toward and away from a seating position overlying and closing the central aperture of said valve seat, with an apical end of the valve generally centered in said aperture, which process comprises:
(1) expurging the existing seating area of the worn valve seat and reshaping an annular area to form a new seating area having an arcuate curvature of a theoretical sphere,
(2) reshaping said dome-headed valve
  (a) by axially shortening said apical end,
  (b) by reshaping the worn, annular seating area surrounding said head adjacent its apical end, to form a conical shape of more acute angle than that of the worn valve,
  (c) by forming adjacent the apical margin of said reshaped conical area, an annular area of arcuate curvature based on a theoretical sphere of slightly shorter radius than the arcuate curvature of said reshaped valve seat,
whereby a thin, annular, line-contact of less axial thickness than that of the previous contact between the worn valve and the worn valve seat is formed between the reconditioned valve when seated and the reconditioned valve seat, said contact thus being at the converged end of a thin, arcuate, wedge-shaped space which is defined jointly by the two spherical curvatures of slightly different radii, said space being thus adapted to be filled by fluid-flow disposed to cushion the valve in seating.

3,400,441
METHOD OF MAKING SPLIT-WEDGE GATE VALVES
Owen W. Fryling, North Scituate, Mass., assignor to Walworth Company, New York, N.Y., a corporation of Massachusetts
Filed Aug. 28, 1964, Ser. No. 392,883
10 Claims. (Cl. 29—157.1)

1. The method of manufacturing split-wedge gate valve apparatus which comprises roughly forming a plurality of split-wedge metal gate valve elements each with a ball-and-socket type mating connection surface on one side thereof merged with a relatively broad-area reference surface, both of which surfaces are substantially irregular in the rough-formed condition, subjecting each of said elements to pressures of coining die members sufficient to coin said irregular surfaces into relatively smooth and hard surfaces which, except for any relatively minor depressions remaining therein, are in a precision relationship to one another established by action of the coining die members, and thereafter machining a seating surface on the other side of each of said elements with reference to the coined broad-area reference surface thereof.



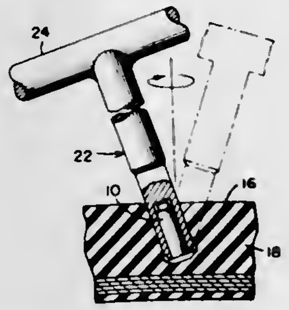
3,400,442
WORK ORIENTER
Alonzo Merrill Morris, Franklin, Ind., assignor to Vernco Corporation, Columbus, Ind.
Filed July 25, 1966, Ser. No. 567,626
11 Claims. (Cl. 29—208)



1. A device for consecutively orienting like work parts, each having a recess in a common zone, comprising
a relatively fixed member having a bore therethrough;
feeding means carrying work parts to said bore;
a reciprocating plunger urging one part upon another through said bore;
clutch means having elements directed into said bore engaging said parts therein, one at a time;
means rotating said clutch in turn rotating an engaged part;
said recess being in said part zone;
a stop pin yieldingly directed into said bore into the path of that recess in the part engaged and rotated;
the entrance of said stop pin into said recess stopping rotation of the part; and
means intermittently reciprocating said plunger in timed sequence following said part rotation stopping.

3,400,443
METHOD OF AT LEAST PARTIALLY REMOVING A TIRE STUD FROM A TIRE

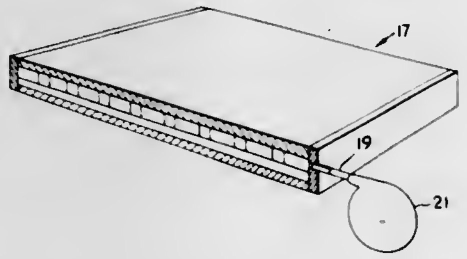
William P. Miller II, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Sept. 7, 1965, Ser. No. 485,379
5 Claims. (Cl. 29—400)



A method of removing or adjusting a tire stud from or in a recess in a tire, which recess is either preformed during curing of the tire or is provided after curing of the tire. The stud is inclined relative to the axis of the recess, as formed, and one end of the stud is revolved about said axis thereby effecting movement of the stud outwardly of the recess.

3,400,444
METHOD OF MAKING REINFORCED PANELS OF HIGH TEMPERATURE MATERIAL

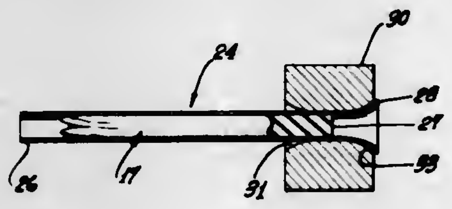
Fritz F. W. Krohn, Del Mar, Calif., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Dec. 8, 1964, Ser. No. 416,743
4 Claims. (Cl. 29—423)



The present invention relates to a method of producing joined structural members by placing such members in abutting positions with spacer elements maintaining the members' relative position to form a substantially boxlike configuration, enclosing the abutting members and spacing members in an evacuated deformable metal enclosure, evacuating the enclosure and hot rolling the entire package, and then separating the joined members from the elements by mechanical means giving a composite joined structure.

3,400,445
METHOD OF MAKING UNITARY TIRE REPAIR CARTRIDGE

Loid Crandall, Granada Hills, and Louis D. Leone, Gardena, Calif., assignors to Active Engineering, Inc., Gardena, Calif., a corporation of California
Filed Jan. 7, 1966, Ser. No. 519,215
5 Claims. (Cl. 29—451)

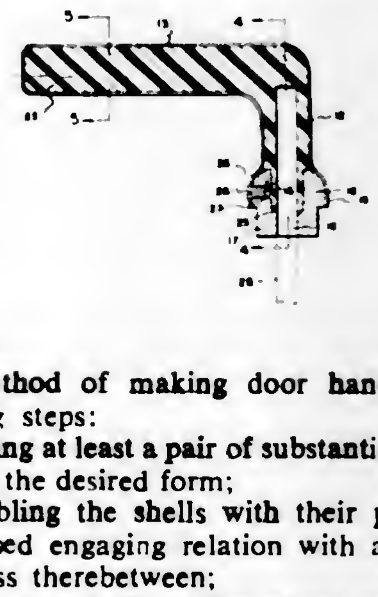


1. In a method of making a tire repair plug cartridge which includes a hollow tube and a rubber plug body having a backfolded enlarged head contained within the tube, the steps of:

polishing the internal surface of a pre-cut hollow tube having an inner diameter greater than a selected inner diameter of the cartridge;
inserting a rubber plug with an enlarged head and with a stem of a diameter less than said pre-cut tube inner diameter and greater than said selected diameter, into one end of the tube with its stem end first so as to backfold said enlarged head;
positioning said backfolded headed plug in said tube with end portions of the plug spaced from ends of the tube; and
sizing said tube with the plug contained therein whereby said inner diameter of the tube is reduced to a selected cartridge diameter and the rubber material of said plug flows longitudinally within the tube whereby the deformed plug is adapted to be deposited in a puncture hole as said tube is stripped therefrom.

3,400,446
METHOD OF MANUFACTURE OF LEVER HANDLE

Leon Yulkowski, 244 W. Sheffield, Pontiac, Mich. 48055
Filed Oct. 15, 1963, Ser. No. 316,300
10 Claims. (Cl. 29—463)



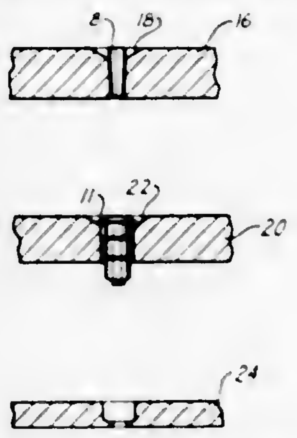
1. The method of making door handles comprising the following steps:

(1) stamping at least a pair of substantially symmetrical shells of the desired form;
(2) assembling the shells with their peripheral edges in opposed engaging relation with an insert receiving recess therebetween;
(3) applying a fusible alloy along and adjacent the peripheral engaging edges or surfaces of the shells;
(4) welding the shells at a series of peripheral spaced points for securing the shells together;
(5) fusing the alloy to and along the peripheral meeting shell edge surfaces; and
(6) positioning and securing a lock spindle receiving insert within said recess.

3,400,447
METHOD AND APPARATUS FOR ASSEMBLY OF TIRE STUDS

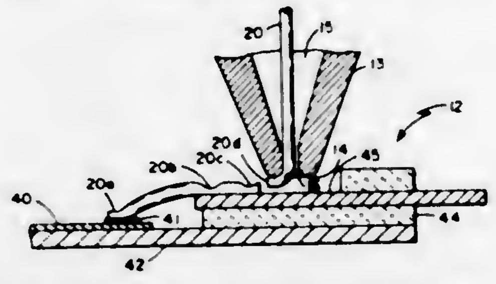
Bernard A. Woods, Jr., and Robert Martin Woods, Pittsburgh, Pa., assignors to Aluma-Grip Company of America, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 23, 1965, Ser. No. 474,241
10 Claims. (Cl. 29—467)

This invention comprises process and apparatus for production of carbide pins for studding of tires whereby tungsten carbide pins are assembled into the cases by a process employing a number of plates. One of the plates is operated in a vibrating manner to receive and orient tapered tungsten carbide pins in a plurality of holes over its surface. Another plate having a plurality of holes therethrough disposed opposite the holes in the first plate when the two plates are in juxtaposition, is employed to orient the cases prior to the actual assembly process and to control the position of the cases during the assembly process. The use of these plates together with use of various other plates supplies a process for the rapid assembly of components.



3,400,448
METHOD OF BONDING FILAMENTARY MATERIAL

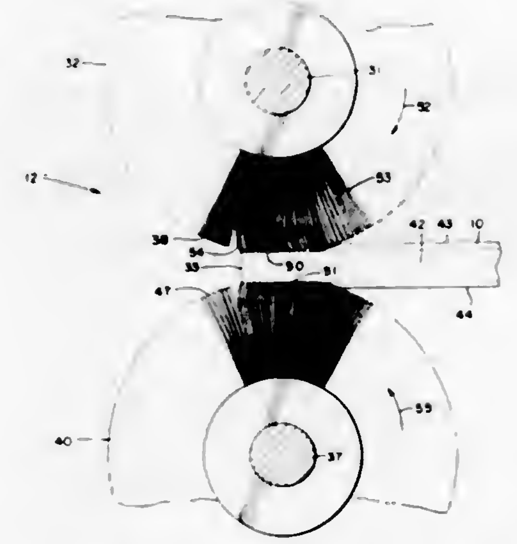
Robert W. Helda, Scottsdale, Ariz., and William E. La Point, Chelmsford, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Jan. 27, 1966, Ser. No. 523,407
4 Claims. (Cl. 29—471.1)



Method of thermal compression "stitch" bonding to connect a length of fine wire between a semiconductor die and a header lead, in which the bonding tool is vibrated while it is moved away from the bond at the header lead thus breaking the wire closely adjacent the bond.

3,400,449
METHOD OF PREPARING A SURFACE FOR WELDING

George A. Maguire, Matthew A. Ostrofsky, and Vincent C. Szeligo, Pittsburgh, Pa., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed June 6, 1966, Ser. No. 555,293
4 Claims. (Cl. 29—483)



4. A mechanical process for making a tubular article from a blank of tin plated steel having opposite marginal side seam forming edges comprising: moving the blank along a path through grinding stations at a predetermined speed; rotating a plurality of flap wheels at the grinding stations at a rotational speed that gives the flap wheels a peripheral grinding surface speed in lineal feet per minute in the neighborhood of 8.8 times the speed of the blank in lineal inches per minute; progressively lightly contacting the sheet on opposite sides thereof adjacent the opposite marginal edges with a flap wheel grinding surface to substantially remove all of the tin plating and any underlying oxides and smooth the underlying steel to provide smooth steel welding surfaces adjacent the side seam forming marginal edges; forming the blank into a tube so that opposed welding surfaces are in close overlapped relationship and welding the overlapped surfaces together.

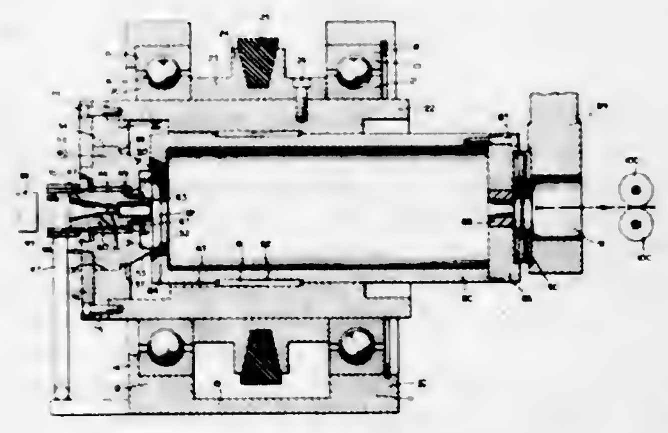
3,400,450
METHOD OF FORMING FERROUS SHEET FACED WITH ALUMINUM

Joseph A. Nock, Jr., Natrona Heights, and John E. Vrugginx, Lower Burrell, Pa., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Continuation-in-part of application Ser. No. 192,043, May 3, 1962. This application Nov. 10, 1965, Ser. No. 507,237
4 Claims. (Cl. 29—497.5)

A laminate composite consisting of a ferrous sheet layer faced with an aluminum base alloy sheet layer containing aluminum and between 0.4 and 10% magnesium is produced by interdisposing between these two layers a third layer of magnesium-free aluminum. The composite is formed by hot rolling and the intermediate layer overcomes the impaired bondability to a ferrous base of aluminum alloys containing magnesium.

3,400,451
WIRE WORKING APPARATUS

Edward S. Pierce, 152 Oberlin St., Milbeth Village, Sinking Spring, Pa. 19608
Filed Jan. 23, 1967, Ser. No. 611,062
19 Claims. (Cl. 29—561)



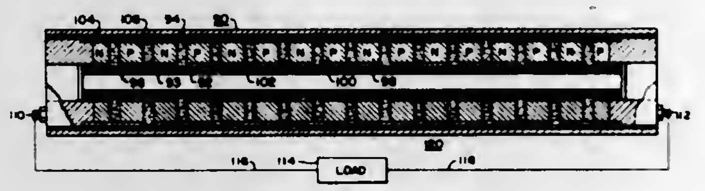
The instant disclosure is of machines for grinding, burnishing and/or straightening either continuous or short lengths of tempered or resilient metal wire or rods.

3,400,452
PROCESS FOR PRODUCING THERMOELECTRIC ELEMENTS

Frank Emley, Penn Hills Township, Allegheny County, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 21, 1963, Ser. No. 282,061
6 Claims. (Cl. 29—573)

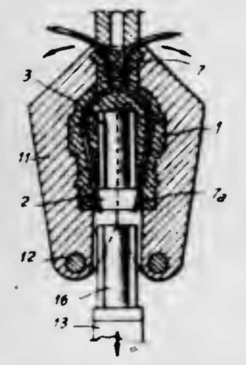
1. In the process of producing a thermoelectric element, the steps comprising (1) disposing at least one body of a thermoelectric material formed from a material selected from the group consisting of semiconductive

materials, refractory metals and ceramic materials and mixtures thereof within a compartment formed at least in part from a conductive metal member conforming in shape to at least a portion of the periphery of said body, (2) sealingly enclosing said body within said compartment to provide a closure therefor, (3) evacuating the closure, (4) then hot pressing the entire assembly at a temperature from about 250° C. to slightly below the melting temperature of the lowest melting temperature component in the assembly at an isostatic pressure of from about 5000 p.s.i. to 50,000 p.s.i. until the metal member has a reduction in area of from about one to fifteen percent to provide a metallurgical bond between the portion of the periphery of the thermoelectric body and the walls of the metal member part.



3,400,453
INJECTION MOLDS FOR MANUFACTURING THERMOPLASTIC LAMP SOCKETS

Silvano Tilesi, Via Palestro 6, Florence, Italy
Filed Sept. 11, 1964, Ser. No. 395,822
Claims priority, application Italy, May 4, 1964, 10,034/64
9 Claims. (Cl. 29—592)

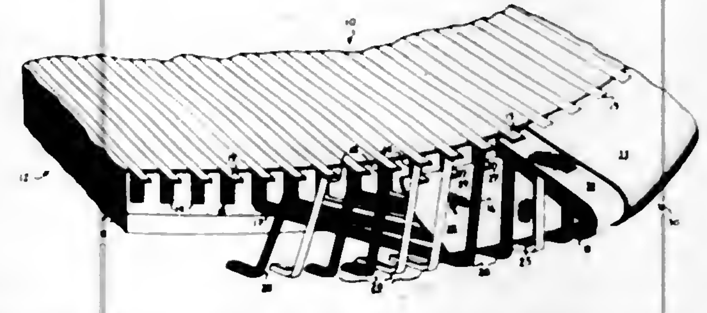


An injection mold for the mass production of pea-type lamp sockets having a split cavity into which is positioned a split core carrying knife blades actuated by the swinging movement of the split core to cut completely through a central portion of an insulated wire molded into the lamp socket body and also to strip the insulation away from the adjacent cut ends. Upon the longitudinal removal of the split core from the split body cavity, flat conductors are inserted into sockets which have been cast into the lamp body socket. Such flat conductors engage and are held permanently in electrical contact with the bared copper wires by a forced mechanical fit.

3,400,454
METHOD OF MAKING ENCAPSULATED ELECTRICAL MEMBERS

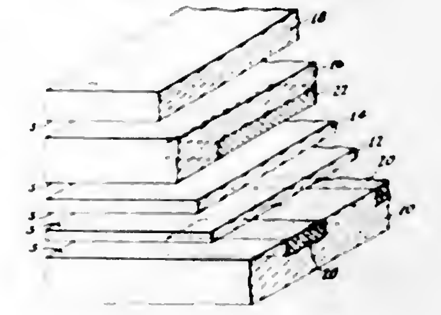
Roy L. Balke and James T. Duane, Erie, Pa., assignors to General Electric Company, New York, N.Y., a corporation of New York
Original application Mar. 29, 1963, Ser. No. 269,033, now Patent No. 3,242,358, dated Mar. 29, 1966. Divided and this application Dec. 27, 1965, Ser. No. 516,548
2 Claims. (Cl. 29—596)

A method of making an encapsulated electrical member wherein a protective envelope is provided for electrical windings which extend from a core of the electrical member by impregnating the windings with a thermosetting resinous dielectric composition, and at least partially curing the composition. The extending portions of the windings are covered with a thermosetting resinous dielectric composition, a strip of loosely woven fabric is imbedded into the outer surface area of this composition, and the composition is cured to complete the protective envelope.



3,400,455
METHOD OF MAKING A LAMINATED FERRITE MEMORY

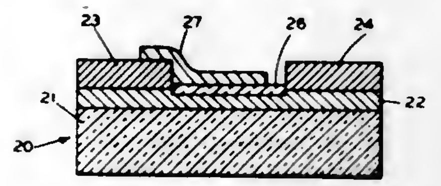
Joseph J. Cosgrove, Walpole, Mass., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 513,318
9 Claims. (Cl. 29—604)



A method of making a laminated ferrite memory plane having two sets of imbedded conductors. A lamination is made from five individual green ferrite sheets, two of which are relatively thin and two of which are relatively thick and have flush imbedded conductors. Each green ferrite sheet has one shiny side after removal from a smooth substrate. The green ferrite sheets are assembled in the order of a first thick sheet placed with shiny and conductor side up, a first thin sheet placed with shiny side up, a second thin sheet placed with shiny side down, a second thick sheet placed with shiny and conductor side down and a final sheet placed shiny side down, the assembly is subjected to heat and pressure to form a lamination, and is then fired to produce a homogeneous body of sintered magnetic ferrite having imbedded conductors.

3,400,456
METHODS OF MANUFACTURING THIN FILM COMPONENTS

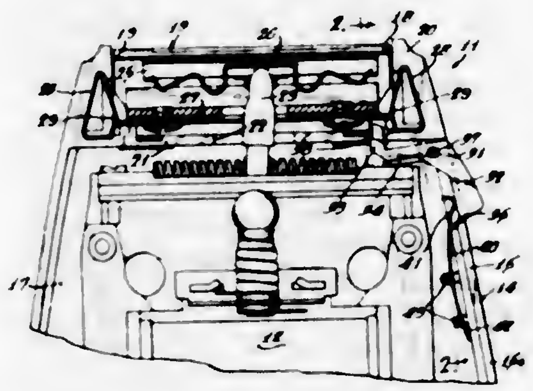
Alexander M. Hanfmann, Allentown, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 30, 1965, Ser. No. 483,594
10 Claims. (Cl. 29—620)



The resistance of an electrical component comprising a substrate having coated thereon at least two conductive layers separated by a nonconductive layer is adjusted by applying a laser beam to the component. If the resistance of the component is less than a desired value it is increased by forming open holes in one or both of the conductive layers with a high energy laser pulse of short duration which evaporates the layers through which it passes. If the resistance is greater than the desired value it is decreased by forming shunt holes between the conductive layers with a lower energy pulse of longer duration which partially evaporates and melts the layers through which it passes thus causing a parallel connection between the conductive layers.

3,400,457
SHAVER HEAD RELEASE

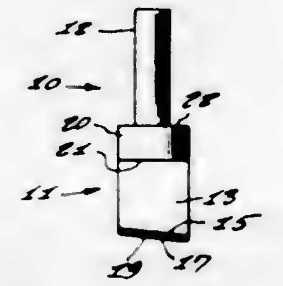
Albert R. Spohr, Park Ridge, and Otto Babler, Chicago, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 26, 1967, Ser. No. 611,951
6 Claims. (Cl. 30—43.92)



A dry shaver having the shaving head retained on the housing by detent means and provided with a pivotal release extending through the housing to displace the head and disengage it from the detent means.

3,400,458
LEATHERCRAFT TOOL

Thomas A. Moore, Sulphur, Okla.
(2715 Alford St., Columbus, Ga. 31903)
Filed Nov. 8, 1966, Ser. No. 592,877
1 Claim. (Cl. 30—164.9)

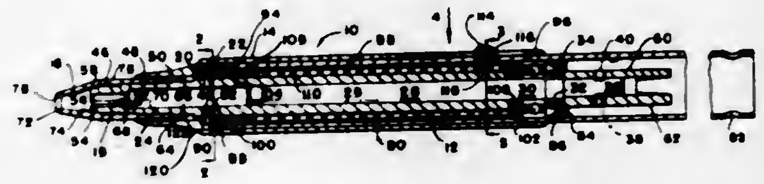


A tool for engraving leather, the tool comprising a working head at one end of a shank, the working head including a pair of faces at an angle respective to each other and at different angles respective to an axis of the shank, the faces forming an edge therebetween which is inclined respective to the axis of the shank.

3,400,459
DENTAL HANDPIECE

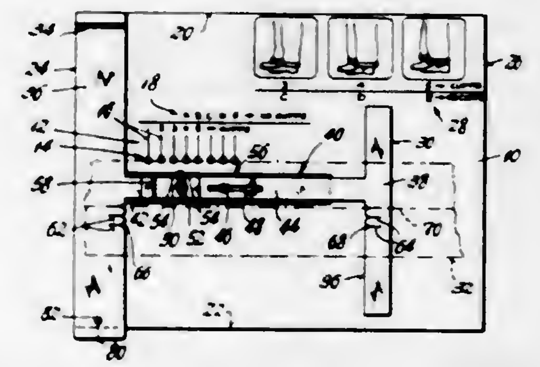
Joseph Stemler, St. Clair Shores, Mich., assignor, by mesne assignments, to Ritter Pfaudler Corporation, Rochester, N.Y., a corporation of New York
Filed July 13, 1964, Ser. No. 382,202
12 Claims. (Cl. 32—26)

The invention relates to an improved dental handpiece having a collet and including means integral therewith for tightening and loosening the collet. The handpiece includes a rotatable collet shaft, collet means at one end of the shaft, an outer body tube and means operable between the collet shaft and outer body tube to guard against relative rotation therebetween to permit manual tightening and loosening of the collet. The locking means comprises pin and slot structure carried by the outer body tube and collet shaft and engageable with the outer body tube and collet shaft in a predetermined relative axial relation. The structure includes a bearing tube within the outer body tube and preloaded self-lubricating bearings within the bearing tube supporting the collet shaft for rotation therein.



3,400,460
TAILOR'S TROUSER LENGTH AND TROUSER CUFF MARKER

John J. Sullivan, 3920 Granby St., Norfolk, Va. 23504
Filed Sept. 16, 1965, Ser. No. 487,812
9 Claims. (Cl. 33—2)

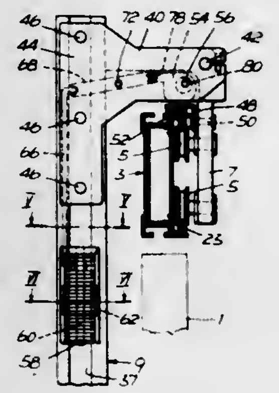


A tailor's trouser-length and cuff marker comprising a base having indicia related to trouser lengths and cuffs, and a device for positioning the trousers thereon in relation thereto. Spaced above the base and trousers is a two-part guide, one part of which mounts to the base. The other part has a straight edge to guide a marking instrument. The parts are adjustably connected to enable the straight edge to be variously positioned, for effecting different markings on the trousers.

3,400,461
CARRIAGE-TYPE DRAWING APPARATUS

Thomas L. Faul, Skaneateles, N.Y., assignor to Albert Nestler A.G., Lahr, Black Forest, Germany
Filed Feb. 3, 1967, Ser. No. 613,783
Claims priority, application Germany, Apr. 28, 1966, N 28,460
4 Claims. (Cl. 33—79)

A drawing apparatus comprising two guide rails extending at right angles to each other and connected to each other by a carriage which is movable along one guide rail, while along the other guide rail another carriage is movable which carries a drawing head, locking means for locking each carriage to the respective guide rail in any position to which the carriage is moved, and separate control means for actuating each locking means and located closely adjacent to each other so as to permit

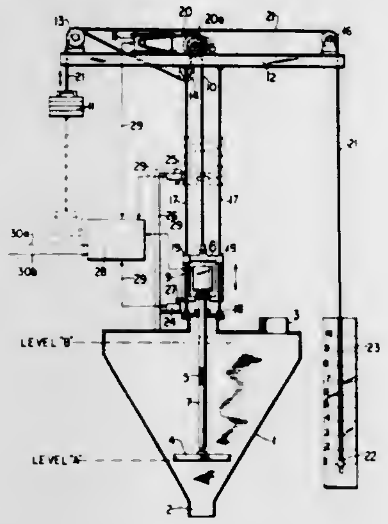


them to be easily operated simultaneously with the same hand.

3,400,462

MATERIAL LEVEL DETECTOR

David F. Pobst, Jr., Pampa, Tex., assignor to Columbian Carbon Company, New York, N.Y., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,521
4 Claims. (Cl. 33—126.6)



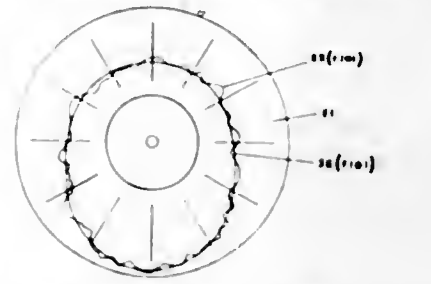
1. Apparatus for detecting the level of material residing within pre-established limits within a tank comprising:
   (a) a rotating material contactor adapted to move up and down within the tank,
   (b) a reversible, electrically energized drive means which raises said material contactor within the tank when the drive means is energized in one direction and which lowers the material contactor within the tank when energized in the reverse direction,
   (c) a double-throw switch which is actuated to a first relation of throw by a torque force created upon engagement of said rotating contactor with material in the tank and which is actuated by spring tension to a second relation of throw upon disengagement of said contactor with material in the tank,
   (d) means for supplying energizing current to the electrically operated drive means through the double-throw switch, said driver means being energized in a direction which raises said material contactor when the double-throw switch is in the first relation of throw switch, said drive means being energized in a reverse direction when the double-throw switch is actuated to the second relation of throw,

whereby said material contacting means is repeatedly and automatically raised and lowered by interruptive engagement of the rotating contactor with material contained in the tank.

3,400,463

MEASURING AND RECORDING ARRANGEMENTS

Brian Wilfred Barringer, East Twickenham, England, assignor, by mesne assignments, to The Rank Organisation Ltd., London, England, a British company
Continuation of application Ser. No. 301,396, Aug. 12, 1963. This application Dec. 21, 1966, Ser. No. 603,688
Claims priority, application Great Britain, Aug. 28, 1962, 32,987/62
11 Claims. (Cl. 33—174)

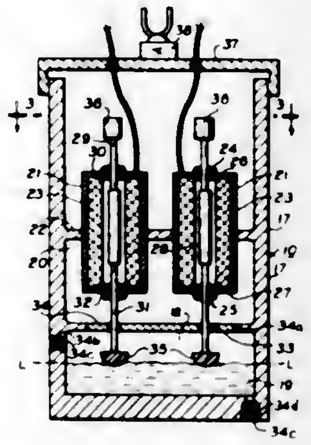


Apparatus for inspecting the profile of a noncircular workpiece for variations from a reference profile. An electrical sensor engages the surface of the workpiece as these two elements are relatively rotated. The output of the sensor is fed during a first revolution to a display device and to sine and cosine potentiometers which rotate at a multiple of the rate of relative rotation between the sensor and workpiece. The sensor output and the potentiometer outputs are integrated and stored. The stored signals are summed and fed to the display device to superimpose upon the profile indication a reference indication during a subsequent revolution.

3,400,464

INCLINATION INDICATOR

Reuben H. Karol, 261 S. Adelaide Ave., Highland Park, N.J. 08904
Filed May 11, 1966, Ser. No. 549,204
10 Claims. (Cl. 33—205)



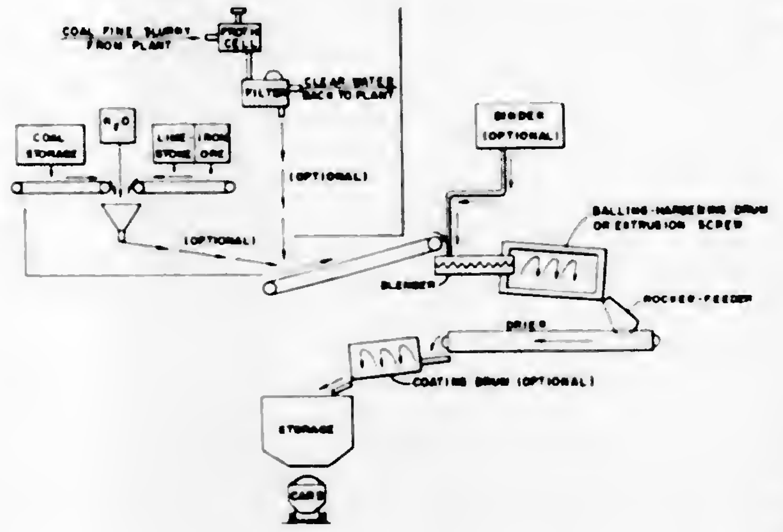
An inclination determining device for measuring the settlement or lateral movement of earthen structures or the like. The device comprises a plurality of differential transformer means positioned within a housing and provided with armature core rod members, floatingly supported on a pool of mercury, which are movable through their respective armatures in response to fluctuations in the level or slope of the mercury liquid.

3.400.465

PERMEABLE BED DRYING PROCESS

Gerald F. H. von Stroh, Huntington, W. Va., assignor of fifty percent to James D. Ireland, Cleveland, Ohio
Continuation-in-part of application Ser. No. 223,135, Sept. 12, 1962. This application Jan. 26, 1967, Ser. No. 611,966
4 Claims. (Cl. 34—22)

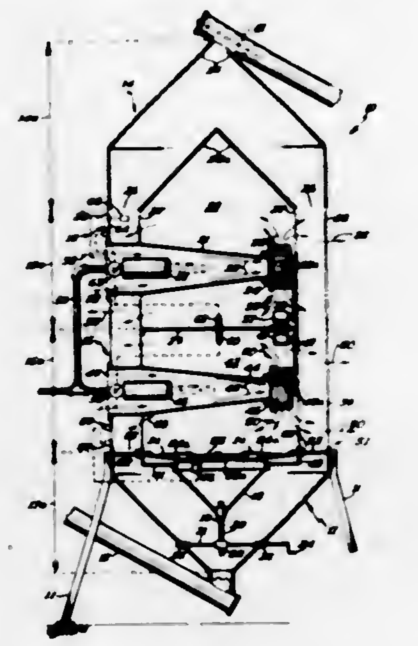
A process for the drying of a bed of pelleted fines wherein the bed has a permeability to a drying medium of no less than about 20%, the bed being superimposed upon a support area having a substantially lesser permeability than that of the bed, thus to assure uniform drying of the pellets without regard to non-uniform thickness of the bed and without substantial disturbance to the bed.



3,400,466

METHOD AND APPARATUS FOR CONDITIONING GRAIN

Jay L. McClaren, Box 366, Garden City, Kans. 67846
Filed Oct. 13, 1966, Ser. No. 586,523
9 Claims. (Cl. 34—25)



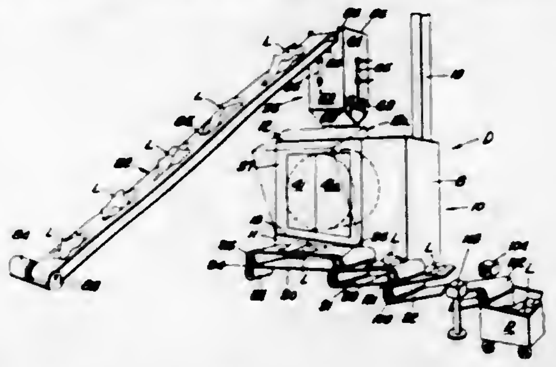
A grain dryer with interior heated pressurized air plenums, inner and outer perforate walls confining grain and permitting flow of the heated air therethrough, a top surge bin supplying grain between the walls, a gate structure at the lower portion of the walls, and a holding bin below the gate structure from which the dried grain is removed.

3,400,467

LAUNDRY PROCESSING ASSEMBLY

Lawrence V. Drace, Las Vegas, Nev., assignor of one-half to Western Laundry & Linen Rental Co., a corporation of Nevada
Filed Apr. 4, 1967, Ser. No. 628,430
14 Claims. (Cl. 34—45)

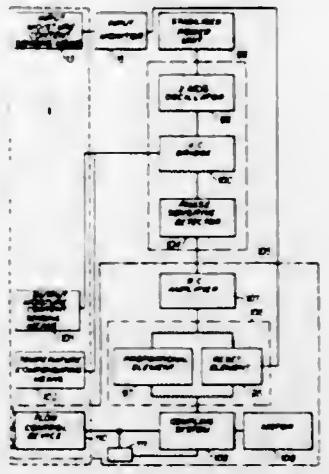
An accumulation hopper has laundry items deposited therein by a continuous conveyer and has a gravity discharge gate located above a washer-or-dryer-carried chute which is mounted to deliver into the entry port of a rotary washer or dryer of the type characterized by a horizontally rotatable, laundry-holding container which is tiltable along the rotation axis for loading into the elevated end discharge from the lower end. Automated control means for sequential operating steps, including pneumatic tilt and front and rear door operation for successive load-unload, are integrated with discharge of the hopper, being responsive to accumulation of hopper-load, or alternately to low humidity determination in the dryer (whichever lasts longer). The discharged load is piece-separated by successively faster-running conveyers and then run past an automatic piece counter.



3,400,468

APPARATUS FOR CONTROLLING THE DRYING OF PARTICULATE MATERIALS

John Matthews, Stopsley, Luton, England, assignor to National Research Development Corporation, London, England
Filed Mar. 9, 1967, Ser. No. 621,838
Claims priority, application Great Britain, Mar. 11, 1966, 10,942/66
12 Claims. (Cl. 34—52)



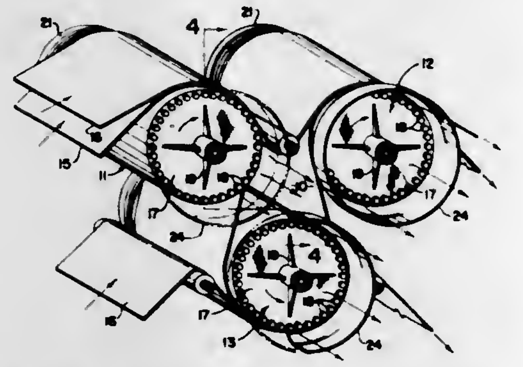
A continuous flow grain drier having electrical moisture sensors at the input and output ends and control apparatus for controlling the extent of drying in response to signals from the input and output sensors. The control apparatus includes a reset potentiometer arranged to apply a control signal, the base voltage across the potentiometer being determined by the input sensor while the wiper of the potentiometer is driven in opposite directions when the signal from the output sensor exceeds a specified range.

3,400,469

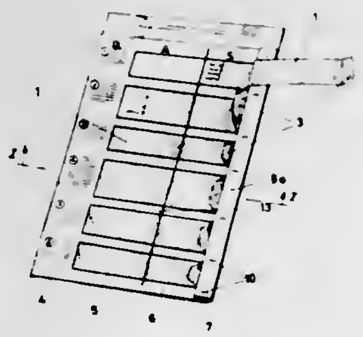
DRIER DRUMS COMPRISING ANNULAR SHELL AIR DEFLECTING COLLARS

Leslie George Janett, Somerville, N.J., assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 27, 1967, Ser. No. 618,665
3 Claims. (Cl. 34—116)

Each drier drum of a plurality comprising a web drying apparatus has its far end or untended side provided with a shell extension at about the drum's periphery and axially outwardly. The extension is attached to the drum end by the same bolts used in its construction or, it can be spaced in close relation relative the drum periphery and exteriorly supported.



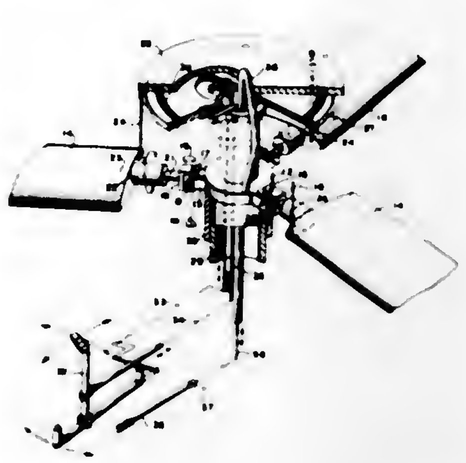
3,400,470
WRITING ARRANGEMENT
Eduard Ritter, Klausstrasse 44,
Zurich 8/34, Switzerland
Filed Nov. 4, 1965, Ser. No. 506,359
Claims priority, application Germany, Nov. 7, 1964,
R 39,196; June 26, 1965, R 40,956
29 Claims. (Cl. 35—9)



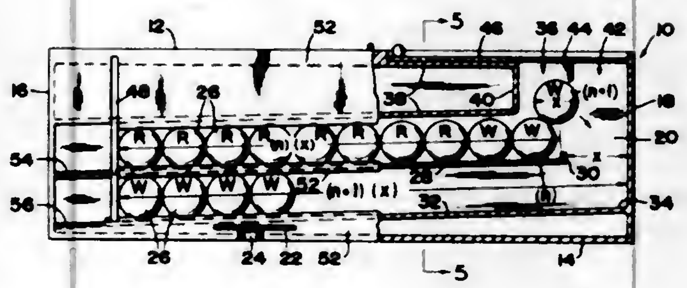
A first sheet is provided on an exposed surface thereof with spaces in which problems are presented, empty spaces in which replies may be marked, and spaces in which the correct answers to the problems are shown. A second sheet having an impression-transferring face overlies the empty spaces and the spaces containing the correct answers. A sleeve surrounds both sheets so that the problem spaces are visible. Means is provided for permitting sliding movement of the second sheet with reference to the first sheet to expose the answer spaces after replies have been written on the second sheet and transferred thereby to the first sheet, but for preventing return movement of the second sheet so as to preclude changing of the once-written reply when the correct answer becomes visible.

3,400,471
DIGITAL HELICOPTER TRAINER
Franklin E. Papin, Annandale, Va., James R. Toler, Fort Washington, Md., and Simeon H. Cotton, Springfield, Va., assignors to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Sept. 20, 1966, Ser. No. 580,745
69 Claims. (Cl. 35—12)

A helicopter simulator for training student pilots includes a student station with continuously variable controls simulating the actual continuously variable control mechanisms aboard a helicopter of the type simulated, these controls connected to potentiometers for developing variable voltages functionally representative of the character and extent of the respective control exercised on the actual helicopter by corresponding actuation of the actual flight control mechanisms. Also provided at the student station are on-off controls simulating those aboard an actual helicopter for engine ignition, landing gear activation and other operating or non-operating functions, and power sources for supplying discrete voltage levels in response to respective actuations of these on-off controls, the discrete levels being functionally representative of the character of the respective control exercised. The signals emanating from the student station are processed by a data processor, and appropriate digital computations are performed after analog-to-digital conversion of certain of these signals to generate information signals representative of the response of the helicopter to the control functions exercised by the student. The information signals are utilized to actuate a display at the student station simulating the instrument panel of the actual helicopter, thereby permitting observation by the student of the effect on the craft of his control operation. The digital computer within the data processor is also utilized to periodically compute the total effect on helicopter performance of the moments and forces exerted at selected observation points along the path of the rotor, and to supply these computations, or signals derived therefrom, as a portion of the information signals indicative of helicopter response.

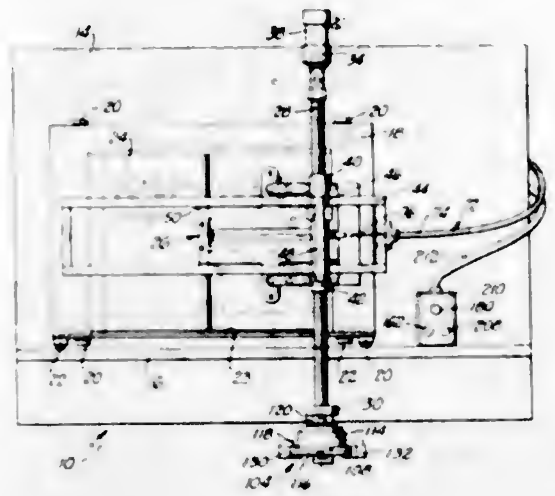


3,400,472
MATHEMATICS TEACHING DEVICE
John G. Strnad, Parma, Ohio, assignor to Education Research Council of Greater Cleveland, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 2, 1967, Ser. No. 619,983
6 Claims. (Cl. 35—31)



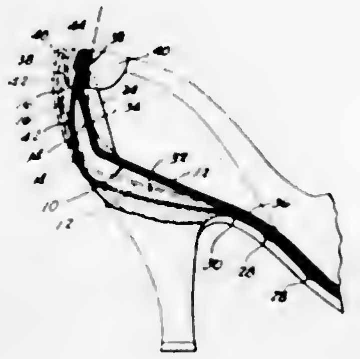
A mathematics teaching device having two superposed inclined ramps mounted in a casing, with the lower ramp having an elevated end extending further up-slope than the upper ramp. An opening in the top of the casing registers with the elevated end of the upper ramp. Balls placed in the opening roll down the upper ramp until the ramp is filled to capacity. Additional balls roll over the elevated end of the upper ramp, landing on the lower ramp.

3,400,473
TACHISTOSCOPE
Wesley I. Nunn, Jr., 1100 Norby Lane,
Fullerton, Calif. 92633
Filed Dec. 27, 1965, Ser. No. 516,414
11 Claims. (Cl. 35—35)



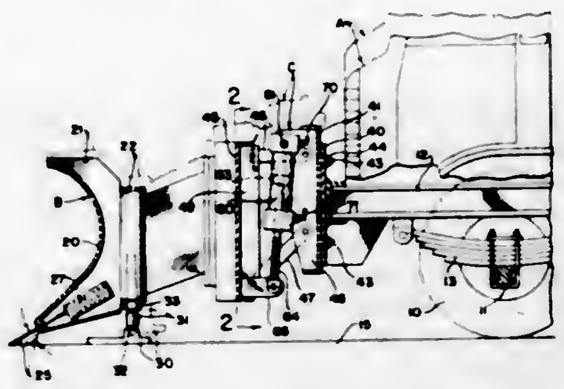
A tachistoscope is disclosed which has a support means adapted to support printed material, a shutter means located on the support means so as to be positioned above any such printed material held by the support means and positioning means for moving the shutter means in increments along any such printed material corresponding to the spacing between lines of print on any such printed material. The shutter means has blade means which are capable of being opened and closed so as to expose an entire line of print on any such printed material.

3,400,474
ACCESSORY DEVICE FOR SHOE HEEL AND SHOE CONSTRUCTION EMBODYING SAID DEVICE
Jack Tendler, 4000 Tunlaw Road NW.,
Washington, D.C. 20007
Filed May 12, 1967, Ser. No. 638,047
10 Claims. (Cl. 36—58.5)



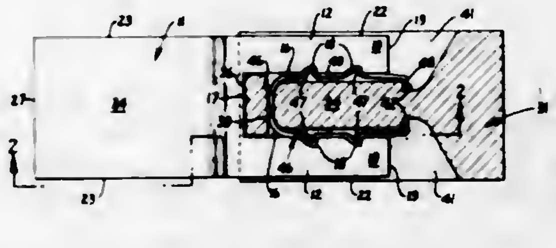
An accessory device for incorporation in the heel of a shoe to prevent chafing, comprising a member formed of spring material having a flat forward portion shaped to conform to the heel and shank of the sole of a shoe and normally seating slightly above and inclined to the shoe sole, an arcuate, upwardly and rearwardly inclined portion extending from the rear of the forward portion and adapted to engage the rear of the heel of the wearer, and means for fixing the forward end of the forward portion to the shank of the shoe so that during walking the member will move downwardly and the upper edge of said inclined portion will push the shoe heel counter away from the heel of the wearer each time weight is taken on the foot, the member returning to its normal position and allowing the shoe heel counter to embrace the heel of the wearer each time the foot is lifted.

3,400,475
SNOW PLOW
Josef Peitl, Vienna, Austria, assignor to Meyer Products Inc., Cleveland, Ohio, a corporation of Ohio
Filed May 28, 1965, Ser. No. 459,568
4 Claims. (Cl. 37—42)



A snow plow to be attached to the front end of the sprung part of a propelling vehicle and having an hydraulic raising and lowering mechanism so arranged as to transfer part of the sprung weight of the vehicle to the cutting edge of the snow plow. The cutting edge is formed from a plurality of retractable blades. The mechanism for mounting the blades is so arranged as to tilt the upper edge of the blade forward when the cutting edge is pressed downwardly to take part of the sprung weight of the vehicle so that the supporting slides on the back of the blade will be raised out of contact with the ground.

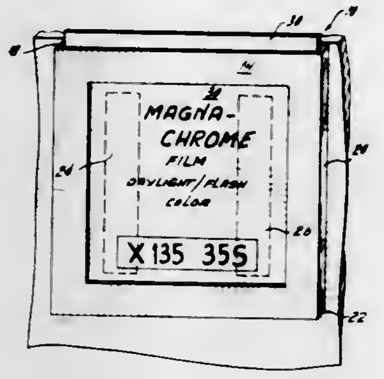
3,400,476
CRIMPED STRING RETAINER FOR EXCAVATING TOOTH
Gerald A. Petersen, Sunnyvale, Calif., assignor of one-half to Anita E. Petersen, Saratoga, Calif.
Filed July 12, 1965, Ser. No. 471,110
3 Claims. (Cl. 37—142)



A pronged tooth of the type of Patent No. 2,968,880 is formed with a notch in at least one wall of the proximal slot. The web of a tooth-holder of the type of said patent receives a metal spring formed in a bow shape which fits through the hole in the web. The spring is formed with a crimp which engages the notch and prevents unintentional dislodgement of the tooth from the tooth-holder.

3,400,477
SELF-MOUNTING FRAME
Harold L. Brown, 43 Burnside Estate,
South Bay Road, Hong Kong
Filed Dec. 5, 1967, Ser. No. 688,055
5 Claims. (Cl. 40—10)

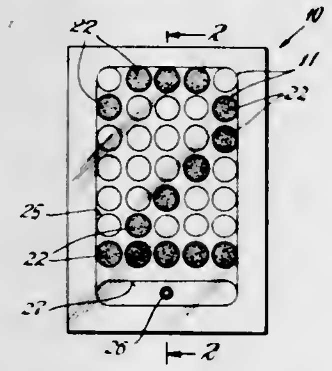
A mounting frame including a backing member provided with one or more apertures and double faced adhesive means secured to said backing and wherein the adhesive is exposed through the apertures to thereby se-



cure the item held by said frame against displacement within said frame.

3,400,478
COMPOSITE CHARACTER DISPLAY DEVICE

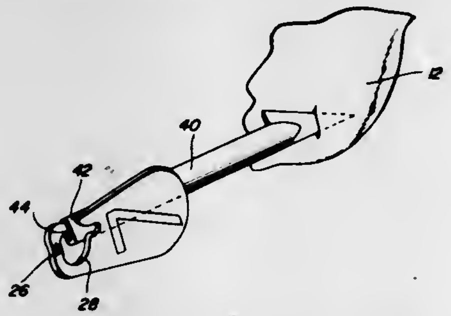
Robert F. O'Keefe, Trumbull, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed Oct. 21, 1966, Ser. No. 588,395
16 Claims. (Cl. 40—28)



A display device comprising a body including a plurality of fluid passages each having a display element freely movable therein between a forward position wherein it is viewable and a retracted position wherein it is normally hidden from view and fluid control means for controlling the positions of the said display elements between each of said positions whereby the display elements may be made to a desired character to be visibly defined.

3,400,479
ANIMAL TAG FOR ATTACHMENT TO DEWLAP AND METHOD OF ATTACHING SAME

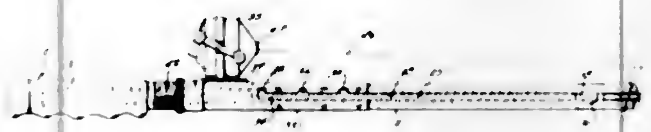
Wayne E. Anderson, Rte. 1, Box 7A, and Donald R. Anderson, Rte. 1, Box 45, both of Gothenburg, Nebr. 69138
Filed Oct. 21, 1965, Ser. No. 499,701
5 Claims. (Cl. 40—300)



A method of tagging animals utilizing a tubular piercing instrument which frictionally retains a deformed end portion of a plastic tag. One end of the instrument forms an aperture through a dewlap when pushed therethrough and the other end of the instrument guides the retained deformed end portion of the tag through the aperture. Upon passage of the deformed end portion through the aperture, it is removed from the instrument and returned to a coplanar alignment with the remaining portion of the tag. Securing means retain the end portion of the tag in its coplanar position.

3,400,480
AUTOMATIC FISHING GUN

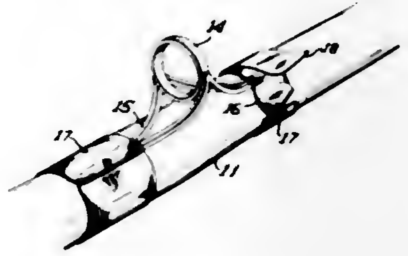
Lester A. Worsham, Box 559, Cedartown, Ga. 30125
Filed Oct. 22, 1965, Ser. No. 502,212
1 Claim. (Cl. 43—19)



A spring-actuated casting rod consisting of a hollow barrel containing a plunger with a spring behind the plunger. A rearwardly concave abutment washer with spaced peripheral anchor lugs is mounted in the barrel behind the spring. A rod is connected to the plunger and has a retaining cup to receive a spherical float member at the end of a fishing line supported on a reel mounted on the barrel. The barrel has a forward abutment sleeve through which the rod slides, and a buffer spring is provided around the rod between the plunger and the abutment sleeve. The fishing line extends slidably through an aperture in the rear wall of the retaining cup. The barrel has a longitudinal slot with spaced notches, and a radial outwardly projecting arm secured to the plunger and is lockingly engageable in a selected one of the notches.

3,400,481
NYLON FISHING ROD WINDING

Harlan B. Christenson, Spirit Lake, Iowa, assignor to Berkley & Company, Inc., Spirit Lake, Iowa, a corporation of Iowa
Filed May 23, 1966, Ser. No. 552,295
7 Claims. (Cl. 43—24)

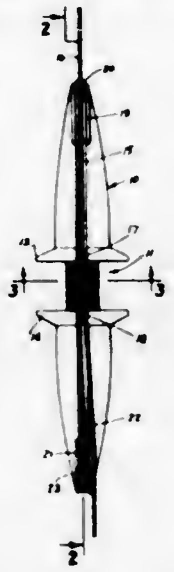


1. In combination, a fishing rod comprising a flexible shaft and a plurality of line guides arranged in spaced apart relationship along the axial extent thereof, each of said line guides having an eyelet and spaced apart feet disposed on opposite sides of said eyelet and extending laterally therefrom for securing said eyelet to the surface of said shaft; means for retaining said feet along the surface of said flexible shaft, said retaining means comprising:

(a) a tape consisting essentially of a plurality of substantially longitudinally disposed heat shrinkable fibers impregnated with a heat curable resin and being wound tautly in a plurality of turns about the periphery of said flexible shaft, with said fibers being disposed generally transversely to the axis of said shaft, each turn of said tape being generally superimposed upon the turn thereunder, with at least one turn confining one of the feet being retained adjacent the outer periphery of said shaft, said heat curable resin being substantially cured, and said fibers having been thermally treated to shrink onto the said shaft.

3,400,482
CASTING BOBBER

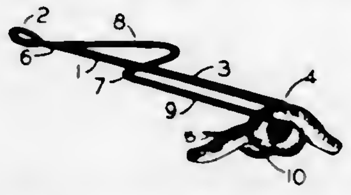
Jerome D. Ekstrand, 3669 South 4400 West, Salt Lake City, Utah 84104
Filed Oct. 7, 1965, Ser. No. 493,647
6 Claims. (Cl. 43—43.11)



A casting bobber for use by fishermen in deep water and characterized by provision of a line storing spool and means for releasably securing the line to the bobber. The required length of fish line between the bobber and sinker and hook necessary to suspend the hook at the desired depth below the surface of the water is wound on the spool before casting and secured. When the bobber strikes the water, the line unwinds from the spool but remains secured. When the line is reeled in, the line releases from the bobber to permit all of the line to be reeled in.

3,400,483
FISHHOOK BAIT HOLDER

Henry B. Temple, Rte. 1, Woodland, Ga. 31836
Filed Mar. 7, 1966, Ser. No. 532,369
4 Claims. (Cl. 43—44.6)

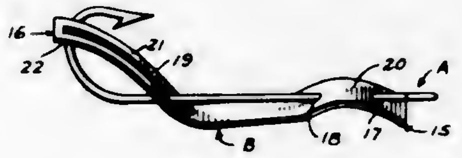


A fishhook with a pressure-exerting bait holding device attached to the upper shank portion. The pressure exerting section of the holding device extends outwardly of the shank portion and terminates in a bar-clamp portion which is substantially parallel to the fishhook shank, the lower end of the bar-clamp portion following the curvature of the fishhook curved portion. The pressure exerting section and the bar-clamp portion are interconnected by an intermediate wire portion which extends across and generally at right angles to the fishhook shank.

3,400,484
BAIT HOLDER

Horace M. Beard, 209 Ridgewood St., Bridge City, Tex. 77611
Filed Dec. 20, 1966, Ser. No. 603,283
2 Claims. (Cl. 43—44.6)

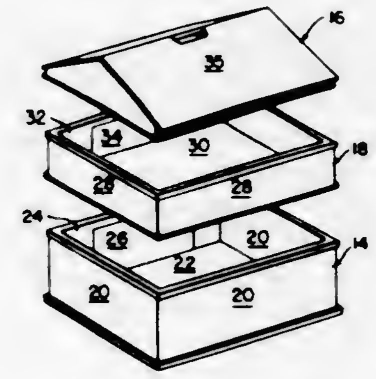
A single length of resilient strip material has a curved end portion provided with two adjacent apertures for receiving and frictionally gripping a fishhook shank adjacent the eye thereof. The strip has a curved opposite end



portion provided with an elongated slot for straddling the curved end of the fishhook.

3,400,485
COMBINATION DOLL HOUSE AND TOY CHEST

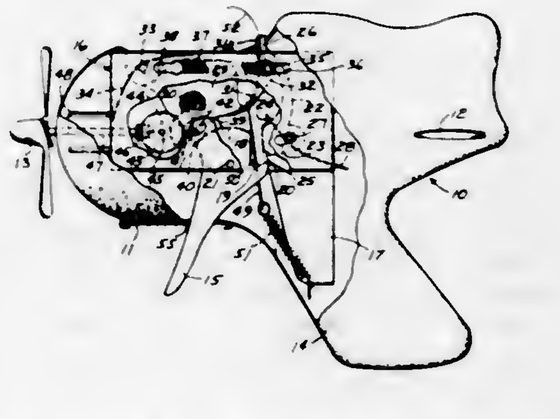
Charles Callin, 136 N. Walnut, Wood Dale, Ill. 60191, and Harold R. Gillespie, 110 Douglas Drive, Hoffman Estates, Ill. 60172
Filed Mar. 3, 1966, Ser. No. 531,405
16 Claims. (Cl. 46—11)



1. A combination doll house and storage chest comprising a plurality of sections stacked one on the other, all but one of said sections comprising a tray having a bottom and four sidewalls, at least a portion of one of said sidewalls being removable to provide an access opening to the interior thereof, the one excepted section comprising a cover, and means detachably connecting each of the sections to an adjoining section in the stack.

3,400,486
CAP SHOOTING AIRPLANE

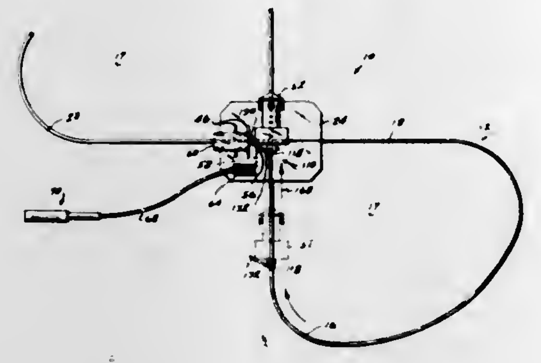
Walter L. Strauss, 1107 Broadway, New York, N.Y. 10010
Filed Apr. 11, 1966, Ser. No. 541,661
9 Claims. (Cl. 46—176)



1. A mechanical toy comprising, in combination, a hollow body simulating an airplane having a rotary propeller, a cap shooting mechanism, and a common actuating means coupled with said cap shooting mechanism and said propeller, operation of said actuating means actuating said cap shooting mechanism and generating a driving momentum causing spinning of said propeller.

3,400,487
SINGLE TRACK SYSTEM AND TOY ACCESSORIES THEREFOR

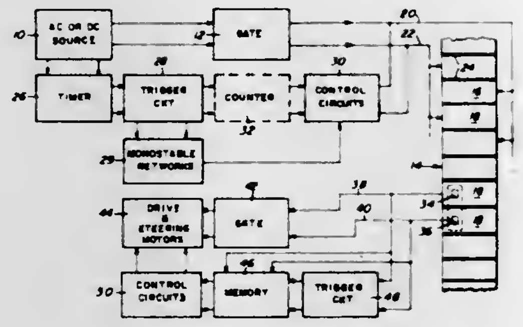
John W. Ryan, Bel Air, and Robert Edgar Hulse, Huntington beach, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of California
Filed Nov. 26, 1965, Ser. No. 509,992
5 Claims. (Cl. 46—217)



A toy train having an engine and a car releasably coupled to it and guided by a flexible track having a cross-over intersection. Movable uncoupling means near the cross-over can be actuated to engage a pivoted coupling member on the engine and uncouple the car as the train reaches the cross-over along one path, which car is left close to the cross-over. The coupling member on the engine has a laterally extending arm arranged to engage a coupling pin on the car, when the engine again crosses the cross-over along a second path at right angles to the one path, to recouple the car and tow it along the second path.

3,400,488
REMOTE CONTROL OF VEHICLES

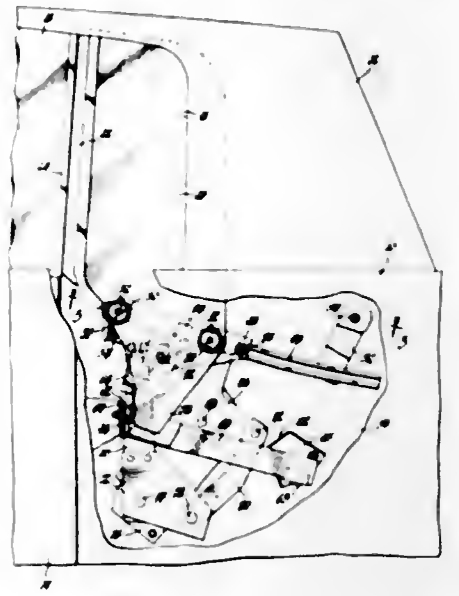
Robert J. Phillpott, 5922 Catina St., New Orleans, La. 70124, and Holden M. Barre, Jr., 714 Lake Ave., Metairie, La. 70005
Filed Apr. 4, 1966, Ser. No. 540,029
27 Claims. (Cl. 46—244)



1. In a remote control system, a base unit having power supply means, means for producing gated power signals having periodic delay periods and means for generating control signals during said delay periods; means for transmitting said signals in a time-sharing arrange- single suction roller being arranged between the conveyor power and said control signals to a remote unit to be controlled; at least one remote unit in contact with said track means, each said remote unit comprising first means responsive only to said power signals, means for disconnecting said first means from said track means during transmission of said control signals, memory means for storing said control signals, and second means reponsive to said stored control signals to perform desired control functions in said remote unit.

3,400,489
WINDOW REGULATOR

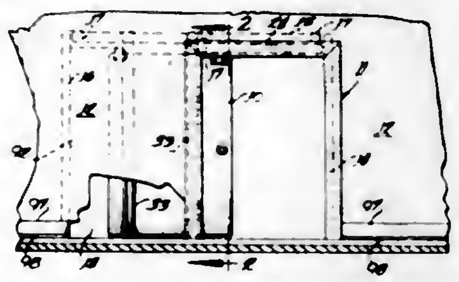
Morris D. Stenger, Harper Woods, and Louis J. Weber, Detroit, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 22, 1966, Ser. No. 596,180
6 Claims. (Cl. 49—348)



1. Regulating means for moving a window between open and closed positions relative to a vehicle body opening, the window including a closure portion for closing the opening and a tailpiece portion extending therefrom, including spaced first and second guide means mounted on the body, guided means mounted on a portion of the window intermediate the closure and tailpiece portions and engageable with the first guide means to guide the movement of the window in a predetermined path, the second guide means receiving the tailpiece portion to provide stability of the window laterally of the predetermined path during window movement, and operating means for moving the window between open and closed positions.

3,400,490
POCKET DOOR ASSEMBLY

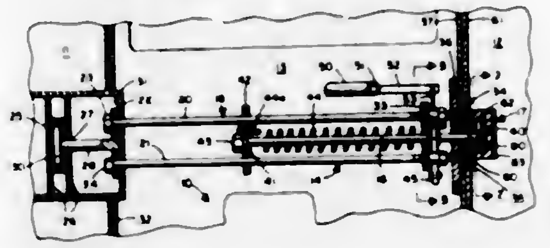
Ralph F. Anderson, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Oct. 14, 1966, Ser. No. 586,867
4 Claims. (Cl. 49—372)



A sliding door assembly where the door slides into and out of a pocket formed in the adjacent wall supported on an overhead track and having a rough frame for the doorway and pocket including a horizontal bridging member between vertical frame members defining the inner end of the pocket and the outer edge of the door opening; and the overhead elongated door track is secured to hangers which are in turn secured to the bridging member. The track includes a horizontal flat plate having a central depending elongated J-shaped track and depending parallel flanges spaced from the track to position nailing strips above the door opening. Vertical split studs formed of metal with wood inserts defining the pocket opening for the door are secured at their upper ends to the bridging member and at their lower ends to the floor; the studs terminating at their lower ends in inturned flanges having irregular nesting peripheries. The door is mounted on a pair of hanger brackets carrying rollers riding in the J-shaped track, the brackets having depending flanges secured to the face of the door adjacent the upper edge; and one bracket has a plastic adjusting wheel in a lower bracket portion cooperating with a depending adjusting screw having a thread cutting end mounted on the upper hanger bracket portion for adjustment of the door in the opening therefor.

3,400,491
DOOR LOCKING MECHANISM

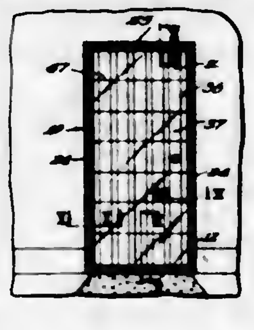
David J. Hole, 10464 Hettrick Circle W., Largo, Fla. 33540
Filed July 5, 1966, Ser. No. 562,889
20 Claims. (Cl. 49—394)



An improved door structure suitable for automobiles is shown in which the automobile door is locked in its closed position by a bolt projecting from its swinging edge, the outer end of which bolt has laterally projecting shoulders which are received between spaced abutments of a locking member on the door frame, the bolt and locking member being rotatable about the axis of the bolt, when the door is closed, so that the shoulders on the bolt may be moved to and from a position between the spaced abutments of the rotatable member to permit opening and closing movements of the door and which bolt and element are rotated when the door is closed whereby the abutments and shoulders then extend in a direction normal to the movement of the door and the shoulders are brought into alignment with additional abutments on the door frame between the door and rotatable member whereby the shoulders of the bolt are blocked to prevent opening movement of the door as well as separation of the door from the door frame in a direction longitudinally of the bolt, the bolt being supported for axial movement in a limited direction from the door by a guide frame which extends across the door and has the end remote from the bolt anchored to the side of the doorway, the guide frame and bolt serving to tie the door between the two opposite sides of the doorway frame.

3,400,492
DOOR FRAME ASSEMBLY

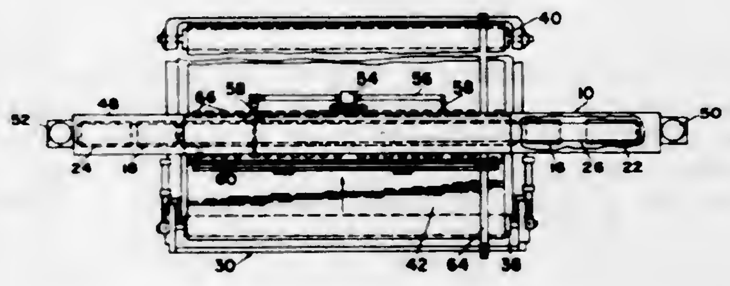
J. Harold Bell and Everett E. Daniels, Litchfield, Ill., assignors to Weather-Proof Company, Litchfield, Ill., a corporation of Ohio
Original application Jan. 18, 1965, Ser. No. 426,189, now Patent No. 3,310,920, dated Mar. 28, 1967. Divided and this application May 9, 1966, Ser. No. 562,986
4 Claims. (Cl. 49—504)



Pre-hung door frame assembly which may be shipped to the site as a unit, in which inside and outside frames are provided for the entranceway of the building and are insulated from each other. The door is hung to the inside frame and the outside frame forms a stop for the door. The inside and outside frames have interengagement with each other at their adjacent ends and are spaced from the walls of the entranceway by parallel legs, to provide an air space between the legs and to enhance the leveling of the frames when attached to the entranceway of a building. The inside and outside frames have parallel hook-like ribs extending along the inside and outside of the respective frames parallel to the walls of the entranceway of the building and forming an attaching means for trim snapped thereto and covering the means for securing the inside and outside frames to the entranceway of the building. The door stop is formed integrally with the outside frame and reenforced by a right angle door stop snapped to the outside of the door stop and to the outside frame.

3,400,493
BELT SANDING AND POLISHING MACHINE

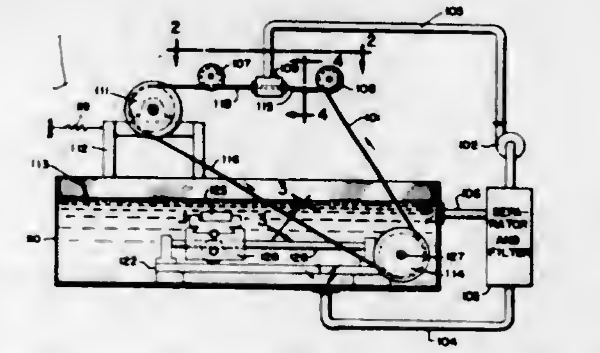
William C. Keyes, Euclid, Ohio, assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed Feb. 16, 1966, Ser. No. 527,896
10 Claims. (Cl. 51—138)



A work positioning and aligning apparatus for a belt sanding machine having a plurality of work engageable segments depending from a support member and adapted to interrupt the advancement of a workpiece. An electrical switching means senses the presence of a workpiece and, after a time delay in which the workpiece abuts the work engageable segments and is caused to be aligned thereby, activates a fluid power means to raise the support member and segments and allows the workpiece to pass thereunder.

3,400,494
APPARATUS FOR MACHINING HARD MATERIALS

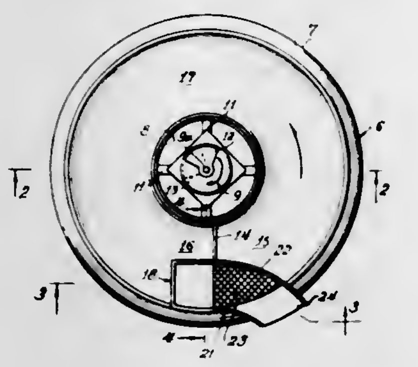
Russell Seitz, Elberon, N.J. 07740
Filed Sept. 24, 1965, Ser. No. 494,299
7 Claims. (Cl. 51—148)



A tubular cord woven of abrasion resistant fibres and filled with a plurality of free abrasive particles is moved across a work piece to be cut. By means of a spring loaded pulley the cord is tensioned so that the diameter thereof is reduced and the abrasive particles penetrate through the fabric of the cord. In the subsequent section of the cord travel, the tension is relaxed and a charging head surrounding the tension relieved portion reinserts under pressure new abrasive particles into the cord. The work piece is submerged in a tank containing a lubricator fluid. By-products of the cutting process are filtered, separated and, by means of a pump, driven partially back to the charging head.

3,400,495
FINISHING APPARATUS HAVING HORIZONTAL CURVILINEAR CHAMBER

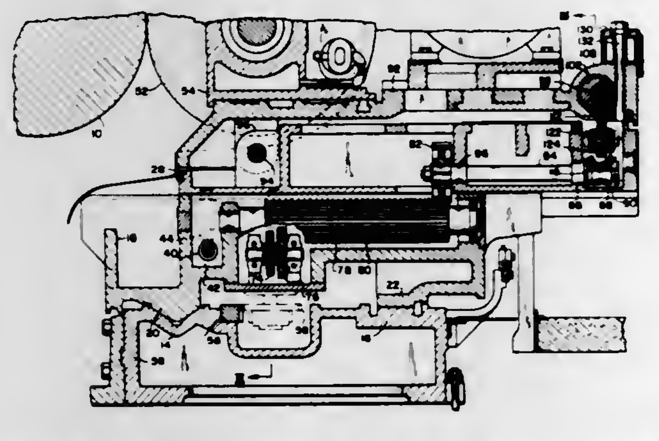
Gunther W. Balz, Kalamazoo, Mich., assignor to Roto-Finish Company, Kalamazoo, Mich., a corporation of Michigan
Filed Nov. 27, 1964, Ser. No. 414,101
43 Claims. (Cl. 51—163)



A finishing machine is provided having a chamber in the form of a horizontal trough curvilinearly arranged as for example in annular form. A vertically mounted unbalanced motor is operatively affixed to the trough to produce gyratory vibrational motion about a vertical axis causing the parts and a finishing material placed in the trough to vibrate orbitally and to move linearly in the trough, causing the parts to be finished. An elevator duct is placed in the trough to remove the mixture, separate and discharge the parts, and return the finishing material to the trough.

3,400,496
IN-FEED MECHANISM

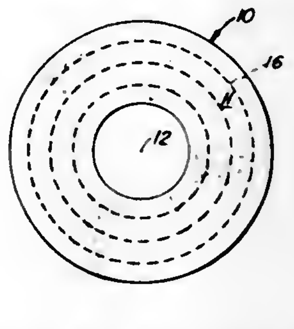
Lorenz Iversen, Pittsburgh, Pa., assignor to Mesta Machine Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 11, 1966, Ser. No. 541,717
13 Claims. (Cl. 51—165)



I disclose, in a grinding apparatus, the combination comprising a carriage structure mounted on slideway means supported by said apparatus for movement toward and away from a workpiece when supported adjacent said apparatus, a carriage section pivotally mounted on said carriage structure adjacent the forward end thereof, a grinding wheel mounted on said carriage section but displaced from the pivotal mounting being so disposed that movements of the rearward end of said carriage section produce corresponding approach and withdrawal movements of said grinding wheel relative to said workpiece, means for moving said carriage structure along said slideway means constituting a relatively coarse feed adjustment for said grinding wheel, a supporting link for said rearward carriage section end adjustably mounted on said apparatus, and a fine feed eccentric rotatably mounted on said carriage section rearward end and engaging said supporting link.

3,400,497
ABRASIVE DISC

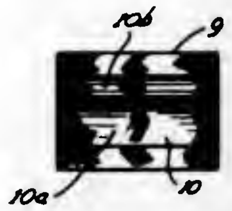
Frank O. Shoemaker, Palos Park, Ill., assignor to Titan Abrasives Company, a corporation of Illinois
Filed Dec. 7, 1965, Ser. No. 512,132
3 Claims. (Cl. 51—209)



A rotatable abrasive disc for grinding articles at a side grinding surface of the the disc and including a reinforcing member comprising abradable glass fibers embedded in the disc and positioned around the axis with the member being substantially entirely at an acute angle to the side grinding surface and those portions adjacent the surface so that only small portions of the reinforcing member are exposed as the abrasive body and glass fiber reinforcing member are worn away at the surface during the grinding, the result being that the reinforcing member continues its reinforcing even during the time that the side of the disc is being worn away.

3,400,498
METAL POLISHER

Dellburt F. Kitzel, 4767 W. 211th St., Cleveland, Ohio 44126
Filed Aug. 10, 1965, Ser. No. 478,539
9 Claims. (Cl. 51—212)

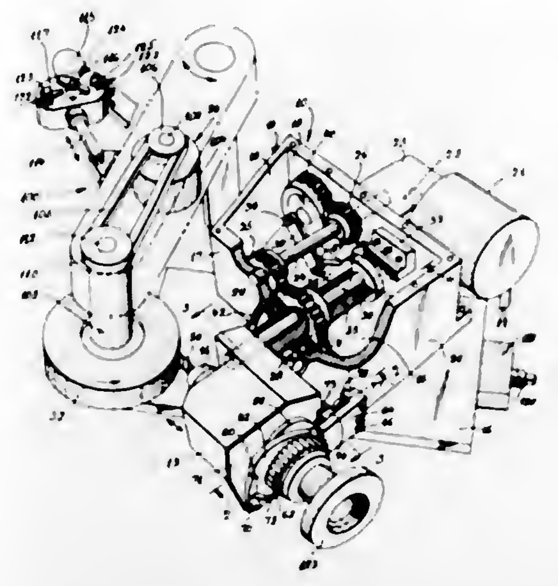


The invention is directed to a polisher particularly adapted for supporting armature shafts for rotation against the polishing face while the face remains in substantially fixed position axially of the shaft, and polishing the shaft uniformly along the entire length of the engaged portion of the shaft to precise cylindrical shape free from circumferential grooves and ridges.

3,400,499
DRILL GRINDING MACHINE

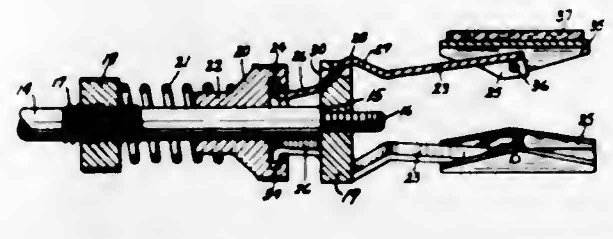
Melvin E. Pew, 211 Albert St., Washington, Ill. 61571
Filed Mar. 14, 1966, Ser. No. 536,183
4 Claims. (Cl. 51—219)

A drill grinding fixture that can be used to grind automatically, quickly and accurately the lips on opposite sides of a drill or drill bit. The fixture comprises a box-like, frame with a bracket thereon for supporting a bearing having an eccentric bore. Drive mechanism is provided for rotating the bearing and a shaft in the bore. A chuck housing is movably mounted on the frame as is operatively connected to the shaft so that the housing oscillates and turns angularly in a vertical plane. There is a chuck in the housing for supporting a drill in coaxial disposition, the axis of the drill lying in said vertical plane to present one end of the drill to a grinding wheel while the drill rocks in said plane.



3,400,500
CYLINDER HONES

James T. Clark, Fort Morgan, Colo., assignor to Clark-Feather Mfg. Co., Fort Morgan, Colo.
Filed July 15, 1966, Ser. No. 565,525
4 Claims. (Cl. 51—353)

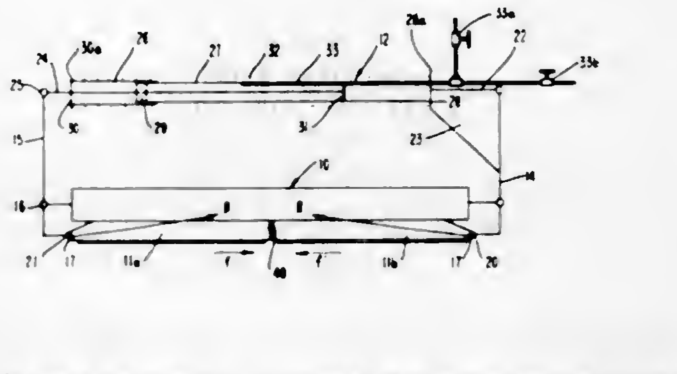


A tool drive shaft having an arm-spreading disc fixed on its forward extremity and a spring actuated slide element slidably mounted thereon rearwardly of said disc, there being a plurality of flexible hone-supporting arms projecting forwardly from said slide element through guide passages in said disc so that as said slide element is urged forwardly by said spring the forward extremities of said arms will be resiliently and radially expanded.

3,400,501
GRINDING AND POLISHING APPARATUS

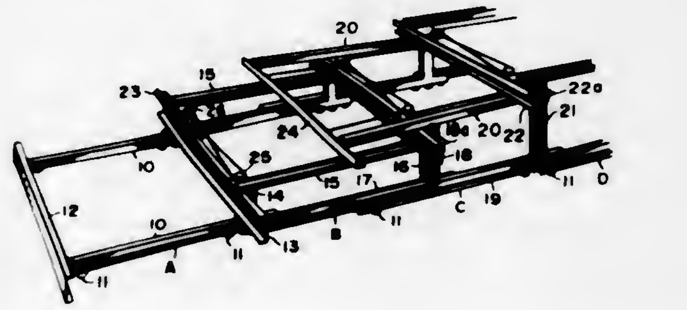
Henri Jules Chaumont, Brussels, Belgium, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed June 10, 1965, Ser. No. 462,940
Claims priority, application France, June 16, 1964, 978,431
15 Claims. (Cl. 51—358)

A rubbing block intended principally for machines for grinding and polishing sheet glass, and quick-releasable clamping means for connecting the block to a heavy base member permanently attached to the machine. The block is formed in two like and essentially coplanar panels joined for limited pivotal movement about a line in their meeting edges. The clamping means cooperates with these panels to hold them together and to urge them into contact with the base member by which they are moved in an orbital grinding or polishing movement. Due to the quick-detachable feature and light weight of the block, it may be readily removed for replacement of its felt rubbing facing.



3,400,502
TELESCOPING PLATFORM STRUCTURE

Robert T. Scaggs, Urbana, Henry A. Meares, Champaign, and Lloyd D. Lindsey, St. Joseph, Ill., assignors, by mesne assignments, to American Seating Company, Grand Rapids, Mich., a corporation of Delaware
Filed Sept. 22, 1966, Ser. No. 581,243
9 Claims. (Cl. 52—9)

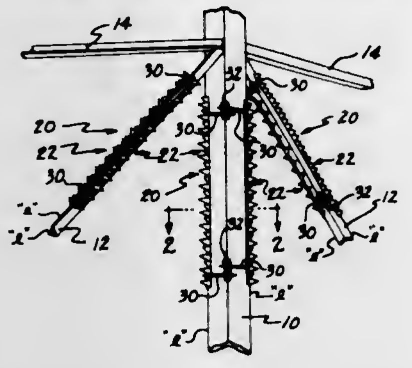


Horizontal platforms in sections are arranged one over the other in telescoping relation for movement to expanded position or inwardly to contracted position, a first section having at its rear a pair of spaced pulleys on opposite sides thereof mounted for rotation in a horizontal plane and in the plane of the second section a pair of cables, each secured to the rear of the second section adjacent a side thereof and extending along said side and about the front portion of the pulley adjacent said side and about the rear portion of the pulley at the other side of said section, each cable being secured to the front portion of said second section. With this structure, the mobile sections which are free of outside support are individually guided in their parallel travel to the expanded and contracted positions.

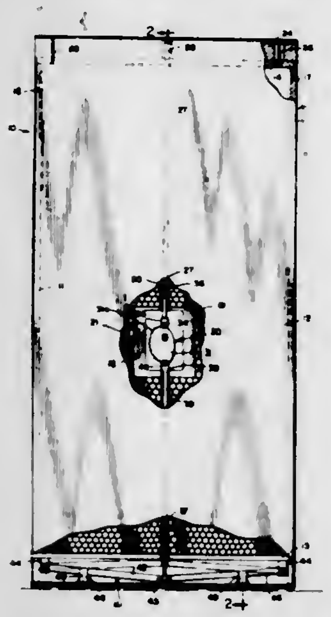
3,400,503
PROTECTIVE DEVICE

Richard J. Schaller, Oaklawn, Ill., assignor to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois
Filed Apr. 17, 1967, Ser. No. 631,537
6 Claims. (Cl. 52—101)

A protective device for discouraging climbers from scaling and climbing the structural members of support towers and the like for electrical transmission lines, comprising an elongated guard extending longitudinally along an edge of the structural member. The guard includes a plurality of sharp, toothlike projections arranged in rows along opposite edges thereof to extend transversely outward of the structural member and thereby discourage climbers from gripping or holding onto the structural member. Clamping means are provided to secure the guard in place along the edge of the structural member without requiring the member to be cut, punched, drilled, or welded.



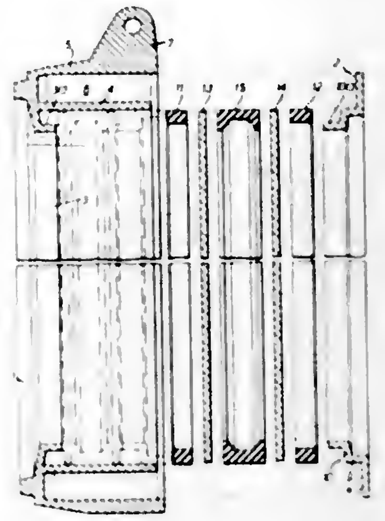
3,400,504
MOVABLE WALL PARTITION
Ray H. Neisewander, 1010 E. Edwards St.,
Springfield, Ill. 62703
Filed July 6, 1966, Ser. No. 563,229
5 Claims. (Cl. 52—122)



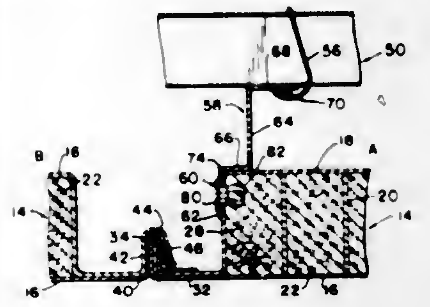
A temporary wall partition having a cavity in which a pair of inwardly extending support arms are mounted. The arms are pivotally connected to the frame of the partition adjacent the side edges of that partition and have their inner ends in opposing relation adjacent the vertical midline of the partition. Each arm is provided intermediate its ends with a downwardly extending caster assembly which is engageable with a floor surface when the inner end of the arm is urged downwardly. A vertical push rod disposed within the cavity of the partition has its lower end operatively connected to the inner ends of both arms and is associated with a cam which may be rotated to extend and retract the casters. A second push rod extends upwardly through the frame and a load equalization bar extends horizontally across the top of the frame and is engaged by the upper end of the second push rod. The second push rod engages the cam so that as the cam is rotated to retract the casters the load equalization bar will be simultaneously extended.

3,400,505
WINDOW FRAMES
Sydney Charles Hart-Still, 79A St. Marks Road, Bush
Hill Park, Enfield, Middlesex, England
Filed Sept. 29, 1965, Ser. No. 491,207
Claims priority, application Great Britain, Oct. 6, 1964,
40,776/64
6 Claims. (Cl. 52—476)

A thermoplastic window frame, which may be injection molded, having two one piece members having pane retaining flanges, the first of which is formed with a pair of spaced upstanding circumferential walls defining a nonreentrant peripheral slot, the second of which seats on the free edges of the walls to seal off the slot, and clamping clips pivotally mounted in the slot.



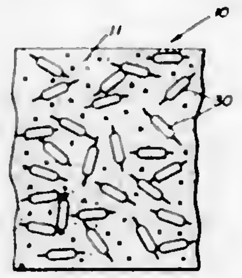
3,400,506
SUSPENDED CEILING OF REMOVABLE PANELS
Walter W. Thompson, Box 627, Hazlehurst, Ga. 31539
Filed July 12, 1965, Ser. No. 471,263
2 Claims. (Cl. 52—484)



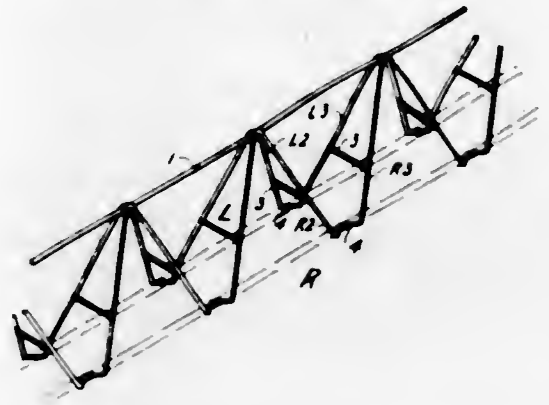
The acoustical system comprises acoutical ceiling panels arranged in parallel rows in a common horizontal plane. The panels are suspended from an overhead support structure which includes spaced parallel bars having depending flanges extending along the opposite sides of the panels in alternate rows. Holes are spaced uniformly along the length of the flanges, and holes along opposite sides of the panels in the alternate rows are spaced apart multiples of the distance between the holes in the flanges. Removable clips project through holes in the flanges and into aligned holes in the panels in the alternate rows to removably secure the latter panels to the flanges. The panels in the alternate or remaining rows are supported on the panels in the alternate rows. For this purpose the panels in the alternate rows have upwardly extending flanges along opposite sides and the panels in the remaining rows have downwardly opening hooks engaging over the upwardly extending flanges.

3,400,507
STRUCTURAL MEMBERS WITH PREFORMED CONCRETE REINFORCING DEVICES
Chester M. MacChesney, Chicago, Ill., assignor to Ellamac Incorporated, Chicago, Ill., a corporation of Illinois
Filed Sept. 12, 1966, Ser. No. 578,620
7 Claims. (Cl. 52—659)

There is disclosed a strucutral member including a concrete mass having a plurality of individual reinforcing devices suspended in and distributed through the concrete mass; the reinforcing devices are of preformed construction and each comprises an elongated metal rod carrying a cement body enveloping the intermediate portion thereof and firmly adhered thereto, the cement body being in spool form with alternate areas of lesser and greater diameters and being formed essentially of set-up Portland cement.

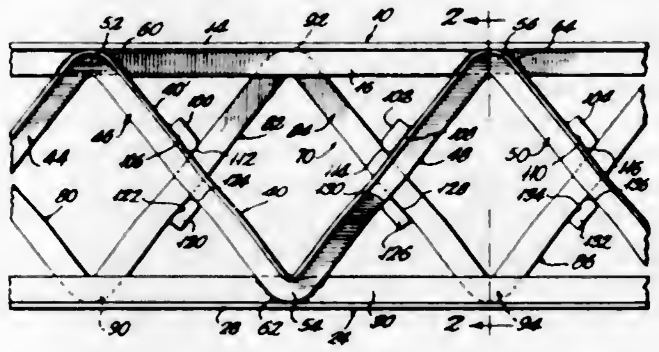


3,400,508
FRAMEWORK GIRDER WITHOUT LOWER CHORD
Herbert Dietner and Heinz Schulz, Graz, Josef Ritter, Graz-Kroisbach, and Wilhelm Boyer, Graz, Austria, assignors to AVI Alpenlandische Veredelungs-Industrie Gesellschaft m.b.H., Graz, Styria, Austria, a corporation of Austria
Filed June 7, 1966, Ser. No. 555,893
5 Claims. (Cl. 52—691)



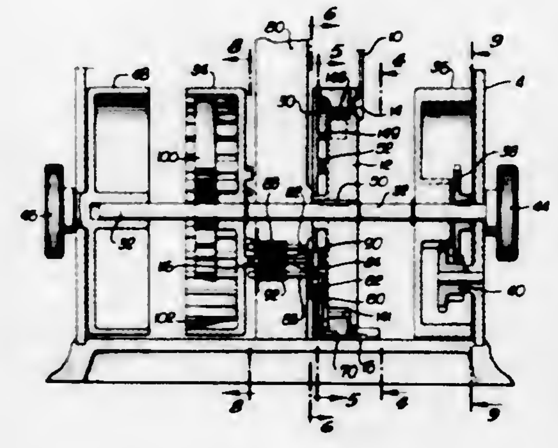
A truss girder has a top compression chord and a series of paired diagonal web members connected to the top chord and is used in engaging a prefabricated reinforcing element in pincer fashion.

3,400,509
STRUCTURAL IMPROVEMENT
Glenn W. Setzer, 915 Tulip St.,
Johnson City, Tenn. 37603
Filed Nov. 15, 1966, Ser. No. 594,483
10 Claims. (Cl. 52—694)



The purpose of the invention is to rigidify a beam or truss when under load. The diagonal portions of the structural member are provided with laterally extending kicker members fixed thereto which slidably engage other diagonal portions so that the diagonal portions as well as the longitudinal members are stressed partly in compression and partly in tension whereby the components contain both normal stresses and counter stresses.

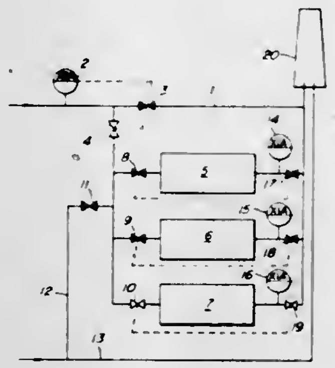
3,400,510
CALENDAR CLOCK
Henry Schwarzer and Esther Schwarzer, both of
13021 Osborne St., Pacoima, Calif. 91331
Filed Apr. 11, 1966, Ser. No. 541,805
5 Claims. (Cl. 58—4)



1. A calendar clock comprising:
a first wheel;
a shaft keyed to said first wheel;
means to rotate said first wheel and shaft at a rate of one revolution every 31 days;
a second wheel mounted on said shaft driven by said first wheel, said second wheel being adapted to rotate ahead of said first wheel, said second wheel having a groove therein;
a bracket means pivoted to said second wheel;
a peripheral day indication adapted to be driven by said bracket, said day indicator having the numbers 1 through 31 thereon;
a fixed plate adjacent said second wheel, said fixed plate having three pins therethrough adapted to engage said second wheel and said groove, said pins being normally biased away from said second wheel and said groove;
a third wheel having the months of the year thereon mounted on said shaft, said third wheel having a spring connected therewith and to said shaft whereby said third wheel is adapted to be biased so as to rotate with said shaft, said third wheel further having twelve equally spaced bosses thereon, said bosses being circumferentially and radially arranged on said third wheel whereby the radially inward bosses represent the months of April, June, September and November, the intermediate bosses represent January, March, May, July, August, October and December, and the radially outward boss represents February, each of said bosses being adapted to engage one of said three pins, said third wheel spring and bosses being adapted to bias said pins toward said second wheel, said pins when engaging said groove on said second wheel being adapted to disengage said boss to release said third wheel to allow rotation thereof until the next boss is engaged by a pin;
said bracket means being adapted to be engaged by the intermediate pin biased toward said second wheel to rotate said day indicator $\frac{1}{31}$ of a revolution ahead of said first wheel and $\frac{3}{31}$ of a revolution when said bracket means is engaged by the outer pin.

3,400,511
APPARATUS AND METHOD FOR RETAINING RADIOACTIVE EXHAUST GAS

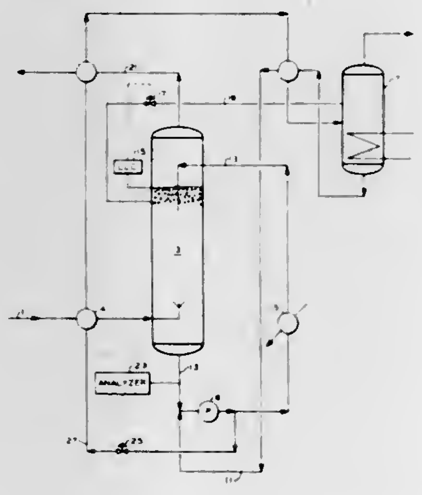
Hajime Yamanouchi, Hitachi-shi, Japan, assignor to Hitachi, Ltd., Osaka, Japan, a corporation of Japan
Continuation of application Ser. No. 333,053, Dec. 24, 1963. This application Aug. 3, 1966, Ser. No. 573,750
Claims priority, application Japan, Dec. 28, 1962, 37/59,169
8 Claims. (Cl. 55—18)



1. A process for treating an exhaust gas containing radioactive gases which comprises selectively directing an exhaust gas low in radioactivity directly to the atmosphere and an exhaust gas high in radioactivity to the first of a series of adsorption reservoirs substantially removing the radioactive gases from the exhaust gas in said first adsorption reservoir, discharging said treated exhaust gas to the atmosphere, monitoring said discharged gas such that when the radioactivity of said gas reaches a predetermined level the first adsorption reservoir is bypassed and the exhaust gas containing radioactive gases is directed to a second reservoir and succeeding reservoirs as the adsorbing capacity of each reservoir is in turn spent.

3,400,512
METHOD FOR REMOVING WATER AND HYDROCARBONS FROM GASEOUS HCl

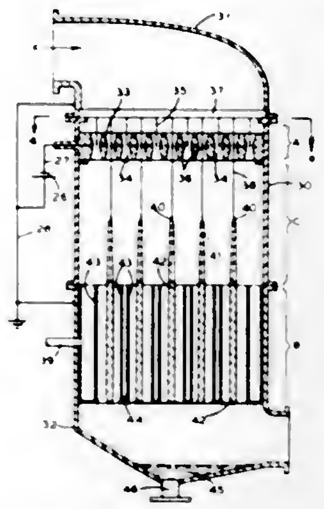
Dwight L. McKay, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 5, 1966, Ser. No. 562,840
3 Claims. (Cl. 55—69)



A multi-component vapor stream is purified by contacting said stream in a vapor cooling zone with a refrigerant pre-cooled to a temperature below the freezing point of at least one of the components of said stream to separate frozen component and separately removing said frozen component and remaining purified vapor from said zone.

3,400,513
ELECTROSTATIC PRECIPITATOR

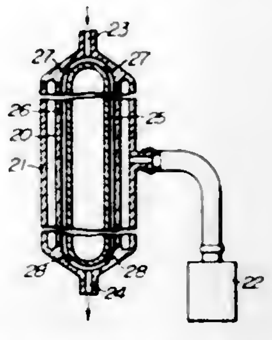
Richard H. Boll, Alliance, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 8, 1966, Ser. No. 578,435
6 Claims. (Cl. 55—103)



An electrostatic precipitator having an open ended housing of dielectric material with hoods positioned on said opposite ends of the housing to direct a flow of dust laden gas into and clean gas from the precipitator. The dust in the gas is electrostatically charged upon entering the housing and the dust collected after leaving the housing while the electrostatic charge on the dust is increased by electrogasdynamics in passing through the housing for enhanced dust collection.

3,400,514
CARRIER GAS SEPARATING DEVICE

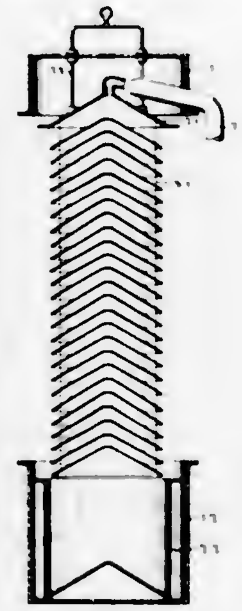
Tamotsu Noda, Katsuta-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Sept. 20, 1966, Ser. No. 580,746
Claims priority, application Japan, Oct. 1, 1965, 40/79,571, 40/79,572
3 Claims. (Cl. 55—158)



A device for separating carrier gas from sample components for use in a system in which the sample components emerging from a gas chromatograph are subjected to mass spectrometric analysis by the use of a mass spectrometer, comprising a porous carrier gas separating tube, a vacuum jacket enclosing said tube, an inlet to said tube connected with a gas chromatograph and an outlet from said tube connected with a mass spectrometer, means for evacuating the interior of the vacuum jacket to remove a carrier gas, through the porous wall of the tube, which enters the tube through the inlet, together with sample components, from the gas chromatograph, and an air-tight inner space reduction member positioned within the tube, thus defining a uniform interstice between the member and the tube, which interstice provides for communication between the inlet and the outlet of the tube. According to an alternative embodiment of the present invention, the inner space reduction member is constructed so as to be movable axially within the porous tube to effect a blocking of communication between the inlet and outlet means of the tube. The movement of the inner space reduction member may be accomplished by electromagnetic means.

3,400,515
PRODUCTION OF WATER FROM THE ATMOSPHERE

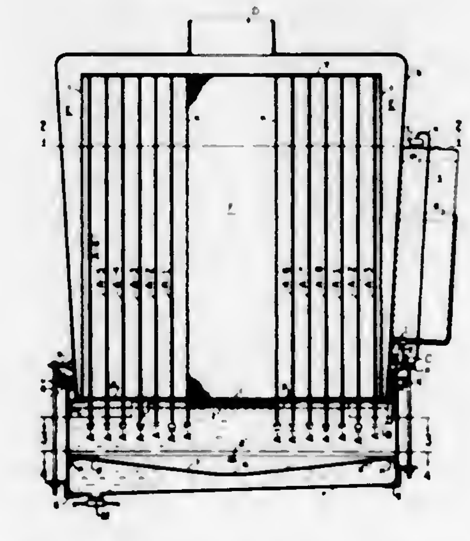
Ernest B. Ackerman, 1537 N. Marion, Denver, Colo. 80218
Continuation-in-part of application Ser. No. 457,724, May 21, 1965. This application May 2, 1966, Ser. No. 546,800
2 Claims. (Cl. 55—179)



An apparatus for recovering potable water from the atmosphere is described. The apparatus is based on the principle that air in a given environment will become saturated and produce water vapor provided the air space is minimized. The device permits exposing large surface areas of a hydrophilic material to the atmosphere to collect water and the enclosure of the hydrophilic material containing the collected water in a minimum air space to produce liquid water.

3,400,516
AIR FILTER

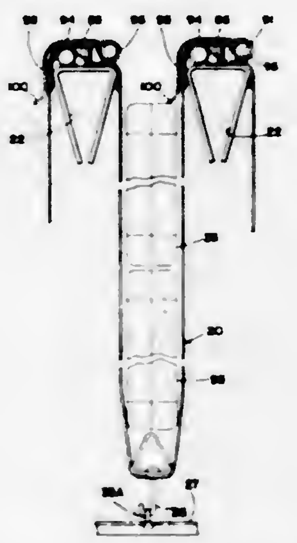
Roberto Munoz de Leon, Providencia 332–1, Colonia del Valle, Mexico
Filed Sept. 26, 1966, Ser. No. 581,839
Claims priority, application Mexico, Sept. 24, 1965, 84,847
3 Claims. (Cl. 55—228)



An air filter has body and cup members separated by a partition having a central opening, a set of spiral vanes in the cup extending into oil maintained at a constant level, and a set of spiral vanes within a filter in the body and covered by a cap. The vanes define a continuous closed spiral path to guide air in a single direction of rotation from an inlet over the oil and through the filter to an outlet, to provide a maximum path length and filtering area.

3,400,517
DUST COLLECTOR

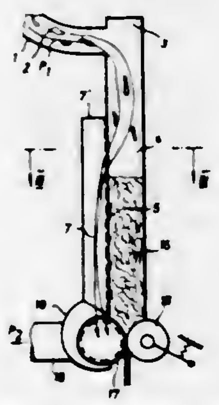
Carl R. Sare, Bay Village, Ohio, assignor to W. W. Sly Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed July 25, 1966, Ser. No. 567,519
13 Claims. (Cl. 55—378)



A dust collecting apparatus having a dust compartment and a clean air compartment with the border therebetween being defined by a plurality of spaced support mullions and open filter bags positioned therebetween. Flaps of adjacent bags overlap each mullion and are secured in seating engagement by a fastening device attached to one edge of the flaps, overlying the flaps, mullion, and mullion pin and projecting back into the bag on which the fastening device is mounted.

3,400,518
APPARATUS FOR SEPARATING FLOCK FROM AN AIR STREAM

Paul Staheli, Wilen, near Wil, Switzerland, assignor to Rieter Machine Works, Ltd.
Filed Sept. 16, 1966, Ser. No. 580,115
Claims priority, application Switzerland, Apr. 5, 1966, 5,009/66
14 Claims. (Cl. 55—428)

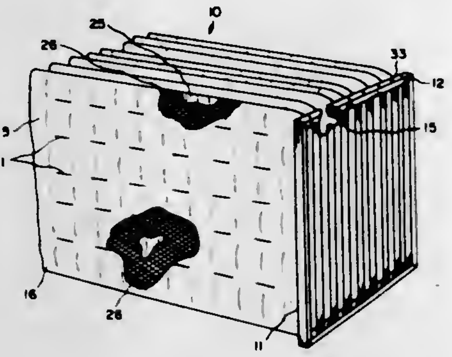


In a card feed system wherein a stream of air is used to transport loosened fibrous flock to a spinning machine, the flock containing air stream is directed through the filling shaft and thence through the separating wall so that the flock is separated out of the air stream and deposited in the filling shaft. The flock deposited in the filling shaft is removed in a wad by the wad forming rollers at the base of the filling shaft.

3,400,519
HIGH EFFICIENCY AIR FILTER

Paul P. Korn, 12 N. Lake Circle, and Lawrence Korn, 6 Pine Brook Drive, both of White Plains, N.Y. 10605

Filed Jan. 11, 1967, Ser. No. 608,679
6 Claims. (Cl. 55—484)

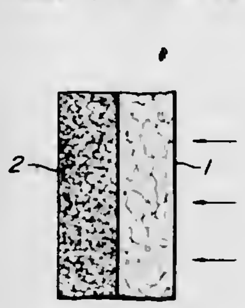


A multi-pocket air filter comprising one or more bags of filter media mounted on a header member through which the air enters each bag. A shorter porous separator sheet is provided between longer media bag sides which are joined together along substantially parallel spaced lines to form under air pressure plural tubular members divided by the separator and constituting air channels for the air stream. The filter supported only at the header remains collapsed until inflated by air pressure.

3,400,520
FILTER MATERIAL FOR INTERNAL COMBUSTION ENGINE AIR CLEANER

Takasi Sakurai, Kariya-shi, Japan, assignor to Nippon Denso Company Limited, Kariya-shi, Japan, a corporation of Japan

Filed Apr. 24, 1967, Ser. No. 633,083
Claims priority, application Japan, Nov. 16, 1966, 41/105,508
7 Claims. (Cl. 55—487)

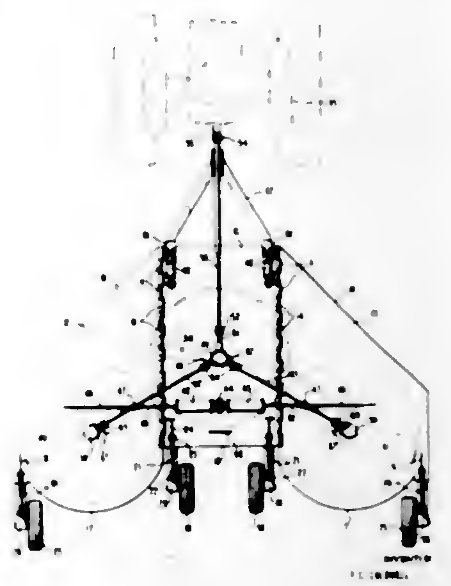


A filter material for internal combustion engine air cleaner, which consists of an air inlet layer of non-woven fabric having a relatively low amount of fibers used per unit area and an air outlet layer of non-woven fabric having a relatively high amount of fibers used per unit area, both layers being secured with an adhesive, in which a dust retention capacity of the filter material is enhanced by using the fibers having the same size mainly in the non-woven fabrics for both layers; a filtration efficiency of the filter material is enhanced by mixing a small amount of finer fibers into the non-woven fabrics; and the change with time in the filtration efficiency of the filter material is made even by using at least two kinds of fibers showing mutually different tendencies in the change with time in the filtration efficiency, at least in the air inlet layer.

3,400,521
TRACTOR-DRAWN MOWING MACHINE

Frederick Clay Caldwell, Corpus Christi, Tex., assignor to E. L. Caldwell & Sons, Inc., Corpus Christi, Tex., a corporation of Texas

Filed May 26, 1965, Ser. No. 458,988
3 Claims. (Cl. 56—6)

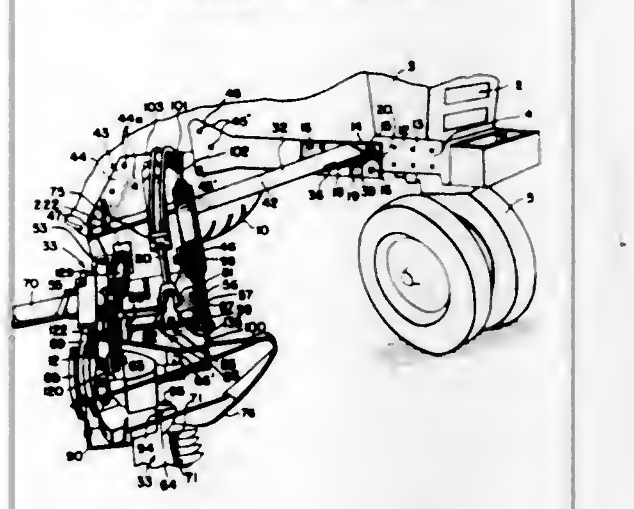


A multi-section rotary type mower including center and side sections which are hingedly connected on parallel longitudinal hinge axes. The mower structure is characterized by compactness, and the opposed cylinder-piston units which raise and lower the mower side sections are disposed in a substantially horizontal plane close to the top of the center section and beneath the telescoping drive shafts which interconnect the gear boxes of the side mower sections and a central gear box on the center section.

3,400,522
SELF-MOUNTING MOWER AND CONTROLS THEREFOR

Thomas J. Scarnato, Park Ridge, Paul C. Gordon, Hinsdale, and James Morkoski, Clarendon Hills, Ill., assignors to International Harvester Company, a corporation of Delaware

Filed Dec. 2, 1964, Ser. No. 415,382
18 Claims. (Cl. 56—25)

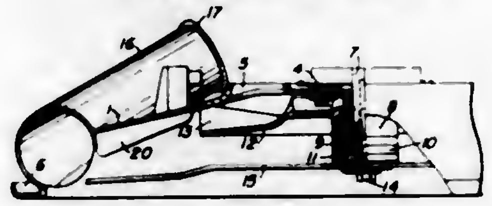


An attachment of a mower having a frame with a forwardly projecting attachment arm at its inner end and a cam lifter extending from the side of a tractor, a ball connection between the front end of the arm and the cam plate and a fulcrum between the front attachment and the cam plate and arm, the ball connection being adjustable to raise and lower the rear end of the mower about the fulcrum for attachment to the tractor and mower having adjustment with frame to position the arm and frame in alignment with tractor attachments.

3,400,523
LAWN MOWERS

Svante Klingofstrom and Ernst Sture Lennart Svensson, Malmo, Sweden, assignors to Flymo Societe Anonyme, Geneva, Switzerland

Filed June 11, 1965, Ser. No. 463,132
Claims priority, application Great Britain, June 20, 1964, 25,598/64
7 Claims. (Cl. 56—25.4)

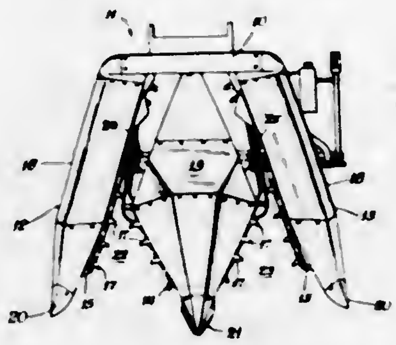


A power lawn mower of the rotary type, having a discharge chute for discharging the grass clippings and comprising a rotary impeller and a cutter blade mounted on the same power driven shaft, the impeller and cutter blade being enclosed within a housing which has an air intake in its upper portion and a bottom opening confined by a continuous boundary having its bottom face located substantially in a plane, said continuous boundary being located at a distance above the ground which is small enough to substantially restrict escape of air between the housing and the ground. The air pressure created within the housing by the aforesaid rotary impeller is sufficient to cause the grass clippings to be expelled through the discharge chute under pressure and, at the same time, in one embodiment of the invention, to cause the housing and its associated parts to be elevated slightly above the ground by the air escaping between said continuous boundary and the adjacent ground. In another embodiment, the housing is provided with wheels and the air pressure within the housing is maintained through the use of a flexible curtain extending downwardly from the lower edge of the housing to a plane near the ground.

3,400,524
ADJUSTABLE COMBINATION GUARD AND LEDGER PLATE

John D. Segredo, Chicago, Ill., assignor to International Harvester Company, a corporation of Delaware

Filed Aug. 31, 1965, Ser. No. 484,012
13 Claims. (Cl. 56—98)



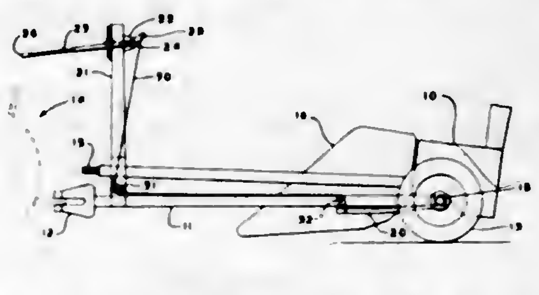
A harvester having a pair of relatively reciprocal elements including a sickle and a split guard with cutting portions, the parts of the guard being adjustable lengthwise of the sickle to vary the position of the cutting area therebetween.

3,400,525
FORAGE HARVESTER

Benjamin H. Snavely, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Filed Aug. 3, 1965, Ser. No. 476,911
3 Claims. (Cl. 56—214)

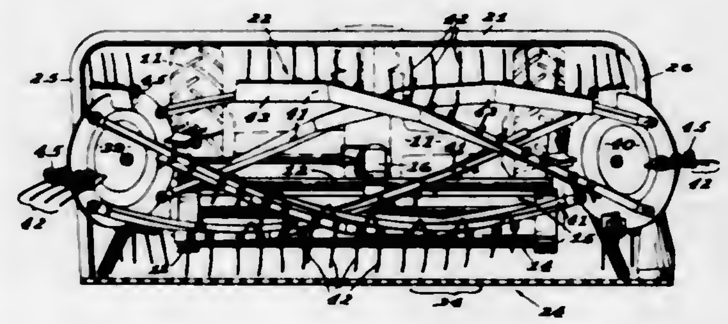
A tractor drawn harvesting implement, having a header unit mounted thereon which is adapted to be selectively vertically adjustable by a tractor operator from his station by means of a lever mounted forwardly of the harvesting implement, within reach of the tractor operator, such that a downward movement of the lever will cause means operatively connected to the lever and the header to raise the header, while upward movement of the lever permits downward movement of the header.



3,400,526
HARVESTER REEL CONSTRUCTION

Miles H. Tuft, Birmingham, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Oct. 19, 1965, Ser. No. 497,795
8 Claims. (Cl. 56—220)

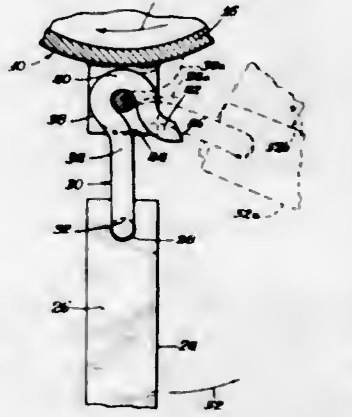


1. A reel for harvesters, said reel having a pair of reel end plates lying in forwardly divergent vertical planes, a series of bars extending between the end plates and attached to said end plates at spaced intervals, and rake teeth mounted on the bars, each bar having a generally helical form and attaching to the two end plates at diametrically opposite attaching points.

3,400,527
FLAIL KNIFE MOUNTING

Robert W. Woodring, La Grange, Ill., assignor to International Harvester Company, a corporation of Delaware

Filed Dec. 13, 1965, Ser. No. 513,257
7 Claims. (Cl. 56—294)



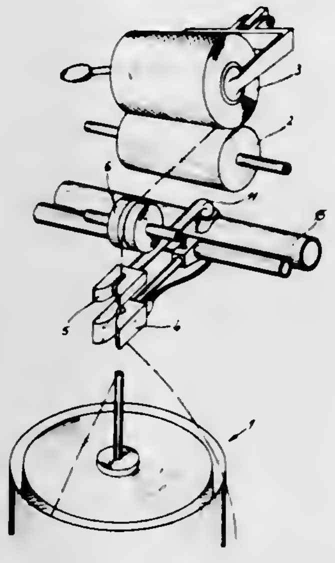
1. A flail knife and mounting for use with a rotary shaft, comprising, lugs secured to the shaft, an axially positioned mounting element supported by the lugs, a knife, and a ring swingably supporting the knife on the mounting element, the ring having a hook and being mountable on the mounting element by hooking the hook substantially normal to said ring transversely thereover.

3,400,528

METHOD AND APPARATUS FOR POST-TREATING OF YARN ON TWO-FOR-ONE TWISTING MACHINES

Klaus Nimtz and Willy Heimes, Krefeld, Germany, assignors to Palitex Project-Company G.m.b.H., Krefeld, Germany

Filed Oct. 11, 1967, Ser. No. 674,474
Claims priority, application Germany, Mar. 25, 1967, P 41,729; Sept. 6, 1967, P 42,945
22 Claims. (Cl. 57—35)



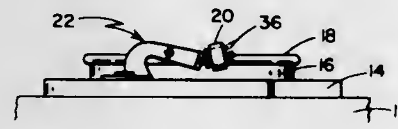
The present invention concerns a method of and apparatus for post-treating yarn on two-for-one twisting machines according to which the yarn passes partially in the form of a thread balloon from a bobbin to a winding-up spool. The invention is characterized primarily in that the thread on its path from the tip of the thread balloon coming from said bobbin to said winding-up spool is singed while during the same operational step and on the same path the surface of the thread is moistened.

3,400,529

TRAVELER CLEANER

Knrt Constantine Chilpan, Seneca, S.C., assignor to Maremont Corporation, Chicago, Ill., a corporation of Illinois

Filed Apr. 27, 1966, Ser. No. 545,760
6 Claims. (Cl. 57—57)



A traveler cleaner having an elongate arcuate blade extending throughout its length in generally concentric and parallel relationship to the path of movement of the traveler being cleaned, and provided with a cutting edge at one of its ends.

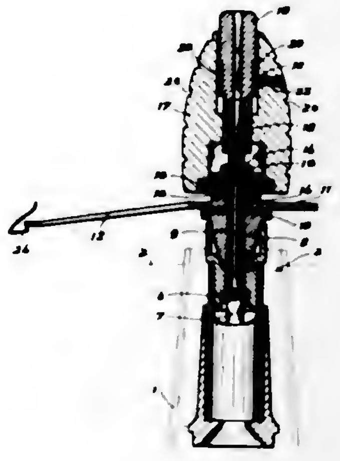
3,400,530

DEVICE FOR BRAKING A TRAIN FLYER ON MULTIPLE TWISTING SPINDLES

Willy Heimes, Krefeld, and Hans Grapp, Krefeld-Forstwald, Germany, assignors to Palitex Project-Company G.m.b.H., Krefeld, Germany

Filed May 15, 1967, Ser. No. 638,340
Claims priority, application Germany, May 17, 1966, P 39,458; Apr. 22, 1967, P 41,969
11 Claims. (Cl. 57—58.83)

The present invention relates to a device for braking a train flyer on multiple twisting spindles, which includes a train flyer having a bearing hub freely rotatable about the axis of the spindle shank, while friction surface means are provided below the train flyer for selective friction braking engagement with said braking hub. The device furthermore comprises magnetic means respectively connected to the spindle shank and the bearing hub and operable selectively to move the bearing hub relatively toward and away from said friction surface means for selectively increasing and decreasing the frictional engagement of said bearing hub with said friction surface means and also for selectively frictionally disengaging said hub from said friction surface means.



3,400,531

BULKY YARNS

Toshio Ohfuka, Hiroshi Yokoyama, Hideo Sato, and Yoshikazu Inai, Funi-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

Filed Jan. 6, 1967, Ser. No. 607,758
4 Claims. (Cl. 57—140)

Bulky yarns excellent in shape stability, compression elastic modulus, surface smoothness, flexibility, luster, bulkiness and feeling of fullness are prepared by the steps where acrylic non-shrinkable fibers, shrinkable fibers of limited shrinkage and acrylic conjugated fibers of limited shrinkage and latent crimping ability are mixed in a specific range of mixing ratio and then the mixture is spun by mixed-yarn spinning process or twisted by mixed yarn twisting process.

The shrinkage degrees of the component fibers are respectively, between 0 and 4, between 5 and 35, and between 0 and 8. The latent crimping ratio referred to above is between 10 and 35. The mixing ratios (weight percent) are, respectively, more than 15%, and more than 25% and between 50% and 10%.

ERRATUM

For Class 58—4 see:
Patent No. 3,400,510

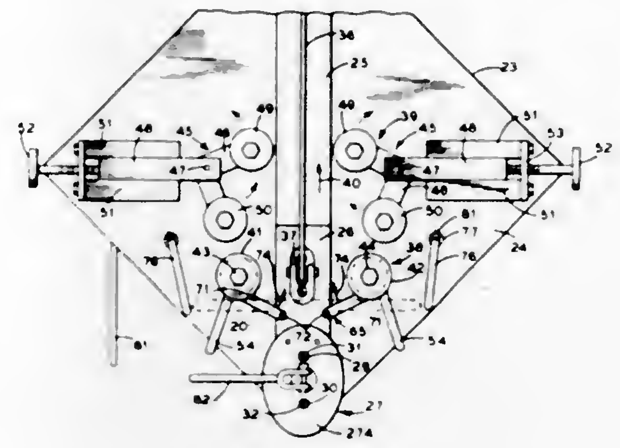
3,400,532

APPARATUS FOR MAKING HORSESHOES

Raymond Smith, 2322 Neptune Ave., Seaford, N.Y. 11783

Filed Oct. 22, 1965, Ser. No. 501,332
9 Claims. (Cl. 59—36)

This disclosure is directed to an apparatus for shaping bar stock into horseshoes. The apparatus comprises essentially a base member on which there is mounted a track on which a die for shaping the bar stock into horseshoes is mounted. A drive means is connected to the die to move it along the track. Forming means are disposed on either side of the track to bend the stock to the shape of the die as the latter is advanced along the track. The arrangement is such that the bar stock is automatically centered before the die is moved.

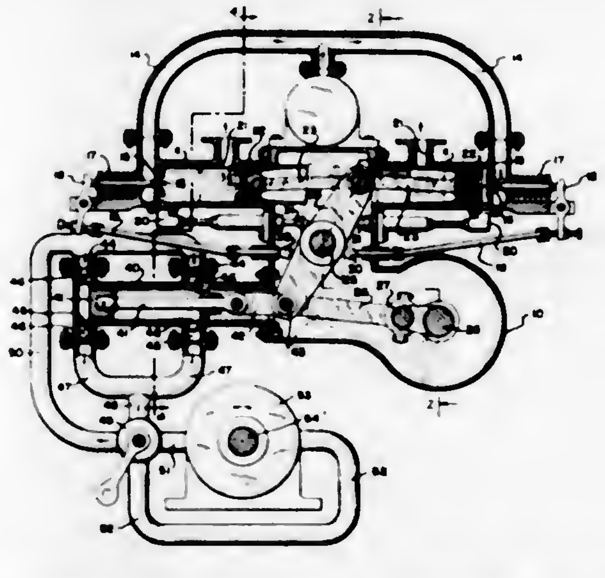


3,400,533

OPPOSED CYLINDER TWO-CYCLE ENGINE

John S. Wenzel, Willimantic, Conn., assignor of thirty-three and one-third percent each to Marjorie L. Barnett, New York, and Helen W. Tonken, Massapequa Park, N.Y.

Filed Oct. 31, 1966, Ser. No. 590,647
4 Claims. (Cl. 60—19)



1. A power system comprising an internal combustion engine having at least one pair of opposed cylinders, a movable piston in each cylinder, stroke limiting means for limiting the stroke of each said piston, a rocker beam mounted for oscillation between each pair of opposed cylinders, a connecting rod connected at one end to each said piston and at its other end to an end of said rocker beam, a fluid pump operatively connected to an opposite end of said rocker beam for converting the oscillatory movement of said beam into fluid pressure, and a fluid power take-off motor connected to said pump by a closed hydraulic circuit.

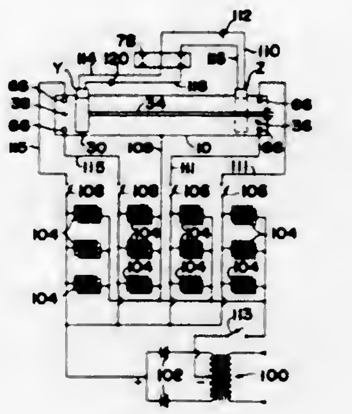
3,400,534

HIGH ENERGY DRIVE UNIT

Anatol Michelson, Glenolden, Pa., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Filed Apr. 11, 1967, Ser. No. 630,124
5 Claims. (Cl. 60—27)

An electrohydraulic energy conversion device for reciprocating a member repeatedly along a path and in first and second directions with the second direction being opposite to the first direction. The device comprises a housing forming an elongated chamber extending along the path. A piston is positioned in the chamber to divide the chamber into front and aft cavities. An element is provided to connect the piston to the reciprocating member and an electrically nonconductive and noncombustible liquid is in at least the front cavity. The liquid generally fills the front cavity when the member has been moved in the second direction. Positioned in the front cavity are members forming a spark gap. Power leads connect the members through switches to a power supply including a capacitor bank. Consequently, when the switches are closed, a high energy spark is created across the spark gap. This creates a shock wave in the liquid of the front cavity and drives the piston and member in the first direction. Additionally, means are provided for supplying gas under pressure to the front cavity as the piston and member move in the first direction.

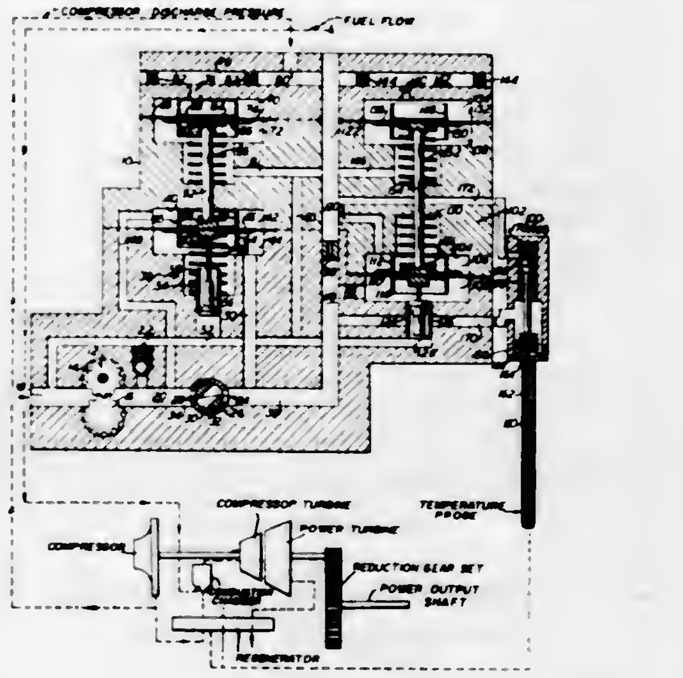


3,400,535

AUTOMOTIVE GAS TURBINE FUEL CONTROL SYSTEM

Arthur F. McLean, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

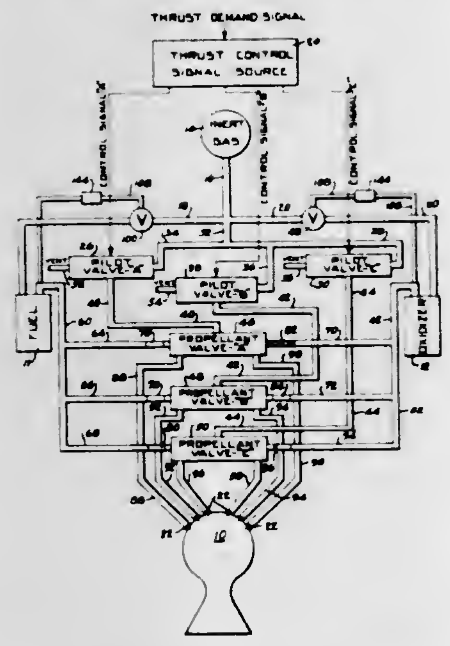
Filed Oct. 3, 1966, Ser. No. 583,534
10 Claims. (Cl. 60—39.28)



A fuel control system having a throttle valve controlling fuel flow, a first steady state pressure regulating valve for maintaining the pressure differential across the throttle valve constant for a set position of the valve, modified by compressor discharge pressure above a predetermined level; an acceleration fuel flow control including a fixed area flow orifice and an variable area bypass, a second pressure regulating valve modifying the flow through the orifice as a function of either the pressure differential across the orifice or changes in compressor discharge pressure, and a temperature responsive control to modify flow through the bypass as a function of engine temperature change above a set value.

3,400,536
TEMPERATURE COMPENSATION FOR THRUST CONTROL SYSTEMS

Harry L. Richardson, River Edge, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed May 14, 1965, Ser. No. 455,725
4 Claims. (Cl. 60—39.48)

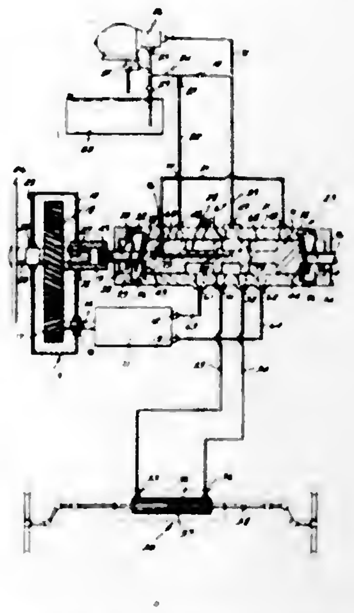


1. Means for controlling the pumping of fuel in a rocket engine fuel system of the type having means for storing liquid fuel and means for pumping the fuel from the fuel storing means, the controlling means comprising:
(a) adjustable means connected to the pumping means for controlling the pumping of the fuel from the fuel storing means;
(b) means for regulating the adjustable means connected to the adjustable means and responding to the increases in the temperature of the fuel in the fuel storing means to increase the pumping of the fuel from the fuel storing means with an increase in the temperature; and
means for conveying fuel including
  (i) a fuel conduit connected to the fuel storing means, the fuel being pumped from the fuel storing means entering at the upstream end of the fuel conduit, and
  (ii) means for regulating the rate of flow of fuel in the fuel conveying means substantially as a function of the fuel pressure at the upstream end and the vapor pressure of the fuel.

3,400,537
POSITION CONTROL SYSTEM

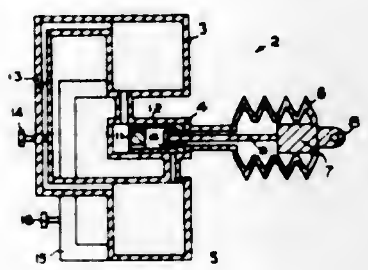
Jean Mercier, 501 Bloomfield Ave.,
Caldwell, N.J. 07006
Filed Aug. 2, 1966, Ser. No. 569,637
Claims priority, application France, Aug. 6, 1965, 27,527; Nov. 25, 1965, 39,709; Nov. 29, 1965, 40,084; Mar. 4, 1966, 52,052
11 Claims. (Cl. 60—52)

This invention relates to the art of positioning controls and more particularly to a steering control for the rudder of a ship or the wheels of a farm tractor, in which a reversible hydraulic motor having a movable actuator has both sides of the actuator pressurized when the steering control is in neutral position.



3,400,538
HEAT ENGINE

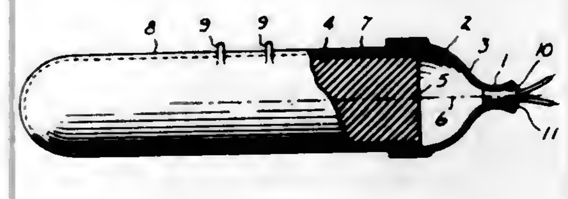
Garland Winfrey, 104 S. State St.,
Rolla, Mo. 65401
Filed Oct. 28, 1966, Ser. No. 590,441
1 Claim. (Cl. 60—95)



A steam engine situated between a boiler and a condenser. The steam engine including an expansion bellows. A member connected to the bellows which actuates a valving member and cyclically controlling the entrance of steam from the boiler to the bellows and the exit of steam from the bellows to the condenser.

3,400,539
RUBBER BASE COMPOSITE PROPELLANT AND METHOD OF USE

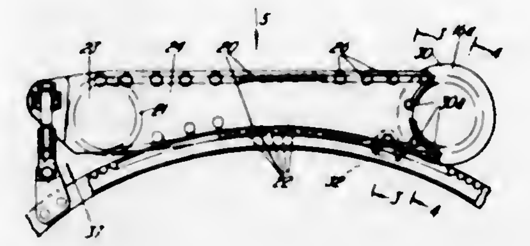
Gilbert H. Swart, Akron, Ohio, assignor to The General Tire and Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Jan. 14, 1954, Ser. No. 404,014
9 Claims. (Cl. 60—219)



A solid rocket fuel is prepared by forming a liquid mixture which contains a synthetic rubber of a selected type e.g., polysulfide rubber, with a solid inorganic oxidizing agent e.g., potassium perchlorate, introducing the mixture into a mold and curing it until solid.

3,400,540
JET NOZZLE CHAIN DRIVE AND MOUNTING MEANS THEREFOR

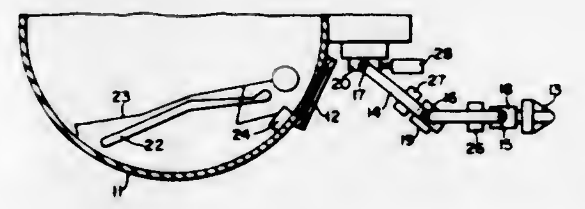
Roger A. Cresswell, Derby, and George Samuel Kitson, Aspley, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed May 15, 1967, Ser. No. 638,480
Claims priority, application Great Britain, June 8, 1966, 25,424/66
3 Claims. (Cl. 60—232)



A gas turbine jet propulsion engine has a rotable nozzle. The nozzle derives its rotation from a motorized sprocket tooth and chain arrangement, the sprocket teeth being fitted around the outer periphery of the upstream end of the nozzle and the motor and chain being mounted as one assembly, on the jet pipe. The mounting comprises a plurality of spherically jointed links which absorb any movement which takes place between the motor and chain assembly and jet pipe as a result of differential expansion, thus maintaining a nearly constant amount of drive contact between the chain and sprocket teeth.

3,400,541
MANIPULATOR APPARATUS

Wayne B. Lloyd, Baltimore, and Earl R. Schlissler, Towson, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 23, 1966, Ser. No. 596,627
4 Claims. (Cl. 61—69)

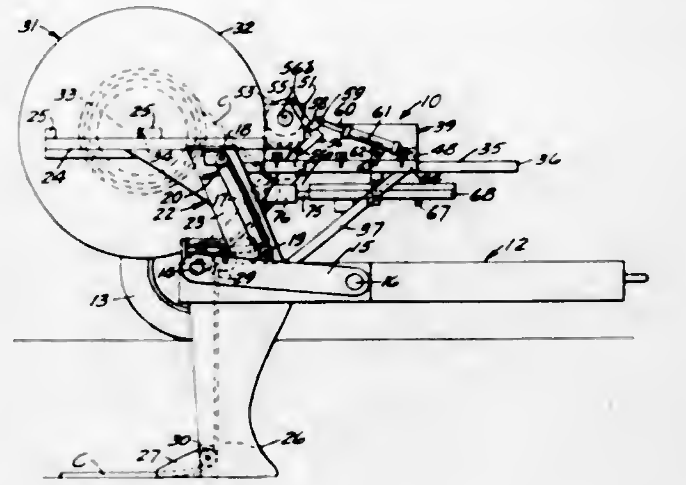


Manipulator apparatus for use on undersea vehicles. An exterior-mounted multi-joint manipulator arm has a respective hydraulic actuator and electro-hydraulic flow control valve at each arm joint. Common hydraulic supply and return lines connect the several control valve to a sea-ambient pressure-compensated hydraulic supply-return system. Current regulating means at an operator's station provides for operation of the control valves, and means are included for equalizing all hydraulic volumes within the system at sea-ambient-compensated pressures during de-activation of the apparatus.

3,400,542
UNDER GROUND CABLE LAYING VEHICLE WITH FORCE FEED DEVICE

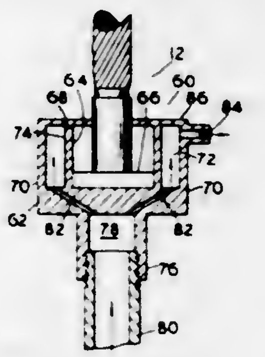
Ronald C. Davis, Minneapolis, Minn., assignor to August R. Scheppmann, Okabena, Minn.
Filed Oct. 24, 1965, Ser. No. 504,662
6 Claims. (Cl. 61—72.6)

A force feed device for a cable laying vehicle which lays cable below the surface of the ground. A tension sensing mechanism sensing tension on the cable during the cable laying operation and controlling a drive to the cable laying reel to minimize damage to the cable.



3,400,543
SEMI-CONDUCTOR COOLING MEANS

Peter G. Ross, 460 Shannon Place,
Cliffside Park, N.J. 07010
Filed Oct. 31, 1966, Ser. No. 590,812
5 Claims. (Cl. 62—3)

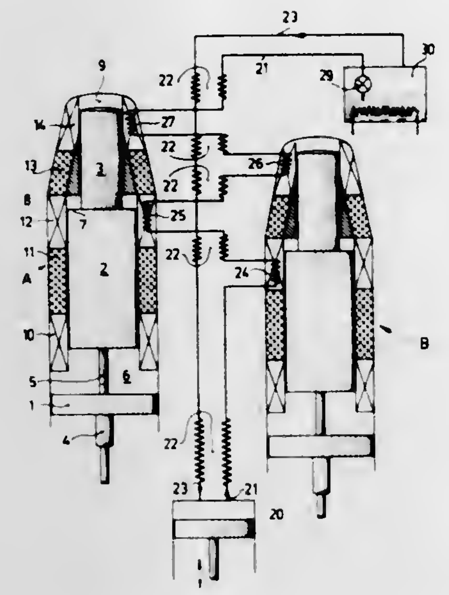


The present invention relates to a transistor cooling means and basically utilizes a fluid injection system to cool the base member of the transistor. A coolant fluid source and circulator pump conveys fluid through a plurality of tubes to bases of a bank of transistors and thereby circulates the fluid to cool the transistor. Alternative arrangements for providing a jacket around the transistor elements is also provided having a similar fluid conduction and circulating means. A further alternative arrangement embodies the use of dissimilar elements and their interaction to create a cooling surface within or adjacent to the semi-conductor elements within the transistor.

3,400,544
FLUID COOLING EMPLOYING PLURAL COLD PRODUCING MACHINES

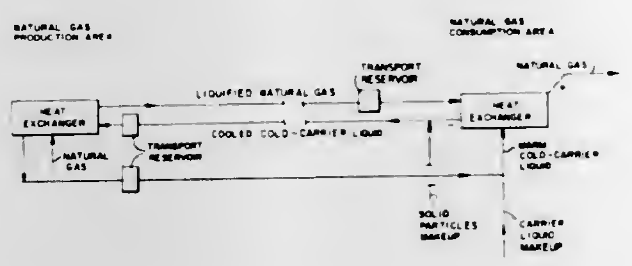
Gijsbert Prast, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 28, 1967, Ser. No. 619,467
Claims priority, application Netherlands, Mar. 2, 1966, 6602674
2 Claims. (Cl. 62—6)

A cooling device for a fluid comprising at least two cold producing machines, each machine having at least one compression space and at least two expansion spaces of successively lower temperature with means communicating with said spaces, said means including at least one regenerator. The fluid to be cooled passes through a duct system and is cooled in the expansion space of higher temperature in one machine and is further cooled in the like expansion space of the other machine, and thereafter being cooled in each further group of corresponding expansion spaces of lower temperature in each machine.



3,400,545
USE OF COLD-CARRIERS IN LIQUEFACTION AND REGASIFICATION OF GASES

Willem P. Hendal, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed May 25, 1966, Ser. No. 552,712
Claims priority, application Netherlands, May 31, 1965, 6506843
24 Claims. (Cl. 62—9)

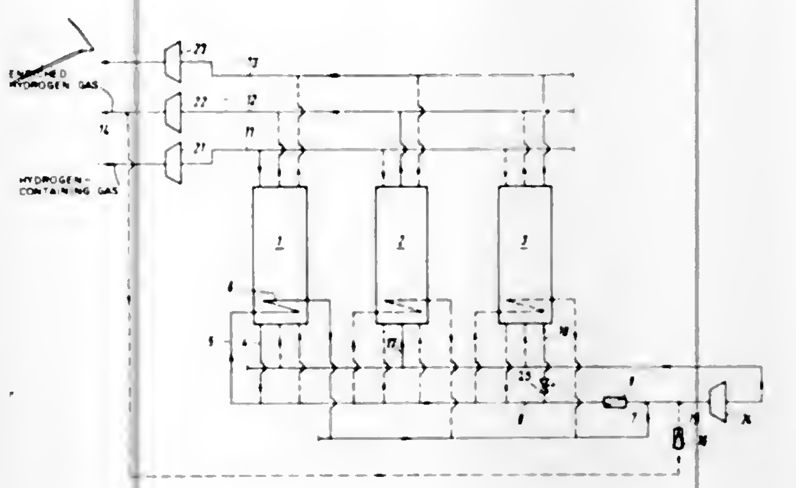


Method of liquefying a natural gas by bringing the gas into heat exchange with a cooled cold-carrier which cold-carrier is formed by introducing a carrier liquid which remains fluid during the process of heat exchange and having a boiling point higher than a temperature which is just below ambient temperature, and having particles evenly dispersed therein of a substance distinct from the carrier fluid which, during the process of heat exchange, undergo a phase change, the said even dispersion being accomplished by the addition of an emulsifying agent for the system of carrier fluid and particles.

3,400,546
HYDROGEN PRODUCTION AND ENRICHMENT

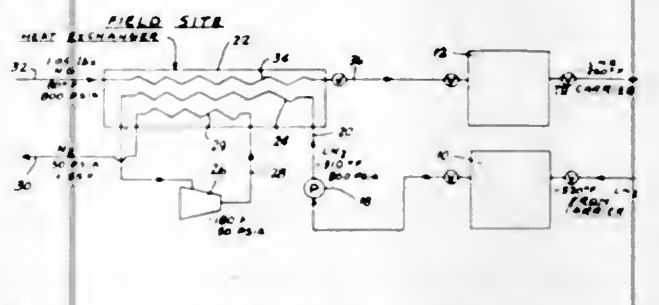
Ernst Karwat, Pullach, Isartal, Germany, assignor to Gesellschaft fur Linde's Eismaschinen Aktiengesellschaft, Wiesbaden, Germany
Filed June 18, 1965, Ser. No. 464,965
Claims priority, application Germany, June 18, 1964, G 40,875
9 Claims. (Cl. 62—12)

Hydrogen containing feed gas is enriched in hydrogen content without fractional distillation by cooling the feed gas in a first regenerator to remove by solidification the bulk of higher boiling impurities, thus obtaining a gas enriched in hydrogen. A minor portion of the enriched hydrogen is used to sublime impurities from a second regenerator in which impurities were previously deposited while a main portion and another warmed minor portion of enriched hydrogen is work expanded and passed thru a third regenerator which has previously been substantially completely purged of impurities.



3,400,547
PROCESS FOR LIQUEFACTION OF NATURAL GAS AND TRANSPORTATION BY MARINE VESSEL

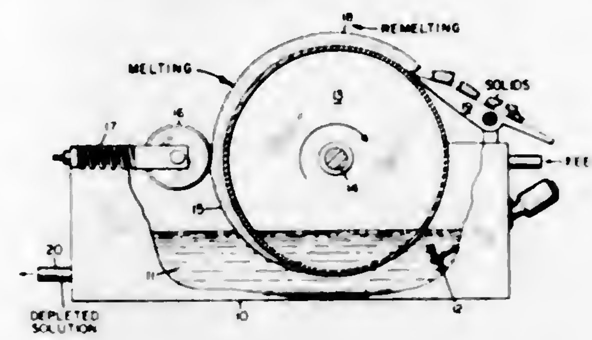
Virgil C. Williams, 104 Frontenac Forest, St. Louis, Mo. 63131, and Omar H. Simonds, Essex Fells, N.J.; said Simonds assignor of thirty-five percent to said Williams
Continuation-in-part of application Ser. No. 591,496, Nov. 2, 1966. This application July 20, 1967, Ser. No. 654,935
23 Claims. (Cl. 62—55)



Natural gas liquefaction and transportation from a field site to a market site is accomplished by transporting liquid nitrogen or liquid air by ship from the market place to the field site where it is used to liquefy the natural gas. The availability of the cold or refrigeration in the liquid nitrogen or air reduces the equipment required at the field site. Liquid natural gas is pumped into the holds of the same cryogenic tanker ship used to transport the liquid nitrogen or air and the liquefied natural gas is returned to the market site. Regasification of the liquid natural gas is carried out to use the cold or refrigerant effect therein to liquefy nitrogen or air, which is then charged to the returning tanker to the field site. The process is a repetition of liquid nitrogen or liquid air from the market site to the field site and there used to liquefy natural gas, which is then shipped from the field to the market where the liquid natural gas is gasified and in the process liquefies nitrogen or air for return to the field. The cycle employs about 1.0 to 2.1 pounds of nitrogen to 1.05 pounds of methane. In the process of both the field site and the market site, various cycles employing expansion of the various high pressure streams for cooling is employed and the work is matched against compression of other streams and subsequent expansion for efficiency in the system and minimization of power requirement.

3,400,548
CRYSTAL SEPARATION OF DIMETHYLNAPHTHALENE

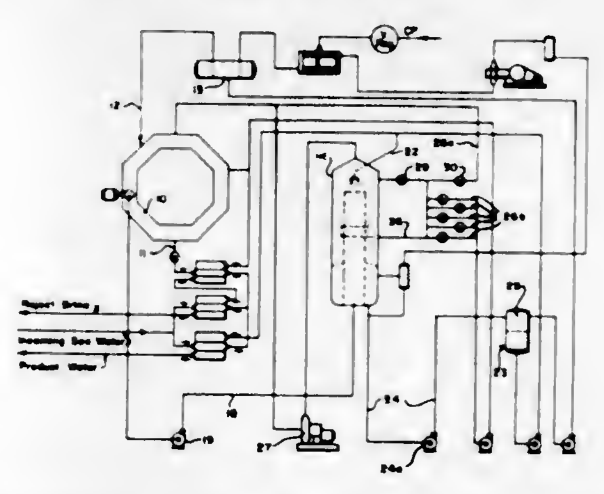
Dennis E. Drayer, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
Filed June 25, 1965, Ser. No. 467,063
5 Claims. (Cl. 62—58)



The invention comprises a process for the separation of 2,6-dimethylnaphthalene from solutions of liquid composition containing 2,6-dimethylnaphthalene and other dimethylnaphthalenes comprising in combination the steps of agitating a body of said liquid composition, contacting a portion of said liquid composition with the surface of an imperforate drum, said surface being cooled to a temperature below the crystallization point of said 2,6-dimethylnaphthalene and above about 18° F., whereby a portion of said liquid composition is cooled by contact with said drum, continuously moving the surface of said drum away from contact with said liquid composition at a rate sufficient to form a solid layer of crystals on said surface, said crystals being richer in 2,6-dimethylnaphthalene than is said solution, thereafter compressing said thin layer of crystals against said drum to reduce the solvent content of said thin layer, heating said layer to melt at least a portion of the crystals in a zone on the drum surface and thereafter recrystallizing at least a portion of said crystals by further cooling while on the surface of said drum, thereafter removing said thin layer from the surface of said drum, thereafter remelting at least a portion of the crystals from said thin layer and repeating the above steps utilizing a drum surface having a temperature at least about 18° higher than said first mentioned drum surface.

3,400,549
METHODS AND MEANS FOR PRODUCING POTABLE WATERS

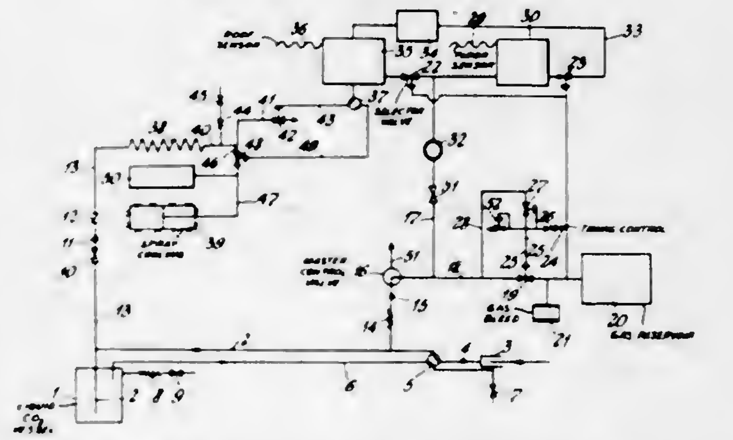
George B. Karnofsky, Mount Lebanon Township, Allegheny County, Pa., assignor to Blaw-Knox Company, Pittsburgh, Pa. a corporation of Delaware
Filed Aug. 10, 1966, Ser. No. 571,611
5 Claims. (Cl. 62—58)



An apparatus is provided for producing potable water from saline water using a freezing or ice crystallization method including a washing step carried out in a vertical washer column. Wash water is added at the top of the column, ice slurry is added at the bottom of the column and intermediate the top and bottom there is provided a perforate portion for separating brine from the ice slurry. The perforate portion is surrounded by a chamber which is maintained at a reduced pressure in order to accelerate the separation of ice and brine.

3,400,550
LIQUID CARBON DIOXIDE REFRIGERATION CONTROL SYSTEM

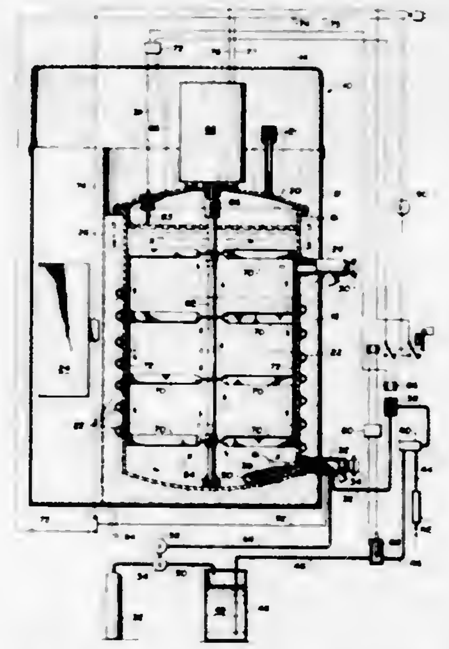
Vincent Guiffre, Ramsgate, New South Wales, Australia, assignor to The Colonial Sugar Refining Company Limited, Sydney, New South Wales, Australia, a company of New South Wales, Australia
Filed Aug. 16, 1966, Ser. No. 572,755
Claims priority, application Australia, Aug. 25, 1965, 63,273/65
6 Claims. (Cl. 62—64)



Method of and apparatus for maintaining pre-cooled goods (for example, meat) during storage in a chamber at a temperature substantially the same as the average initial post-storage temperature of the goods. The method comprises first sensing the average air temperature near the floor of the storage chamber at a predetermined time after loading, then sensing continuously the average air temperature near the roof of the chamber, and refrigerating the chamber responsively to reduce the difference between the two sensed temperatures.

3,400,551
SLUSH BEVERAGE MACHINE

Jack J. Booth, 5006 Tanbark 75229, and William C. Branch, 6730 Greenwich Lane 75230, both of Dallas, Tex.
Filed June 28, 1967, Ser. No. 649,541
11 Claims. (Cl. 62—135)

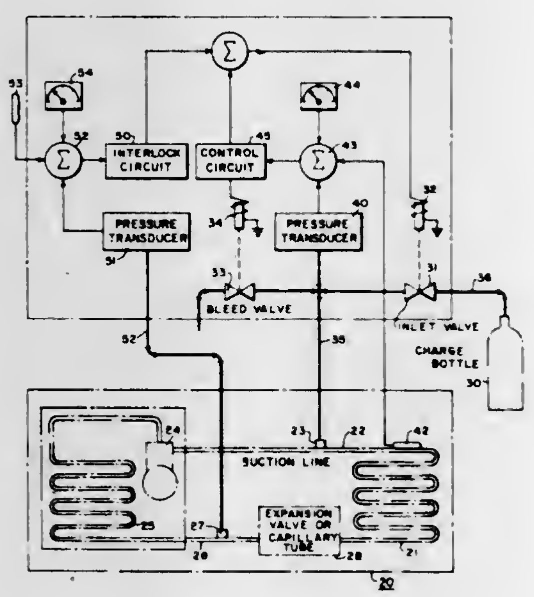


A slush bank is formed in a tank wherein liquid introduced at the tank bottom is mixed with diffused carbonation gas and frozen to slush under predetermined gas pressure while circulated by an impeller. Temperatures within the tank are maintained within a very narrow range in order that a bank of slush is established and maintained with relatively low energy transfer rates.

3,400,552
ELECTRICALLY CONTROLLED REFRIGERANT CHARGING DEVICE

Richard A. Johnson, Monroeville, Pa., and William V. Miller, Novelty, and Robert A. Essig, Elyria, Ohio, assignors to Luxaire, Inc., Elyria, Ohio, a corporation of Delaware

Filed Feb. 13, 1967, Ser. No. 615,742
9 Claims. (Cl. 62—149)

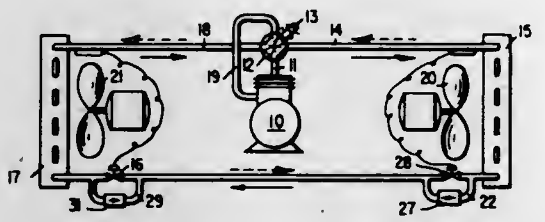


Electrically controlled inlet and bleed valves are detachably connected to the suction line of an operating refrigeration system and to a source of refrigerant. Pressure and temperature transducers sense the ambient temperature, liquid line pressure, suction line temperature and suction line pressure to open the inlet valve to add refrigerant or to open the bleed valve to remove refrigerant from the operating refrigerating system. Certain relations of ambient temperature and suction line pressure will prevent the inlet valve from opening even though related suction line temperature and pressure is such as to normally open the inlet valve.

3,400,553
REFRIGERATION SYSTEM DEFROST CONTROL

Gordon B. Orbesen, Bridgeport, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Apr. 20, 1967, Ser. No. 632,380
4 Claims. (Cl. 62—155)

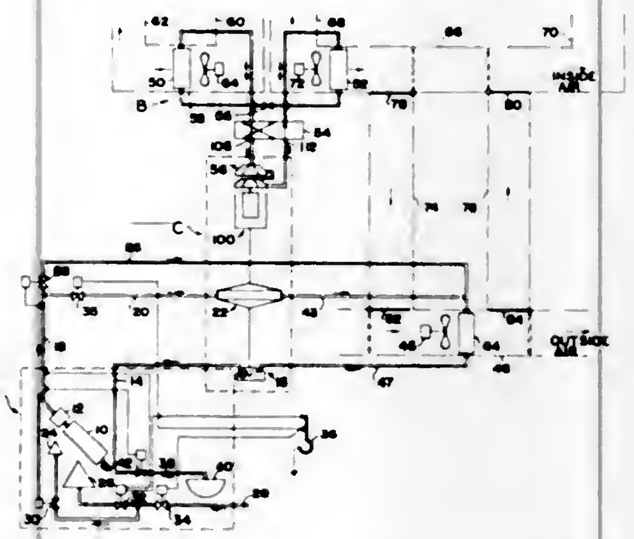


A control for time-temperature based heat pump defrosting systems effective to hold the control timing mechanism in an actuated position following lapse of a preset timed interval thereby placing the defrosting system in condition for immediate actuation pending icing of the heat pump outdoor coil.

3,400,554
FUEL-FIRED HEAT PUMP SYSTEM

David D. Dennis, Wickliffe, Paul F. Swenson, Cleveland Heights, and Paul F. Swenson, Jr., Shaker Heights, Ohio, assignors to Swenson Research, Inc., South Euclid, Ohio, a corporation of Ohio

Filed Mar. 17, 1967, Ser. No. 624,063
5 Claims. (Cl. 62—238)

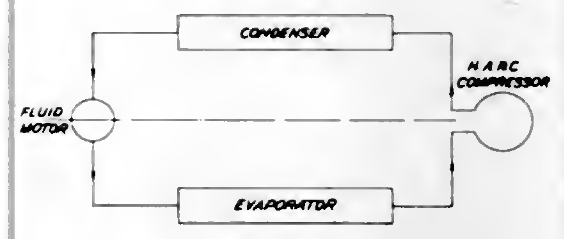


A closed-loop, reversible hermetically sealed refrigeration cycle the compressor of which is driven by a vapor turbine supplied with vapor from a once-through type vapor generator of a hermetically sealed closed-loop vapor cycle. The turbine and compressor are constructed as a unit and are drivingly interconnected through a magnetic coupling which is comprised of a pair of spaced but interfitted magnet members which are carried on the ends of the turbine and compressor shafts respectively. A fluid impervious non-magnetic barrier or partition member extends between the magnet members to seal between the turbine and compressor. A feed pump in the form of an inverted cone is carried on the lower end of the turbine shaft and extends down into a hot well or condensate receiving container and functions to pump the condensate back to the vapor generator. The system also includes an air duct arrangement which, when the system is operating on the heating mode, causes the air to be heated by both the Freon cycle and the vapor cycle apparatus. Additionally a vapor by-pass line is provided around the turbine to increase the heat available from the vapor cycle when needed.

3,400,555
REFRIGERATION SYSTEM EMPLOYING HEAT ACTUATED COMPRESSOR

Eric G. U. Granryd, Chicago, Ill., assignor, by mesne assignments, to American Gas Association, Inc., New York, N.Y., a not-for-profit corporation of New York

Filed May 2, 1966, Ser. No. 547,038
3 Claims. (Cl. 62—498)

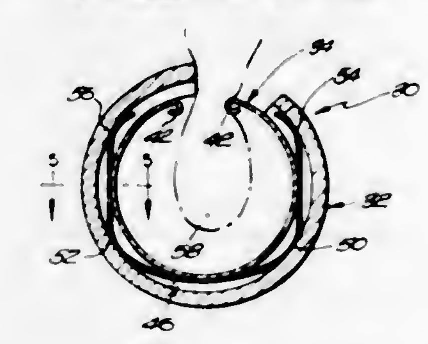


A closed cooling system. The system includes a conduit and a cooling medium of carbon dioxide or sulfur dioxide. An evaporator is connected to the conduit and operates at a relatively low pressure. A heat actuated compressor increases the pressure of the cooling medium passing from the evaporator at a relatively low pressure to a relatively high pressure. A condenser is connected to receive the cooling medium passing from the compressor. The cooling medium passes from the condenser in a high pressure, condensed condition. A fluid operated motor is connected to the conduit between the condenser and the evaporator and the fluid motor is mechanically operated by the flow of the condensed fluid passing through the motor from the condenser to the evaporator. The flow of the cooling medium through the fluid motor provides useful mechanical energy for the fluid motor and the cooling capacity of the system is increased.

3,400,556
ADJUSTABLE EARRING

John P. Walsh, Warwick, and John A. Velino, Providence, R.I., assignors to Tri-Bro Tool Co., Inc., Providence, R.I., a corporation of Rhode Island

Filed Dec. 6, 1965, Ser. No. 511,866
6 Claims. (Cl. 63—14)

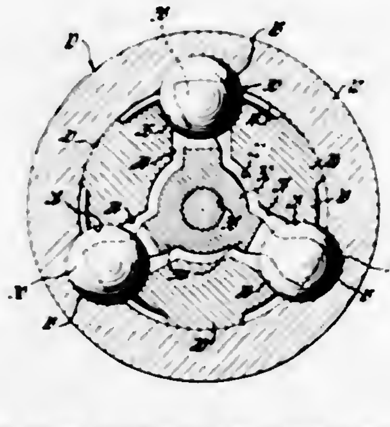


An earring construction of the nonpiercing type that is adapted to simulate a piercing action and that includes an inner member on which an outer member is mounted, the inner and outer members having relative movement and having openings formed therein through which the ear lobe of the wearer is insertable, the relative movement between the members providing for securement of the earring on the wearer's ear lobe and for producing the simulated piercing appearance.

3,400,557
FIXED CENTER CONSTANT VELOCITY UNIVERSAL JOINT

Kenneth L. Westercamp, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 22, 1966, Ser. No. 574,145
4 Claims. (Cl. 64—21)

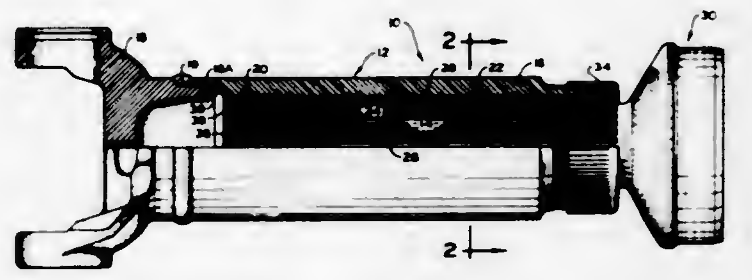


A universal joint includes an outer member having a spherical bore and three axially straight cylindrical grooves; an inner member having three axially straight cylindrical grooves, an axially open central chamber and three axially open radially extended slots interconnecting the grooves and the central chamber; a spider having trunnions extending through the slots into the grooves; a plurality of balls received within the grooves; and ball-and-socket connections between the inner member and the spider and between the outer member and the spider. The inner member further includes three spherical lands engaging the outer member to establish a center of joint rotation, the lands being narrower than the width of the grooves to permit a bayonet assembly of the members.

3,400,558
LOW FRICTION SLIDING AND TORQUE TRANSMITTING CONNECTION

Charles W. Haines, Toledo, Ohio, assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia

Filed Apr. 9, 1965, Ser. No. 447,041
25 Claims. (Cl. 64—23)

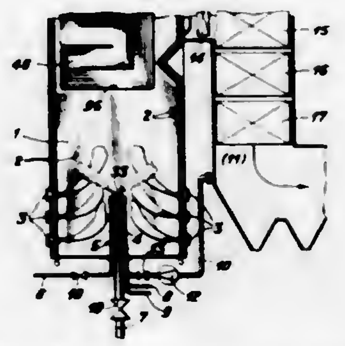


1. A torque transmitting slip connection comprising in combination, an outer axially elongated portion having an elongated axially extending opening therein, an axially elongated urethane plastic portion having a Shore type D durometer hardness in the range of 65 to 90 and a minimum tensile strength of about 5000 p.s.i. disposed within the opening in said outer portion with a substantial portion of the plastic portion being disposed within and circumferentially surrounded by said outer portion, means securing said plastic portion to said outer portion against relative axial and rotative movement such that torsional loads may be transferred therebetween while said outer portion surrounding said plastic portion inhibits the external periphery of the plastic portion from deforming in a readially outward direction, said plastic portion having an elongated axially extending noncircular opening therein, and an inner axially elongated member having at least a portion thereof disposed in said noncircular opening and axially slidingly cooperable with and closely conforming thereto in a torque transmitting relationship for telescoping movement relative to said plastic portion and transmitting torque thereto.

3,400,559
STEAM GENERATOR HAVING A MINIMUM LOAD FIRING SYSTEM

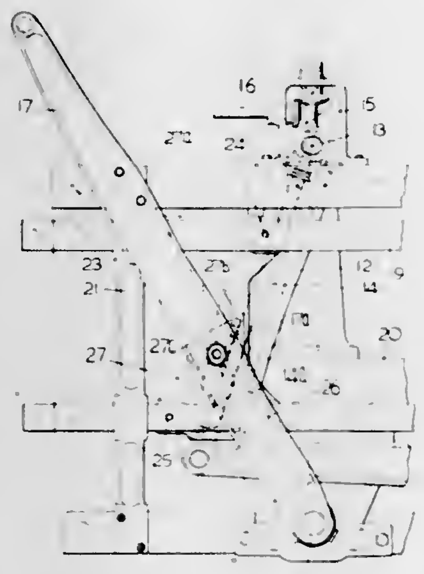
Richard Litwinoff, Winterthur, Switzerland, assignor to Sulzer Brothers Ltd., Winterthur, Switzerland, a corporation of Switzerland

Filed June 27, 1966, Ser. No. 560,446
Claims priority, application Switzerland, July 1, 1965, 9,240/65
11 Claims. (Cl. 122—479)



A minimum load firing system is mounted centrally within the combustion chamber and the main firing system. The flame of the minimum load firing system is varied to produce a variable load especially during shutdown of the main firing system. This flame enables a uniform heat across the heating surfaces to be maintained and also allows rapid start up of the main firing system after shutdown.

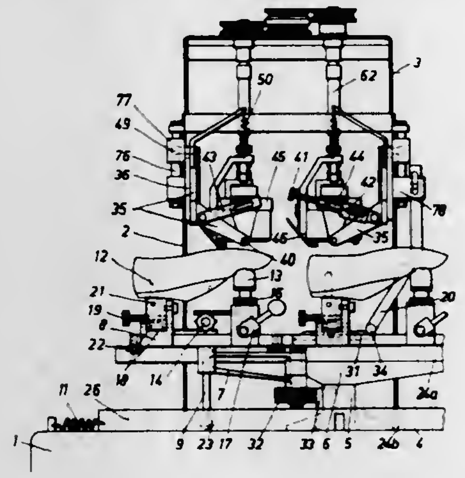
3,400,560
STRAIGHT BAR KNITTING MACHINES
Ernest Start, Nottingham, and Keith T. Wilby, Leicester, England, assignors to William Cotton Limited, Loughborough, England
Filed May 4, 1965, Ser. No. 453,035
Claims priority, application Great Britain, May 5, 1964, 18,524/64
8 Claims. (Cl. 66—110)



A straight bar knitting machine suitable for uniform adjustments and the particularly narrow width knitting without duplication of the adjusting mechanism.

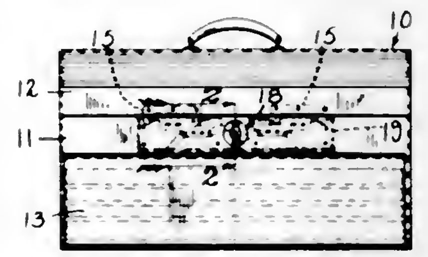
The knitting machine is provided with a variable draw mechanism in which a lever driven by a draw cam mechanism and having adjusting screw means controlled by a selvage stop mechanism is connected with a nonadjustable slurcock driving lever to provide for a constant lead of the thread carriers over slurcocks and narrow width knitting.

3,400,561
MACHINES FOR ROUGHING THE OVERLASTED PORTIONS OF SHOE UPPERS
Johann Bechtold, Oberursel, Taunus, Germany, assignor to Adrian & Busch K.G. Schuhmaschinenfabrik, Oberursel, Taunus, Germany
Filed Sept. 2, 1966, Ser. No. 577,074
Claims priority, application Germany, Sept. 7, 1965, A 50,189; Jan. 17, 1966, A 51,332
4 Claims. (Cl. 69—6.5)



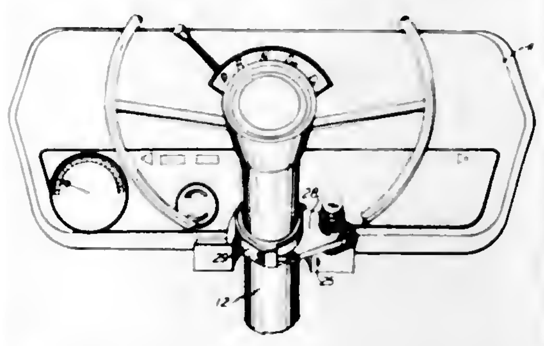
A machine for roughening the overlasted margin of a shoe upper has a shoe support that is guided in a closed path with curvilinear and rectilinear portions relative to a rotatable roughening tool. The tool is maintained in a fixed position until the operation reaches a predetermined portion of the shoe bottom and is then released so it can adapt itself to the countour of the shoe during the remainder of the operation. The bristles of the tool may project variable amounts from the body portion to vary the depth at which the material is roughened.

3,400,562
LATCHING DEVICE
Herman Bloss, Orange, Conn., assignor to The Seymour Products Corporation, Seymour, Conn., a corporation of Connecticut
Filed Dec. 21, 1965, Ser. No. 515,341
7 Claims. (Cl. 70—70)



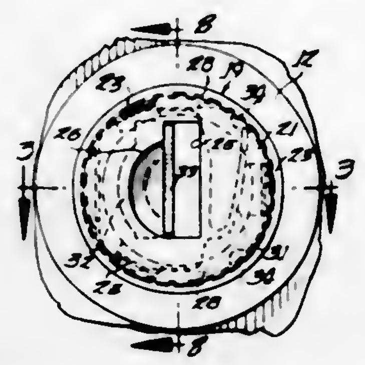
A double latching mechanism for simultaneously securing two covers of a carrying case to a fixed portion of the case. In particular, this invention comprises a fixed location side member positioned between two movable cover members, said cover members each having keeper means for mating with portions of said latching device, said device comprising in combination, a base plate adapted to be secured to the side member, a pair of slides mounted on said base plate for linear movement thereon and having means for engaging the keeper means of one of the covers, a rotatable member mounted for rotation on said plate and positioned thereon intermediate said pair of slides, a pair of links pivotally coupled to said rotatable member, one of said links pivotally coupled to each of said slides, latch members pivotally coupled to said slides and adapted to engage keeper means on the other of said covers, and limit means for permitting said rotatable member to rotate past dead center, but restraining said rotatable member from rotating completely around, so that the slides are positioned while in the locking position.

3,400,563
STEERING COLUMN LOCK
James L. Lempke, Detroit, and Edgar G. Trudeau, Birmingham, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 31, 1967, Ser. No. 657,406
5 Claims. (Cl. 70—184)



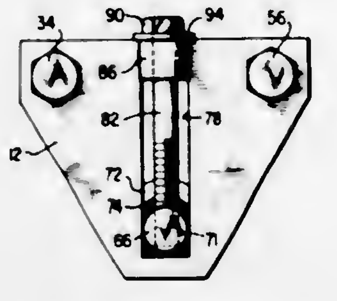
A locking mechanism mounted on a vehicle steering column to prevent turning movement of the vehicle transmission shift tube and rotation of the steering shaft. The locking action is achieved by locking detents which pass through the steering column tube and the transmission shift tube before engaging the steering shaft. The detents are cam controlled by a cam that is driven by a key operated lock cylinder device.

3,400,564
DUST CAP ASSEMBLY FOR TUMBLER LOCKS
Dwight W. Glass and Robert A. Sewell, Rockford, Ill., assignors to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 497,368
3 Claims. (Cl. 70—455)



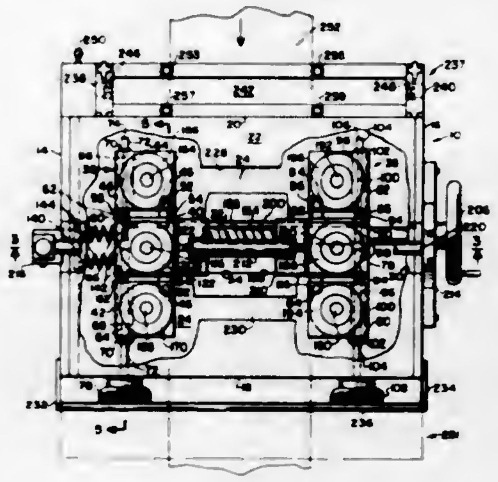
A dust cap assembly for tumbler locks having a locking plug rotatable in a cylindrical housing utilizing a movable cam or pair of cams positioned between the face of the lock plug and a dust cap or cover fitting over the face of the plug; the dust cap or the face of the plug having a recess receiving the cam or cams. The dust cap has an opening therein generally aligned with a keyway in the lock plug, and the plug includes circumferentially spaced pockets on the rear surface of the front flange receiving lips formed on an annular flange extending rearwardly of the dust cap. A single cam has an opening to be aligned with the keyway, an outwardly projecting arm received in the opening in the cap to limit movement of the cam, and an integral curved spring arm cooperating with a projection in the recess for the cam. If a pair of cams are utilized, the cams meet at a central parting line, each having a sloping lead-in surface and a pair of outwardly curved integral spring arms opposite the lead-in surface and cooperating with projections in the cam recess.

3,400,565
TOOL AND METHOD FOR RE-ARCHING LEAF SPRINGS
Jimmie Ray Morris, 103 Maurice St., Jonesboro, Ark. 72401
Filed Mar. 2, 1966, Ser. No. 531,215
3 Claims. (Cl. 72—175)



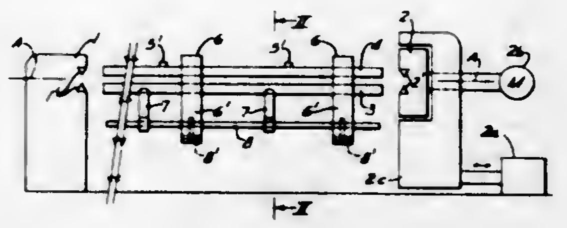
Leaf spring re-arching tool and method for re-arching damaged leaf springs. The tool includes three rollers carried in opposed frame members. The rollers are arranged in a triangular pattern. One of the rollers is moved toward the other two, to apply pressure on a damaged leaf spring inserted between the rollers and re-arch the leaf spring. The pressure roller can be disassembled so that the tool can be placed on a spring mounted on a vehicle. The roller is then re-assembled so that the spring can be re-arched without necessity for dismounting the spring. Rotation of either of the other two rollers moves the tool along the spring so that pressure can be applied along the spring to facilitate reformation into the desired arch.

3,400,566
SHEET METAL EDGING APPARATUS
Walter Gauer, 48 S. 18th St., Kenilworth, N.J. 07033
Filed Dec. 13, 1966, Ser. No. 607,589
14 Claims. (Cl. 72—199)



Sheet metal edging apparatus for deburring and forming the edges of sheet metal and metal strip material within a wide range of sheet metal and metal strip width and thickness dimensions comprising a pair of carriage means adjustably spaced laterally of each other and carrying cooperating members to provide the plural functions of deburring, shaping or forming and finishing of sheet or strip material passing therebetween.

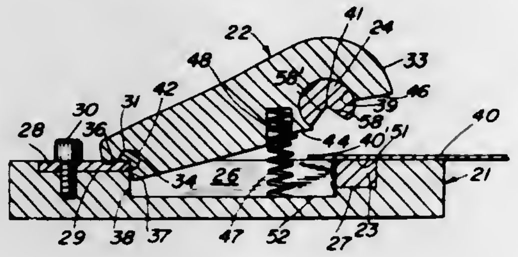
3,400,567
METHOD AND APPARATUS FOR STRAIGHTENING AND UNTWISTING ELONGATED METAL SECTIONS
Albert Sirantoine, Beaumont-sur-Oise, France, assignor to Compagnie du Filage des Mataux et des Joints Curty, Paris, France, a corporation of France
Filed Oct. 18, 1966, Ser. No. 587,551
Claims priority, application France, Nov. 9, 1965, 37,794
5 Claims. (Cl. 72—299)



1. A method of straightening and untwisting elongated metal sections which comprises gripping the ends of the section between the jaws of the heads of a straightening bench under a tension less than the yield strength of the section and rotating at least one end to bring the two ends into a position parallel to each other, surrounding the section with at least two dies which have a length slightly less than the distance between the heads of the straightening bench and which have along their lengths plane surfaces which match specific generally protruding parts of the section, elongating the section by an amount above its minimum permanent elongation but generally below 6% and, simultaneously forcing the dies to come closer to each other against the length of the section.

3,400,568
DIE FOR MAKING RIGHT ANGLES ON STEEL

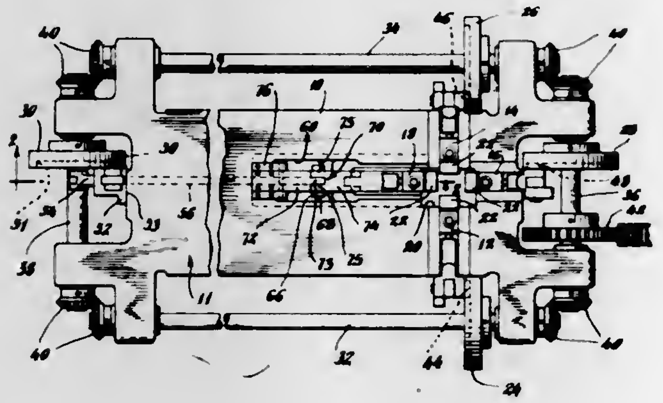
Ernest E. Brandner, Lyons, Ill., assignor of one-half to John F. Cech, North Lake Village, Ill.
Filed Oct. 22, 1965, Ser. No. 500,705
6 Claims. (Cl. 72—310)



A die for making right angles including member having a seat, for the operative positioning of any of one of a variety of pairs of die-elements, and mounting a hinged arm having a greater than 180 degree arcuate-shaped transverse pocket in the under face of the arm for the operative axial insertion of any one of the several cylindrical die-elements each quadrantly-recessed with a metal-shaping contour matching that of the one of die-element seated in the base member.

3,400,569
METAL FORMING MACHINE HAVING IMPROVED FORMING SLIDE MEANS

Frederick Thurlow Goodwin, Stratford, Conn., assignor to The U.S. Baird Corporation, Stratford, Conn., a corporation of Connecticut
Filed Aug. 17, 1966, Ser. No. 572,951
9 Claims. (Cl. 72—395)

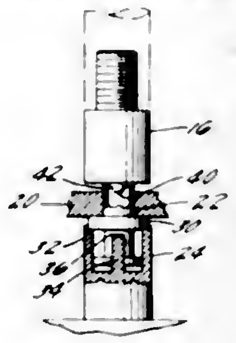


1. A metal forming machine comprising: a bed; drive shafts mounted upon said bed and arranged to be driven by a driving means; camming means secured to and operated by each of said drive shafts; a plurality of forming slides mounted on said bed and operative at a forming station; and connecting means for operatively associating each of said forming slides with its respective camming means, wherein said connecting means comprises, for at least one of said slides, a cam follower and a linkage means including an elongated link disposed entirely beneath said bed for connecting said cam follower to said one slide.

3,400,570
AUTOMATIC SWAGING METHOD AND TOOL

Charles T. Schellhammer, Thompsonville, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed June 8, 1966, Ser. No. 556,016
1 Claim. (Cl. 72—435)

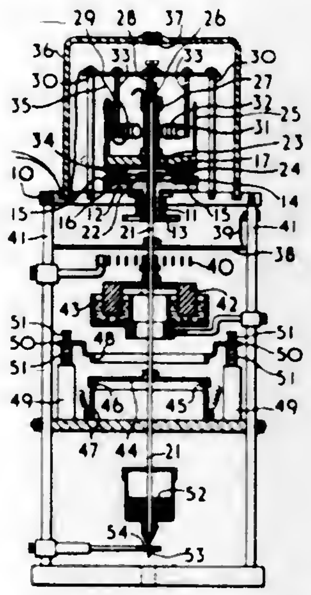
A total and die arrangement for installing electrical connectors in a perforated circuit board wherein a bottom die centers and supports the hollow connector in the circuit board and a triggering swaging tool easily upsets



the connector end portion above the board and fixes it to the board.

3,400,571
APPARATUS FOR THE MEASUREMENT OF INTERNAL FRICTION OF MATERIALS

Ivan Clifford Cheetham, Upper Longdon, England, assignor to Dunlop Rubber Company Limited, London, England, a British company
Filed Dec. 6, 1965, Ser. No. 511,938
Claims priority, application Great Britain, Dec. 10, 1964, 50,244/64
14 Claims. (Cl. 73—9)

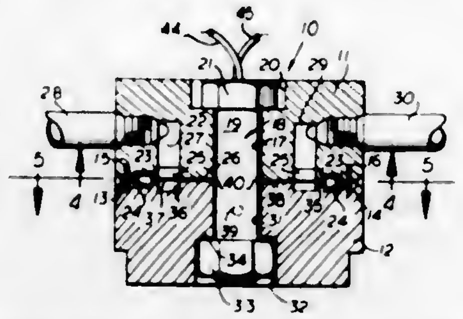


An apparatus for measurement of internal friction of materials and particularly the hysteresis loss in polymers over a substantial temperature range. The specimen to be measured comprises a thin annulus adhered to a plate supporting a heating bath and lies in contact with a plurality of balls which are supported on a rotatable track plate. The balls are constrained to rotate around the track plate in equally-spaced-apart relationship by means of a metal spider, the end of each arm of the spider being bifurcal the balls being located in the bifurcate portions of the arms. The bifurcate portions of the spider arms are coated in polytetrafluoroethylene to substantially eliminate friction between the balls and the arms of the spider. The balls are restricted in radial movement by a groove in the track plate. The torque generated by rotation of the track plate is transmitted to the specimen via the balls and when measured represents the internal friction of the material of the specimen.

3,400,572
SEAL EVALUATION TEST FIXTURE

John M. Mizenko, Palos Heights, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 17, 1967, Ser. No. 616,813
7 Claims. (Cl. 73—37)

A test fixture, for use in evaluating sealing materials, having uniform pressure loading characteristics by employing a single calibrated bolt equipped with an electric strain gauge installed in the shank thereof for ac-



curately controlling the pressure exerted upon the sealing materal.

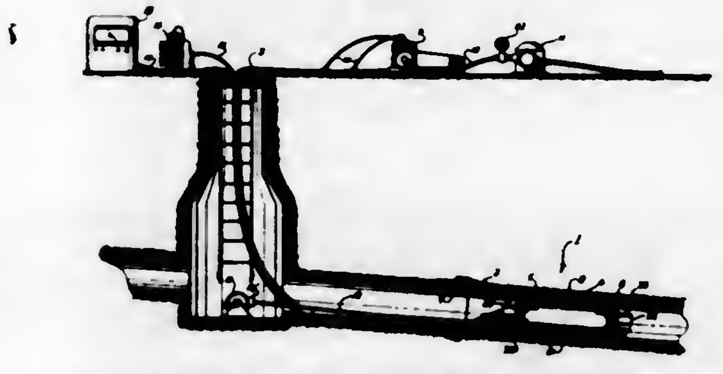
3,400,573
GAGING METHOD AND APPARATUS

Roger E. Matter, Cranston, R.I., assignor to Federal Products Corporation, Providence, R.I., a corporation of Rhode Island
Continuation-in-part of application Ser. No. 411,417, Nov. 16, 1964. This application June 27, 1966, Ser. No. 560,660
16 Claims. (Cl. 73—37.5)

A gaging system for measuring the size of an object by placing a plurality of gage jaws in spaced relation to the object, displacing the gage jaws toward the object to predetermined positions, and indicating the size of the object in response to the relative position of the gage jaws and the distances between the gage jaws and the object.

3,400,574
METHOD AND APPARATUS FOR TESTING PIPELINES

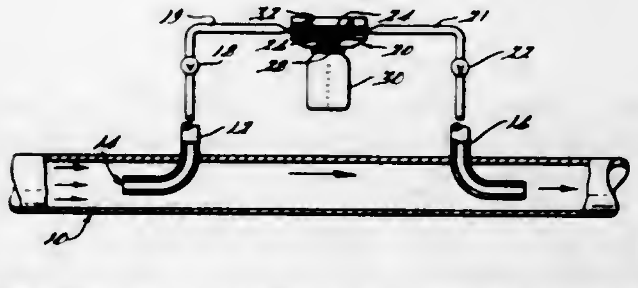
Harold W. Cramer, 8419 Linden Lane, Shawnee Mission, Kans. 66207
Filed Oct. 31, 1966, Ser. No. 590,599
11 Claims. (Cl. 73—40.5)



A pipeline leak testing apparatus having an elongate body member movable through a pipeline with longitudinally spaced expandable seal members on the body member and engageable with the interior of a pipeline to form a test chamber therebetween, with operating structures for expanding the seals and operative structure connected to the body and communicating with the test chamber to provide a fluid pressure medium therein and pressure sensitive means to indicate pressure changes in the chamber in testing for leaks. A television camera being mounted in the forward portion of the apparatus with lights for viewing the interior of the pipeline, a closure means on the apparatus for closing the passage therethrough to stop flow of liquids in the pipeline when the seals are engaged with said line. And the method of testing pipeline for leaks by moving a testing apparatus through the line effecting sealing engagement with the interior of the line and introducing pressure into a test chamber and monitoring the pressure to determine presence of leaks.

3,400,575
CONTAMINANT SAMPLING APPARATUS AND METHOD

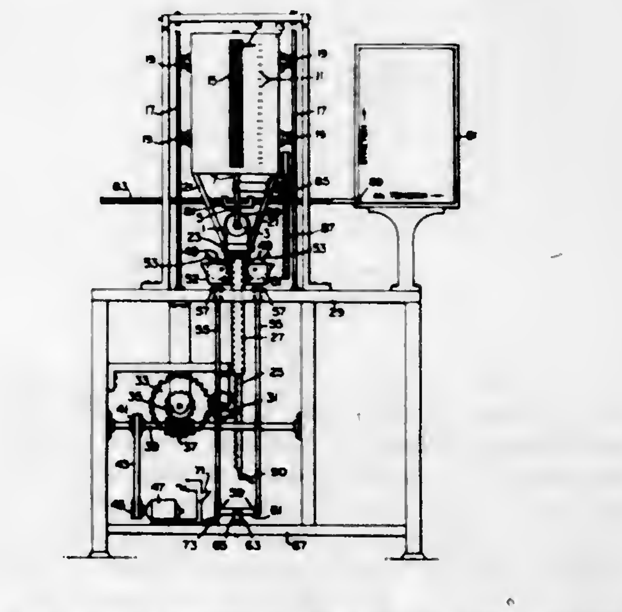
Eugene Madden, Detroit, Mich., assignor to Cox Instruments Division, Lynch Corporation, Detroit, Mich., a corporation of Indiana
Filed Jan. 28, 1966, Ser. No. 523,661
6 Claims. (Cl. 73—61)



A fluid sampling apparatus for sampling the particulate contamination content of a fluid in which the fluid to be sampled is flowed across the surface of a filter membrane and then through the filter.

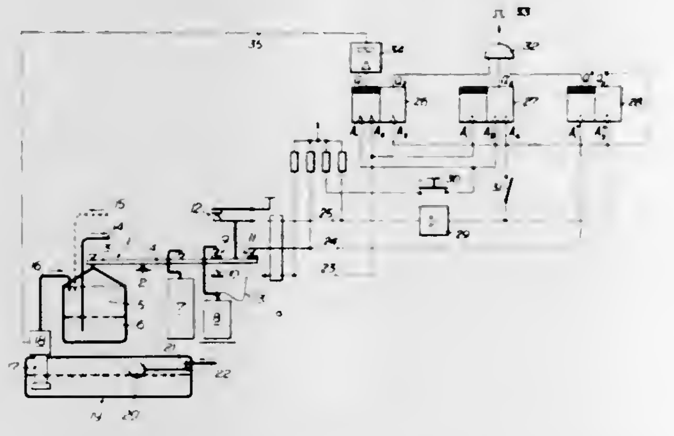
3,400,576
STRETCH-TESTING MACHINE FOR ELASTIC FABRIC

Samuel F. Siciliano, Westerly, R.I., assignor to George C. Moore Company, Westerly, R.I., a corporation of Rhode Island
Filed July 15, 1965, Ser. No. 472,141
4 Claims. (Cl. 73—95)



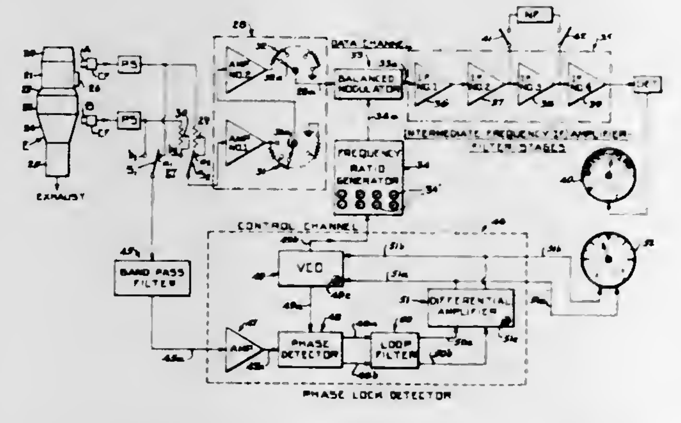
Means for simultaneously stretching two unequal lengths of identical elastic fabric for equal distances until the shorter one of them reaches the useful limit of its stretch, the resultant greater tension in this one enabling it to stop the machine, overpowering the longer piece, which strives to resist such stopping; indicates the extension and contractive effort of the shorter piece in inches and pounds on a graph.

3,400,577
DEVICE FOR THE MEASUREMENT OF THE CONSUMPTION OF LIQUIDS
Hans List, 126 Heinrichstrasse, Graz, Austria
Filed Jan. 27, 1966, Ser. No. 523,305
Claims priority, application Austria, Feb. 2, 1965, A 922/65
3 Claims. (Cl. 73—113)



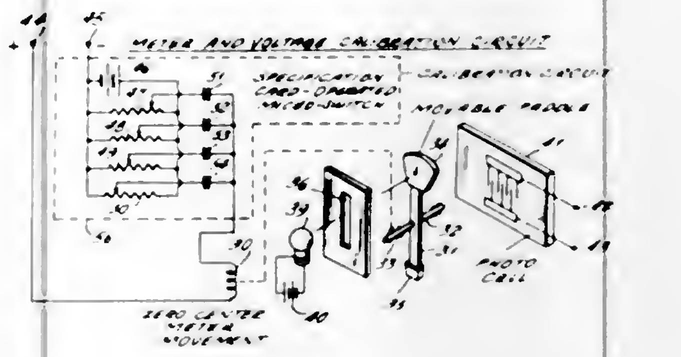
An installation for the measurement of the consumption of liquids as a fuel for an internal combustion engine having a balance with a measuring bowl and counterpoises all mounted on a balance beam. The beam is connected to an electronic control system including a plurality of bistable switch steps.

3,400,578
ACOUSTICAL ANALYSER FOR INDICATING FAULTS IN OPERATIVE PARTS OF HIGH-SPEED ENGINES
John L. Frarey, Saddle River, Houchang Handjani, Cedar Grove, and Clarence J. Zabriskie, Mahwah, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed Dec. 6, 1965, Ser. No. 511,667
10 Claims. (Cl. 73—116)



1. An engine analyser system for detecting incipient and actual mechanical malfunction of essential rotating components of a high-speed engine that is set for operation at a predetermined reference r.p.m., comprising means for producing electrical signals representing the sound spectrum from a selected region of the engine, an electrical signal of frequency corresponding to engine r.p.m., said spectrum including a discrete signal of frequency that is characteristic of a rotating component selected for test, and electronic analysing means for receiving all the aforesaid signals and for displaying information directly indicating the operative condition of the selected test component as compared with that of a normal counterpart, said analysing means comprising a data signal channel and a control signal channel, the data channel having means for mixing said sound spectrum signals and a variable r.p.m. tracking signal from the control channel, said control channel including a local source for producing a reference signal of variable frequency, automatic tracking means responsive to any phase difference between the engine r.p.m. signal frequency and the local signal frequency for locking the phase of the local signal frequency to that of said r.p.m. signal, said locked local signal determining the variable of the aforesaid r.p.m. tracking signal, means for selecting from the output of said mixing means a constant frequency signal whose amplitude corresponds to the amplitude of the discrete test signal, and a display indicator operable according to the magnitude of said constant frequency signal for visually indicating the operative condition of the rotating test component, as compared with that of a similar normal component.

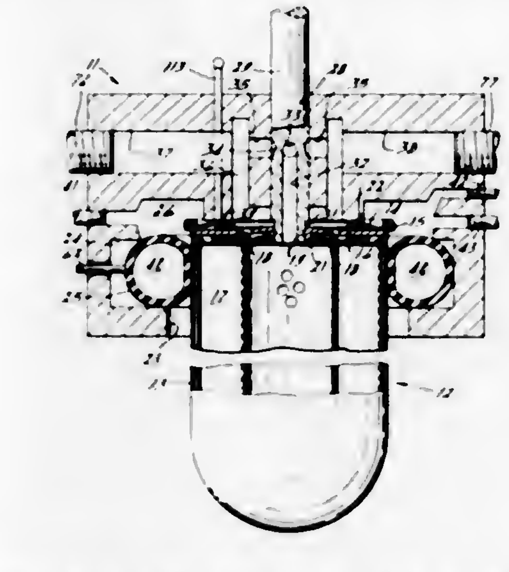
3,400,579
COMPRESSION TEST APPARATUS
Lee W. Parmater, Plainwell, Robert M. Cain, Kalamazoo, and Lawrence J. Weissert and John Q. Parmater, Otsego, Mich., assignors to Kal-Equip Company, Otsego, Mich., a corporation of Michigan
Filed June 14, 1966, Ser. No. 557,472
12 Claims. (Cl. 73—117.3)


METER AND VOLTAGE CALIBRATION CIRCUIT
CALIBRATION CIRCUIT
SPECIFICATION CARD-OPERATED MICRO-SWITCH
MOVABLE PADDLE
PHOTO CELL
ZERO CENTRE METER MOVEMENT

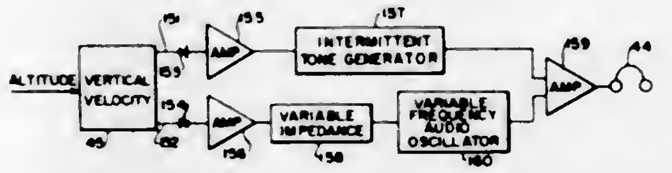
A test apparatus for vehicles containing internal combustion engines contains a charging test circuit, a dwell test circuit, an ignition test circuit, a starting test circuit and a compression test circuit. Each of the individual test circuits is connected to the vehicle being tested and to a common meter device through an electrically operated sequential switching circuit in which the test circuits are sequentially connected to the vehicle and their outputs are sequentially connected to the common meter. A calibration circuit is connected to the meter for calibrating the meter in accordance with the particular test circuit connected thereto. The meter contains a centered paddle wheel which selectively interrupts a light beam directed toward a light-sensing device when the meter reading is above or below a preset range. The output of the light-sensing device then operates either a successful test or unsuccessful test indicator depending upon the positioning of the meter paddle.

3,400,580
METHOD AND APPARATUS FOR TESTING OIL FILTER CARTRIDGES OR THE LIKE
Ralph J. Haren and Gerald H. Shaff, Racine, Wis., assignors to Walker Manufacturing Company, a corporation of Delaware
Filed Aug. 10, 1965, Ser. No. 478,620
10 Claims. (Cl. 73—119)

A test apparatus and method for checking the threads and determining leakage in the joints of a throw-away type oil filter. The test apparatus includes an inflatable seal for effecting a fluid tight seal in the area of the joint to be tested.

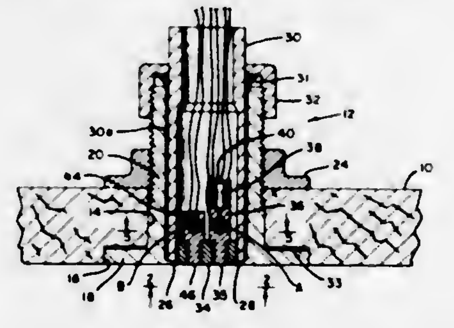


3,400,581
AIRCRAFT FLIGHT CONTROL SYSTEM
Dunbar W. Bostwick, New York, N.Y., assignor to Aviation Instrument Manufacturing Corp., Houston, Tex., a corporation of Texas
Filed Mar. 15, 1966, Ser. No. 534,351
9 Claims. (Cl. 73—178)



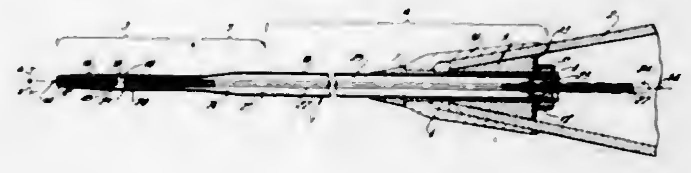
An aircraft flight control system having a see-through indicator with an altimeter arranged to provide a visual indication of the "decision" altitude and circuits to provide an aural indication of the vertical velocity of the aircraft.

3,400,582
BOAT SPEED INDICATOR
Eric S. Warner, 267 Hillcrest Road, Berkeley, Calif. 94705
Continuation-in-part of application Ser. No. 489,824, Sept. 24, 1965. This application May 8, 1967, Ser. No. 636,905
6 Claims. (Cl. 73—181)



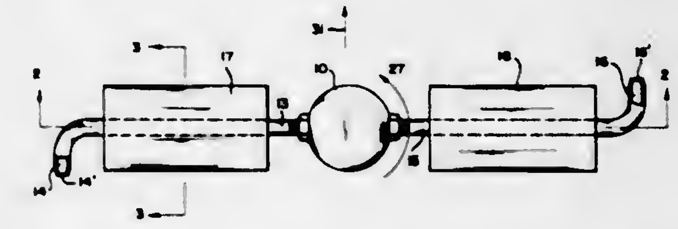
A device for indicating sensitivity to temperature change relative to flow rate across a body having two sensing probes of heat conductive material. One probe is heated and the probes are arrayed in a housing with a wall thereof and parts of the probes extending through the wall all flush with the surface of the body. Circulation of the flowing fluid around the housing isolates it from effects of temperature-influencing factors from sources other than the fluid, and the probes are of such relative heat capacities that abrupt changes of the fluid temperature are quickly detected because such changes affect the probes at different rates.

3,400,583
PITOT-STATIC PROBES
Stanley Bernard Newport, Charlton Kings, Cheltenham, and Terence Long, Gotherington, Cheltenham, England, assignors to Smiths Industries Limited, London, England, a British company
Filed Mar. 16, 1966, Ser. No. 534,827
Claims priority, application Great Britain, Mar. 17, 1965, 11,399/65
10 Claims. (Cl. 73—182)



An electrically-heated pitot-static probe, self-compensating for static-pressure error, has two spaced sets of static-sensing ports located in a portion of the probe that is of increasing cross-section aftwards along the probe from a cylindrical forward portion to a cylindrical main-body portion of larger diameter. The forward portion has an ogival nose provided with a pitot-sensing port, and the aft-end of the main-body portion is clamped to an aircraft-nose by internally- and externally-fitting conical shells.

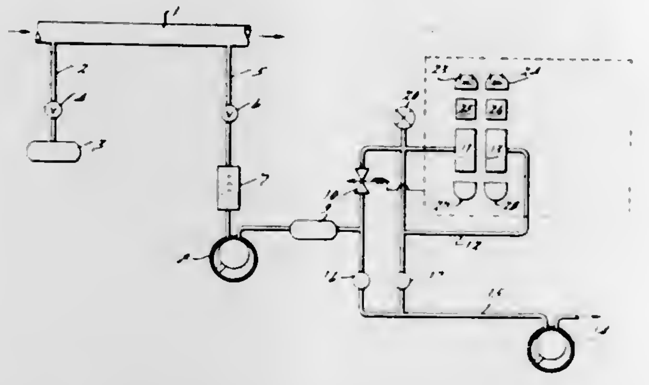
3,400,584
AIRSPEED INDICATING APPARATUS
John Leon Beilman, Lancaster, N.Y., assignor to Cornell Aeronautical Laboratory, Inc., Buffalo, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 529,001, Feb. 21, 1966. This application May 25, 1967, Ser. No. 641,214
9 Claims. (Cl. 73—182)



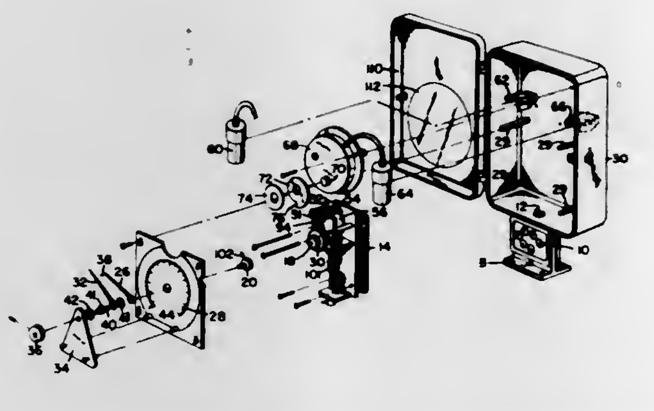
A true airspeed indicating instrument utilizing a sensor rotated at constant speed by a motor detached from the craft's propulsion system. The sensor employs static pressure probes mounted at the tips and air foils having opposite angles of incidence are mounted on the sensor arm to minimize centrifugal effects.

3,400,585
METHOD OF MEASURING THE OUTPUT OF A SOURCE OF A CERTAIN GAS
Thaddaus Kraus, Vaduz, and Otto C. Winkler, Balzers, Liechtenstein, assignors to Bendix Balzers Vacuum, Inc., Rochester, N.Y., a corporation of Delaware
Filed July 14, 1965, Ser. No. 471,800
Claims priority, application Switzerland, July 23, 1964, 9,647/64
4 Claims. (Cl. 73—194)

A method of measuring the quantity of a gas evolved by a source. A small quantity of an auxiliary or reference gas is added to the gaseous products being evolved by a gas source. This combination is passed through partial pressure measuring devices and by comparing measured partial pressures and the known quantity of auxiliary gas introduced, the quantity of the gas to be measured is directly measurable. By employing as pressure reference a gas in the system, differential measurements are substituted for absolute measurements and non-linearities, and irregularities in pump suction and gas flow do not affect the final measurement.



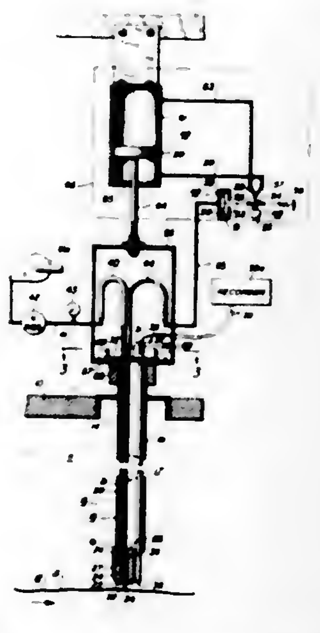
3,400,586
MAXIMUM DEMAND RECORDER FOR FLOWMETERS
Richard M. Wilson, Cincinnati, Ohio, assignor to Mercury Instruments, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 19, 1966, Ser. No. 602,688
11 Claims. (Cl. 73—199)



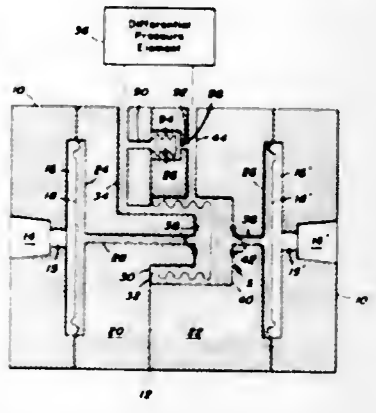
A maximum demand recorder for flowmeters including a first indicator indicating the maximum flow during a predetermined period. A second indicator driven from the flowmeter advances the first indicator. The second indicator is periodically reset through a gear drive including a magnetic clutch, a motor-driven one-cycle gear which carries a longitudinally shiftable coupling pin. The pin is spring urged toward a retracted position and is advanced to its coupling position by a stationary cam.

3,400,587
APPARATUS FOR MEASURING THE TEMPERATURE OF A MOVING SURFACE
John M. Franck, Baltimore, Md., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Filed Sept. 3, 1965, Ser. No. 484,915
3 Claims. (Cl. 73—343)

Temperature measuring apparatus including a sensing device, a thermocouple and a protection tube which are secured together to move as a unit and are operatively connected to a servo-mechanism regulator. The thermocouple is maintained a relatively constant distance from the surface of moving material by means of the sensing device which transmits variations in pressure, based upon the distance of the device from the material, to the regulator which reacts to move the sensing device and thermocouple to maintain them a fixed distance from the material surface.

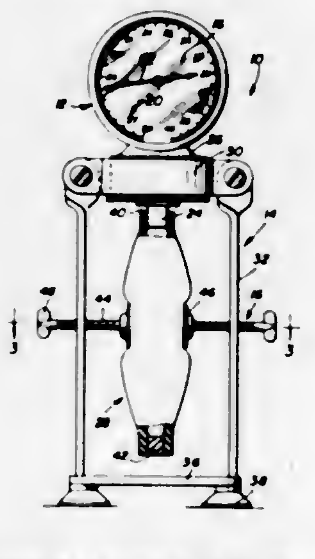


3,400,588
FLUID PRESSURE GAUGE
Ward F. O'Connor, Denville, N.J., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware
Filed May 27, 1965, Ser. No. 459,281
6 Claims. (Cl. 73—407)



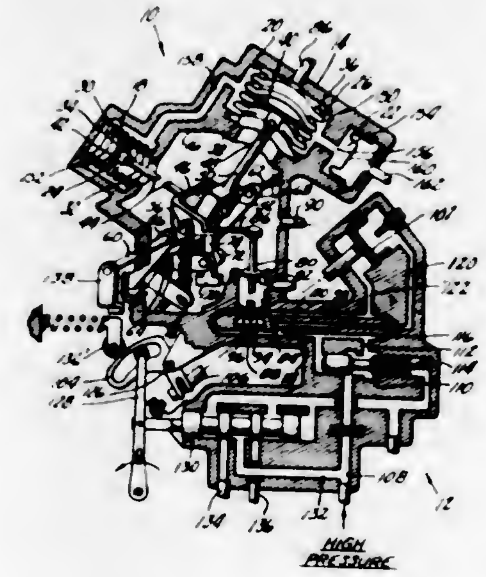
1. Device for measuring differential pressures that comprises:
- (a) first diaphragm means responsive to a first pressure;
- (b) first confined, non-compressible fluid means adjacent said first diaphragm means and responsive thereto;
- (c) first bellows means responsive to said first fluid means;
- (d) second diaphragm means responsive to a second pressure;
- (e) second confined, non-compressible fluid means adjacent said second diaphragm means and responsive thereto, said second fluid means also being responsive to said bellows means;
- (f) sensing means responsive to said first and second fluid means, said first fluid exerting a pressure proportional to said first pressure and said second fluid exerting a pressure proportional to said first pressure and the difference between said first and second pressures;
- (g) closure means cooperating with said bellows means and operable to seal one of said fluid means when the difference between said first pressure and said second pressure exceeds a predetermined maximum; and
- (h) thermal protection means, said means comprising second bellows means having said first fluid on one side thereof and said second fluid on the other side thereof, said second bellows being effectively in parallel with said sensing means, whereby said second bellows means compensates for temperature variations when the closure means seals one of said fluid means.

3,400,589
REFERENCE PRESSURE COMPARING BAROMETER
Daniel Parilla, 331 S. 1st St.,
Brooklyn, N.Y. 11211
Filed July 8, 1966, Ser. No. 563,853
3 Claims. (Cl. 73—409)



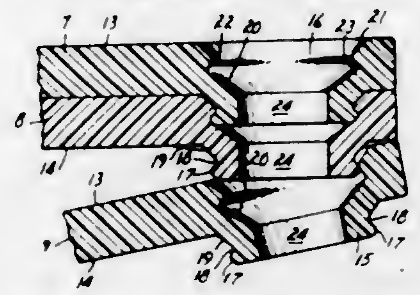
A flexible pressure sensing bulb is connected to the input of a barometer mounted on a frame. Adjustable clamps engage the bulb within the frame to establish a reference pressure within the bulb to which the barometer is exposed producing a reference pressure reading.

3,400,590
VECTOR SENSOR
Robert S. Lanctot, Longmeadow, Mass., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Dec. 16, 1966, Ser. No. 602,382
3 Claims. (Cl. 73—410)



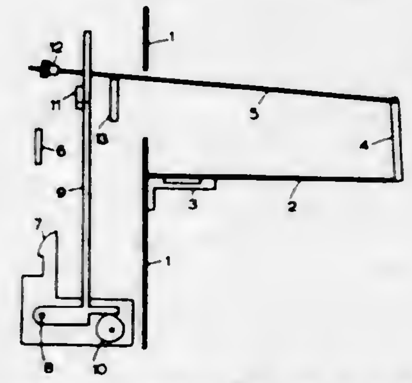
A vector ratio sensor utilizing bellows disposed in cavities interconnected by passages sealed in a housing containing the vector linkages and separated therefrom. The cavities and passages are completely filled with a dampening fluid. A biasing element closes off one end of the passage and responds to temperature changes to assure that the fluid completely fills the passages and the volume changes are compensated thereby. The linkages have been constructed with a weight on one element to counteract inertial effects of the linkages to acceleration.

3,400,591
STACKED MEASURING UTENSILS HAVING RELEASABLE SNAP FASTENING MEANS IN THE HANDLES
Donald A. Larson, Minneapolis, Minn., assignor to Foley Manufacturing Company, Minneapolis, Minn., a corporation of Minnesota
Filed May 18, 1967, Ser. No. 639,484
5 Claims. (Cl. 73—426)



A measuring spoon formed to be releasably secured to other like spoons in stacked relationship and including a handle having an integrally formed stem projecting from one surface of the handle and a cavity in an opposite surface axially aligned with the stem for reception of the stem of an adjacent spoon handle.

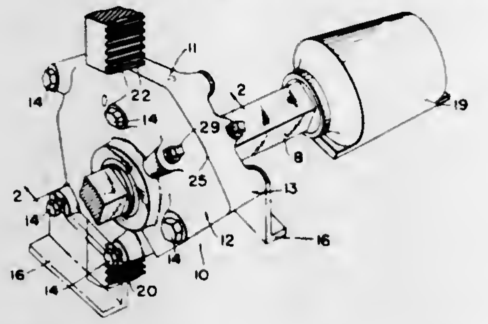
3,400,592
TIMING CONTROL ARRANGEMENTS FOR ELECTRIC COOKING APPLIANCES
John Robert Jones, Sidcup, England, assignor to Morphy-Richards (Cray) Limited, St. Mary, Cray, Kent, England, a company of Great Britain
Filed Feb. 10, 1966, Ser. No. 526,538
Claims priority, application Great Britain, Feb. 13, 1965, 6,322/65
5 Claims. (Cl. 74—3.5)



A timing control arrangement for an electrical cooking appliance such as a toaster, which is controlled by a temperature sensitive device located adjacent to the food to be cooked. Members are provided for coupling the control mechanism of said appliance to said device when the arrangement is set, the relative positions of said coupling members being determined by the position of the device at that time, so that the cooking operation is terminated accordingly at different temperatures of said device.

3,400,593
PARTS LIFTING EQUIPMENT FOR DIE PRESS
Donald E. Darnell, Northville, Mich., assignor to Power Components, Inc., Dearborn, Mich., a corporation of Michigan
Filed Mar. 28, 1966, Ser. No. 537,856
15 Claims. (Cl. 74—29)

A material handling unit comprising a housing having a shaft-receiving bore opening. A pair of bushing members coaxial with the housing bore are rotatably mounted in the housing. Each bushing member has a flange which engages counterbores on a pinion to rotatably mount the pinion within the housing. The pinion meshes with the rack. A shaft extends through the pinion in driving engagement therewith.

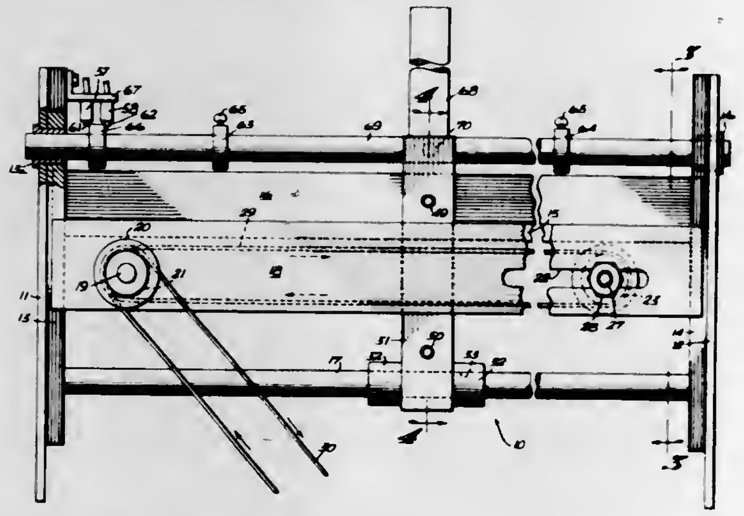


3,400,594
TRAVERSING MECHANISM

Joseph Steyh, 89 John Ryle Ave., Haledon, Paterson, N.J. 07508

Filed July 8, 1966, Ser. No. 563,757

4 Claims. (Cl. 74—37)



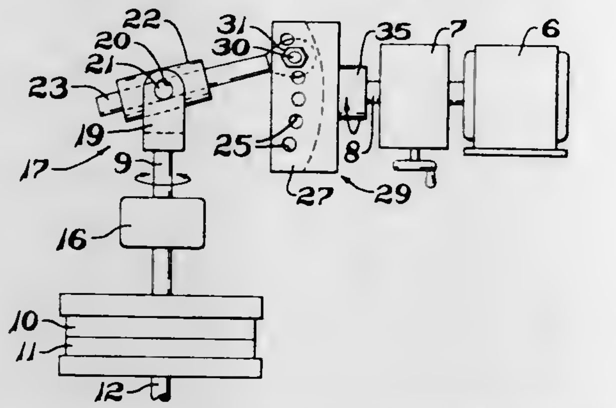
A traversing mechanism including a carriage, pneumatic clamps for reversing engagement of said carriage, time belt loops engaged by said clamps, and means including a cam means fixed on a control rod and bleeder valves in longitudinal contact with said cam, said bleeder valves utilized as limit transfer members controlled by movement of said carriage for repeatedly reversing said carriage direction.

3,400,595
DRIVE MECHANISM FOR CONVERTING ROTARY TO OSCILLATING MOTION

George F. Pfeiffer, Tallmadge, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Filed May 23, 1967, Ser. No. 640,527

10 Claims. (Cl. 74—47)



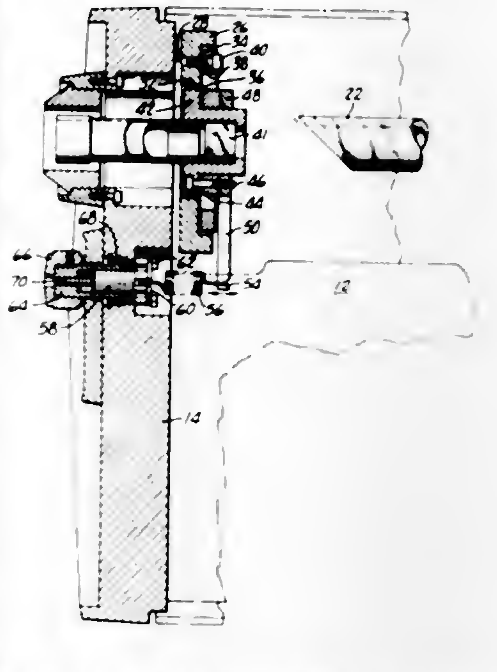
A drive mechanism for converting a rotary input to an oscillating motion without lost motion therebetween through connecting means which provides means for adjusting the amplitude of oscillation.

3,400,596
ADJUSTABLE OPTICAL ELEMENT SUPPORTING APPARATUS

Alberto L. Laich, Rockville, Md., assignor to Spectra-Physics, Inc., Mountain View, Calif., a corporation of California

Filed Apr. 15, 1966, Ser. No. 542,842

13 Claims. (Cl. 74—89.15)



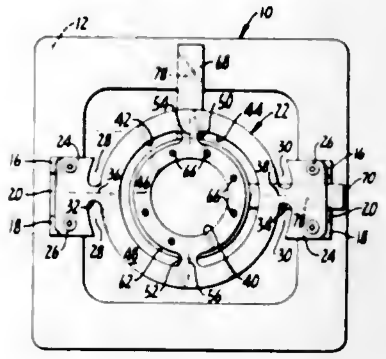
Apparatus for adjustably supporting an optical element in precise spacial relationship relative to the optical axis of a laser or other optical system. The optical element is mounted in the central portion of a resilient diaphragm, with the peripheral margin of the diaphragm being mounted in fixed relation to the optical avis. A pair of elongated arms extend radially from the optical element mounting for applying a bending moment about each of two perpendicular axes transverse to the optical axis. The resulting elastic deformation of the resilient diaphragm permits independent adjustment of angular rotation of the optical element about each of these perpendicular axes. To controllably and precisely position the optical element, a motion transmitting mechanism is provided for independently actuating each moment arm, which mechanism includes a resilient portion for reducing the amount of actuating motion transmitted to the respective moment arms.

3,400,597
OPTICAL ADJUSTMENT MEANS

Charles Nater, Los Gatos, Calif., assignor to Laser Image Systems, Inc., Sunnyvale, Calif., a corporation of California

Filed Sept. 15, 1966, Ser. No. 579,553

5 Claims. (Cl. 74—89.15)



1. A plate, formed of a material having a spring constant, comprising an inwardly disposed portion, an intermediately disposed portion, and an outwardly disposed portion, said inwardly disposed portion being connected to said intermediately disposed portion by means comprising a first pair of oppositely directed and radially extending portions constituting a first torsional hinge, said intermediately disposed portion being connected to said outwardly disposed portion by means comprising a second pair of oppositely directed and radially extending portions constituting a second torsional hinge, the axes of said first and second torsional hinges intersecting at the geometric center of said inwardly disposed portion, and means associated with said outwardly disposed portion for mounting said plate in a preselected reference plane.

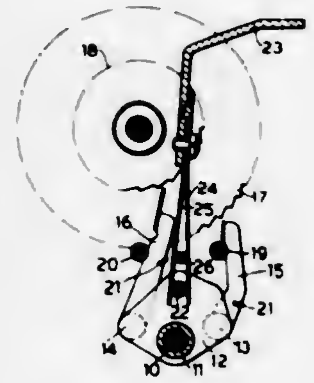
3,400,598
DEVICE FOR CONTROLLING THE ADVANCE OF DRUMS IN A DISPLAY DRUM APPARATUS

Fermo Solari, Udine, Italy, assignor to Solari & C. Udine, S.p.A., Udine, Italy, a company of Italy

Filed May 24, 1966, Ser. No. 552,607

Claims priority, application Italy, Aug. 9, 1965, 723,779

9 Claims. (Cl. 74—142)



A device for controlling the selective advance of either of a pair of drums of a two-drum structure. A pair of gears are respectively fixed to the drums for rotation therewith, and a pair of pawl-members respectively coact with these gears. A rocker is pivotally connected at a pair of distinct points to the pair of pawl members, and a pivot means supports the rocker for oscillation about an axis situated between the points of connection of the rocker with the pawl members. A control means is provided for oscillating the rocker in one direction or the other about the turning axis thereof so as to cause one or the other of the pawl members to contact with one of the other of the gears, thus bringing about rotation of a selected one of the drum with respect to the other drum, depending upon the direction of turning of the rocker. The rocker has a rest position where both pawl members are displaced from the gears so as not to interfere with the latter when the rocker is not oscillated.

3,400,599
TURNTABLE DRIVING APPARATUS

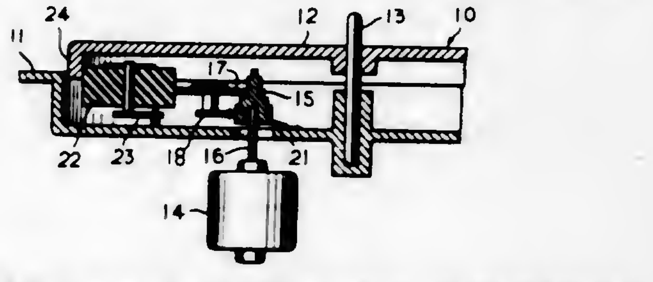
Osamu Samuta, Yokohama, Japan, assignor to Victor Company of Japan, Limited, Yokohama, Japan, a corporation of Japan

Filed July 11, 1966, Ser. No. 564,249

Claims priority, application Japan, July 28, 1965, 40/45,708; (utility models), 40/61,985, 40/61,986, and 40/61,987

4 Claims (Cl. 74—194)

A turntable driving apparatus having a first idler formed by a relatively hard elastic material abutting a second idler formed by a relatively soft elastic material. A multistage pulley driven by a turntable drive motor selectively engages the first idler to drive it at the selected rotational speed. The second idler engages with a vertical peripheral edge of the turntable to transmit the rotational drive thereto. The transmission of vibration from the turntable drive motor to the turntable is substantially prevented by the second idler.



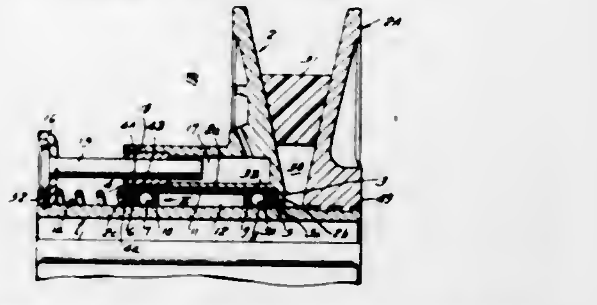
3,400,600
VARIABLE-PITCH SHEAVE

Robert Ruprecht, Aichelberg, and Falko Hamm, Sindelfingen, Germany, assignors to Ernst Heinkel Aktiengesellschaft, Stuttgart-Zuffenhausen, Germany

Filed May 18, 1967, Ser. No. 639,353

Claims priority, application Germany, May 26, 1966, H 59,523

15 Claims. (Cl. 74—230.17)



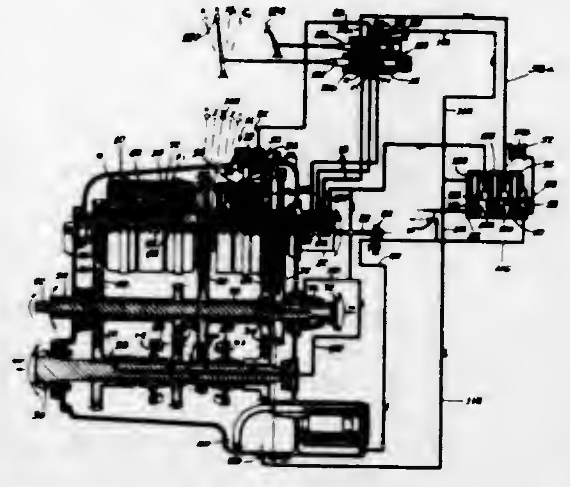
The reciprocable flange of a variable-pitch sheave is mounted on the main shaft or on a series of axially parallel guide rods by means of pairwise arranged antifriction bearings having outer races whose radial clearance with reference to the peripheral surface of the main shaft or the respective guide rod is slightly greater than the radial clearance between the annuli of balls in the respective bearings and the peripheral surface. This insures that the outer races cannot damage the peripheral surface but can scrape off foreign matter in response to axial movement of the flange, and simultaneously prevent escape of lubricant from or entry of foreign matter into the bearings.

3,400,601
TRANSMISSION HAVING SLOW-DOWN BRAKE AND DUMP VALVE

Charles A. L. Ruhl, Wheaton, Peter P. Polko, Lyons, and Edward Mayer, North Riverside, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed July 25, 1966, Ser. No. 567,618

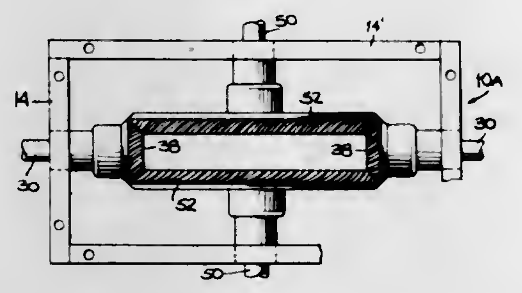
21 Claims. (Cl. 74—339)



Forward-reverse gear transmission in a power train of the kind for driving a tractor, having an alternately operable transmission slow-down brake and a conventional clutch engageable to establish drive in the power train. De-clutching, which is a necessary incident to gear shifting in the gear transmission, is attended by automatic engagement of the transmission slow-down brake for immediately conditioning the transmission by braking the moving parts thereof to minimize gear clashing and thereby expedite the shift.

3,400,602
UNIVERSAL HIGH SPEED RATCHET ADAPTER

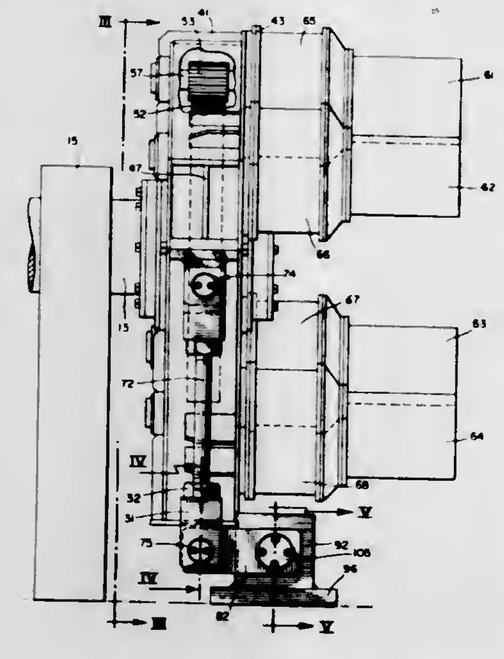
Salvatore Scardaci, 2 Mehan Lane, Commack,
Huntington, Deer Park, N.Y. 11729
Filed Nov. 5, 1965, Ser. No. 506,554
5 Claims. (Cl. 74—410)



A ratchet adapter comprising a casing, a plurality of rotatable shafts mounted in the casing and angularly disposed with respect to one another on the same plane, extending from the casing, a beveled gear mounted on the inner end of each shaft, with the gears in continuous engagement with one another, disposed so that each gear is in angular engagement with the gear on each side thereof.

3,400,603
TORQUE RESISTING SYSTEM

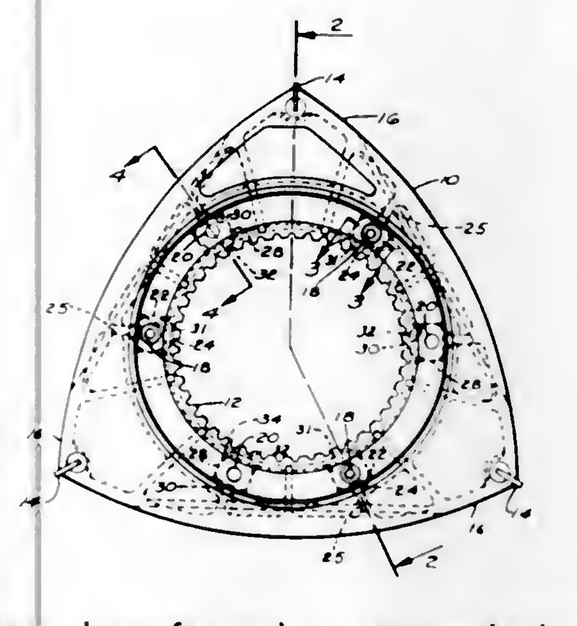
Milton C. Stafford, Valley Forge, Pa., assignor to King of Prussia Research and Development Corporation, King of Prussia, Pa., a corporation of Pennsylvania
Filed Dec. 2, 1966, Ser. No. 598,700
10 Claims. (Cl. 74—411)



A torque resisting system is disclosed for shaft mounted drives. A single torsion bar is horizontally disposed, preferably below the drive, and supported at each end in bearings for rotation. Crank arms are connected to each end of the torsion bar. The ends of the crank arms are connected by vertically disposed connecting rods to opposite sides of the main drive housing. Torque forces on the drive housing tend to pull one crank arm up and to push the other down, thereby causing opposite ends of the torsion bar to be subjected to torsional forces in opposing directions.

3,400,604
ROTOR AND GEAR ASSEMBLY FOR ROTARY MECHANISMS

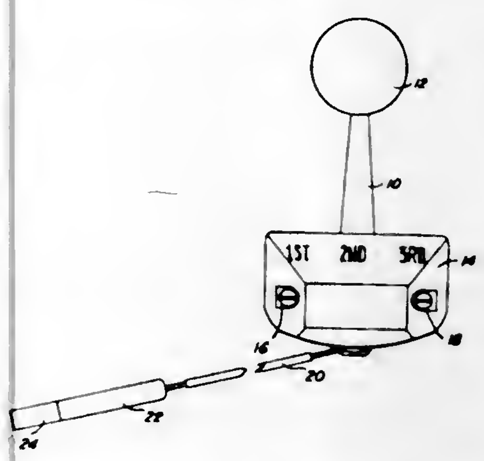
Charles Jones, Hillsdale, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed Nov. 25, 1966, Ser. No. 596,845
9 Claims. (Cl. 74—433)



A rotor and gear for use in a rotary mechanism, especially a rotary combustion engine, are assembled to minimize stresses produced in an operating mechanism in the gear and in rotor and gear fastening means by securing the gear and rotor against relative radial movement due to thermal distortion at only a sufficient number of locations to assure concentricity of the parts, and by piloting the gear on the rotor with a clearance between the gear and rotor such that at operating temperatures, a tight fit is established between the surfaces of the gear and rotor and cyclic operating loads are transmitted across such surfaces.

3,400,605
BICYCLE SHIFT CONTROL

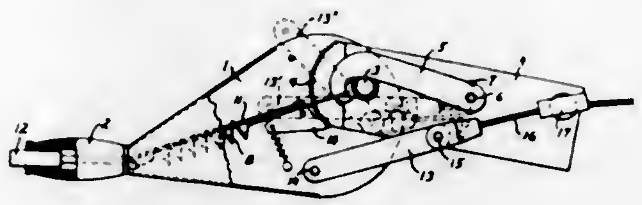
Edwin Elliott Hood, Elmira, N.Y., assignor to The Bendix Corporation, a corporation of Delaware
Filed May 31, 1966, Ser. No. 554,009
2 Claims. (Cl. 74—501)



A manual shift control for a multi-speed bicycle. Shift position is maintained by the interaction of spaced detents in the housing-backing plate and a screw projecting from the shift lever which is, in turn, spring-biased toward the housing-backing plate. By combining the cable anchor and pulley on the shift lever, the cable is protected from failure due to flexing. A pivot edge in cooperative association with ramp surfaces allows a known and constant side load to be applied to the lever.

3,400,606
HAND OPERATED BRAKE

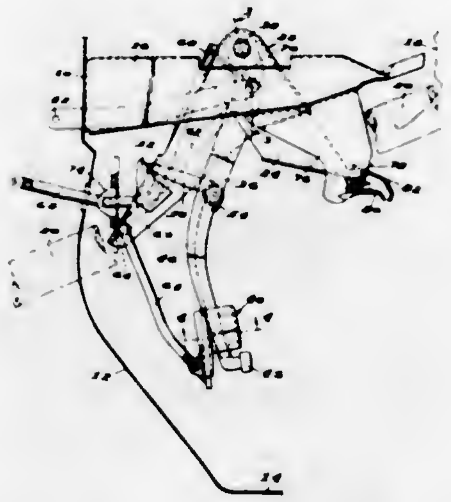
Hans O. Schröter, 162 Schliesfach,
8 Munich 22, Germany
Continuation-in-part of application Ser. No. 470,371, July 8, 1965. This application Apr. 24, 1967, Ser. No. 633,231
Claims priority, application Germany, Mar. 1, 1965, 36,616; June 18, 1965, Sch 37,247
2 Claims. (Cl. 74—516)



A hand operated brake applying mechanism comprising a lever 1 adapted to be swung about a fixed axis 3, a swinging link 5 pivotable about a stationary axis 6 and having its free end connected to one end of a tension spring 8 whose remote and is anchored to the lever 1, the link 5 remaining in engagement with the axis 3 during the first portion of its swinging movement but disengaging the axis 3 and receding therefrom during the remaining portion of its swinging movement to assist in brake application, and a rigid bar 13 having one end thereof pivotally connected to the lever 1 while its other end is adapted to be pivotally connected to a vehicle brake, the bar 13 being at a distance from the axis 3 while the lever 1 is at rest but moving toward the axis 3 during initial swinging movement of the lever 1 with simultaneous increase of lever ratio until the bar 13 comes into engagement with the axis 3 when the lever ratio will be a maximum, the lever 1 and bar moving in unison during continued pivotal movement of the lever 1 while the lever ratio decreases.

3,400,607
VEHICLE CONTROL ASSEMBLY

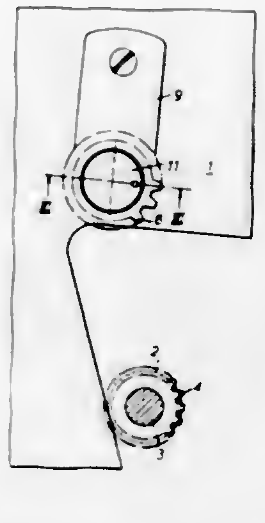
Raymond P. Smith, Southfield, Mich., assignor to The Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 20, 1965, Ser. No. 514,867
3 Claims. (Cl. 74—560)



An adjustable pedal assembly for a motor vehicle including a portion which provides a rigid footrest when the adjacent pedal is not depressed.

3,400,608
TOOL TRAVERSING MECHANISM CONTROLLED BY TEMPLATES OR PATTERNS

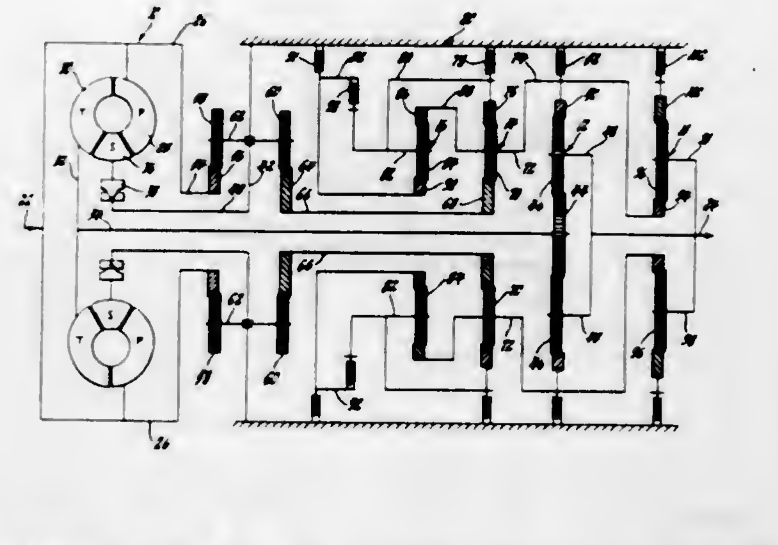
Arthur Ernest Laws, 53 Beaumont Ave.,
St. Albans, Hertfordshire, England
Filed Aug. 22, 1966, Ser. No. 574,142
Claims priority, application Great Britain, Aug. 23, 1965, 36,143/65
2 Claims. (Cl. 74—569)



1. A template follower mechanism comprising a template having an internal corner, a motor driven roller which is caused to bear against the template, a rotatably driven gear pinion coaxial with said roller, a gear member mounted adjacent said internal corner of said template for engagement by said pinion when said roller enters said corner, and lost-motion connection means operative to ensure that said roller will dwell in said conrer after engagement of said pinion with said gear member prior to said gear member becoming effective to act as an abutment against which said pinion can work to drive said roller out of said corner.

3,400,609
TRANSMISSION

Robert C. Utter, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 504,020
1 Claim. (Cl. 74—688)



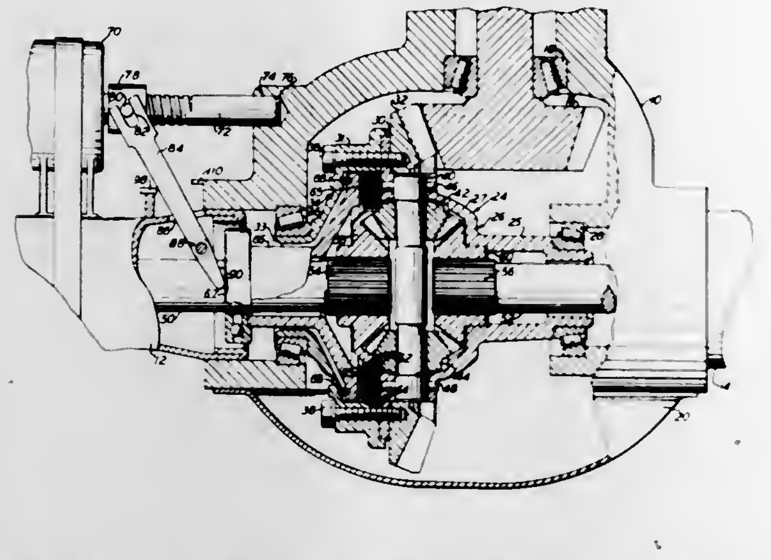
A three element torque converter is combined with four forward speed and reverse planetary gearing to provide single power path torque converter drive in a low forward drive range and reverse drive and output split torque drive in three higher forward drive ranges.

3,400,610
LOCKING DIFFERENTIAL GEAR

Paul E. Taylor, deceased, late of Livonia, Mich., by Katherine M. Taylor, administratrix, Livonia, Mich., and Charles C. Bookout, Livonia, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Mar. 31, 1966, Ser. No. 539,223

9 Claims. (Cl. 74—710.5)



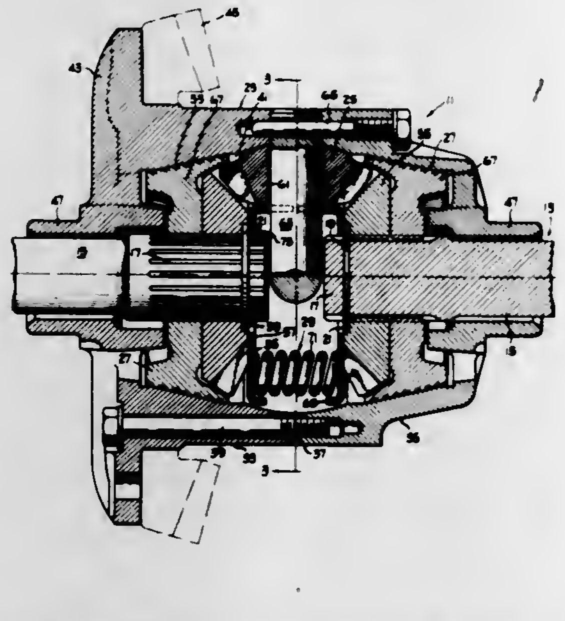
An electric motor compresses a clutch pack located between one side gear and a clutch housing fastened to the ring gear to prevent differential action at torques less than those capable of inducing clutch slippage. The electric motor is controlled by a control circuit preventing compression at vehicle speeds above a predetermined value, permitting compression according to a manual signal at speeds below the predetermined value, and automatically removing compression when vehicle speed increases through the predetermined value.

3,400,611
DIFFERENTIAL MECHANISM

Jack F. Engle, Auburn, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed May 6, 1966, Ser. No. 548,228

10 Claims. (Cl. 74—710.5)



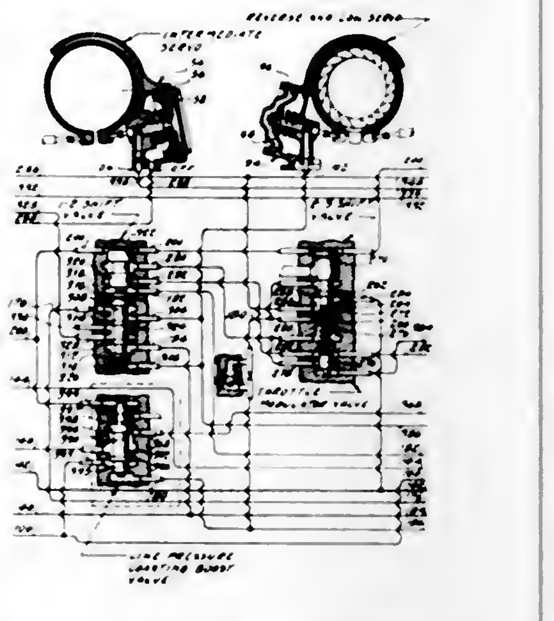
A limited slip differential mechanism for use in an axle system including means within the differential mechanism for restricting outward movement of the axles. The mechanism includes biasing means urging clutch members into frictional engagement. The biasing means is insertable through a side port opening and includes springs spaced apart a sufficient distance to allow insertion of axle restraining means into the mechanism.

3,400,612
AUTOMATIC CONTROL VALVE SYSTEM FOR A MULTIPLE SPEED RATIO POWER TRANSMISSION MECHANISM HAVING A CONTROL PRESSURE BOOSTER

Stanley Leroy Pierce, Jr., Madison Heights, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Jan. 5, 1966, Ser. No. 518,882

10 Claims. (Cl. 74—864)



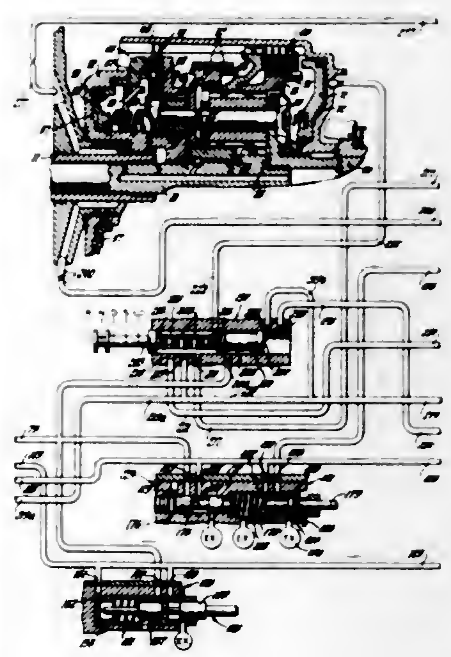
A control valve circuit for a multiple-ratio power transmission system including a pressure regulator for maintaining a calibrated circuit pressure for any given driving condition and a control pressure coasting boost valve that communicates with the regulator and changes its calibration during coasting operation of the transmission system under zero driving torque, thereby augmenting the circuit pressure to accommodate the coasting torque delivery and delaying a forced downshift to the lowest speed ratio when the vehicle transmission is conditioned for coasting operation in the intermediate underdrive ratio.

3,400,613
AUTOMATIC TRANSMISSION

Ivan R. Johnson, Royal Oak, and Frank A. Swindell, Detroit, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 29, 1965, Ser. No. 517,275

9 Claims. (Cl. 74—869)



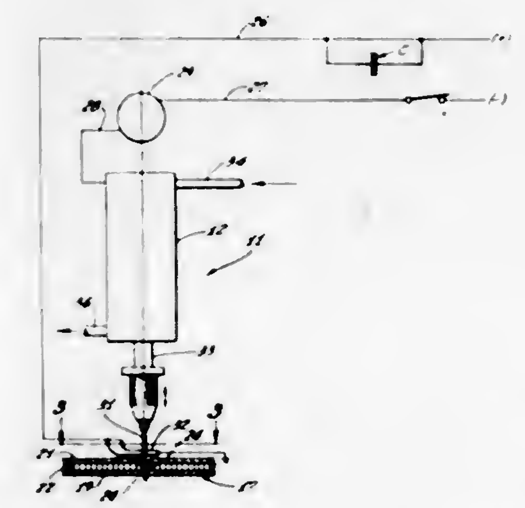
A torque converter transmission which has gearing providing three forward drive ratios and one reverse ratio controlled by a hydraulic control system responsive to vehicle speed and vehicle engine torque demand signals for automatically effecting a smooth transition between the forward drive ratios. The control system includes a movable manual valve which can be positioned to condition the controls for fully automatic operation or selectively positioned to condition the transmission for only the low ratio, the second ratio, neutral or the reverse ratio. The controls include a down-shift valve which operates to provide a direct high-to-low shift at zero to light throttle and includes a detent valve for third-to-second down shift at a predetermined throttle opening when the output speed is below a predetermined speed. Part throttle third-to-second down shifts below predetermined output speeds are provided by increasing throttle valve oil pressure to effect down shift of a second-third shifter valve in the controls.

3,400,614
SURVEILLANCE SYSTEM

Edwin A. de Voss, Torrance, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California

Original application May 4, 1964, Ser. No. 364,579, now Patent No. 3,285,102, dated Nov. 15, 1966. Divided and this application July 27, 1966, Ser. No. 568,176

3 Claims. (Cl. 77—5)



1. In a drilling assembly incorporating means to detect drill breakage that may occur during a drilling operation, the combination comprising: a drilling unit including a motor and bit member; a guide member having an aperture formed therein; said bit member continuously operating in said aperture during normal operations of said unit; the clearance between said bit member and the walls defining said aperture being such that electrical contact is normally provided therebetween; and a path for electrical current including said bit member, guide member and motor connected in series whereby said motor will be deenergized in the event of bit member breakage.

3,400,615
FEEDBACK APPARATUS

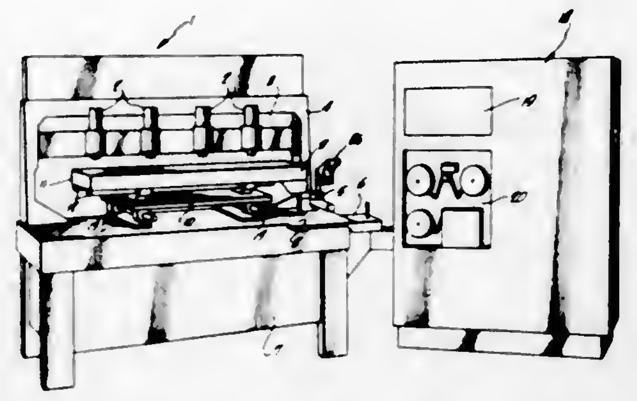
Robert J. Godlove, Hacienda Heights, and Henry P. Karwan, Pomona, Calif., assignors to Digital Systems, Inc., Covina, Calif., a corporation of California

Filed July 27, 1966, Ser. No. 568,235

16 Claims. (Cl. 77—32.2)

1. A feedback apparatus capable of use in the fabrication of holes in a workpiece in combination with a program controller and a drilling machine, the drilling machine having at least one drill, a table capable of two coordinate travel for mounting at least one workpiece to be drilled, means for positioning the table and the workpiece, means for operating the drill to drill a hole in the workpiece, and a platform for a master descriptive of the drill pattern desired; the program controller including means for generating a position signal to actuate the workpiece positioning means; the feedback apparatus comprising:

(a) a frame carried by the table mounted for movement with respect to the master on the platform to a position corresponding to the position of the workpiece with respect to the drill, which position is dictated by the position signal from the program controller; and



(b) means carried by the frame for sensing the master and determining whether the position of the workpiece with respect to the drill is correct and for commanding the drilling machine to fabricate a hole in the workpiece after such means determines that such position is correct.

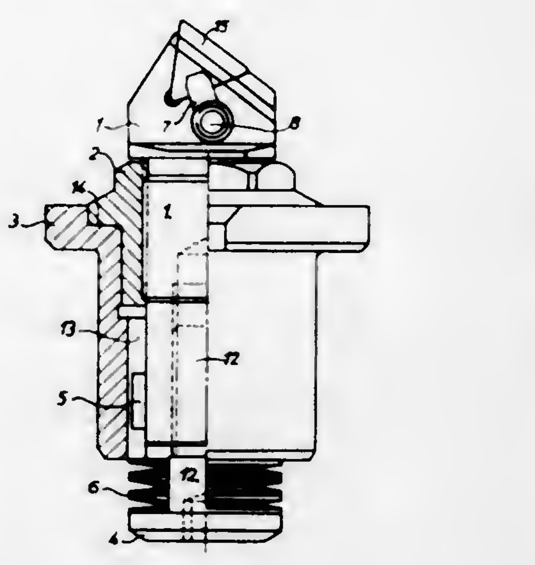
3,400,616
TOOL INSERT

Wlajko Mihic, Lotangsgatan 5, Gavle, Sweden

Filed July 20, 1966, Ser. No. 566,518

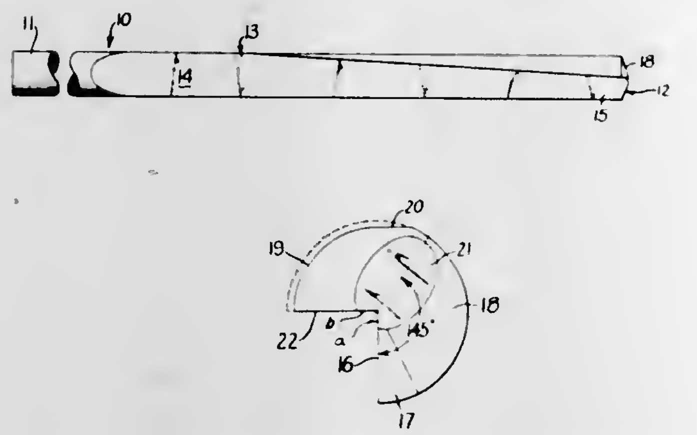
Claims priority, application Sweden, Aug. 26, 1965, 11,133/65

2 Claims. (Cl. 77—58)



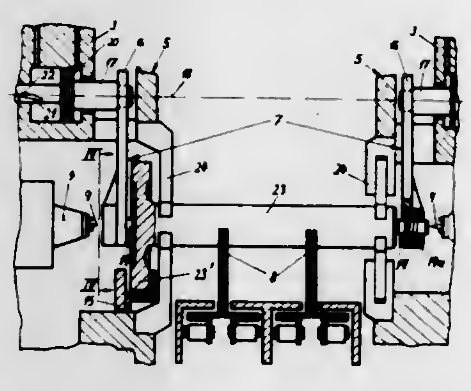
There is disclosed a tool insert in which a tool head provided with a cutter is adjustable to desired positions by an adjusting nut mounted in an insert bushing, and in which the adjusting nut is threadedly connected to the head and biased to a seat disposed on the bushing by spring means, fastened between the bushing and a part connected to the head, the spring means comprising a plurality of elastic or spring washers abutting against each other, the part connected to the head comprising a screw threaded into the head and coaxial with the head, the screw having a threaded portion, a head portion and an intermediate portion, said nut and said bushing having cooperating surface means for preventing radial displacement of the nut relative to the bushing with minimum spring pressure, the screw head portion being in engagement with an end washer, and the intermediate portion having a shoulder stud portion defining means for maintaining alignment of the washers, the washers being disposed about the shoulder stud portion with washer holes in close-fit relation therewith, and the bushing terminating longitudinally adjacent the end washer disposed most remote from the screw head portion.

3,400,617
DRILL BIT TIP
Frank E. Sanborn, 626 Busse Highway, Park Ridge, Ill. 60068
Filed July 18, 1966, Ser. No. 565,952
6 Claims. (Cl. 77—67)



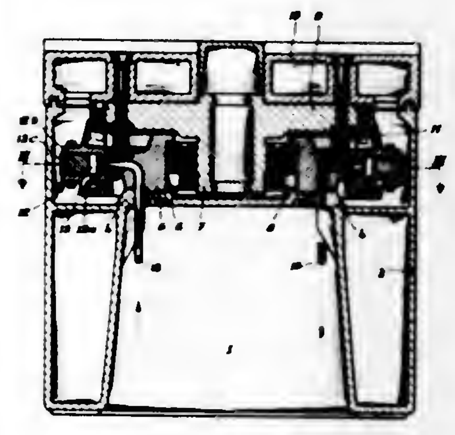
1. A cutting tip for a drill bit, said tip being substantially conical with the axis of the cone substantially coinciding with the axis of the bit and having a flute which extends radially inwardly of the bit to at least the axis of the bit, said flute being defined by divergent, longitudinally extending surfaces, one of said surfaces terminating at the tip in a radially extending cutting edge, means providing a clearance for said cutting edge over the radially outer regions of said edge, and means providing a different clearance for said cutting edge over the radially inner regions of said edge.

3,400,618
APPARATUS FOR AXIALLY CENTERING A WORKPIECE IN MACHINES ADAPTED TO CUT A WORKPIECE TO LENGTH AND CENTER THE SAME
Hans Werner Steinmetz, Schaffhausen, Switzerland, assignor to Georg Fischer Aktiengesellschaft, Schaffhausen, Switzerland
Filed Dec. 6, 1965, Ser. No. 511,752
Claims priority, application Switzerland, Dec. 10, 1964, 15,943/64
9 Claims. (Cl. 82—2.5)



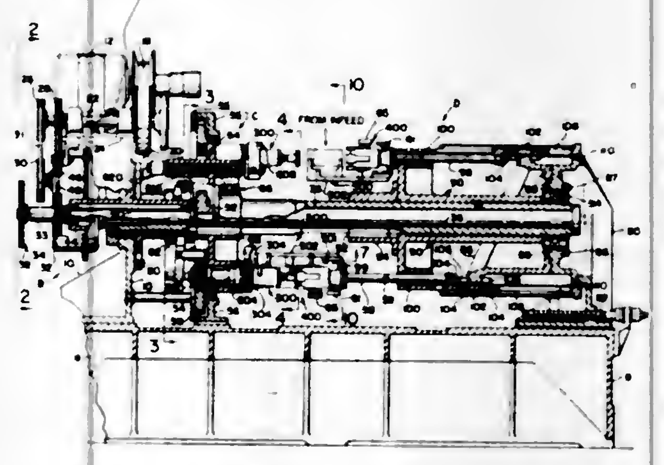
A device for use with a machine tool including a conveyor to convey a workpiece into machining position and abutments to engage the workpiece from opposite sides to position the workpiece in the axial direction together with clamp means to clamp the workpiece in machining position, the abutments being moveable in the axial direction of the workpiece to engage and release the workpiece.

3,400,619
DRIVE FOR THE FACE PLATE OF VERTICAL LATHES
Hans O. Wagner, Dusseldorf, Germany, and Alfred Jakob Zwicky, Rapperswil, Switzerland, assignors to Schiess Aktiengesellschaft, Dusseldorf, Germany
Filed May 6, 1966, Ser. No. 548,092
Claims priority, application Germany, May 15, 1965, Sch 37,063
5 Claims. (Cl. 82—28)



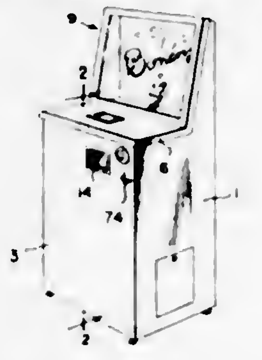
A variable speed drive means and mounting for the faceplate of a lathe. The drive means being hydraulic, infinitely variable and relatively shock-free.

3,400,620
METHOD AND APPARATUS FOR TRIMMING EXTRUDED CAN BODIES
Ronald H. D. Armbruster, Battle Creek, and John S. Ringler, Hastings, Mich., assignors to The E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Aug. 22, 1966, Ser. No. 573,903
20 Claims. (Cl. 82—47)



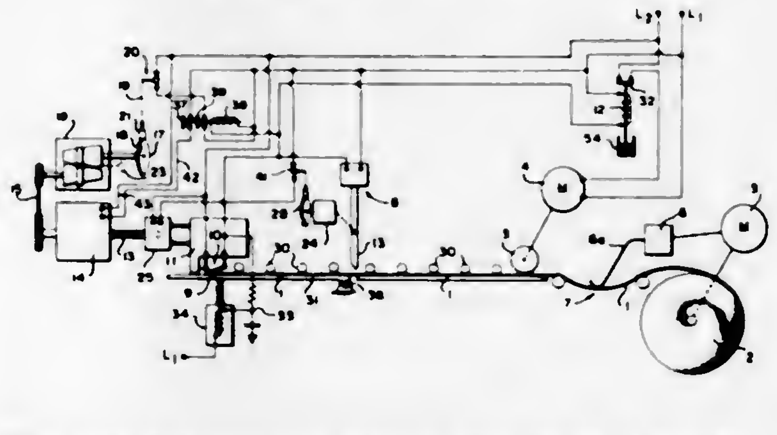
1. A method of cutting a tubular member about an imaginary circumferentially extending line to separate said member into scrap portions and a usable body portion, one end of said member being a scrap end and the other end being a usable body end, said method comprising the steps of: making at least two cuts between the scrap end and the imaginary circumferentially extending line, and cutting circumferentially around said member at said imaginary circumferentially extending line.

3,400,621
COIN OPERATED VENDING MACHINE
Johnnie Wilson, 215 N. 7th St., Miles City, Mont. 59301
Filed Oct. 5, 1966, Ser. No. 584,511
4 Claims. (Cl. 83—205)



A coin operated vending machine for dispensing tickets or coupons in continuous strip form which includes a feeding mechanism and a cutter device operable upon the insertion of a coin into the machine. The coupons or tickets in the strip are arranged serially with the adjacent tickets being of dissimilar values. The construction of the device allows only the terminal coupon on the strip next to be dispensed to be viewed by the user.

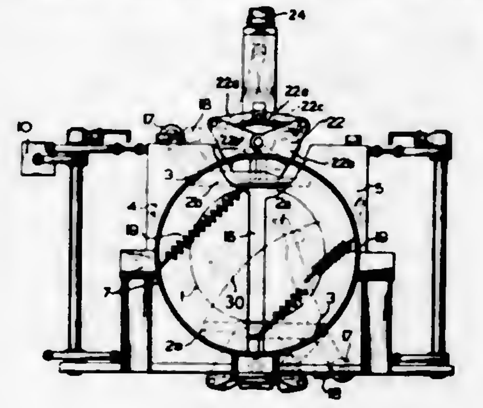
3,400,622
APPARATUS FOR CUTTING INCREMENTALLY CHANGING LENGTHS OF MATERIAL
Willy Olsen, Mount Vernon, Ill., assignor to Olsen Magnetics, Inc., Mount Vernon, Ill., a corporation of Illinois
Filed Mar. 31, 1966, Ser. No. 539,161
10 Claims. (Cl. 83—210)



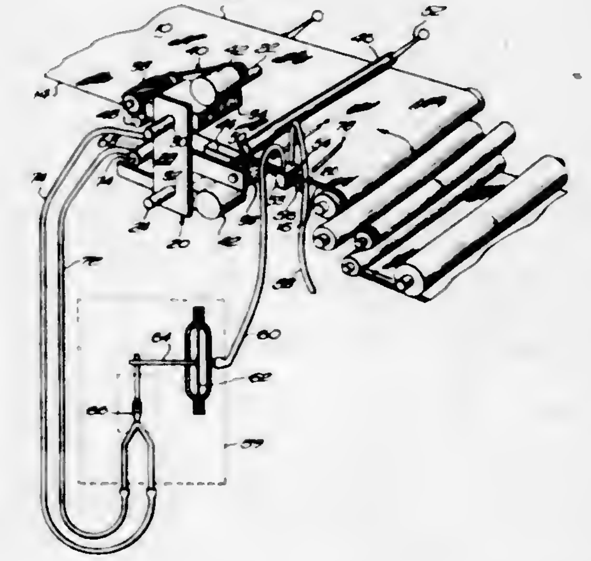
The apparatus cuts strip material into pieces of increasing length. Strip material is fed up to a stop and, upon arrival of the material at the stop, feed is terminated, a shear cuts the material and the cut strip is removed from the machine. Removal of the strip indicates feed and moves the head one increment of length relative to the shear. After a predetermined number of shear operations, the head is moved an abnormally large increment relative to the shear and the cycle then reverses itself and returns the machine to its starting condition.

3,400,623
MACHINE FOR SEVERING COILED MATERIAL
Erich Reth, Duisburg-Buchholz, and Werner Colditz, Duisburg, Germany, assignors to Demag Aktiengesellschaft, Duisburg, Germany
Filed Jan. 20, 1966, Ser. No. 521,985
Claims priority, application Germany, Jan. 26, 1965, D 46,357
4 Claims. (Cl. 83—356)

A device for subdividing a coiled wire into individual lengths includes means for feeding a coiled wire downwardly past one or more cutters arranged at right angles to the feed direction. A guiding lever is associated with each cutter and its sweeps through a path to intercept a coil of wire and to guide it into association with this cutter. The guiding means also includes two carriage members which are disposed adjacent the cutters and are movable toward and away from each other. When the carriages are at their innermost position they define a gap therebetween which permits the passage of wire therethrough to facilitate orienting the wire in respect to the cutter.



3,400,624
APPARATUS FOR EDGE TRIMMING FABRICS
William J. Holm, Springfield, Vt., assignor to Parks & Woolson Machine Company, Springfield, Vt., a corporation of Vermont
Filed Mar. 8, 1966, Ser. No. 532,631
7 Claims. (Cl. 83—368)

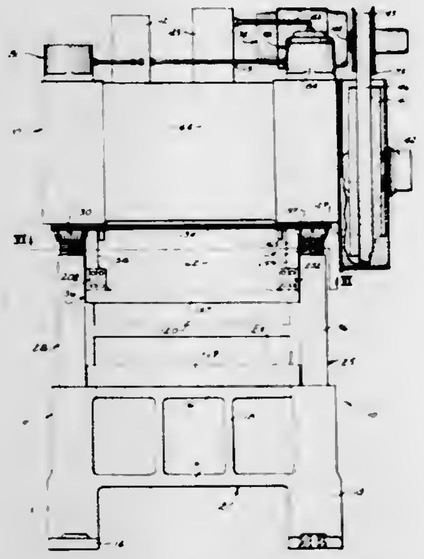


A relatively short rotary shear supported on a movable carriage extends across the edge of a moving web to trim threads hanging from the web edge. The shear rotates about an axis perpendicular to the direction of movement of the web and parallel to the plane of the web and cooperates with a ledger knife fixed to the carriage. The carriage is controlled by means of an automatic web edge detecting unit which causes the carriage with the shearing elements to follow the edge of fabric. Air jets are provided to direct the threads upwardly and into the bite of the shearing elements. A mask is provided whereby the face of the web is protected from the shearing elements.

3,400,625
MACHINE TOOL
Theodore J. Wrona, Sturgis, Mich., assignor to Oak Products, Incorporated, Sturgis, Mich., a corporation of Michigan
Filed Sept. 14, 1966, Ser. No. 579,427
9 Claims. (Cl. 83—529)

1. A machine for applying a force to a workpiece, comprising:

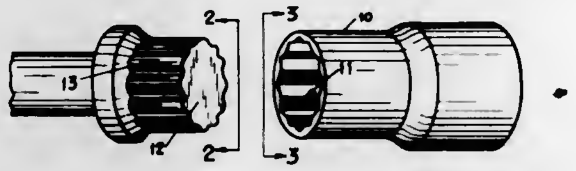
- base means having a workpiece supporting structure on one side thereof and plural parallel guide members mounted on said base means and extending substantially perpendicularly away from said side thereof;
- head means mounted upon said guide members and spaced from said supporting structure, said guide members being rigidly secured to one of said base means and said head means and being slideably engaged with the other;
- adjustment means mounted upon each of said guide members for controlled movement toward and away from the rigidly secured one of said base means and head means, and for engagement by the slideable one of said head means and base means for positively limiting the movement of said slideable one toward said secured one;



- pressure fluid actuated means connected between each of said guide members and said slideable one for firmly holding said slideable one against said adjustment means;
- pressure applying means located opposite said side of said base means;
- shaft means supported by said head means for rotation around an axis transverse of the direction of movement of said adjustment means; and
- eccentric means connecting said pressure applying means to said shaft means for effecting reciprocation of said pressure applying means toward and away from said side of said base means in response to rotation of said shaft means.

3,400,626
TWELVE-LOBE FASTENER

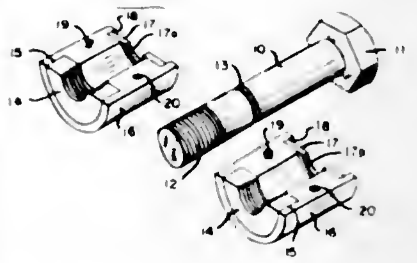
Emric W. Bergere, 2324 Nottingham Ave.,
Los Angeles, Calif. 90027
Continuation-in-part of application Ser. No. 450,870, Apr. 26, 1965. This application Mar. 13, 1967, Ser. No. 622,798
1 Claim. (Cl. 85—9)



Fastening devices either in the form of threaded bolts or threaded nuts having a specialized exterior wrenching contour for engagement by the recesses of a standard double hexagon wrenching tool socket of mating size. The wrenching contour of the fastener is such that the standard wrenching tool sockets can be used and yet a considerably higher torque can be applied before failure of the socket. The actual wrenching contour is defined by twelve lobes circumferentially spaced about the fastening device, each lobe constituting part of a semicircle, there being defined valleys between the lobes. If D represents the distance between diametrically opposite flats of one of the double hexagons defining the standard socket within a standard tolerance, G the radius of curvature of each lobe, F the diameter of the contour measured from the tips of diametrically opposite lobes, and B the diameter of the contour measured from diametrically opposite valleys between the lobes, then the values of G, F, and B in terms of the dimension D of the wrenching socket are given by the formulas set forth in FIGURE 5.

3,400,627
BLIND FASTENERS WITH SPLIT DEFORMABLE SLEEVE

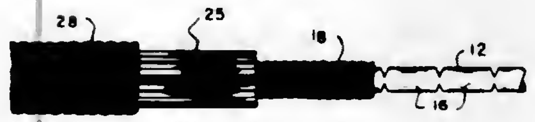
George Raynovich, Jr., Pittsburgh, Pa., assignor to Edward M. Citron, Pittsburgh, Pa.
Continuation-in-part of application Ser. No. 362,580, Apr. 27, 1964. This application Jan. 3, 1967, Ser. No. 606,941
6 Claims. (Cl. 85—70)



A blind fastener having a shank threaded at one end and stop means, preferably in the form of a groove, intermediate the ends of the shank, a pair of deformable half sleeves to be positioned around the threaded member, each half sleeve having a stop engaging means at one end and a threaded portion at the other end to engage the stop and threads respectively of the shank so that on rotation of the shank the threaded portion moves toward the stop engaging means to deform the half sleeve outwardly.

3,400,628
FLEXIBLE WEIGHT LINE AND METHOD OF MAKING WEIGHT LINE

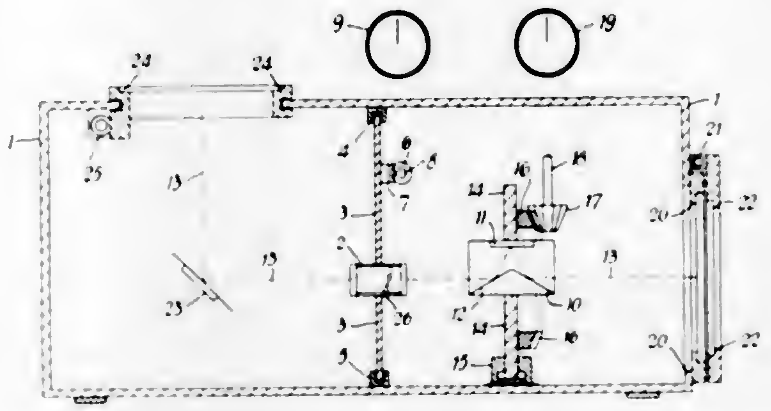
Lothar J. Herzog, Burnaby, British Columbia, Canada, assignor, by mesne assignments, to Grace Fibres Canada Ltd., Brantford, Ontario, Canada
Filed May 18, 1966, Ser. No. 551,135
7 Claims. (Cl. 87—6)



A flexible weighted line comprising a core of short sections of lead, an inner braided jacket holding the lead sections, straight yarns of limited stretchability surrounding the inner braided jacket and an outer braided jacket surrounding the straight yarns.

3,400,629
CODING AND DECODING OF DOCUMENTS

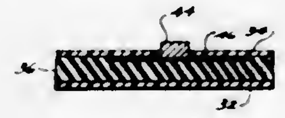
Alfred Hans Cornwall, Britannica House, Waltham Cross, Hertfordshire, England
Filed Mar. 29, 1965, Ser. No. 443,463
Claims priority, application Great Britain, Apr. 3, 1964, 13,948/64
8 Claims. (Cl. 88—24)



Method and apparatus for encoding documentary material wherein the image of a subject is projected onto a photographic sensitized surface by an optical system which controllably causes rotational and translational displacement factors of the image on the sensitized surface to produce a coded representation. To render the coded representation unintelligible, the sensitized surface is sequentially exposed by the subject and a screen having opaque and translucent areas. Displacement factors are employed for each sequential exposure. A second coded representation is obtained by sequentially exposing a second sensitized surface by the image of the subject and a second screen having reversal translucent and opaque areas and employing preferably different displacement factors. The encoding procedure may also be accomplished by reversing the subject and/or the screens. The optical apparatus includes a lens system mounted in a housing and means for translating the lens system in a plane perpendicular to the optical axis of the system to thereby effect the aforementioned translational displacement factors. Rotational displacement factors are achieved by employing the combination of light reflective surfaces for reflecting light rays away from and back to the optical axis and means for rotating said light reflective surfaces about said optical axis.

3,400,630
PHOTOGRAPHIC COPYBOARD

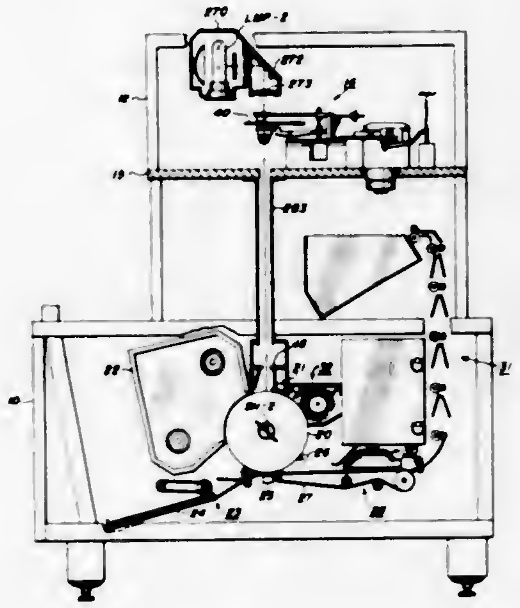
Chesley F. Carlson, 2230 Edgewood Ave., Minneapolis, Minn. 55427
Filed May 20, 1965, Ser. No. 457,400
3 Claims. (Cl. 88—24)



A photographic copyboard having a base with a hinged cover. A resiliently yieldable pressure pad is removably positioned on the base for uniformly pressing an apertured work sheet against the cover when the latter is closed. The pad consists of a resilient cushion sandwiched between two rigid plates. Retractable pins project from one of the plates to locate the apertured work sheet, the locating pins being retractable against the resilient cushion by closing of the cover.

3,400,631
RANDOM FRAME SELECTION SYSTEM FOR MICROFICHE MACHINES

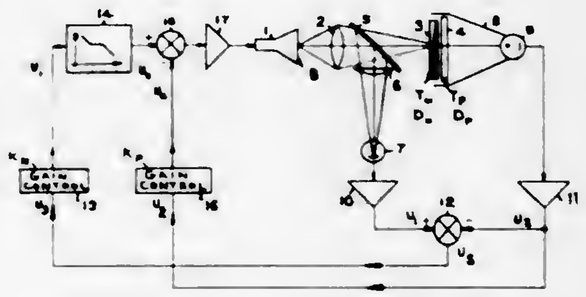
Richard C. Rauscher, Fairport, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed June 30, 1965, Ser. No. 468,469
4 Claims. (Cl. 88—24)



A control arrangement for controlling the positioning of a microfiche card relative to a fixed point such as an optical axis. Indexing devices are associated with the card for imparting indexing motion thereto in transverse and longitudinal directions. Control devices are utilized to cause movement of the card to a predetermined selectable position and then normal indexing action until the card reaches a second predetermined selectable position.

3,400,632
METHOD OF PHOTOGRAPHIC REPRODUCTION AND APPARATUS THEREFOR

Robert Wahli, Unterengstringen, Zurich, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company
Filed Feb. 7, 1966, Ser. No. 525,443
Claims priority, application Switzerland, Feb. 12, 1965, 1,962/65
22 Claims. (Cl. 88—24)

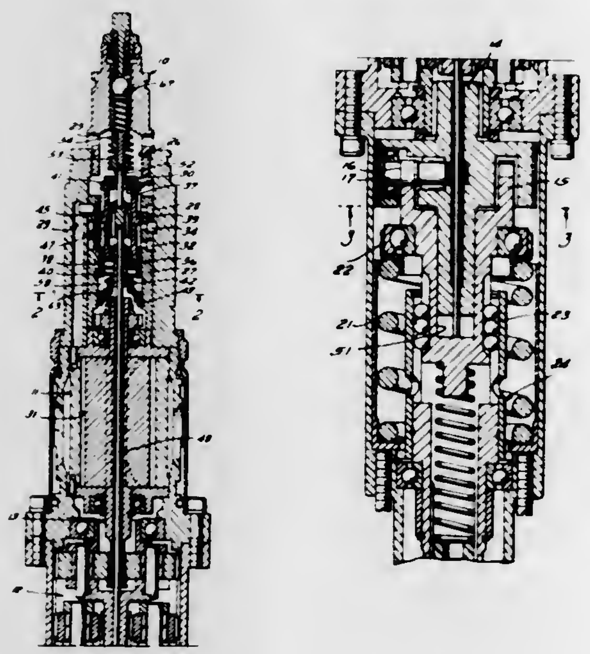


9. Photographic reproduction apparatus comprising a scanning system for generating a beam of light and scanning it over a transparent image to be reproduced and a light sensitive copying material to provide an image of the former on the latter, a first light sensitive device responsive to the light from said scanning beam which is reduced by the transmission of the individual points of said transparent image as said beam scans thereover, a second light sensitive device responsive to the intensity of said light beam, first and second logarithmic amplifiers in series with said first and second light sensitive devices

respectively, first and second signals appearing on the output of said first and second logarithmic amplifiers, subtracting means adapted to subtract said first signal from said second signal to provide a third signal which is dependent on the density value of each individual point scanned, a tone correction computer for modifying said third signal in accordance with the density values required in the copying material, a comparison device responsive to the modified third signal and said first signal to provide a signal for controlling the scanning beam so as to maintain the difference between the modified third signal and said first signal substantially to zero.

3,400,633
ULTRA-TORQUE NUT RUNNER WITH MOTOR BRAKE

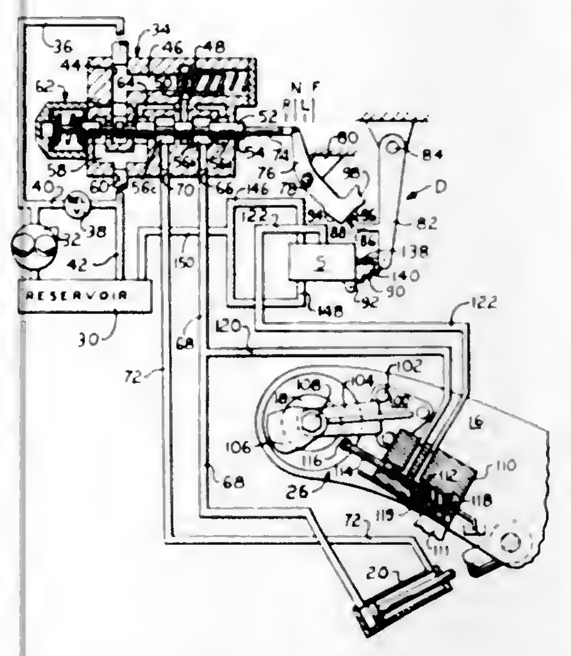
Lester A. Amtsberg, Utica, and William K. Wallace, Berneveld, N.Y., assignors to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 16, 1966, Ser. No. 572,753
7 Claims. (Cl. 91—59)



There is disclosed a nut runner having a motor connected by means of a torque releasable cam clutch to an output spindle. The clutch includes a driving member drivingly engaged by means of rollers in cam pockets of a driven member. Upon development of a predetermined torque in the work, the driving member cams the driven member axially and simultaneously carries the rollers out of the pockets in an overriding direction. Before the rollers can be carried over cam slopes between the pockets into the next succeeding pockets, valve mechanism operable by the axial movement of the driven member interrupts positive live air feed to the motor and causes it to be fed to the motor in a reverse direction. The motor is arrested in its positive movement by the counteracting force of this reverse air feed before the rollers can move over the cam slopes into the next pockets. A return clutch spring responds to this arrested condition to return the clutch members to engagement with the rollers moving back into their original pockets. The valve mechanism responds to this re-engaging action to cause resumption of the air feed to the motor in a positive direction. The dis-engaging and re-engaging action of the clutch continues in this manner until the air feed to the tool is finally terminated by the operator or by control means. Any reverse action that occurs in the motor during the re-engaging action is brief and is terminated upon clutch re-engagement before it can be transmitted to the work.

3,400,634
VENT MEANS FOR HYDRAULIC CIRCUIT

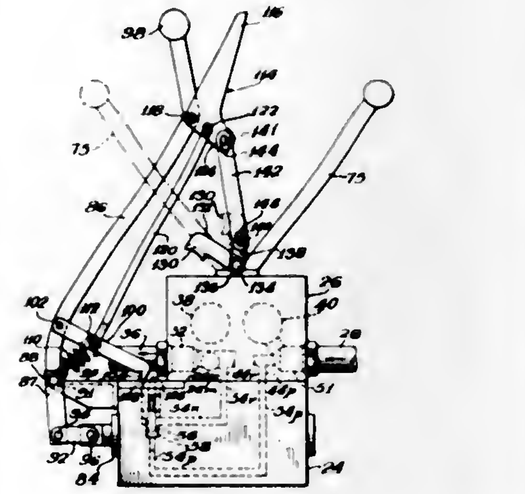
Edward A. Wirtz, Joliet, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Oct. 21, 1966, Ser. No. 588,481
2 Claims. (Cl. 91—358)



A hydraulically actuated control device is provided for automatically arresting the operation of a fluid motor during preselected portions of an operating cycle. The control device has means for selectively venting the hydraulic circuit to a zone of reduced pressure only after operation of the motor has been arrested.

3,400,635
HYDROSTATIC DRIVE CONTROL

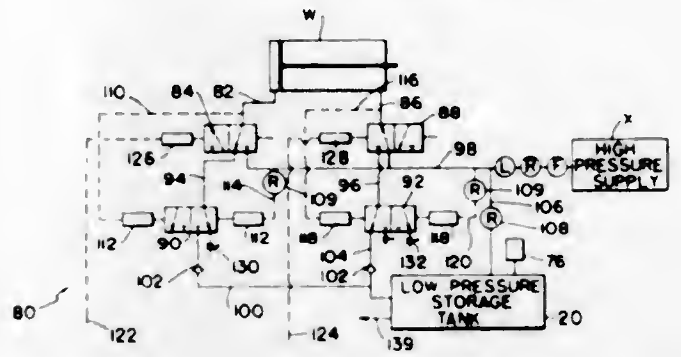
Stuart D. Pool, Naperville, and Aaron M. Schaible, Rockford, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 20, 1966, Ser. No. 588,193
10 Claims. (Cl. 91—412)



A means for controlling a pair of two-speed, reversible hydraulic motors arrangd to power drive wheels on opposite sides of the vehicle, including a direction control valve for each motor capable of supplying hydraulic fluid under pressure to the associated motor to drive it in either forward or reverse direction, a speed control valve for determining whether the motors will be driven in high speed range or low speed range, means responsive to an increase in pressure differential between motor inlet and outlet to shift said control valve to low range whenever the load imposed upon the motor approaches a stall condition, and mechanical link means for shifting said speed control valve to low range whenever either of the motors is reversed.

3,400,636
PNEUMATIC CIRCUIT FOR RAPIDLY TRANSFERRING FLUID UNDER PRESSURE FROM A WORK CYLINDER TO A STORAGE TANK FOR SUBSEQUENT USE

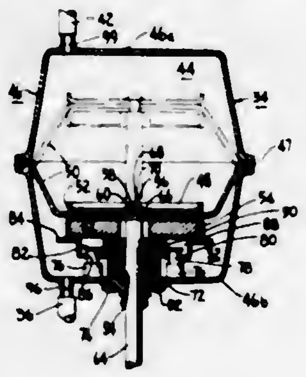
Ervin J. Schneider, 13970 Forrer Ave., Detroit, Mich. 48227
Filed Apr. 12, 1966, Ser. No. 542,072
12 Claims. (Cl. 91—452)



1. A pneumatic circuit comprising a work cylinder and piston assembly having a pair of pressure ports, a primary source of pneumatic fluid under pressure, a directional control valving means interposed in the circuit between said source and the ports of said cylinder, a pneumatic fluid storage tank establishing a secondary source of pneumatic fluid under a pressure less than the pressure of the primary source, flow control means in said circuit for controlling the speed of said piston, and fast acting fluid responsive valve means located in said circuit between the ports of said cylinder and said storage tank, said valve means being responsive to fluid exiting from the cylinder and alternately connecting the ports of said cylinder to said storage tank to thereby transfer exiting pneumatic fluid from the work cylinder to said storage tank in an explosive manner, the transfer of such pneumatic fluid occurring almost instantaneously in a brief period of time measured in milli-seconds upon actuation of said valve means, the remaining exiting pneumatic fluid under pressure used in controlling said valve means being exhausted to atmosphere through said flow control means immediately after the explosive action has occurred to speed control said piston.

3,400,637
FLUID PRESSURE POWER UNIT WITH MAGNETIC LATCHING MEANS

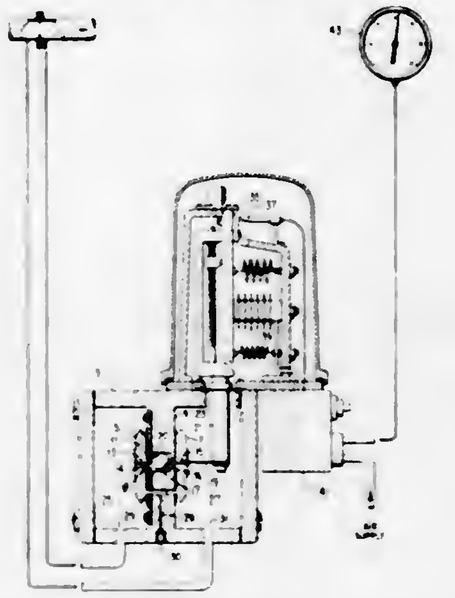
Hobart V. Roberts, Jr., Elma, and Joseph J. Andrycha, Buffalo, N.Y., assignors to Trico Products Corporation, Buffalo, N.Y.
Filed Aug. 8, 1966, Ser. No. 570,903
6 Claims. (Cl. 91—466)



A fluid system for controlling a fluid pressure power unit which actuates movable equipment as, for example, retractable headlights on a motor vehicle, includes fluid pressure source, control for directing fluid to one side of the other of a fluid operated power unit. The power unit includes a diaphragm which may be latched at one unit position by a self-aligning magnetic latch which includes a magnet mounted on the diaphragm and a hold-down unit disposed for self-aligning solid contact with the magnet mounted in opposition to the magnet for engagement with the magnet in the latching position.

3,400,638
OVERPRESSURE SEAL FOR DIFFERENTIAL PRESSURE RESPONSIVE DEVICE

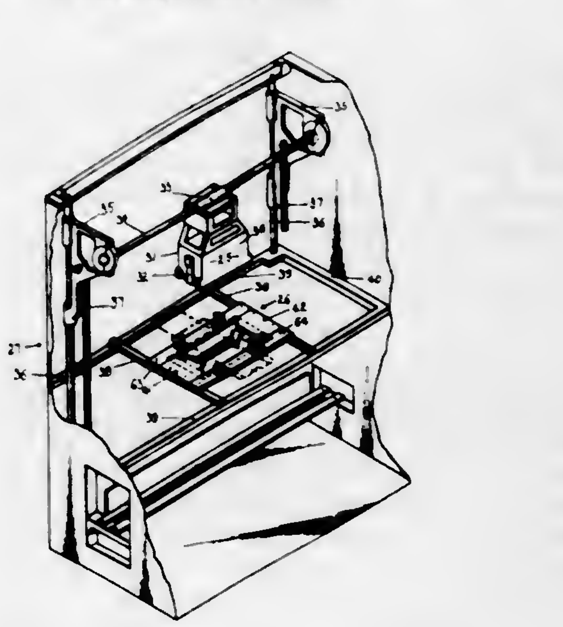
James E. McEvoy, South Euclid, Ohio, assignor to Bailey Meter Company, a corporation of Delaware
Filed Nov. 7, 1966, Ser. No. 592,528
5 Claims. (Cl. 92—10)



A differential pressure responsive device having two bellows attached to a partition wall and enclosing a body of liquid. The partition wall has a passageway connecting the interiors of the bellows and is provided with a free floating valve acting as an overpressure seal.

3,400,639
FORMING DIE UNIT FOR CONTAINER FORMING MACHINES

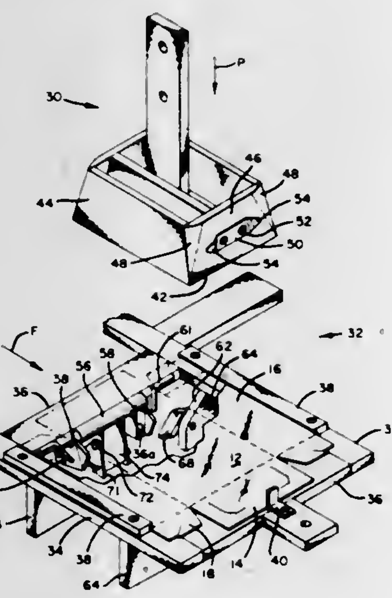
Daniel Wainberg, 4755 Blvd. des Grandes Prairies, St. Leonard, Montreal 38, Quebec, Canada
Filed Sept. 2, 1965, Ser. No. 484,569
3 Claims. (Cl. 93—51)



A device for the locking of corners when setting up a folding container in a container forming machine, and particularly for folding containers that are provided with locking flaps having bendable locking lips and which articulate from certain of the container's upright walls and with slits located in adjacent upright walls. The forming die has folding edges extending along two opposing sides of the aperture and lug plates with integral projecting lugs extending along and secured to the other sides of the aperture, and hook plates mounted on and secured to the lug plates and having arcuate-shaped guides forming gliding surfaces and which are hook-shaped and the integral hooks of which are directed towards the bottom and extend at an acute angle towards the outside in a direction not facing the plunger corners, the edges of the hooks forming the end of the arcuate-shaped guides of the hook plates.

3,400,640
METHOD AND APPARATUS FOR FOLDING AND LOCKING A BOX BLANK

Arthur E. Randles, 707 Warrington,
Redwood City, Calif. 94063
Filed July 13, 1966, Ser. No. 569,003
8 Claims. (Cl. 93—51)

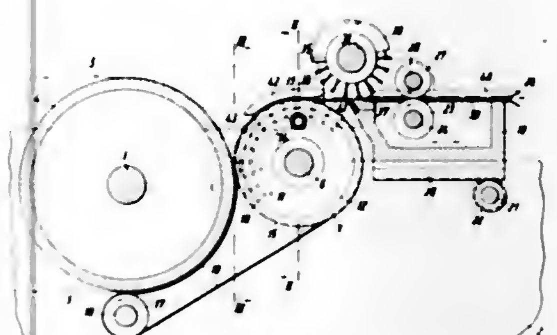


A device and method for folding and locking the corners of a box blank of paperboard or the like without glue or separate fastening means by interlocking male and female members integrally formed in the box panels.

3,400,641
APPARATUS FOR APPLYING WINDOW MATERIAL TO WINDOW CUTOUTS IN THE MANUFACTURE OF WINDOW ENVELOPES AND THE LIKE

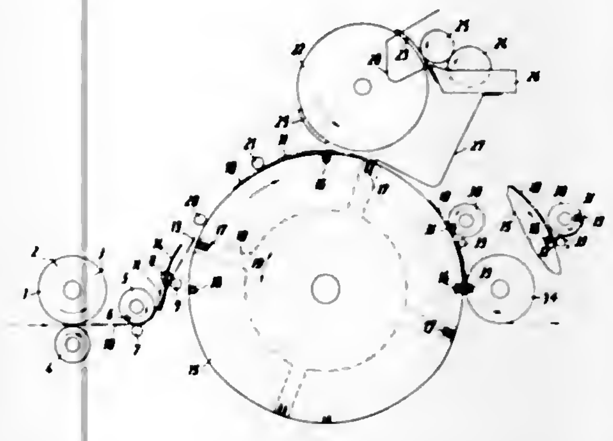
Kurt Stemmler, Feldkirchen, near Neuwied, Germany, assignor to Richard Winkler, Neuwied, and Kurt Dunnebier, Gladbach, Germany
Filed Oct. 27, 1964, Ser. No. 406,688
Claims priority, application Germany, Nov. 13, 1963, W 35,614
7 Claims. (Cl. 93—61)

An apparatus for applying transparent window pieces over window openings provided in webs or blanks of material adapted for the production of envelopes and the like. The apparatus is especially adapted for high speed production of window envelopes and involves a special relationship between a conveyor roll for conveying material having window cutouts to which transparent window covering pieces are to be applied, a suction roller cooperating with the conveyor roll and adapted to transport window covering material into engagement with the envelope making material carried by the conveyor roll, the window covering material being adhesively applied to the area in which the window opening is provided. Also included in the apparatus are means for feeding window covering material from a suitable source to a cross-cutter for cutting individual window covering pieces from a strip of such material, these window covering pieces being delivered to the suction roller and by the latter to the material being carried by the conveyor roll. An important feature is the adjustability of the cross-cutter in a direction toward and away from the axis of the suction roller to enable adjustment of the size of the window covering pieces to be applied over the window openings provided in the envelope forming material. Another aspect of the apparatus, which adapts it for high speed operation, is the provision of a cross-cutter which includes a continuously rotating blade arranged to cooperate with a fixed blade in providing the desired cross-cuts. Further contributing to the reliability of the operation of the apparatus at high speeds is the provision of a rotating brush arrangement for retaining the window covering material in a desired plane or path and for advancing the severed sections of the covering material to the suction roller in properly timed relation to the movement of the envelope forming material by the conveyor roll.



3,400,642
APPARATUS FOR FOLDING AND GUMMING THE SIDE FLAPS AND FOLDING THE BOTTOM FLAPS IN THE MANUFACTURE OF ENVELOPES AND THE LIKE

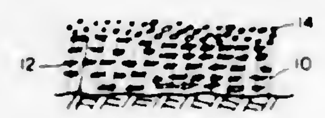
Kurt Stemmler, Feldkirchen, near Neuwied, Germany, assignor to Richard Winkler, Neuwied, and Kurt Dunnebier, Gladbach, Germany
Filed Oct. 27, 1964, Ser. No. 406,686
Claims priority, application Germany, Nov. 15, 1963, W 35,642
—3 Claims. (Cl. 93—62)



An apparatus for folding and gumming various portion of blanks to produce envelopes, said apparatus being adapted to feed successive blanks continuously along a predetermined path and in the course of advance of the blanks to provide scoring at the inner ends of the bottom and closure flaps, to fold inwardly the prescored side flap portions provided on the blanks, to then apply gum or adhesive material to the exposed surface of the flaps, and to then fold a bottom flap over the gummed side flaps to adhesively connect the bottom flap to the side flaps. To achieve the foregoing objectives in a rapid and reliable manner, the means for conveying the successive blanks, through the major part of its travel during which the foregoing operations are performed, is a suction roll having a plurality of lines of openings therethrough for imparting suction to each blank along two different lines, one of these being close to the forward end of the blank which constitutes the free end of the bottom flap, and the other line of suction openings being disposed rearwardly of, but close to, the scored fold line for the bottom flap. The suction roll is preferably provided with lines of suction openings of the type mentioned in four regions whose central points are 90° apart. Each of said regions becomes successively effective upon rotation of the roll to pick up and transport a blank to be folded and gummed in the manner mentioned. After completion of the folding of the bottom flap into firm engagement with the side flaps, each blank is discharged from the suction drum and delivered to a collection point. A special feature of the apparatus is the provision of radially projecting ribs on a rotary gum applying member, and the provision on the blank carrying suction roll of grooves that are adjustable transversely of the direction of movement of the blanks, to enable certain of them to be aligned with the ribs mentioned. Another feature is the disposition of the gumming means above the suction roll, where adequate space is available for means preventing objectionable splattering of the gum.

3,400,643
PLASTIC SKI SURFACE STRUCTURE

Danforth Holley, Grosse Pointe Shores, Mich., assignor to Holley Plastics Company, Warren, Mich., a corporation of Michigan
Filed Feb. 14, 1966, Ser. No. 527,342
7 Claims. (Cl. 94—3)



An artificial surface for skiing or the like comprising a sloping surface covered with grass and or straw, a layer of small flat flakes of approximately ¼" maximum dimension of for example 3 inches in thickness which may be an acetate or butyrate plastic and a layer of polyethylene or polystyrene plastic pellets of approximately 3⁄32" diameter over the flat flakes. An additional layer of crushed ice or natural or artificial snow may be placed over the plastic pellets to increase the speed of skiing on the artificial surface if desired. The speed of skiing on the artificial surface may also be increased by spraying the plastic flakes and or pellets with liquid silicon or tumbling them in liquid Teflon.

3,400,644
MEMBRANE SURFACED RUNWAYS

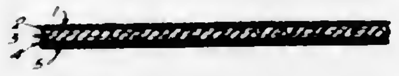
Charles M. Baskin, 1642 A. I. du Pont Bldg.,
Miami, Fla. 33131
Filed June 7, 1967, Ser. No. 644,374
9 Claims. (Cl. 94—7)

This invention relates to a system of construction of combat roads and runways wherein natural soil, utilized as the base, is covered with a flexible dimensionally stable high tensile strength composite membrane as a means for deconcentrating traffic loads. The makeup of the said membrane is:

First, a fibrous sheet or tape having a film of pressure sensitive adhesive on both surfaces.

Second, the said fibrous sheet is laid over the graded soil, and over it is spread a thin steel sheet, the pressure sensitive fibrous sheet acting as an intermediate bond between the steel sheet and the soil.

Third, the steel sheet is then, in turn, covered with a pressure sensitive adhesive fibrous sheet, the same as the one between the soil and the steel sheet, except that the film of pressure sensitive asphalt or other thermoplastic resin on the surface, exposed to traffic, has imbedded in it mineral particle forming a skid-resistant surface.

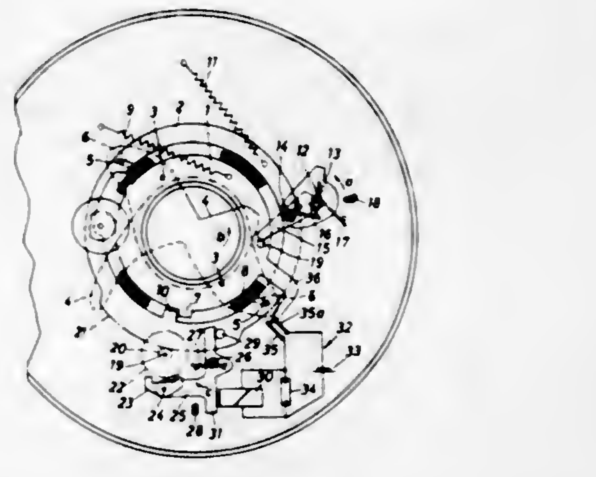


A special feature of this invention is the ability to build up a load deconcentrating membrane to accommodate the highest anticipated traffic loads by laminating a number of steel sheets and interposing the above pressure sensitive sheets.

The principal features of this membrane are: high tensile strength, dimensional stability under all loads below its yield point, high flexibility, corrosion proofness, resistance to skidding and ease of maintenance.

3,400,645
CENTRAL PHOTOGRAPHIC SHUTTER

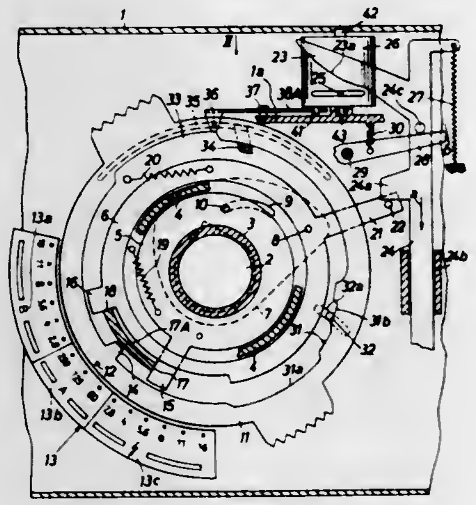
Gerd Kiper, Unterhaching, near Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Feb. 8, 1966, Ser. No. 525,882
Claims priority, application Germany, Feb. 13, 1965, A 48,394
12 Claims. (Cl. 95—10)



1. In a photographic shutter of the central type including a housing, a pair of rotatably mounted sector operating rings in said housing, said rings being an opening ring and a closing ring, a number of shutter sectors, each of said shutter sectors being movably connected to both of said rings to cause said rings to open and close said sectors when the angular phase between said rings varies from the normal condition and returns to it, exposure control means for varying said angular phase between said rings, said exposure control means including a delay switch circuit having retarding affecting magnetic means, variable means in said circuit for adjusting the strength of said magnetic means, arresting means operatively associated with said closing ring for governing its angular velocity, and said magnetic means controlling the operative time of retarding action of said arresting means.

3,400,646
ADJUSTABLE AUTOMATIC CAMERA

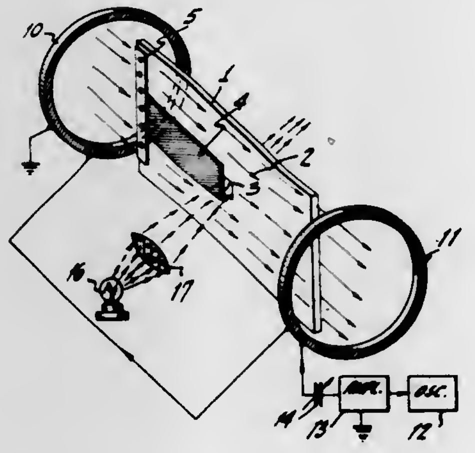
Gerd Kiper and Joachim Von Albedyll, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed July 7, 1965, Ser. No. 470,129
Claims priority, application Germany, July 11, 1964, A 46,567
14 Claims. (Cl. 95—10)



An exposure control wherein the diaphragm is adjustable by an exposure meter as a function of scene brightness or by a single rotary selector which further serves to select the exposure time and can effect initial setting of the exposure meter as a function of the selected exposure time. The selector can select any one of several shutter speeds when the diaphragm is adjusted as a function of scene brightness. When the selector selects a desired aperture size, the shutter speed is automatically set to a predetermined value.

3,400,647
HIGH-SPEED SHUTTER USING A MAGNETOSTRICTIVE TRANSDUCER

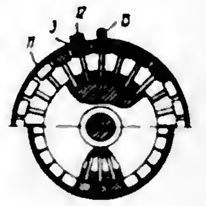
Hillel Weinstein, Kendall Park, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Jan. 19, 1966, Ser. No. 521,724
5 Claims. (Cl. 95—53)



A light control device is constructed by clamping one end of a foil of magnetostrictive material to a transparent substrate leaving one end of the foil free to move in a light beam. Upon application of a magnetic field, the foil changes dimensions and correspondingly causes the free end of the foil to move and control the amount of light that can pass through the substrate.

3,400,648
CYLINDER ADAPTED FOR HOLDING MASTER COPIES IN MACHINES AND DEVICES EMPLOYED FOR REPRODUCING IMAGES BY MEANS OF SCANNING TECHNIQUES

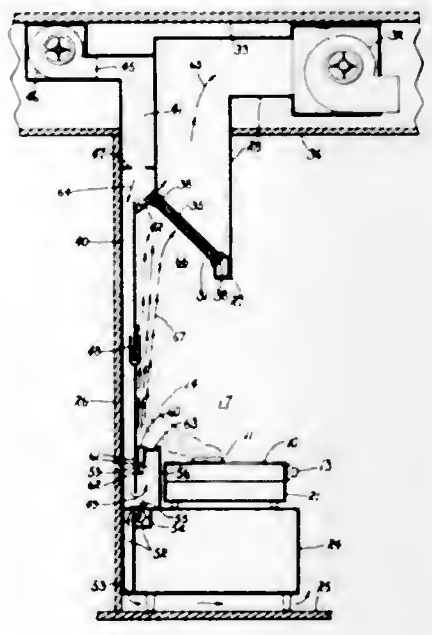
Kirill Fedorovich Izmailov, B. Gruzinskaya ul., 21/2, kv. 61, and Aron Davidovich Rabinovich, ul., Shukhova, 13/15, kv. 47, both of Moscow, U.S.S.R., and Petr Julievich Fleishmakher, prospect Mira, 4, kv. 4, Odessa U.S.S.R.
Filed Aug. 3, 1965, Ser. No. 476,886
1 Claim. (Cl. 95—77.5)



An electron engraving machine cylinder intended for securing master copies in which the diameter of the cylinder can be altered and as a result thereof a smooth variation of the dimensions of the image is obtained thereacross. This is achieved by making the working surface of the cylinder in the form of radially movable separate longitudinal plates and an elastic cover envelops the working surface of the cylinder. A flexible transparent film presses the master copies against the cover.

3,400,649
VENTILATING SYSTEM INCLUDING FUME REMOVAL MEANS

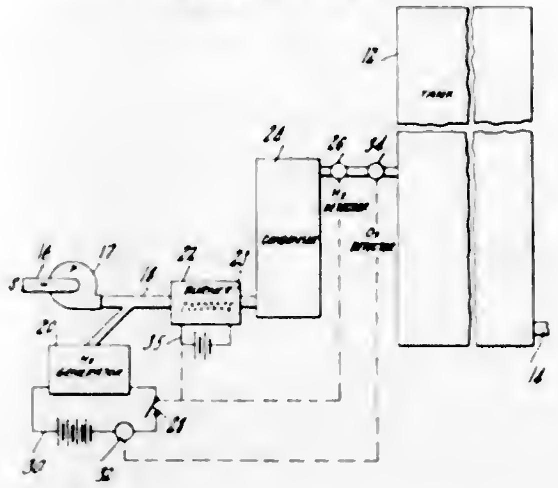
Donald D. Jensen, 3604 E. Butler, Fresno, Calif. 93702
Continuation-in-part of application Ser. No. 486,956, Sept. 13, 1965. This application Jan. 26, 1967, Ser. No. 617,759
13 Claims. (Cl. 98—115)



A ventilation system adapted to remove objectionable fumes, vapors and the like emitted from a localized zone, such as cooking ranges, laboratory tables and the like and having particular utility in conjunction with a heating unit installed in a closed room and being adapted to remove the fumes and vapors without substantially disturbing the ambient air surrounding said localized zone. Essentially, the system provides an air discharge aperture rearwardly adjacent to the heating unit which directs a relatively high velocity low pressure airstream upwardly into an exhaust stack above the heating unit to draw airborne impurities from the localized zone and to carry them into the stack.

3,400,650
CONTROLLED ATMOSPHERE STORAGE SYSTEM FOR PLANT MATERIAL

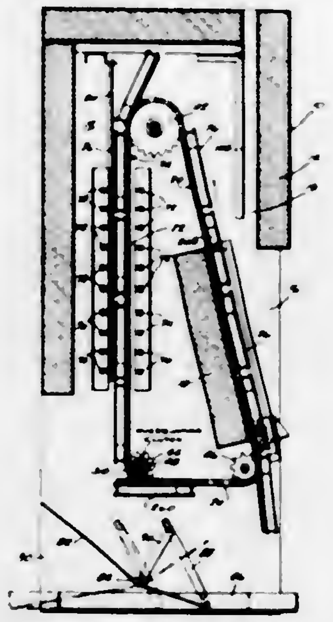
Stanley P. Burg, Coconut Grove, Miami, Fla., assignor to United Fruit Company, Boston, Mass., a corporation of New Jersey
Filed Sept. 30, 1964, Ser. No. 400,540
7 Claims. (Cl. 99—271)



Controlled atmosphere storage system having a storage chamber with air inlets and outlet means and located between the air inlet and the chamber, an electrolytic hydrogen generator, a burner for igniting hydrogen gas, a condenser for cooling oxygen-depleted air and means for controlling the amount of treated air entering the storage chamber.

3,400,651
AUTOMATIC TOASTER

Kenneth Gordon Hatch, Milwaukee, Wis., assignor to Hatco Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Dec. 1, 1966, Ser. No. 598,339
14 Claims. (Cl. 99—331)



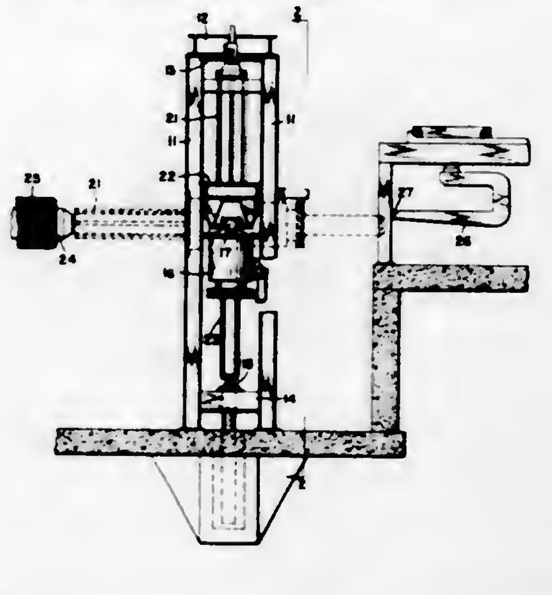
An endless conveyor carrier bread past radiant heaters to be toasted thereby. The heaters may be electric or gas. Various means are disclosed for turning some of the heaters on in anticipation of the arrival of bread to be toasted. During toasting operation, the desired degree of toasting is achieved by varying conveyor speed rather than the temperature of the heating elements.

A handle having limited reciprocation along the path of the conveyor is in permanent over-running clutch connection with the conveyor to enable the operator to accelerate movement of bread to the toasting zone by advancing the empty portions of the conveyor through said zone.

When toast is complete, it is deflected at will to either side of the apparatus into a reciprocable slide or tray which operates the deflector.

3,400,652
COIL BUNDLE COMPRESS AND TYING MECHANISM

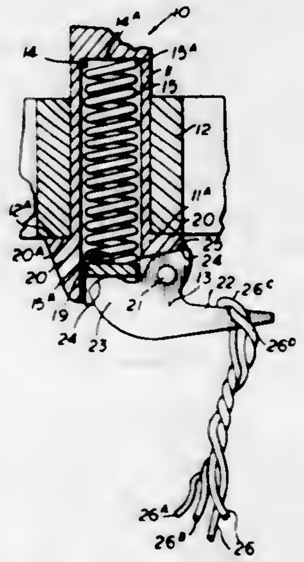
William J. Hill, Holden, and Raymond R. Starvaski and Harold E. Woodrow, Worcester, Mass., assignors to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts
Filed Jan. 4, 1967, Ser. No. 607,266
10 Claims. (Cl. 100—7)



An apparatus for compacting and banding large rod coil bundles produced by a continuous rolling mill and reformed into bundles weighing up to 3,000 pounds or larger. The compacting forces are applied and reacted within a structural framework through which a mandrel is pivoted first to receive the loose bundle, second to position the mandrel and bundle in compacting position where the compacted coil is banded and finally to discharge the compacted and banded bundle.

3,400,653
SELF-STRIPPING WIRE TWISTER HOOK FOR WIRE BALERS

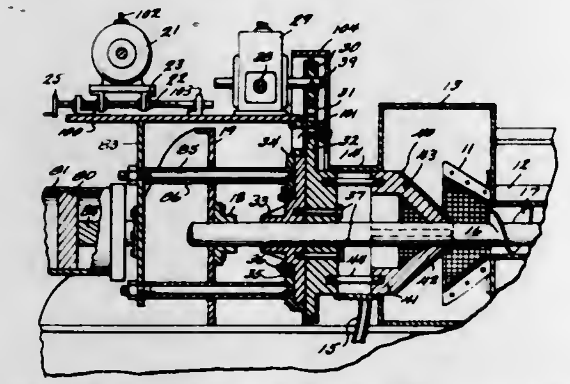
William K. Ralston and Patrick L. May, Memphis, Tenn., and Charles G. Barfield, West Memphis, Ark., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 21, 1966, Ser. No. 588,442
4 Claims. (Cl. 100—31)



1. A wire twisting mechanism for intertwisting opposite ends of a strand of wire encircling a bale formed in a baling machine, comprising a shaft rotatable about a fixed

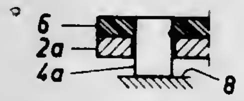
axis, a twister hook pivotally mounted on said shaft, said twister hook being pivotable about an axis between a first position for rotation and a second position for stripping wire therefrom, biasing means operative upon said twister hook in a direction lengthwise of said shaft axis for biasing the said twister hook in said first position for rotation.

3,400,654
DEWATERING PRESS
Daniel Boscawen Vincent, 2608 Watrous St.,
Tampa, Fla. 33609
Filed Oct. 20, 1966, Ser. No. 588,093
10 Claims. (Cl. 100—148)



1. A dewatering press comprising: a drum having an outlet; a hollow member disposed at said outlet in substantially coaxial relation to said drum; a driven shaft having screw conveyor means thereon journalled in said drum coaxially therewith and extending through said outlet and said member; an element coaxially disposed on said shaft adjacent to and externally of said hollow member, said element shaped so that it cooperates with the hollow member to form an annular passage at the outlet of the drum and means for rotating said element at a rate substantially less than the rate of the screw conveyor.

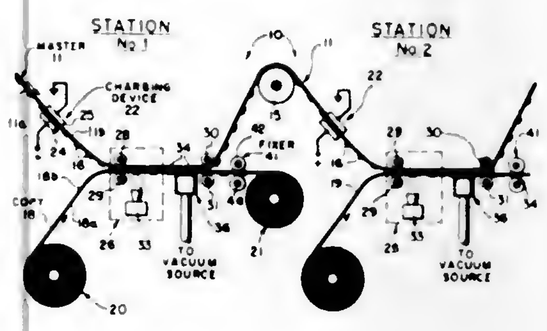
3,400,655
PRESS MATRIX
Paul Ensio Leskinen, Kommunalvagen 20,
Huddinge, Sweden
Filed Feb. 15, 1967, Ser. No. 616,302
Claims priority, application Sweden, Mar. 4, 1966,
2,893/66
1 Claim. (Cl. 100—295)



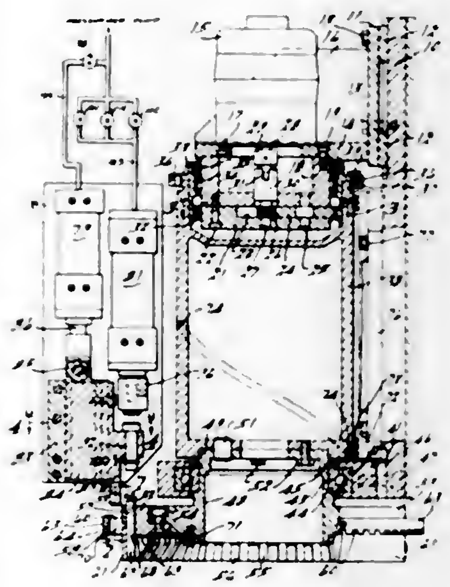
Press matrix with a press surface consisting of a flat base surface provided with protrusions. The matrix comprises in combination a flat plate of perforated plate stock material one (front) side of which constituting the base surface of the matrix, insertion pieces running through the perforations of said flat plate so as to project over said base surface and constituting said protrusions and also projecting over the opposite (rear) side of the plate all to equal height. A layer of adhering plastic material covers said rear side to said equal height there embedding said insertion pieces.

3,400,656
ELECTROSTATIC DUPLICATOR FOR REPRODUCING AN IMAGE FROM ELECTRICAL CHARGE RETAINING INK PARTICLES FIXED IN PLACE
Thomas L. Thourson, Penfield, N.Y., assignor to Borg-Warner Corporation, a corporation of Illinois
Filed Jan. 26, 1966, Ser. No. 523,093
4 Claims. (Cl. 101—1)

1. In a method for producing copies from a master having imprinted thereon a first image with electrical charge retaining ink, the steps comprising applying an electrical charge to the image on the master, pressing one surface of a copy sheet of dielectric material into juxtaposed relationship with the master, the image on the original being disposed between the original and copy sheet, and applying ink particles to an opposite surface of said copy sheet, said particles attracted electrically by said charged image on said master and adhering to said copy sheet surface so as to establish a corresponding second image on said copy sheet.



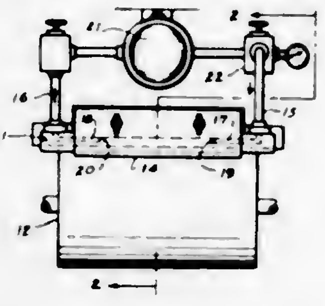
3,400,657
MACHINE FOR SELECTIVELY APPLYING INDICIA TO A WORKPIECE
James K. Fulks, 18450 Scarsdale,
Detroit, Mich. 48227
Filed Jan. 18, 1967, Ser. No. 610,155
4 Claims. (Cl. 101—18)



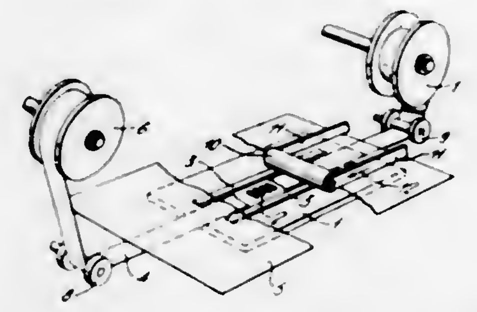
A machine having a plurality of indicium applying elements, any one of which may controllably be indexed to a striking station where it is precisely positioned and struck for imprinting the indicium into a workpiece surface.

3,400,658
METHOD OF INTAGLIO PRINTING
Mario P. Gagliardi, Wayne, Arthur J. Dunne, River Edge, and Arthur R. Heuser, Mahwah, N.J., and James W. Healy, Wakefield, Mass., assignors, by direct and mesne assignments, to Interchemical Corporation, New York, N.Y., a corporation of Ohio
Filed Apr. 20, 1965, Ser. No. 449,594
5 Claims. (Cl. 101—170)

A process of intaglio printing with a foamed print paste having a density of 0.1 to 0.9 gram per cc., the paste having a residence time of .01 to 30 seconds in an enclosed feeding device, the ink being continuously removed from the feeding device, refoamed, and recirculated. The pressure in the feeding device is maintained at a pressure of 5 to 30 p.s.i. gauge. The foamed print paste can contain an aliphatic chlorofluorocarbon gas having a vapor pressure of 15 to 100 p.s.i. gauge at 100° F.

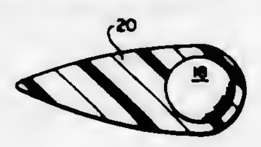


3,400,659
PRINTING ARRANGEMENTS
Richard E. Baldwin, Coulsdon, and Bernard P. Marples, Sawbridgeworth, England, assignors to English Numbering Machines Limited, Enfield, England, a British company
Continuation-in-part of application Ser. No. 570,590, Aug. 5, 1966. This application Feb. 12, 1968, Ser. No. 704,634
Claims priority, application Great Britain, Aug. 19, 1965, 35,535/65
7 Claims. (Cl. 101—274)



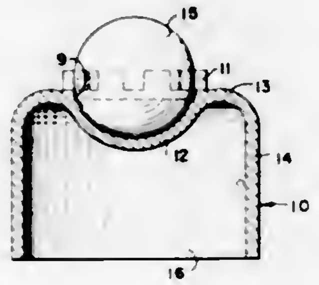
The invention relates to a printing arrangement which comprises a printing plate having raised symbols on a surface of the printing plate, at least two spacer bars on said surface, one at each side of said symbols, the height of said spacer bars being equal to the height of said symbols, an impression roller of uniform thickness throughout its length and arranged to roll along said spacer bars for creating a printed impression of the symbols, at least one pressure sensitive strip between the symbols and the impression roller, the width of the strip being smaller than the distance of the spacer bars from one another, and feeding means arranged for feeding the strip only along the symbols under the exclusion of the spacer bars to prevent a printed impression of the spacer bars.

3,400,660
AMMUNITION PROJECTILE
Richard L. Malter, 620 Reiss Place,
Bronx, N.Y. 10467
Filed Oct. 20, 1965, Ser. No. 498,333
14 Claims. (Cl. 102—42)



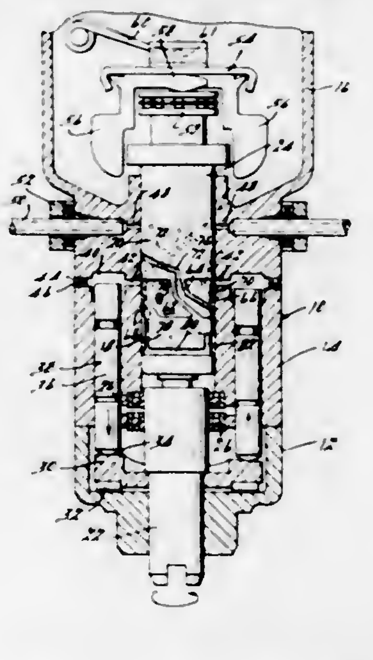
1. A shotshell having a plurality of pellets, each of said pellets having a body comprising a deformable material means having an initial configuration, which is essentially other than teardrop and which transforms into an improved teardrop shape when in free flight through the atmosphere at velocities corresponding to the effective range.

3,400,661
PROJECTILE
John M. Coon, Rte. 2, Petersburg, Tenn. 37144, and Rolland G. Sturm, 1520 Forbes Drive, Huntsville, Ala. 35802
Filed May 13, 1966, Ser. No. 550,050
10 Claims. (Cl. 102—93)



A frangible sabot for a projectile comprising a generally cylindrical skirt closed at one end. The closed end defines a continuous surface with an external central concave portion and a toroidal portion concentric to and surrounding the concave portion. A plurality of spaced fingers extend generally parallel to the longitudinal axis of the skirt, beyond the closed end of the skirt and function to releasably hold a projectile against the concave portion of the skirt.

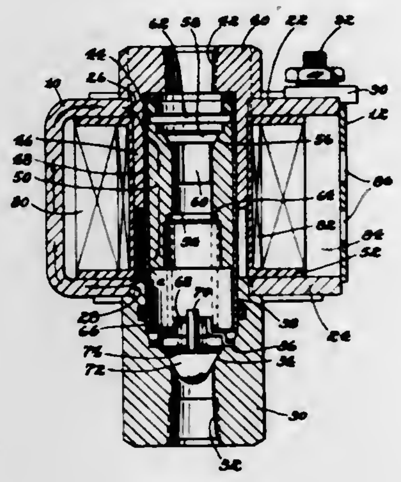
3,400,662
FUEL INJECTION PUMP AFTER INJECTION CONTROL APPARATUS
Laszlo Hideg, Dearborn Heights, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 24, 1967, Ser. No. 625,726
10 Claims. (Cl. 103—2)



A fuel injection pump having a central rotatable fuel flow metering shaft that is movable axially in one direction by the vehicle accelerator pedal linkage, and in the opposite direction by a speed responsive governor, to control the initial injection and duration of injection of fuel; the metering shaft having a channel that spills a finite volume of fuel back into the pump plunger cavities after injection is terminated, to reduce the residual pressure in the injection line.

3,400,663
RECIPROCATING PLUNGER PUMP

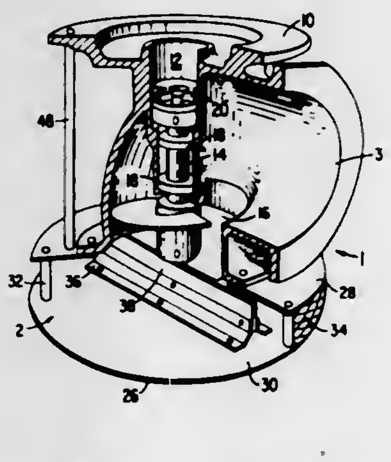
Harry P. Wertheimer, Horseheads, N.Y., assignor to The Bendix Corporation, a corporation of Delaware
Filed Mar. 9, 1967, Ser. No. 621,809
3 Claims. (Cl. 103—53)



A reciprocating electromagnetically-driven plunger pump comprised of interfitting U-shaped members forming a housing for pump elements. At least one of the U-shaped members is a substantial structural member and a good magnetic flux conductor. Inlet and outlet fittings are removable plugs or nut-like members retained in opposite legs of the structural U-shaped housing member and retain between them pump sleeve and movable elements such as plunger and valves as a cartridge-like assembly. Electrical components, for example coil, are retained concentrically piloted by one of the fittings and retained laterally by a U-shaped member.

3,400,664
FLOATING PUMP

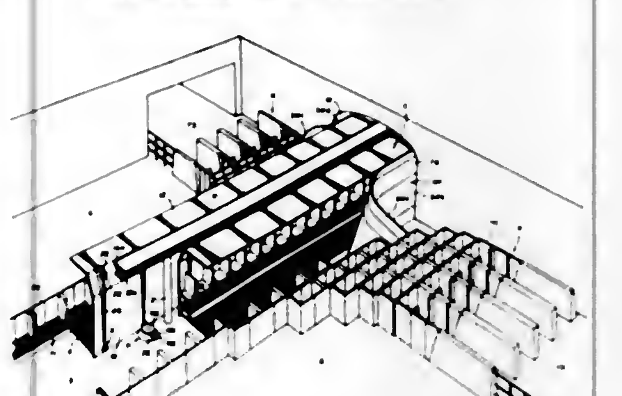
Nicholas J. Kingsep, Calgary, Alberta, Canada, assignor to Can-Do Products Ltd., Calgary, Alberta, Canada
Filed Aug. 26, 1966, Ser. No. 575,460
Claims priority, application Canada, Apr. 18, 1966, 958,192
4 Claims. (Cl. 103—87)



A self-containing floating pump unit having a flotation ring such as an inflatable tube. An elbow shaped housing provides an inlet below the liquid level and an outlet above and an auger shaped impeller is mounted in the housing to pump liquid therethrough. A manifold is provided on the inlet end and a stationary vane of resilient material is positioned in the manifold in close proximity to the lower or leading edge of the impeller and radially across the housing inlet. Both reduce swirl in the liquid and prevent solid particles from wedging between the impeller and the vane.

3,400,665
CONTINUOUS TRANSPORT INSTALLATION

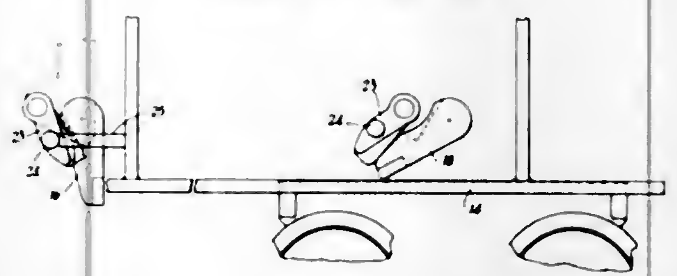
Gabriel Bouladon and Paul Zuppiger, Geneva, Switzerland, assignors to The Battelle Development Corp.
Filed July 29, 1965, Ser. No. 475,794
Claims priority, application Switzerland, Sept. 4, 1964, 11,555/64
16 Claims. (Cl. 104—25)



Passengers are carried at constant speed in an endless articulated succession of transport units each having a square C-shaped cross section, suspended from an aerial rail, and propelled by fixedly mounted drive wheels bearing against a longitudinal surface on the lower inner side of the unit. Between stations, the outer sides of the transport units are closed by a portion of an endless flexible wall.

3,400,666
CONVEYOR SYSTEMS

Arthur Thomas Charles Burrows, Stevenage, Hertfordshire, England, assignor to Geo. W. King Limited, Stevenage, Hertfordshire, England, a British company
Filed Jan. 16, 1967, Ser. No. 609,401
Claims priority, application Great Britain, Jan. 21, 1966, 2,948/66
6 Claims. (Cl. 104—96)

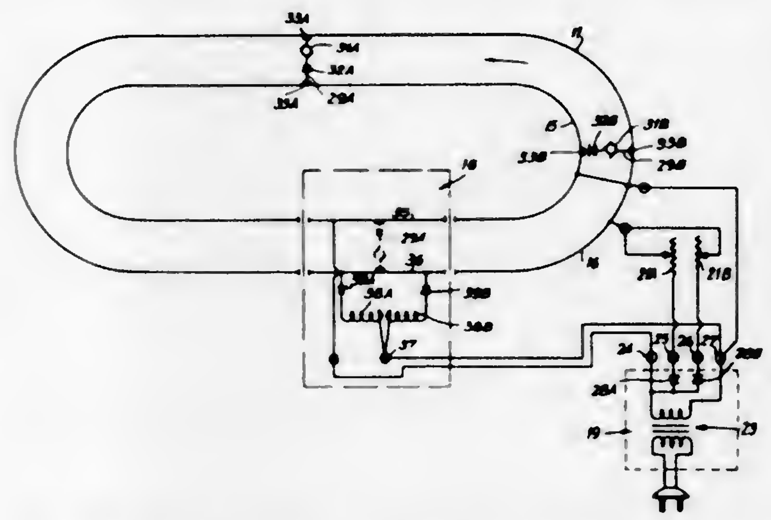


A conveyor installation of the dual duty type wherein provision is made for switching load carrying trolleys from a main line to a branch line and vice-versa. The drive chains of both the main and branch lines are arranged to run in side by side relation for a short distance in the switch zone and the depending pusher dogs on the branch line chain are equipped with latch devices whereby they may be rendered operative or inoperative at will. Provision is made whereby during non-switching periods such latch devices will be tripped to render the pusher dogs on the branch line drive chain ineffective during their passage through the switch zone while during switching operations tripping of said latch means will not take place and the pusher dogs on the branch line chain will be effective to push the trolleys.

3,400,667
LAP COUNTER

Noel L. Case and Bernard J. Tuschak, Girard, Pa., assignors to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York
Filed July 13, 1965, Ser. No. 471,676
4 Claims. (Cl. 104—150)

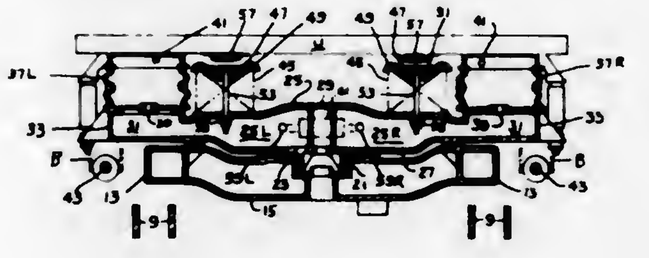
A racing game for toy vehicles in which the number of laps completed by each vehicle may be individually recorded by a lap counting device even when the vehicles are traveling on the same course and deriving their energy from the same conductors. Spaced conductors are provided as part of the circuit which are insulated from the main conductors of the circuit. Each vehicle is supplied with a drive motor with the two drive motors being oppositely rectified, with each motor being arranged to propel the vehicle in the forward direction. Counter means are associated with the insulated conductors and are oppositely rectified and are connected to the insulated conductors to provide power input to the conductors for driving of the vehicles during their travel along the insulated conductors.



An open circuit is provided for the counter means as a result of the spaced conductors and the vehicles complete the circuit through the counter means for effecting a lap counting operation through the circuitry in the vehicles. Counting of the laps for one of the vehicles takes place by completion of a circuit through a portion of a counting means and the associated vehicle which conduct in the same direction and counting of the laps for the other vehicle likewise takes place by completion of the circuit through the other portion of the counting means and the other vehicle which conduct in the same direction which is opposite to the direction of conducion of the first vehicle and its associated portion of the counting means.

3,400,668
PNEUMATIC RAILWAY VEHICLE SUSPENSION

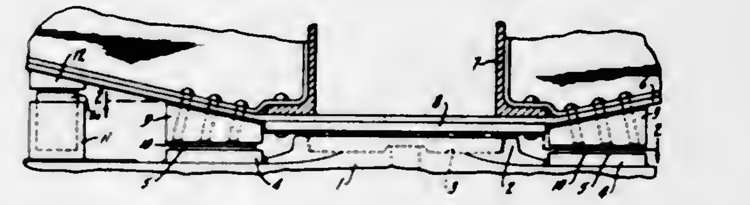
Richard L. Lich, St. Louis, Mo., assignor to General Steel Industries, Inc., Granite City, Ill., a corporation of Delaware
Filed Feb. 9, 1966, Ser. No. 526,176
14 Claims. (Cl. 105—199)



A railway vehicle truck including load supporting flexible-wall pneumatic springs and metal coil safety springs arranged to carry the load in the event either of the pneumatic springs fails, e.g., by rupture of its flexible wall. To permit free deflection of the pneumatic springs throughout their normal operating range, vertical clearance at least as great as the normal operating deflection of the pneumatic springs is provided between the tops of the coil springs and the load by precompression of the coil springs and, to prevent a sudden jolt when the load drops onto the coil spring when an air spring fails, the precompression of the coil springs approximates the light weight of the spring-supported structure.

3,400,669
RAILWAY CAR CENTER PLATE AND AUXILIARY BEARINGS

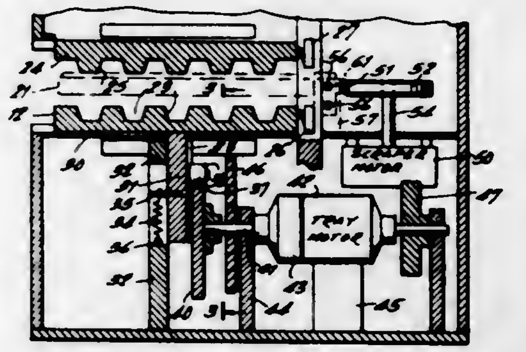
Ray C. Williams, Chicago, Ill., assignor to Standard Car Truck Company, Chicago, Ill., a corporation of New Jersey
Filed Apr. 18, 1966, Ser. No. 543,393
2 Claims. (Cl. 105—199)



In a railroad car, center plates between the car body and the car truck, normally unloaded side bearings adjacent opposite sides of the truck, a pair of auxiliary, rigid, stabilizing pads extending across the bolsters, having load bearing surfaces on opposite sides of the center plates and so disposed that as the car and truck rotate with respect to one another about the vertical axis of the center plate, the load carried by the stabilizing pad bearing surfaces on opposite sides of the truck remain equal. As the car tilts toward contact with the heavy side bearing, the load of the car is concentrated on the stabilizing pad on the heavy side of the truck and as the bearing surfaces of center plates and light side pads separate, the load of the car exerts an anti-tilt effect through the lever arm equal to the distance between the vertical axis of the center plates and the point of application of the car load on the heavy side pad, such situation prevailing until the heavy side bearing picks up the load.

3,400,670
MOULDING MACHINE FOR MINIATURE BAKING PRODUCTS

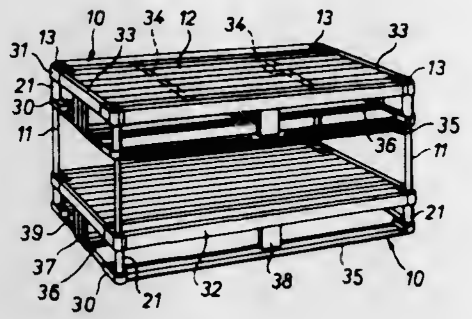
Benard Bennett Pakula, 12 Dalewood Ave., Suffern, N.Y. 10901
Filed Oct. 21, 1966, Ser. No. 588,492
8 Claims. (Cl. 107—4)



A machine for automatically moulding edible baked shell containers for foodstuffs in which complementary male and female dough forming plates are first brought together to initially form the dough into a plurality of shells and partially bake the dough therebetween by means of heating elements within the plates. The plates are then separated by a cam and a scraper removes the excess dough. The plates are then brought together to reshape the shells and finally again separated for removal of the shells.

3,400,671
STACKING ARRANGEMENT FOR PALLETS

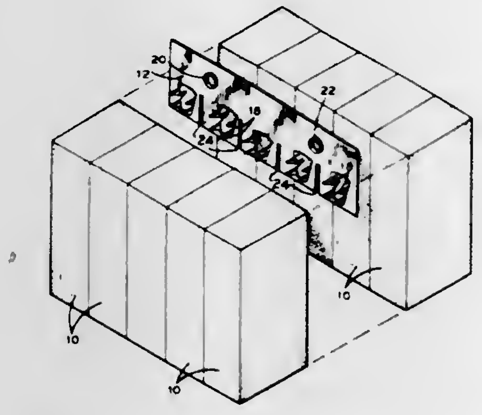
Paul Erismann, Alpenquai 4, Lucerne, Switzerland
Filed May 24, 1967, Ser. No. 641,002
Claims priority, application Switzerland, May 25, 1966, 7,522/66
7 Claims. (Cl. 108—53)



A stacking arrangement for pallets in the form of right angled platforms with corner parts. Support members are arranged detachably in such corner parts to allow the stacking of a plurality of pallets above one another. Each of the corner parts of a platform is provided with a conical recess at the top and at the bottom which cooperate with corresponding conical plug like components provided upon the support members. The platforms are provided when made of corrugated sheet metal with grooves in which wooden lathes are positioned having their top sides slightly higher than the top side of the corrugated sheet metal.

3,400,672
FURNACE ROOF HANGERS FOR REFRACTORY BRICK

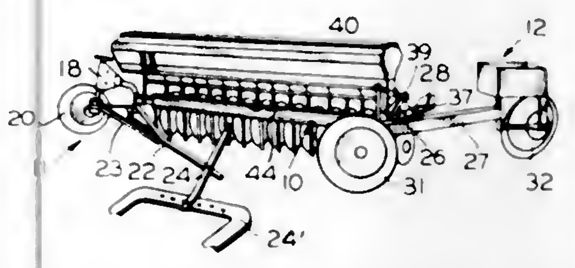
Edwin J. Dickson, Augusta, Ga., assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed May 19, 1966, Ser. No. 551,312
4 Claims. (Cl. 110—99)



A furnace roof arrangement comprising a plurality of hangers for supporting refractory brick. A multiplicity of bricks are attached to both sides of each hanger by impaling each brick to a group of tooth-like projections formed in the hanger plate. The projections in each group extend across the flat surface of the plate in a series transverse to the longitudinal extent of the plate and at an acute angle thereto, a vertical slot is provided between each group to compensate for the differential in expansion between the bricks and the supporting hanger plate. The upper portion of each hanger receives suitable supporting hooks depending from overhead structure above the roof. Each hanger is capable of supporting a large number of bricks and the installation and replacement of the bricks can be readily accomplished on a mass basis as modules.

3,400,673
SEEDING ATTACHMENT FOR IMPLEMENT

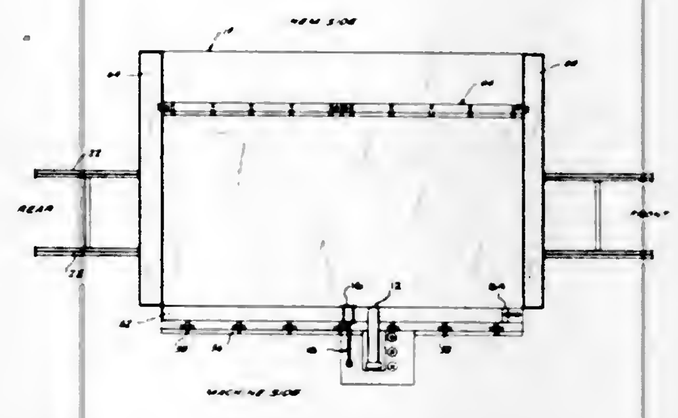
Uwe H. Martensen, Buenos Aires, Argentina, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 17, 1966, Ser. No. 521,061
8 Claims. (Cl. 111—70)



1. An implement comprising an elongated main frame extending diagonally of the direction of travel and having earth-working tools mounted thereon, front and rear relatively stationary supporting means for the ends of said main frame, means operatively connecting the ends of said main frame to the respective of said front and rear supporting means to accommodate axial rotation of said main frame relative thereto, motion-transmitting means mounted on one of said relatively stationary supporting means and operatively connected to said main frame to rotate the latter about its axis to raise and lower said tools, a material-dispensing hopper generally parallel to said main frame, means mounting one end of said hopper on one of said supporting means, and bearing means forming a connection between the other end of the hopper and said main frame to support the hopper on the main frame while accommodating rotation of said main frame relative to said hopper.

3,400,674
MOVABLE TABLE FOR SEWING DRAPERY LENGTHS

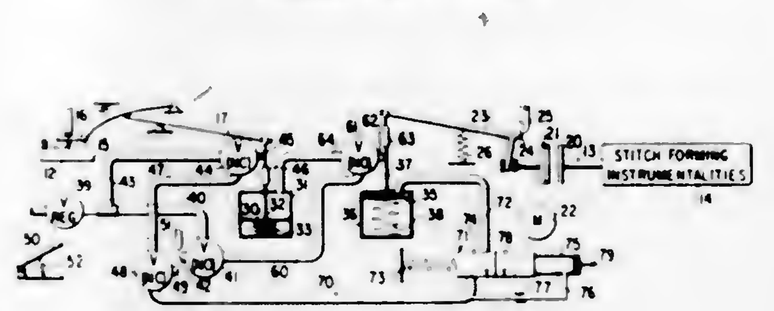
Eugene P. McClintock, Placentia, Calif.
(400 N. Acacia, Apt. 20A, Fullerton, Calif. 92631)
Filed Jan. 19, 1966, Ser. No. 521,633
5 Claims. (Cl. 112—2)



A movable drapery manufacturing table for trimming and sewing drapery lengths. The table includes a smooth horizontal substantially rectangular top with drapery clamps on a hem side of the table and drapery clamps spaced apart from the opposite or machine side of the table with a sewing machine mounted adjacent the machine side of the table to operate on drapery fabric stretched across the slot formed between the machine side drapery clamps and the table edge.

3,400,675
SINGLE CYCLE STARTING CONTROL SYSTEM FOR SEWING MACHINES

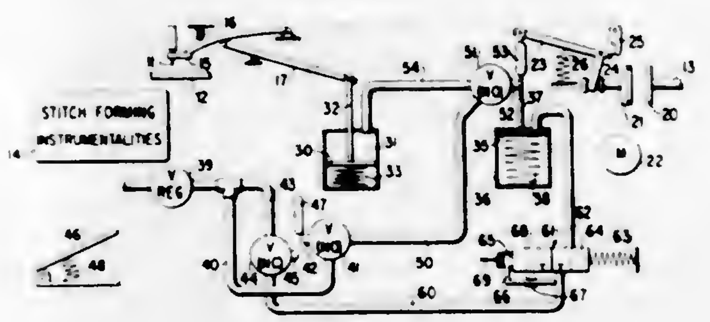
John A. Raudonis, Jr., Elizabeth, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed June 8, 1967, Ser. No. 644,510
2 Claims. (Cl. 112—67)



A fluid operated control system for initiating the cycle starting and lifting of the work clamp of a cyclic sewing machine is disclosed in which an operator's control initiates starting of the machine by way of a normally open time-delayed closing interlock fluid valve which automatically closes after each sewing machine start and remains closed until the operator's control is deactivated in order to prevent machine operation for more than a single cycle for each actuation of the operator's control.

3,400,676
CLAMP LIFT AND CYCLE STARTING CONTROL SYSTEM FOR SEWING MACHINES

John A. Raudonis, Jr., Elizabeth, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed June 8, 1967, Ser. No. 644,656
2 Claims. (Cl. 112—67)

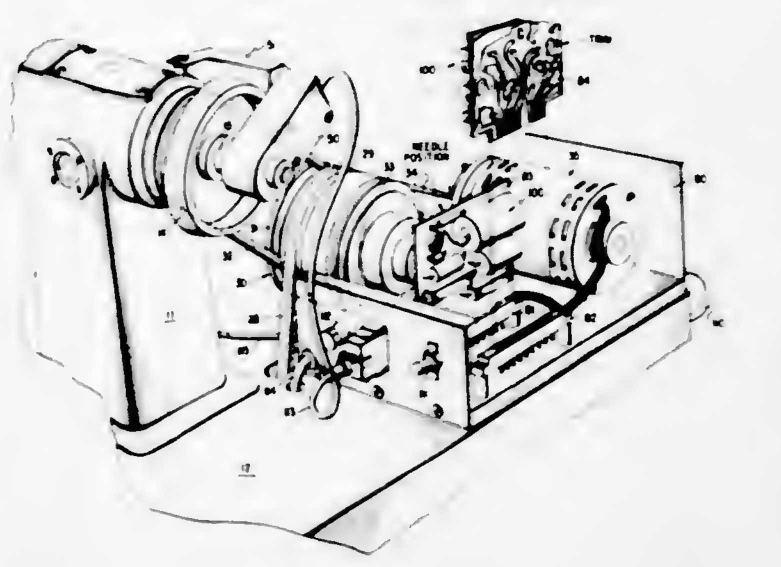


A fluid operated control system for initiating the cycle starting and lifting of the work clamp of a cyclic sewing machine is disclosed in which a normally closed time delayed opening interlock valve controls the initiation of the cycle starting.

3,400,677
CONTROL DEVICES FOR SEWING UNITS

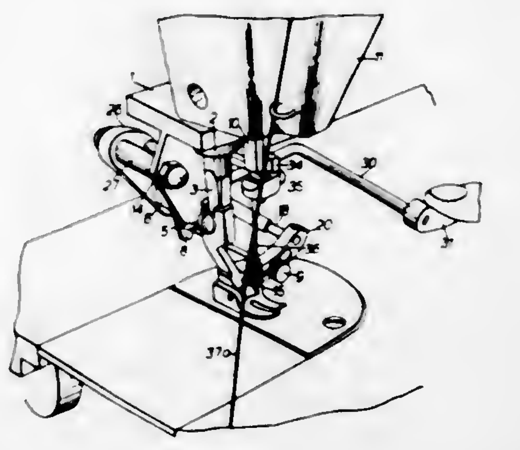
Melville D. Bowers, Montville, and Lorenz A. Wendel, Somerville, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed May 1, 1967, Ser. No. 635,003
2 Claims. (Cl. 112—219)

A sewing machine is disclosed having electrically operated ancillary devices i e., an underbed thread trimming device and a thread wiper, and an electrically operated needle positioner. Multisocket terminals are provided for two exchangeable circuit boards; one for controlling the operation of the needle positioner and the other for controlling the operation of the ancillary devices sequentially with the operation of the needle positioner.



3,400,678
THREADING OF SEWING MACHINE NEEDLES

Michael N. Bennison, Leeds, England, assignor to W. J. Clarkson Limited, Leeds, Yorkshire, England, a British company
Filed Mar. 18, 1966, Ser. No. 535,398
Claims priority, application Great Britain, Apr. 20, 1965, 16,512/65; Aug. 18 1965, 35,384/65; Sept. 6, 1965, 37,916/65
6 Claims. (Cl. 112—225)



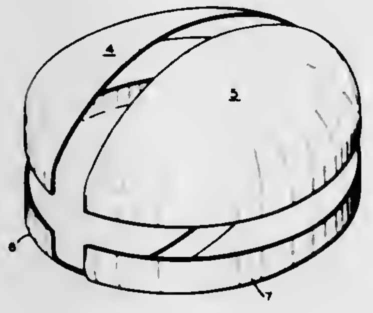
A mechanical needle threader for threading the needle of a sewing machine in any position in which the needle may be stopped with the needle eye clear of the presser foot, and so designed that the needle threader can be built as an independent attachment affixable to the head of a existing conventional sewing machine, comprising a spring-loaded threader element carrier movably linked to a guide member lowerable from an upper position down the side of the needle into a position in which said guide member is intercepted by a part associated with the needle bar, by the application of downward thrust to the threader element carrier first to lower the threader element carrier bodily together with the guide member into said lower position and then to displace the threader element carrier in relation to the guide member to advance the threader element through the needle eye.

3,400,679
SUBMERSIBLE HULL CONSTRUCTION

Burl B. Barhite, 6821 SW. 1st St. 33144, and Paul Arnold, 3338A SW. 25th Terrace 33133, both of Miami, Fla.

Filed Jan. 31, 1967, Ser. No. 612,856

3 Claims. (Cl. 114—16)



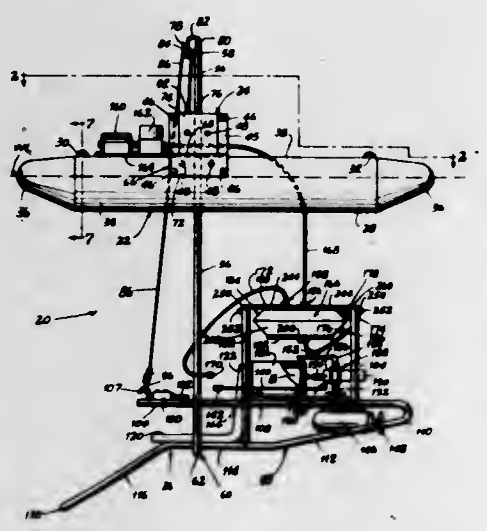
A hermetically sealed hull for undersea exploration assembled from predetermined elements of arcuate tank ends by welding.

3,400,680
CATAMARAN FOR UNDERWATER EXPLORATION

Max W. Taylor, 165 Chateau Drive, Florissant, Mo. 63031

Filed Apr. 26, 1967, Ser. No. 633,909

15 Claims. (Cl. 114—16)



A novel device comprised of two laterally spaced side-by-side connected pontoons mounting apparatus for lowering between them, a normally floating passenger seating structure to an underwater position, and means for releasably maintaining said structure and a passenger seated thereon in such position. A motor driven compressor provides a continuous supply of breathing air to an associated reservoir, the passenger drawing on this supply via tubing and a thereto attached mouthpiece. Means for exhausting excess air from the reservoir, an outboard motor driven propeller, and manually operable rudder means are provided.

3,400,681
CARGO SHIPS

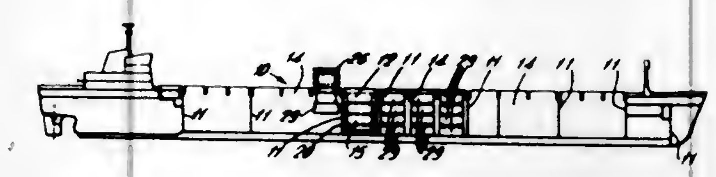
John Armstrong Clay, Bowdon, England, assignor to Turnbull Marine Design Company Limited

Filed July 6, 1967, Ser. No. 651,461

Claims priority, application Great Britain, July 18, 1966, 32,247/66

2 Claims. (Cl. 114—43.5)

The invention provides a deep-sea cargo vessel having a dock compartment substantially midway along the length of the vessel with an opening through which barges or other vessels may be floated into and from the dock compartment, a lifting device, e.g., a gantry crane, for transferring the vessels between the dock compartment and storage compartments provided forward and aft of the dock compartment, and a watertight door for closing the access opening.

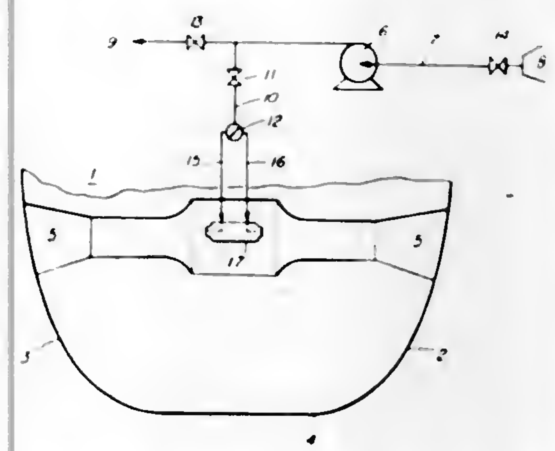


3,400,682
BOW THRUSTER

John P. Jones, Jr., Scarsdale, N.Y., assignor to Mobil Oil Corporation, a corporation of New York

Filed Nov. 30, 1966, Ser. No. 597,899

5 Claims. (Cl. 114—151)



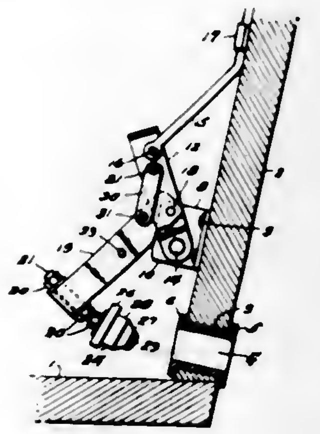
This invention is directed to an improved device for maneuvering a ship. More particularly, this invention is directed to a pump driven water ejector which exhausts into an opening extending transversely through a ship, below its water line. The ejector device induces a high mass, low velocity stream of water to pass transversely from one side of the ship to the other, thereby providing sufficient thrust to readily maneuver the vessel.

3,400,683
POSITIVE LOCKING DRAIN PLUG

Charles R. De Forest, 5027 Eadie Place, West Palm Beach, Fla. 33407

Filed July 6, 1967, Ser. No. 651,578

5 Claims. (Cl. 114—185)



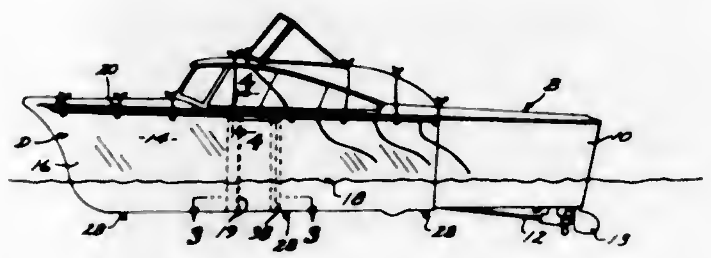
The invention is directed primarily to a lever actuated toggle link pivotally positioning a drain plug selectively in open and closed positions, with a drain aperture in the transom of a boat, and retain the plug in locked open or closed positions.

3,400,684
BOAT-SAVING DEVICE

Salvatore V. Gerardi, 125 E. 67th Way, North Long Beach, Calif. 90805

Filed May 20, 1966, Ser. No. 551,721

7 Claims. (Cl. 114—229)



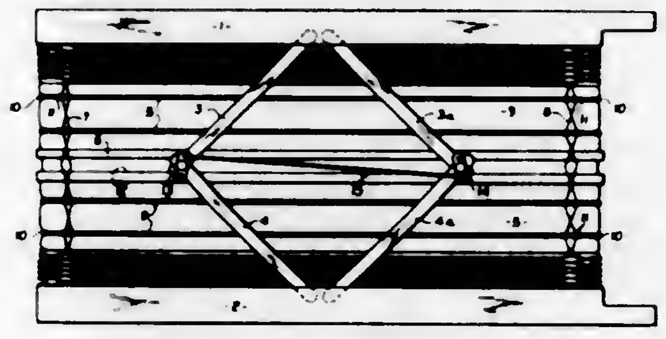
A boat-saving device employing a waterproof synthetic plastic sheet that is normally maintained folded in a stowed position aboard a boat. The waterproof sheet has a front portion and a rear portion, the rear portion being initially overlapped beneath the rear part of the front portion. If the boat develops a leak, the forward sheet portion is initially manipulated into place and secured to thereby resist leakage of the boat hull. Since the rear sheet portion is clear of the boat's propulsion machinery the boat may be driven under its own power to a desired location. When the boat reaches a safe location, the rear sheet portion is extended over the aft portion of the boat hull so that the boat may await repairs without danger of sinking.

3,400,685
PORTABLE BOAT

Alexander Sydoriak, Kingston, N.Y. (P.O. Box 183, Berea, Ohio 44017)

Filed Mar. 7, 1967, Ser. No. 621,188

12 Claims. (Cl. 115—24)



A collapsible, movable boat assembly wherein fabric sections can be inflated or deflated. The craft is supported longitudinally and cross-sectionally by rigid elements which can be folded or expanded as desired. The craft is driven by either foot or hand action which motivates propellers positioned on each side of the craft at the stern thereof.

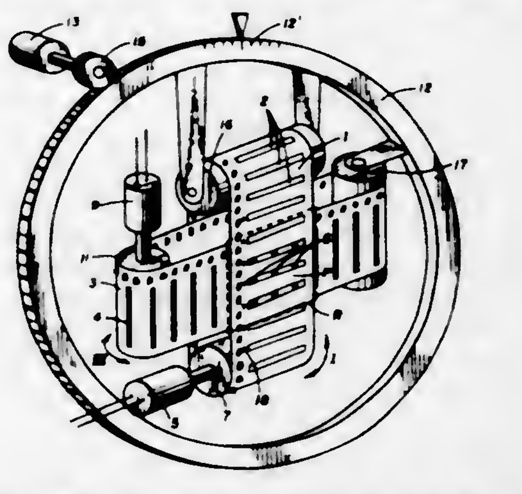
3,400,686
METHOD OF AND APPARATUS FOR INDICATING POSITION AND MOVEMENT

George Kwasniewski, Wellesley, and John W. Senders, Lincoln, Mass., assignors to Bolt Beranek and Newman Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Dec. 21, 1964, Ser. No. 419,975

10 Claims. (Cl. 116—129)

1. An indicator apparatus having, in combination, a support, a first tape, a second tape juxtaposed beneath said first tape, a first means mounted on said support movably mounting said first tape on said support, a second means mounted on said support and angularly disposed from said first means movably mounting said second tape on said support, a first drive means operatively connected to said first mounting means for driving said first tape in a first predetermined direction, a second drive means operatively connected to said second mounting means for independently driving said second tape in a second predetermined direction intersecting said first tape, said first tape having a plurality of spaced light-transmitting elongated areas distributed therealong and oriented at an angle to the first predetermined direction, said second tape having a plurality of spaced elongated bands distributed therealong and oriented to intersect with said light-transmitting areas to define a plurality of spaced spots in the region of the crossing of said tapes, said spot being visible through said light-transmitting areas as discrete points on a background of substantially greater area than that of said spots, whereby movement of said tapes by said first and second drive means creates the illusion of movement of said spots along a direction corresponding to the vector sum of the movements of said tapes.

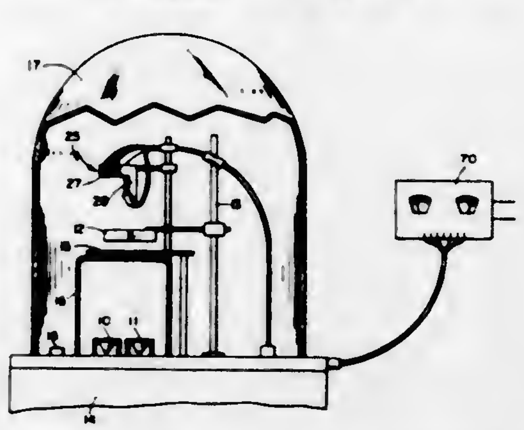


3,400,687
FILM THICKNESS MONITORING APPARATUS

Arthur M. Lueck, Chelmsford, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Feb. 25, 1966, Ser. No. 530,190

5 Claims. (Cl. 118—9)



4. Apparatus for determining the thickness of deposited films for use with equipment for depositing thin films of material on a substrate comprising a vacuum chamber, a support for supporting said substrate within said vacuum chamber, and a container adapted to hold material to be deposited on the substrate within said vacuum chamber; said apparatus including in combination

- a support adapted to be positioned within the vacuum chamber including a first member extending generally transverse to the path of material emanating from the container and a second member extending generally toward the container from one end of the first member, the first member of the support having a flat surface facing the container and lying substantially normal to the path of material emanating from the container, a glass plate adapted to be mounted with one flat surface against the flat surface of the first member of the support whereby the opposite flat surface of the plate is in position to receive material emanating from the container,

spaced-apart electrical connections mounted on the first member of the support and adapted to contact said opposite flat surface of the glass plate at opposite ends thereof,

a source of light mounted on the second member of the support and arranged to direct light on said opposite flat surface of the glass plate mounted against the flat surface of the first member of the support,

a shield disposed between the source of light and the container to prevent material emanating from the container from impinging on the source of light,

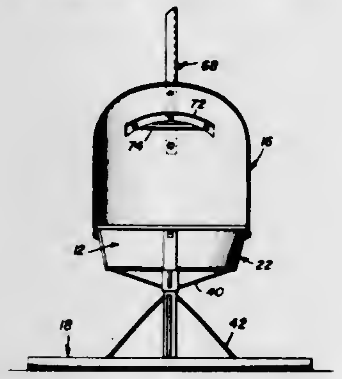
a light sensor mounted within the first member of the support and spaced from said flat surface,

a passage in said first member of the support extending from an opening in said flat surface of the first member to the light sensor to direct against the light sensor a beam of light radiating from the source of light at an angle to said opposite flat surface of the glass plate and at an angle to the path of material emanating from the container,

first indicating means connected to the light sensor and adapted to produce an indication of the amount of light impinging on the sensor, and

second indicating means connected to the spaced-apart electrical connections and adapted to produce an indication of the electrical resistance of material deposited on said opposite flat surface of the glass plate.

3,400,688
LIVESTOCK FEEDER
Walter J. Koinzan, Elgin, Nebr. 68636
Filed June 9, 1966, Ser. No. 556,314
8 Claims. (Cl. 119—51)



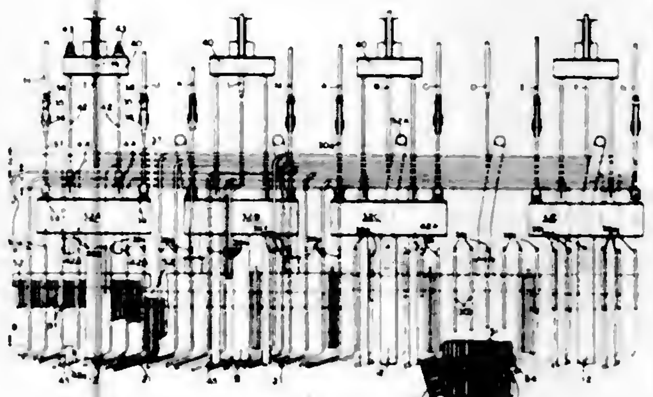
A feed container received within a support cradle rotatably mounted on an upright pedestal, a protective hood extending over the container. The hood, container and cradle are interlocked by bolts extending therethrough with the container being constructed of a resiliently compressible material which acts in the nature of a resilient mount for the hood so as to provide a shock absorbing effect tending to reduce damage to the hood by livestock coming in contact therewith.

ERRATUM

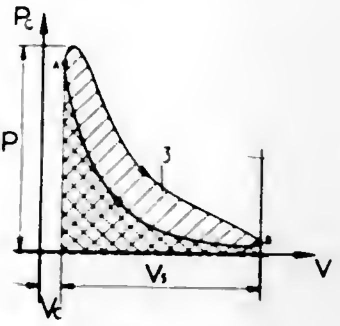
For Class 122—479 see:
Patent No. 3,400,559

3,400,689
VAPOUR GENERATORS
Roy Bagley and Richard H. Evans, London, England, assignors to Babcock & Wilcox, Limited, London, England, a corporation of Great Britain
Filed Aug. 25, 1966, Ser. No. 574,974
12 Claims. (Cl. 122—510)

A forced flow vapour generator having upwardly inclined tubes in the lower portion and upright tubes in the upper portion with the tubes supported by straps from above. The real wall of the furnace is provided with inclined tubes terminating adjacent the level of the lower boundary of a gas outlet with the upright tube extensions arranged in groups arranged axially of gas flow through the gas outlet and supported from above.

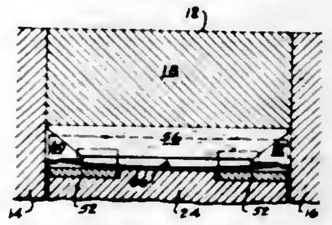


3,400,690
INTERNAL COMBUSTION ENGINES
Jeffrey Holroyd Wood, Buttershaw, Bradford, and Samuel Henry Henshall, Styal, Wilmslow, England, assignors to Crossley Brothers Limited, Openshaw, Manchester, England, a British company
Filed Sept. 15, 1966, Ser. No. 579,657
Claims priority, application Great Britain, Sept. 16, 1965, 39,528/65
3 Claims. (Cl. 123—1)



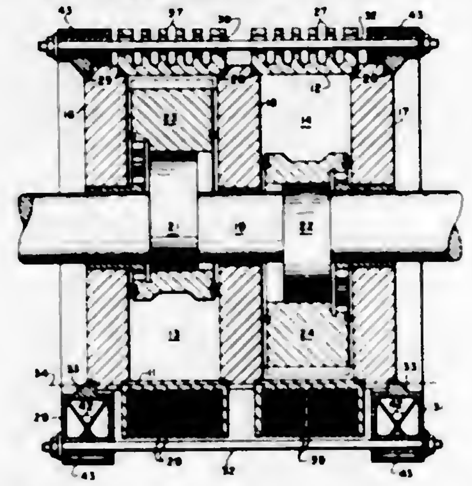
A method of reducing the gas loading on the piston to crankshaft running gear of multi-cylinder internal combustion engines by using an inert gas at high pressure in the crankcase to offset the gas working pressure in the engine cylinders.

3,400,691
SEAL CONSTRUCTION FOR ROTARY COMBUSTION ENGINES
Charles Jones, Paramus, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 384,056, July 21, 1964. This application July 21, 1966, Ser. No. 575,481
9 Claims. (Cl. 123—8)



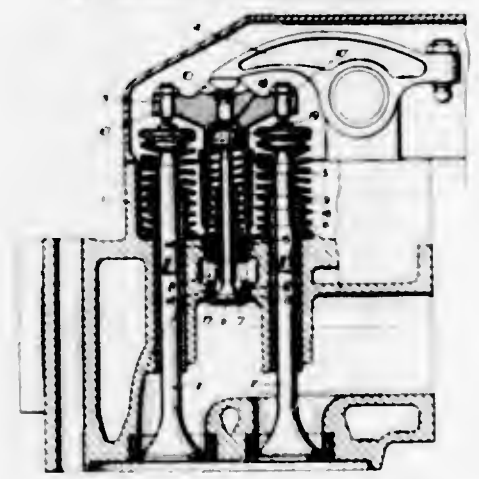
Rotor apex seal construction for rotary combustion engines, comprising at least a main seal piece and an end seal piece with cooperating inclined faces at the juncture of the main and end pieces, and a spring biasing the end piece substantially radially outwardly of the rotor.

3,400,692
HOUSING FOR INTERNAL COMBUSTION ENGINES
Charles Jones, Hillsdale, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,982
10 Claims. (Cl. 123—8)



Resilient members of generally toroidal configuration are provided for a rotary engine housing subject to unequal axial expansion, the resilient toroidal members applying axial tension to a plurality of axially disposed housing members to hold the latter in tight assembly, responding resiliently to distribute unequal axial loads.

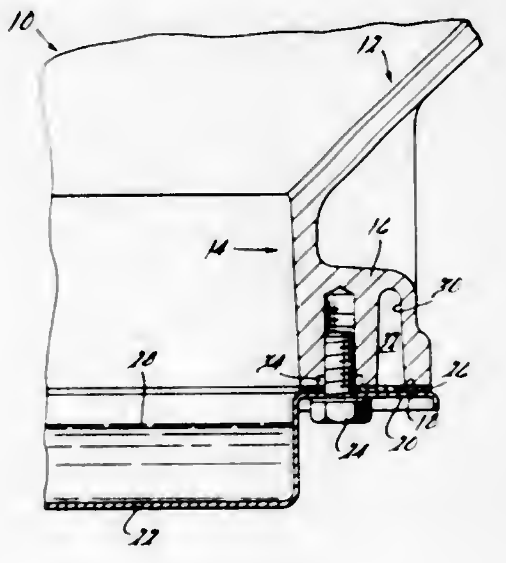
3,400,693
VALVE GEAR FOR AN INTERNAL COMBUSTION ENGINE
Gerhard Siding, Graz, Austria, assignor to Hans List, Graz, Austria
Filed June 10, 1966, Ser. No. 556,776
Claims priority, application Austria, June 11, 1965, A 5,329/65
2 Claims. (Cl. 123—27)



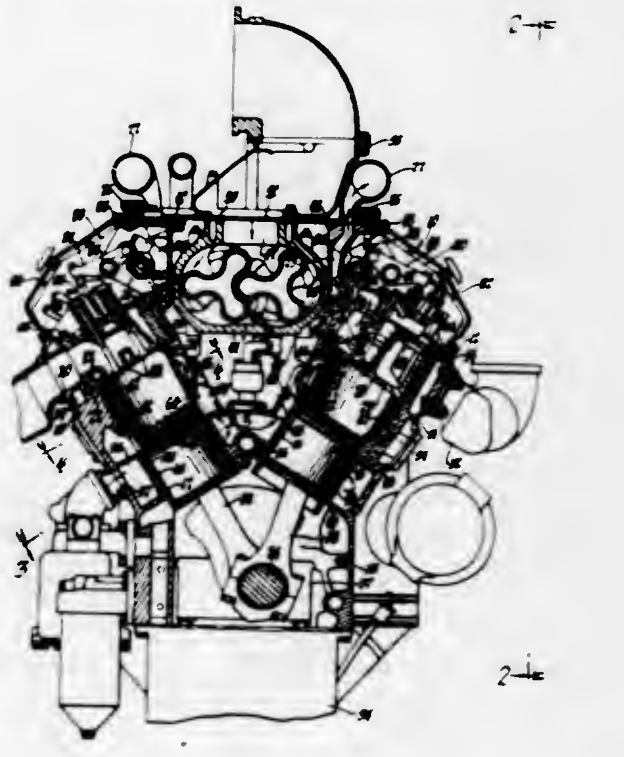
A valve gear for an internal combustion engine with each cylinder of the engine having two intake valves and a gas valve parallel to each other and a guide means for each valve and a valve bridge slidably guided in parallel relation to the valves two stops are mounted in the valve bridge coaxially arranged as to the intake valves and a third stop is in coaxial relation to a stem of the gas valve.

3,400,694
ENGINE BLOCK AND LUBRICANT COOLING SYSTEM
Robert P. Ernest, Dearborn Heights, Wesley J. McLean, Farmington, and Norman D. Postma, Dearborn Heights, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Feb. 2, 1967, Ser. No. 613,610
6 Claims. (Cl. 123—41.33)

An internal combustion engine cylinder block having a coolant passage cast in the block lower wall portion at the point of connection to the oil pan rail to cool the lower block portion and simultaneously aid in cooling the lubricating oil. A second vented passage is provided between the coolant passage and the inside of the block to intercept coolant leakage along the seal between the block and oil pan rail, to prevent contamination of the oil by the coolant.



3,400,695
INTERNAL COMBUSTION ENGINE AND CYLINDER BLOCK
Karl Zaruba, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 1, 1966, Ser. No. 554,450
11 Claims. (Cl. 123—41.82)

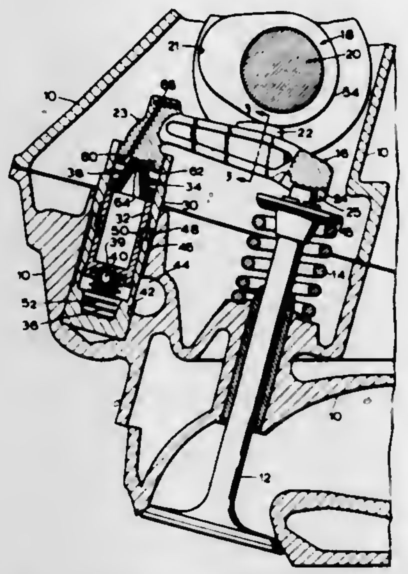


A preferred embodiment comprises a V-type engine having a unitary cast cylinder block including a pair of longitudinal walls extending vertically upwardly from the inner edges of the cylinder banks and cooperating therewith to form an enclosed air compartment containing the charging air blowers. The outer faces of the upwardly extending walls include integrally formed camshaft supports mounting the engine valve gear as well as generally vertical coolant passages arranged to receive coolant from the cylinder heads and discharge it to return manifolds carried by the block. Individual cylindrical cylinder heads and valve gear are enclosed by covers giving the upper portion of the engine a clean appearance without exposed blowers or valve gear.

3,400,696
VALVE TRAIN

Earl A. Thompson, Bloomfield Hills, Mich., assignor to Earl A. Thompson Manufacturing Co., a corporation of Michigan

Filed Jan. 5, 1966, Ser. No. 518,815
6 Claims. (Cl. 123—90)

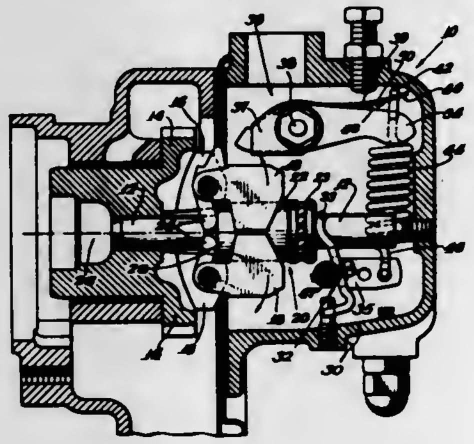


2. An internal combustion engine comprising in combination a reciprocable valve supported in the engine, a pivoted rocker arm bearing on the valve and bearing on a fulcrum which is reciprocable within a guide, a cam rotatable against the rocker arm for operating the valve, the cam producing components of force on the rocker arm in the direction of its length and perpendicular to its length, an automatic lash adjuster for the fulcrum and means for preventing transmission from the cam to the fulcrum of components of force in the direction of the length of the rocker arm.

3,400,697
SPEED CONTROL DEVICE

Carl Cupit, Plainfield, Christopher J. Oliva, Chicago, Charles Broad, Jr., Westchester, and Ralph A. Gritchen, Park Forest, Ill., assignors to International Harvester Company, a corporation of Delaware

Filed Dec. 23, 1964, Ser. No. 420,558
6 Claims. (Cl. 123—97)

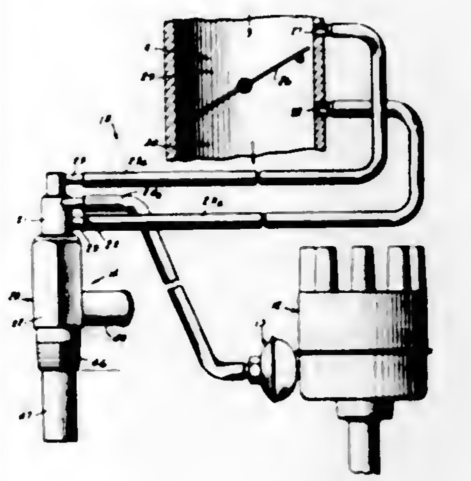


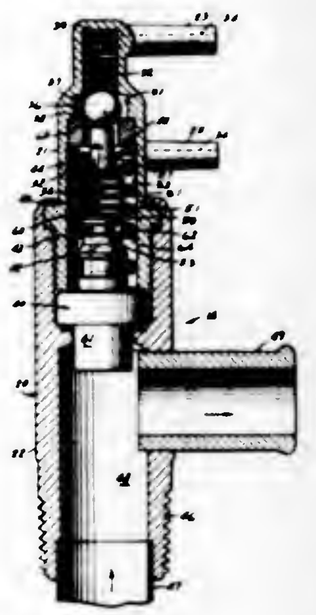
1. In a centrifugal governor including a housing, a fuel control member, engine actuated centrifugal flyweights acting on said member to move it toward a lower fuel position, a first governor spring opposing the action of the flyweights said spring having first and second ends, said first end being connected with said fuel control member to urge it toward a fuller fuel position, said second end being connected to said housing, the improvement comprising: a second governor spring interconnected directly to said second end of said first governor spring and said housing and adapted to cooperate with said first governor spring in opposing the action of the flyweights, said second governor spring being relatively weaker than said first governor spring and being adapted to oppose the action of said flyweights; and stop means to render said second governor spring ineffective when said member approaches a predetermined position corresponding to a predetermined engine speed.

3,400,698
VACUUM PORTED SWITCH

Douglas E. Kelly, Northfield, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois

Filed Dec. 22, 1966, Ser. No. 603,995
19 Claims. (Cl. 123—117)





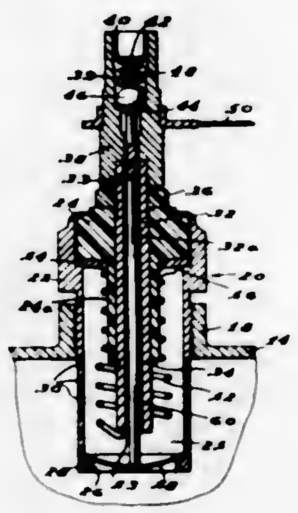
A switch for communicating a vacuum operated spark advance mechanism of a distributor of an internal combustion engine with the air intake passageway of the carburetor either upstream or downstream of the butterfly valve thereof depending upon the operating temperature of the engine for retarding the spark at idle when the engine is running cool and for advancing the spark when the engine is running hot.

3,400,699
PREHEATER UNIT FOR AN INTERNAL COMBUSTION ENGINE

Donald J. Van Kirk, Dearborn Heights, and Charles M. Wells, Livonia, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed June 8, 1966, Ser. No. 556,097
3 Claims. (Cl. 123—122)

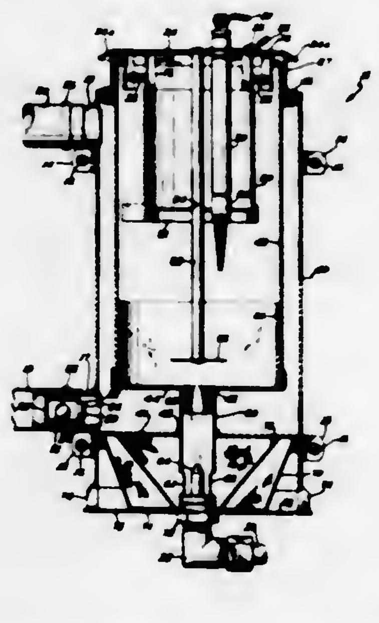
An air intake preheater unit projecting into the air intake manifold of an internal combustion engine. The unit includes temperature responsive valve means operatively connected to a fuel head and an intermittently operable heating and fuel ignition element. Upon actuation of the heating and fuel ignition element, the valve means open to admit fuel to the unit for ignition. The heat generated by the burning of this fuel warms intake air to facilitate engine starting under cold climatic conditions.



3,400,700
PROPANE HEATER FOR INTERNAL COMBUSTION ENGINE

Seth B. Lindsey and John H. Klancke, Minneapolis, Minn., assignors to Phillips Manufacturing Company, Inc., Minneapolis, Minn., a corporation of Minnesota

Filed Dec. 13, 1966, Ser. No. 601,423
7 Claims. (Cl. 123—142.5)



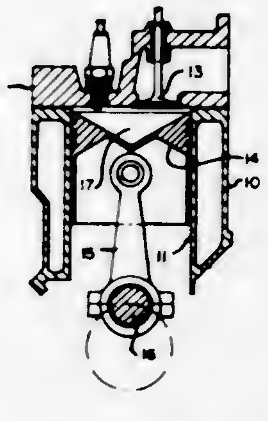
This disclosure is directed to a propane heater used in combination with the fluid cooling system of an internal combustion engine which is exposed to outdoor elements. The propane heater has a wind deflector to break up wind gusts and prevent the flame from being extinguished while providing a full heat flow through the heater by the proper ratio of the area of the input air ports to the vent area for the burned gases.

3,400,701
COMBUSTION CHAMBER PISTONS

Fred Tessmer, 2044 Karolina Ave., Winter Park, Fla. 32789

Filed Nov. 18, 1966, Ser. No. 595,485
3 Claims. (Cl. 123—193)

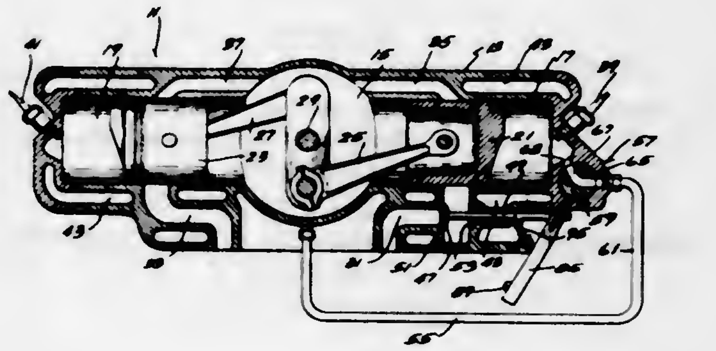
An internal combustion engine having a cylinder chamber, a piston movable in said chamber and a cylinder head normal to the axis of the piston, the piston having a conical recess in the top surface defining at its compression position the major exposed surface of an effective combustion chamber.



3,400,702
IDLING ARRANGEMENT FOR INTERNAL COMBUSTION ENGINE

Lucius D. Watkins, Hartland, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware

Filed Apr. 28, 1966, Ser. No. 546,044
12 Claims. (Cl. 123—198)



Disclosed herein is a twin cylinder opposed two cycle engine including a valve in the exhaust passage extending from one of the cylinders, said valve being displaceable between a duct closing and a duct opening position, together with means for selectively displacing the valve between the two positions. Also disclosed herein is an electrical circuit for grounding or otherwise rendering inoperable a spark plug associated with said one cylinder when the exhaust duct is closed. Also disclosed herein is a conduit extending from said one cylinder to the crankcase and valve means for selectively opening and closing the conduit.

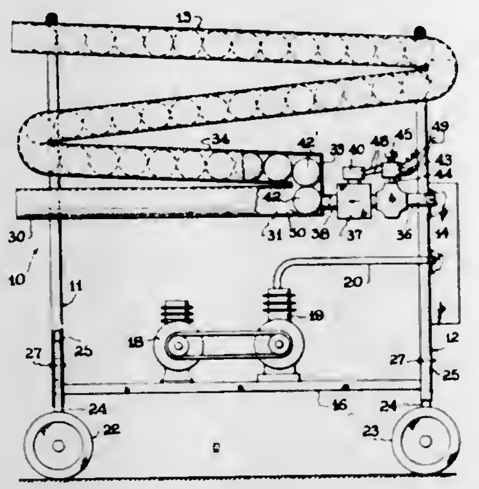
3,400,703
AUTOMATIC BALL THROWING MACHINE

Barry V. Rhodes, 22358 Baltar St., Canoga Park, Calif. 91304

Filed Oct. 19, 1965, Ser. No. 497,763
9 Claims. (Cl. 124—11)

1. A ball throwing machine for use by tennis, soft ball and the like players, said machine having a main frame, a ball throwing barrel mounted on said frame having a discharge end and a breech end, ball hopper means for storing and feeding a plurality of balls individually into the breech end of said barrel, means for supply pressurized air to said breech end including pressure responsive means

operable in response to a predetermined air pressure to jet air into said breech end rearward of a ball therein to propel the same along said barrel and out of the discharge end thereof at a desired velocity, said pressure responsive means including pressure sensitive switch means connected in circuit with a normally closed snap-action solenoid valve opening quickly when energized by said switch means as the air supply reaches said predetermined air pressure value, and said pressure responsive means being thereafter operable in response to lowering of the air pressure to close off all air flow into said barrel until the supply pressure again rises to said predetermined pressure.



3,400,704

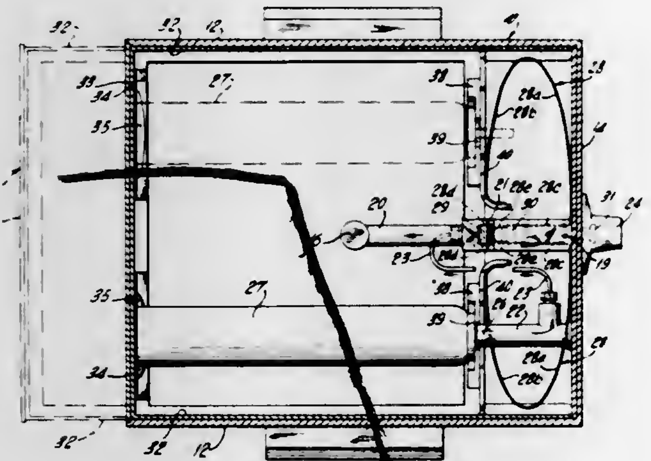
PORTABLE GAS COOKING APPLIANCE

Herman Schlamp and Peter Weber, Cologne (Rhine), Germany, assignors to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey

Filed Jan. 13, 1967, Ser. No. 609,159

Claims priority, application Germany, Jan. 25, 1966, R 42,486

8 Claims. (Cl. 126—38)



A portable gas fired cooking unit having an outer enclosure to which is fixed the gas lines to the burner. A removable drawer which holds replaceable gas refills is placed within the outer enclosure and the gas refill in the drawer automatically becomes aligned with the gas lines in the outer enclosure to supply gas to the burner. A spring in the outer enclosure is tensioned by the drawer and the fixed end of the spring holds the drawer within the outer enclosure. A plunger releases the spring retainer and automatically disengages the gas supply and ejects the drawer holding the gas supply means.

3,400,705

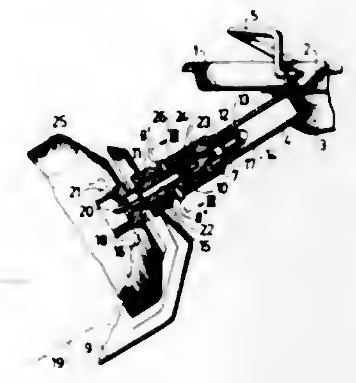
PORTABLE STOVE

Sten Sune Axelsson, Solna, Sweden, assignor to AB Bahco, Lilla Essingen, Stockholm, Sweden, a corporation of Sweden

Filed Nov. 1, 1966, Ser. No. 591,273

Claims priority, application Sweden, Nov. 9, 1965, 14,472/65

4 Claims. (Cl. 126—44)



A compact and simply constructed portable pocket stove is described. A valve housing containing a valve seat is retained within a mixer pipe connected to the burner. The valve body having a passage therethrough is secured to a gas bottle and is externally threaded to engage corresponding threads in a bore in the valve body whereby rotation of the gas bottle serves to move the head portion of the valve body towards and away from the valve seat.

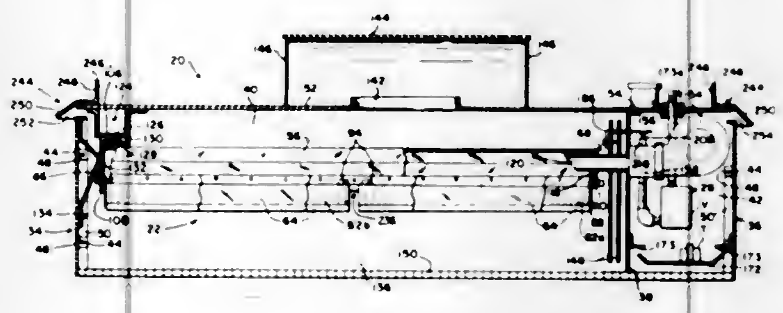
3,400,706

COMBUSTION TYPE RADIANT HEATER

John J. Fannon, Jr., Grosse Pointe Park, Mich., and Marc Resek, Shaker Heights, Ohio, assignors, by mesne assignments, to Fostoria-Fannon, Inc., a corporation of Ohio

Filed June 17, 1966, Ser. No. 558,435

11 Claims. (Cl. 126—92)



An infrared heater having a compartmentalized housing with a pair of infrared generators mounted side by side in one compartment and a fuel and combustion air mixing chamber including control means mounted in another compartment with separate fuel supply conduits extending from the mixing chamber in the other compartment to each infrared generator in the one compartment. Means in the mixing chamber to supply equal amounts of fuel to each generator including adjustable stops to vary the proportion of the fuel and air. A flame propagation means disposed between the generators insures ignition of each generator and a flame sensor associated with at least one of the generators shuts off the fuel if a generator flames out or fails to ignite. Reflectors surround both of the infrared generators to give direction to the infrared rays.

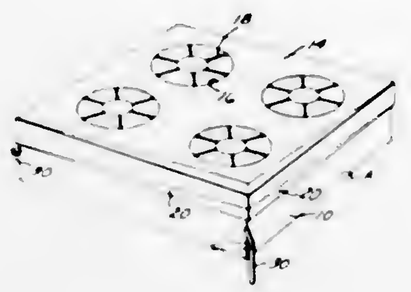
3,400,707

LEVELING DEVICE FOR STOVE OR OVEN STRUCTURE

Clyde A. Owens, P.O. Box 52, Wheeler Ridge, Calif. 93284

Filed Apr. 21, 1967, Ser. No. 632,685

3 Claims. (Cl. 126—211)



A device for adjusting the position of a stove or oven in a camper or other movable vehicle to a position where the stove or oven will support a pot, pan or other cooking utensil in a level position.

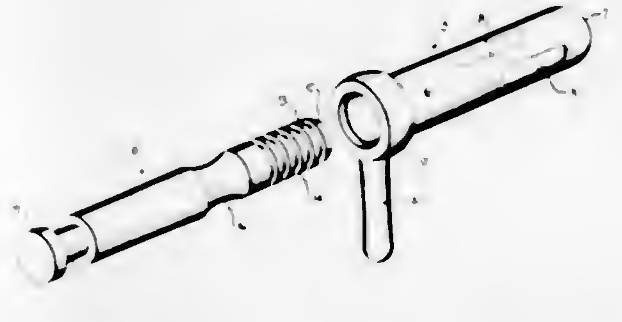
3,400,708

CYTOLOGIC ENDOCRINE EVALUATION DEVICE

Robert A. Scheidt, 10110 Bunny Court, Hales Corners, Wis. 53130

Filed Nov. 24, 1965, Ser. No. 509,526

6 Claims. (Cl. 128—2)



1. An instrument for collecting surface tissue cells from vaginal walls for cytological endocrine evaluation, comprising:

(A) a tube having a closed front end portion adapted to hold a quantity of a specimen suspending solution, and of a size and shape to be readily inserted into the vagina,
  said tube having at least one opening through its side wall at a distance from its closed front end, through which the adjacent portion of the vaginal wall protrudes upon insertion of the tube into the vagina;

(B) plunger means in the tube,
  said plunger means being freely slideable back and forth in the tube and having a part thereon projecting from the tube and by which the plunger means may be reciprocated; and

(C) ridge means on the plunger means to move past the opening in the side wall of the tube and into the specimen suspending solution contained in the tube,
  whereby tissue cells may be scraped off the inwardly protruding vaginal wall portion and deposited in said solution.

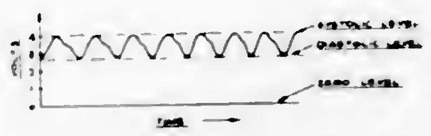
3,400,709

ARTERIAL BLOOD PRESSURE MONITOR

Horst Fünfstück, Los Angeles, Calif., assignor to Statham Instruments, Inc., Los Angeles, Calif., a corporation of California

Filed Oct. 1, 1965, Ser. No. 492,045

8 Claims. (Cl. 128—2.05)



A strain-gage transducing device provides an alternating signal representative of a heart beat—the positive peak indicating the systolic level and the negative peak, the diastolic level. The alternating signal is fed into a differential amplifier, one output of which is rectified and stored in a capacitor to provide a signal indicative of the systolic level. The entire output of the differential amplifier is rectified and stored in a second capacitor providing a signal indicative of the peak-to-peak amplifier output. A subtracting circuit relates the stored positive signal and the stored peak-to-peak signal to provide a further signal representative of the negative swing of the AC signal or the diastolic level. An additional aspect is the provision of a pulse failure indicator which includes a second differential amplifier fed by the output of the first differential amplifier to reverse bias a transistor in series with an indicator lamp maintaining the lamp in the "off" condition as long as there is an output from the first differential amplifier. When the heart pulse fails the reverse bias is removed from the transistor and the indicator light goes "on."

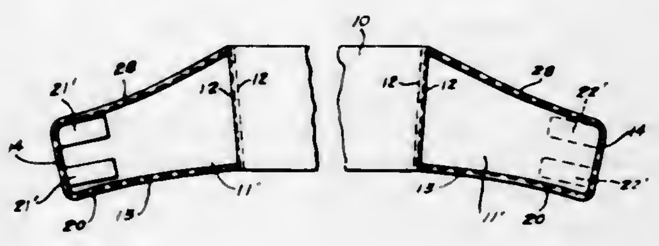
3,400,710

CHEST BINDER

Eugene Goldstein, Kansas City, Mo., assignor to H. G. Enterprises, a co-partnership

Filed May 13, 1965, Ser. No. 455,459

3 Claims. (Cl. 128—78)

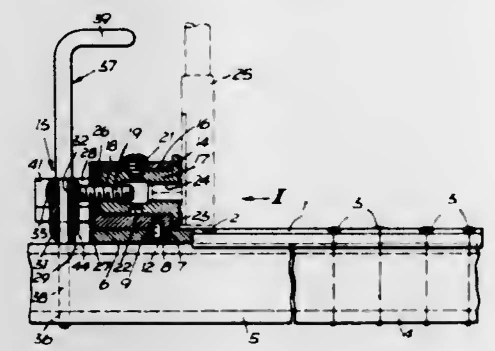


A chest binder which has a rear elastic section of uniform width that extends entirely across the back of the wearer and to which are secured a pair of inextensible sections that are adjustably secured together at their forward ends to extend around the body at the chest. There is a men's and a women's form illustrated both of which have the top and bottom edges of the inextensible sections extending downwardly from their rear ends to their forward ends so as to cause the entire inextensible section on each side to extend downwardly toward the front end. Each of the inextensible sections of the men's binder is cut out at the top edge under the armpit and each of the inextensible sections of the women's binder tapers gradually from the back section to its front end. The parts are so proportioned that the inextensible parts will lie in engagement with the sides and front wall of the chest while the extensible section will extend only across the back.

3,400,711

SURGICAL BONE PLATING APPLIANCE

Hans Hux and Wilhelm Frick, Tuttlingen, Baden, Wurttemberg, Germany, assignors to Aktiengesellschaft für Feinmechanik vormals Jetter & Scheerer, Tuttlingen, Germany, a corporation of Germany
Filed Jan. 10, 1966, Ser. No. 519,552
Claims priority, application Germany, Jan. 16, 1965, A 48,135
11 Claims. (Cl. 128—92)



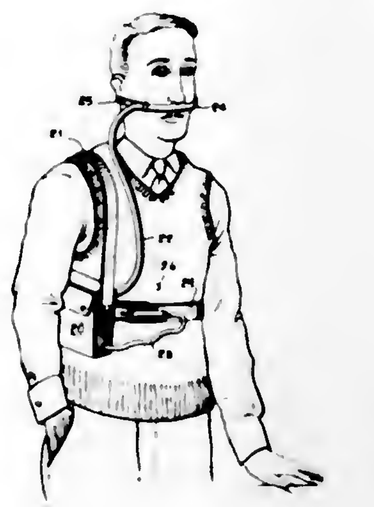
1. A surgical appliance for drawing together at least a first and a second part of a fractured bone and for thereafter securing said bone parts rigidly to each other, comprising a bone plate, said bone plate having a longitudinal axis and comprising a first and a second part adapted to be applied upon the outside of said first and second bone parts, respectively, means for rigidly securing said first bone-plate part to said first bone part at one side of said fracture, a tensioning coaptor comprising plate-clamping means and bone-clamping means, said plate-clamping means comprising a member adapted to be connected to said second bone-plate part at the other side of said fracture and having means thereon for embracing and gripping said second bone-plate part at both lateral sides thereof, said bone-clamping means comprising a tension screw having an axis extending substantially parallel to said longitudinal axis of said bone plate and having one end screwed into said plate-clamping means, said tension screw and said plate-clamping means being adapted to be turned relative to each other about said axis of said tension screw so as to screw said plate-clamping means along said screw, a bushing secured to the other end of said tension screw and extending at an angle to the axis of said screw, securing means adapted to be secured to said second bone part and comprising a rod shaped member adapted to be inserted through said bushing, said bushing being adapted to serve as a boring template for drilling a bore into said second bone part for receiving said rod-shaped member after it has been inserted through said bushing and for thus securing said rod-shaped member to said second bone part, and means for securing said second bone-plate part to said second bone part after said tension screw and said plate-clamping means have been turned relative to each other in one direction until said two bone parts are drawn together.

3,400,712

SYSTEM FOR INTERMITTENTLY DISPENSING OXYGEN OR OTHER GAS SUITABLE FOR BREATHING

James E. Finan, 1193 Hardscrabble Road, Chappaqua, N.Y. 10514
Filed Aug. 12, 1965, Ser. No. 479,128
5 Claims. (Cl. 128—203)

A portable, self-contained apparatus useful for dispensing a gas such as oxygen. In the operation of this device the gas or oxygen is dispensed only when the person wearing the device is inhaling. When the person wearing the device exhales, the supply of oxygen is interrupted. This is accomplished by including in the device adapted to be worn on the person, along with the oxygen supply, an oxygen flow control means and the oxygen dispensing means which may be a nasal cannula connected with the oxygen source via the oxygen flow control means by means of a conduit, an actuating means responsive to the torso body movement of the person wearing the device. The actuating means comprises a belt and a switch with a lost motion connection between the belt and the switch, the switch being operatively connected to the oxygen flow control means which may be a solenoid valve. When the person wearing the device inhales the resulting torso body movement operates the switch so as to open the oxygen flow control means to supply oxygen to the oxygen dispensing means. When, however, the person wearing the device exhales the resulting torso body movement causes the switch to open to shut off the oxygen flow control means thereby interrupting the supply of oxygen to the oxygen dispensing means. The device of this invention does not restrict normal body movement or activity of the person wearing the same and leaves the face of the wearer exposed and the nose and any other face part of the wearer substantially unrestricted.

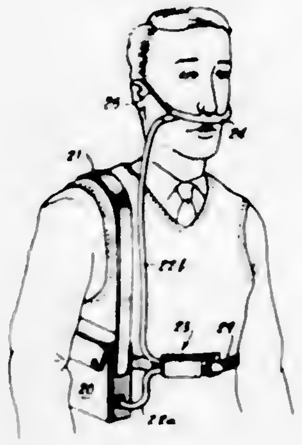


3,400,713

APPARATUS FOR INTERMITTENTLY DISPENSING OXYGEN OR OTHER GAS SUITABLE FOR BREATHING

James E. Finan, 1193 Hardscrabble Road, Chappaqua, N.Y. 10514
Continuation-in-part of application Ser. No. 479,128, Aug. 12, 1965. This application Oct. 12, 1966, Ser. No. 586,278
7 Claims. (Cl. 128—203)

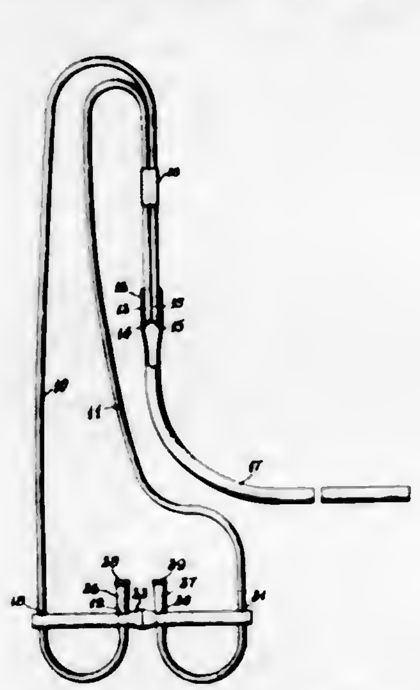
In apparatus for supplying oxygen for breathing, including a source of oxygen, an egress member adapted to supply a person, conduit means leading from the source of oxygen to the egress member, and sensing means adapted to move in first and second directions upon expansion and contraction respectively of the girth of the torso of said person, the improvement in combination therewith for opening and closing the conduit means, for passage of oxygen from the source to the egress member intermittently and in response to each inhalation by the person, comprising valve means interposed in the conduit; a pair of cooperating parts including means defining a chamber member including a wall at on end thereof supported and guided for reciprocal sliding motion, and a piston slidably disposed within the chamber member means in substantially gas-tight peripheral contact with the inner surface thereof; one of the pair of parts being arranged to act as the driven one and actuate the movable portion of the valve means; the other of the pair of parts being arranged to act as the driving one and connected to the sensing means to move in the first and second directions therewith; and means biasing the driven one in a direction tending to move said valve means movable part to the closed position thereof. Desirably, a controlled leak means is provided into the variable chamber portion, so that the vacuum produced therein upon relative motion of the piston and chamber member means end wall away from one another is dependent upon the rate of movement as well as the direction and distance of movement.



3,400,714

NASAL CANNULA

David S. Sheridan, Argyle, N.Y., assignor, by mesne assignments, to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed May 3, 1965, Ser. No. 452,791
5 Claims. (Cl. 128—206)



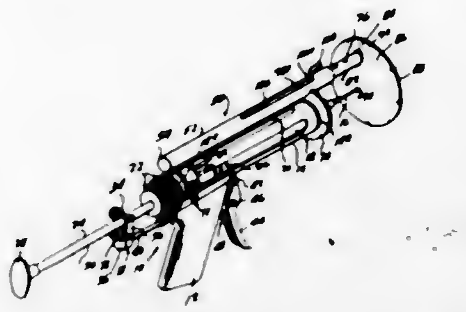
A nasal cannula for use in administering gas under pressure through the nasal passages and having a pair of narine tubes, each one of which has an internally flared section adjacent the outlet end of the tube. The flared section produces a turbulence and reduction of velocity of the gas issuing from the tube so as to reduce nasal burn in the patient's nostril.

3,400,715

ATTACHMENT FOR INJECTION APPARATUS

Halvard J. Pederson, Cartwright, N. Dak. 58838
Filed Jan. 4, 1966, Ser. No. 518,638
9 Claims. (Cl. 128—215)

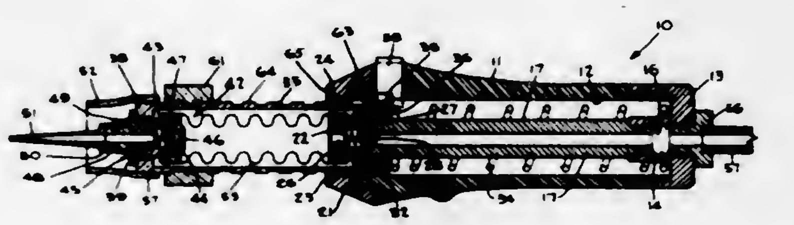
For use with a conventional hypodermic syringe having a barrel, a piston and a cannula, an attachment comprising: a tubular member having means for rigidly but detachably attaching the same to the barrel of a syringe; a plunger slidably received in said tubular member and having its free end projecting from one end of said tubular member; means biasing said plunger out of said tubular member; a plate projecting laterally from the free end of said tubular member, said plate having an aperture to pass said cannula, and selective and adjustable stop means engaging said plunger and operative in a slot in said tubular member for limiting motion in both directions longitudinally of said tubular member.



3,400,716

MULTIPLE DOSAGE HYPODERMIC SYRINGE

William H. Schultz, 6545 Ponchartrain, Chicago, Ill. 60646
Filed June 5, 1964, Ser. No. 372,950
10 Claims. (Cl. 128—216)



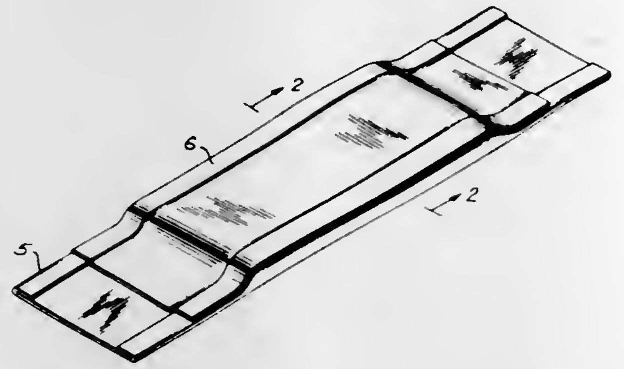
1. A multiple dosage hypodermic syringe comprising an elongated, hollow body adapted to be grasped by a user, a tubular member telescopingly mounted within said body and having an inner end and an outer end, an expansible and contractable container within said tubular member having one end movable with the outer end of said tubular member and its other end fixed with respect to said body, said other end of said container being adapted to be connected to a reservoir of serum to be injected, an injection needle mounted on the outer end of said tubular members and communicating with the interior of said container, first one-way valve means between said container and reservoir preventing serum in said container from flowing into said reservoir upon telescoping movement of said body over said tubular member to contract said container and eject serum through said needle, second one-way valve means between said container and said injection needle preventing reverse flow through the latter, whereby extension of said tubular member from said body causing said container to expand and fill with serum for another injection.

3,400,717

DIAPERS

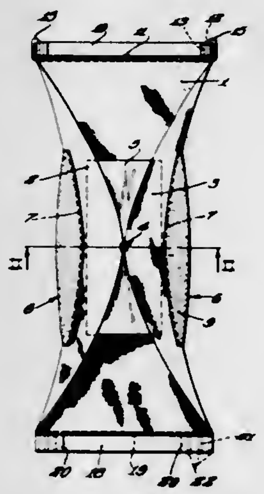
Robert Bruce Cubitt, Bound Brook, Herman Lowell Marder, Plainfield, and Werner Otto Tundermann, Colonia, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed May 21, 1965, Ser. No. 457,762
14 Claims. (Cl. 128—284)

Absorbent articles such as diapers, sanitary napkins and the like comprising a core of highly absorbent material are provided with a surface web of high wet strength paper plasticized to give unusual softness and nonirritating characteristics thereto.



3,400,718
SANITARY BELT

Toshiko Saijo, 902 Shibakatamonzen, Minato-ku, Tokyo, Japan
Filed May 28, 1965, Ser. No. 459,562
6 Claims. (Cl. 128—291)



A sanitary belt has a body of fabric stretchable in a plurality of directions and initially of substantially rectangular shape, side portions of the body being folded in to form crescent-shaped laps over the remainder leaving the body with concave side edges, the laps abutting centrally of their confronting edges and being secured together at the abutting point to form an open-ended pocket with the remainder of the body receptive of a thin impervious shield freely disposed in the pocket. A half belt is attached to each end margin of the body and means connect the ends of the belt together around the waist of the wearer. Depending leakage preventing flanges are secured to the concave side edges.

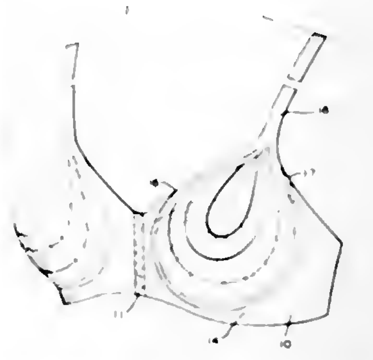
3,400,719
PLASTIC GRAFT MATERIAL AND METHOD OF MAKING SAME

Albert O. L. J. Eckhart Buddecke, Frondsbergstrasse 27, Tubingen, Germany
No Drawing. Filed June 9, 1964, Ser. No. 373,835
Claims priority, application Germany, June 10, 1963, B 72,245
7 Claims. (Cl. 128—334)

To produce improved prostheses out of woven or knitted plastic fibers or out of porous plastic materials, such materials are coated and impregnated with a weakly acid solution, which contains 0.1–5.0 percent by weight of purified procollagen in dissolved condition, whereby the solution penetrates the pores of the plastic material. By drying under mild conditions and removal of the acid components of the coating material, the dissolved procollagen is converted into a water-insoluble fibrous state, whereby an easily absorbable coating which is impervious to blood is obtained.

3,400,720
BRASSIERE

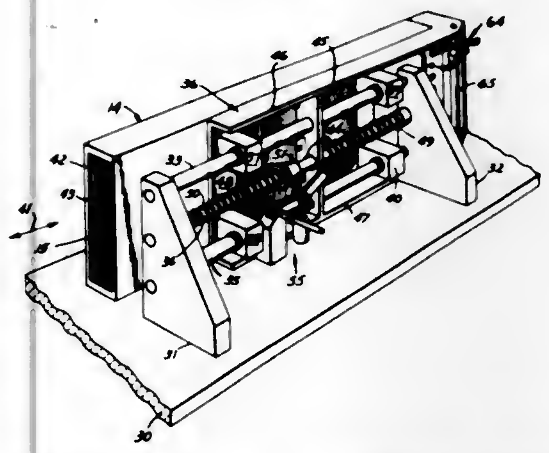
John D. Wark, 326 W. Lena Ave., Freeport, N.Y. 11520
Filed Aug. 23, 1966, Ser. No. 575,222
8 Claims. (Cl. 128—485)



1. A brassiere comprising a rib cage band extending around the breast section of the body of the wearer and joined together at the rear of the body and having a pair of cut-out sections extending downwardly from the upper edge of the band and providing a pair of convexly curved edges, a breast cup in each cut-out section and joined to one of said convex edges, and a shoulder strap extending upwardly and rearwardly from the top of each breast cup and secured thereto, each cup being formed from a plurality of curved segments, each convexly curved along its lower edge and concavely curved along its upper edge, each adjoining pair of edges being secured together from end to end, the edges of each successive segment from the bottom upwardly forming arcs of progressively smaller circles.

3,400,721
CARD SELECTION AND EXTRACTION MEANS

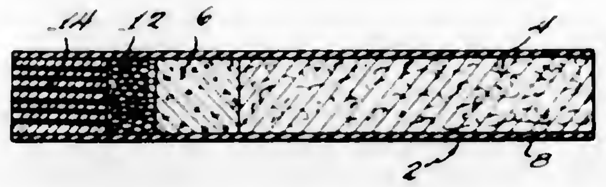
George E. Zenzefilis, Camarillo, Calif., assignor to Computer Accessories Corporation, Goleta, Calif., a corporation of California
Filed Nov. 26, 1965, Ser. No. 510,020
4 Claims. (Cl. 129—16.1)



This invention relates to card selection means for extracting a selected one of a stack of cards from a holder. The holder is carriage-mounted for reciprocable motion along an ejection axis. The carriage is driven by accelerator means which includes one spring to store energy to drive the holder, and another spring to decelerate it. Engagement and retention means restrain to the holder the non-selected cards, so that the selected card, which is accelerated with the holder and the other cards, is expelled when the holder and the other cards are decelerated.

3,400,722
FOAMED WHIPPED SMOKE FILTER

Peter P. Noznick, Chicago, and Robert H. Bundus, Riverside, Ill., assignors to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware
Filed Sept. 8, 1965, Ser. No. 485,779
6 Claims. (Cl. 131—10.7)



A smoker's article with a filter of increased porosity and surface area. The filter material itself is a foamed whipped, dried, finely divided, porous emulsified fat.

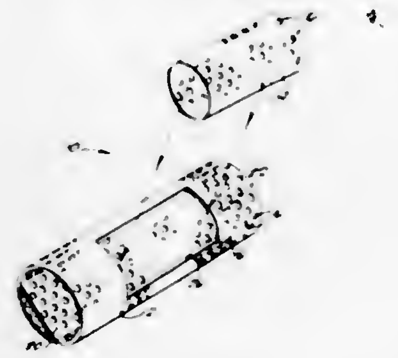
3,400,723
TOBACCO SMOKE FILTERS MADE OF PAPER

Paul Adolf Müller, Triesenberg, Liechtenstein, and Erich Barkowski, Aschaffstrasse 69, Aschaffenburg, Germany
No Drawing. Filed Feb. 20, 1967, Ser. No. 617,084
Claims priority, application Switzerland, Feb. 23, 1966, 2,626/66
14 Claims. (Cl. 131—267)

Tobacco smoke filters, especially for filter-tip cigarettes, which do not impart a so-called "paper taste" to tobacco smoke passing therethrough in which the paper is substantially free of sulphurous compounds and is made from a pulp into which is added a sulphur-free metallic compound of an acid from the group comprising acetic acid, propionic acid and formic acid in an amount to achieve a pH value less than 6.0 in the water container of the last screen of the paper-making machine. The compound preferably is aluminum acetate.

3,400,724
END CURL HAIR ROLLER

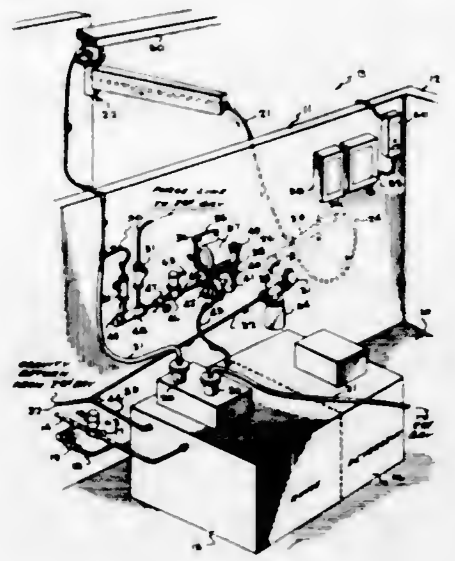
Mamie V. Scott, 116 Virginia Ave., Cumberland, Md. 21502
Filed Aug. 16, 1965, Ser. No. 480,019
1 Claim. (Cl. 132—39)



An end curl hair roller having a hollow cylindrical metal hair roller with perforations throughout for drying hair roller thereon, a sector plate disposed within said hollow cylindrical roller also having perforations, a cutout portion for the cylindrical roller's surface, the cutout portion being disposed generally intermediate the ends of the hollow metal roller for receiving a smaller cylindrical hollow metal roller which engages the sector plate, and on which the end curls of hair are rolled for eliminating end curl flat portions thereon.

3,400,725
AUTOMATIC NON-FREEZING, HOT-WATER-SAVING, PURGE SYSTEM FOR VEHICLE WASHING APPARATUS

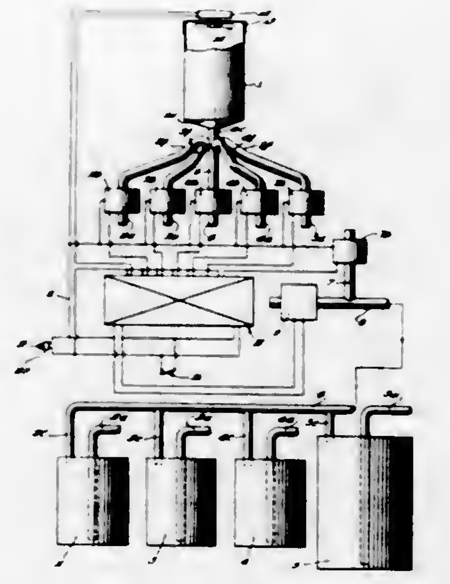
Marshall B. Miller and Melvin H. Fitzwater, both of Broadway, Va. 22815, and Alphie A. Zook, 1236 Upland Drive, Harrisonburg, Va. 22801
Filed July 21, 1966, Ser. No. 566,906
5 Claims. (Cl. 134—57)



An automatic non-freezing hot-water and purge system for vehicle washing apparatus which has unique features for economy, namely, that of hot-water-saving and fuel saving, and wherein, in accordance with the present invention there is provided a water purge system adapted to car wash assemblies.

3,400,726
APPARATUS FOR TREATING OF BIOLOGICAL PREPARATIONS

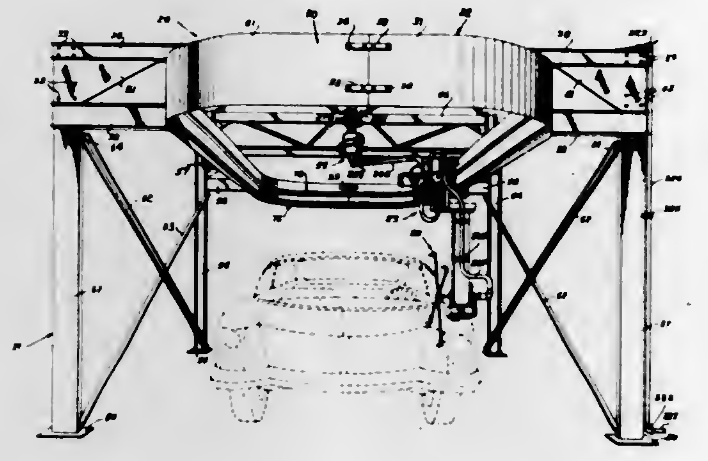
Alain C. J. R. de Bernard du Grail, Viroflay, France, assignor to AB Lars Ljungberg & Co., Stockholm, Sweden, a corporation of Sweden
Filed July 26, 1966, Ser. No. 568,052
Claims priority, application France, July 27, 1965, 26,152
3 Claims. (Cl. 134—95)



Apparatus for treating of biological preparations includes a vat structure comprising an upright container having a bottom wall and an open top, means for supporting specimen-carrying glass plates in the container, means for introducing and discharging treating fluid and a cover for the open top. A central pillar in the container cooperates with vertically spaced annular rows of teeth providing slots on the inside of the container to receive plates vertically and radially. A fan is mounted on the top for drying the treated plates.

3,400,727
CARWASHING APPARATUS

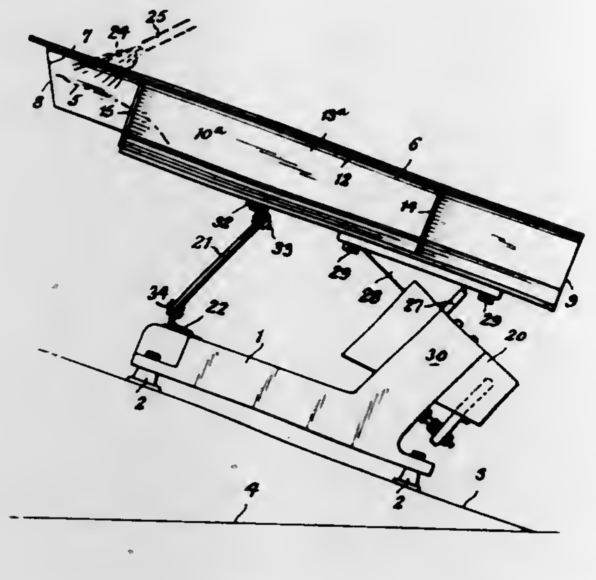
John L. Daum and Ray B. Spurgin, Dallas, Tex., assignors to Delta Manufacturing and Engineering Corporation, Dallas, Tex., a corporation of Texas
Filed Apr. 26, 1966, Ser. No. 545,496
18 Claims. (Cl. 134—99)



A vehicle washing apparatus having a carriage mounted for movement about a substantially oblong track and having a nozzle assembly rotated by a drive means mounted on the carriage, which directs rotating sprays of liquid onto a vehicle position below the track.

3,400,728
VIBRATING APPARATUS

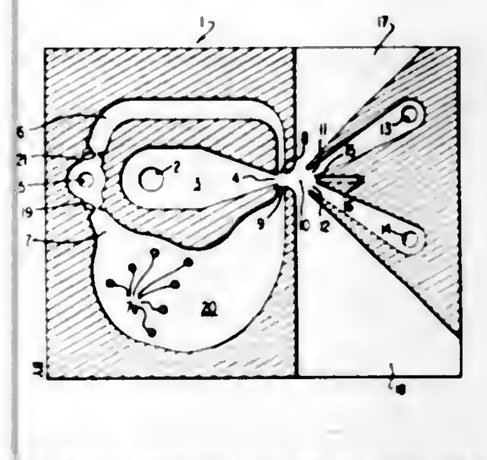
Vincent Di Gennaro, Nutley, N.J., assignor to Vibro-Plus Products, Inc., Stanhope, N.J., a corporation of New York
Filed Apr. 28, 1966, Ser. No. 546,088
3 Claims. (Cl. 134—151)



A vibrating device for finely powdered materials and in which an inclined pan or chute is springably supported from an inclined base. A vibrator located adjacent to the forward or lower end of the chute connects to the under side of the same. The spring means for the chute consists of a leaf spring having one end attached to the base and its other end attached to a bracket on the bottom of the chute. The spring is located between the vibrator and the rear end of the chute. Spray means directs a spray onto material at the rear or closed end of the chute.

3,400,729
RATE OF CHANGE OF PRESSURE SENSOR

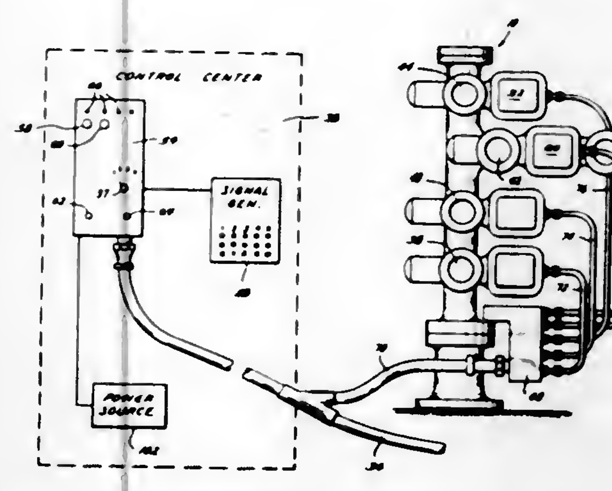
Willis A. Boothe, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 1, 1965, Ser. No. 444,599
4 Claims. (Cl. 137—81.5)



An analog fluid element which is responsive to the rate of change of pressure of a control fluid stream. A control fluid, the rate of change of pressure of which is to be sensed, is supplied through two passages to a pair of control nozzles which direct the fluid perpendicularly from opposite directions into a power fluid jet. Both passages include a resistive fluid component and one of the passages in addition includes an inductive fluid component which delays the response of the associated control nozzle to transient fluid pressure signals. Thus, when the pressure of the control stream is changing, the momentum or pressure of the fluid issuing from one of the control nozzles will be greater than that of the other and will deflect the power fluid jet.

3,400,730
PRESELECTIVE CONTROL OF REMOTELY LOCATED ELECTRICALLY OPERATED APPARATUS

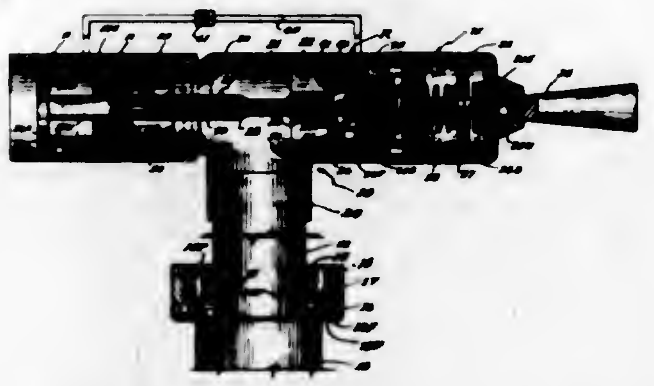
Clifford E. Anderson, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Aug. 27, 1965, Ser. No. 483,035
7 Claims. (Cl. 137—236)



A control system for selectively operating a plurality of remotely located wellhead valves having electrically energized valve operators. The system includes a single electrical cable having control and operating circuits for a single valve operator and having a stepping switch circuit for each wellhead which is operative to selectively connect the circuitry of any one of the operators to the control and operating circuits of the primary cable.

3,400,731
FLUID VALVE WITH SELF-CLEANING METERING ORIFICE

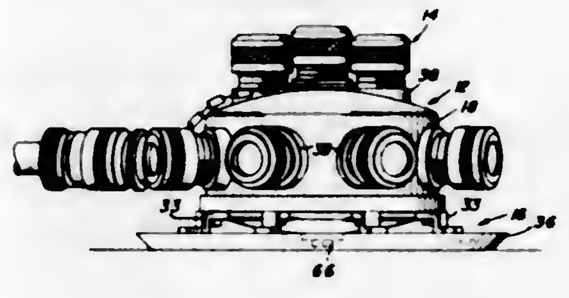
Robert R. McCormack, 980 N. Broad St., Galesburg, Ill. 61401
Continuation-in-part of application Ser. No. 311,466, Sept. 25, 1963. This application May 9, 1966, Ser. No. 592,702
16 Claims. (Cl. 137—245)



This invention is directed to a hydraulic flushometer valve having an adjustable replaceable plastic unit mechanism wherein the pressure chamber is exhausted past a movable pin in a self-cleaning orifice, and the main valve head is modified to eliminated water hammer.

3,400,732
MULTIPLE OUTLET RECEPTACLE

Claude A. Larrabee, 4915 Washington Ave., Kansas City, Kans. 66102
Filed Sept. 20, 1965, Ser. No. 488,667
5 Claims. (Cl. 137—344)



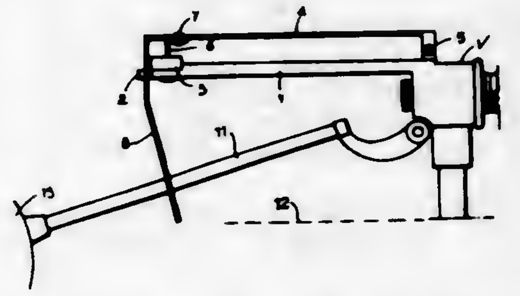
A multiple outlet pressure receptacle for connection to a source of fluid under pressure and provided with a plurality of quick-release valved outlet members whereby the multiple outlet pressure receptacle can be utilized to operate a plurality of fluid pressure operated devices from a single source of fluid pressure and wherein the multiple outlet pressure receptacle includes a support base, or skid, to facilitate movement of the pressure receptacle along a supporting surface.

3,400,733
FLOAT-CONTROLLED HYDRAULIC VALVE ARRANGEMENT

Giorgio Scoppola, Rome, Italy, assignor to Rubinetterie Stella S.p.A., Novara, Italy
Filed June 16, 1966, Ser. No. 557,977
Claims priority, application Italy, June 22, 1965, 13,874/65
5 Claims. (Cl. 137—416)

1. A float-controlled hydraulic valve arrangement, particularly for the control of a supply of water to a tank such as the tank of a water closet, the said arrangement comprising:

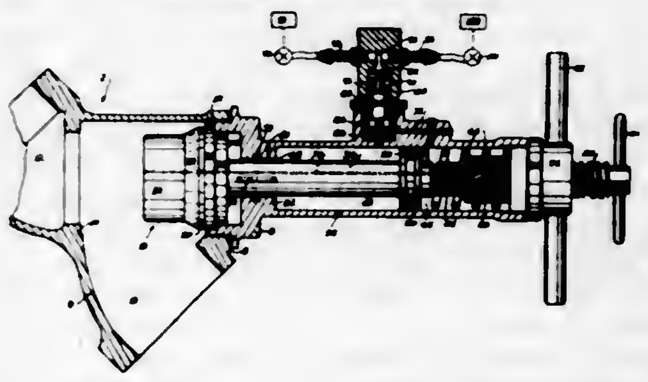
- (A) A valve body incorporating a hydraulic valve for opening and closing a passage of water to the said tank,
- (B) a lever,
- (C) a float, and
- (D) magnet stop means,



the said lever pivoted at one end to the said valve body and carrying at its other end the said float, the said float being arranged to float in the water tank and the said lever being operative by control the hydraulic valve in the valve body to which it is hinged, the said magnetic stop means being mounted to be operatively engageable with the said lever so as to exert on the said lever a force which tends to maintain the said valve open and the said float in a submerged position until the said float has sufficiently submerged for the hydrostatic forces active thereon to overcome the stop forces exerted by the said stop means on the said lever.

3,400,734
AUTOMATICALLY RESPONSIVE SHUTOFF VALVE

Peretz Rosenberg, Moshav Beit Shearim, Israel
Filed Mar. 22, 1966, Ser. No. 536,365
Claims priority, application Israel, Mar. 25, 1965, 23,222
10 Claims. (Cl. 137—495)

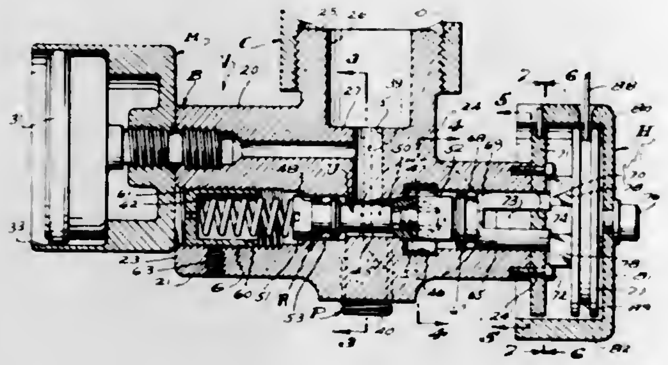


1. A valve comprising a valve housing having an inlet port and an outlet port; a valve seat between the two ports; a valve member movable from an open position away from the valve seat to a closed position against the valve seat; spring means biasing the valve member to its closed position; said valve member being disposed with respect to the inlet port so that when the valve member is in its open position the inlet pressure is applied to the front face of the valve member and normally retains the valve member in the open position against the action of said spring means; a chamber delimited at one end by a wall formed in the housing; a valve stem carried by the valve member and passing through said wall into the chamber; said valve stem carrying piston, dividing said chamber into a first compartment adjacent to said wall and a second compartment remote from said wall; a first communication path for communicating the pressure at the front face of the valve member to said second compartment; a second communication path for communicating the pressure in said second compartment to said first compartment; a third communication path for communicating the pressure in said first compartment to the rear

face of the valve member; and control means for controlling at least one of said communication paths to apply a force on the rear face of the valve member which, when added to the force of said spring means, is sufficient to move the valve member toward its closed position.

3,400,735
PRESSURE REGULATING RELEASE VALVE

Jack E. Favors, Lakeview Terrace, Gerald A. Morales, Simi, and Donald D. Champion, La Puente, Calif., assignors, by mesne assignments, to Rocket Jet Engineering Corp., Glendale, Calif., a corporation of Delaware
Filed Aug. 30, 1966, Ser. No. 576,071
10 Claims. (Cl. 137—557)

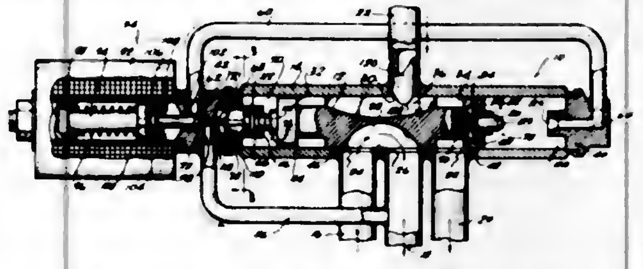


A valve structure including, an elongate body with front and rear ends, an elongate longitudinal flow passage with a forwardly disposed annular valve seat at its forward end in the body, an enlarged flow chamber communicating with the forward end of the flow passage and the seat, a plunger bore entering the front end of the body and communicating with the flow chamber, a socket entering the rear end of the body, a piston bore between and communicating with the socket and the flow passage, an inlet port in the body communicating with the rear portion of the flow passage and an outlet port in the body communicating with the flow chamber, an elongate valving unit including an elongate coupler extending longitudinally through the flow passage, a valve member on the front end of the coupler in the flow chamber and normally engaging the valve seat, a piston head on the rear end of the coupler and engaged in the piston bore, a plunger slidably engaged in the plunger bore, manually operable release means normally releasably holding the plunger in engagement with the front end of the valve member and holding said member seated on the valve seat and actuating means in the socket normally yieldingly urging the unit forwardly.

3,400,736
REVERSING VALVE

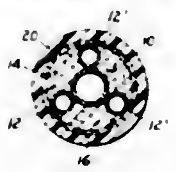
Clifford F. Bastle, Milwaukee, and John J. Lester, Brookfield, Wis., assignors to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed May 31, 1966, Ser. No. 553,770
6 Claims. (Cl. 137—625.29)

This disclosure relates to a reversing valve for a refrigeration system which includes a valve member arranged for movement to determine the direction of refrigerant flow through the evaporator and condenser of the system. A control valve is provided which selectively connects system suction line pressure to one side or the other of the valve member of the reversing valve to achieve valve member movement. The control valve is mounted directly on the body of the reversing valve and the passage in the control valve through which the suction line communicates with the reversing valve opens directly into the valve body on one side of the movable valve member. The passage is also connected to the other side of the valve member. A solid lubricant is provided between the interengaging surfaces of the valve member and the reversing valve to act as a sealing lubricant between areas which are at different pressure levels.



3,400,737
COMPOSITE TUBING PRODUCT AND APPARATUS FOR MANUFACTURING THE SAME

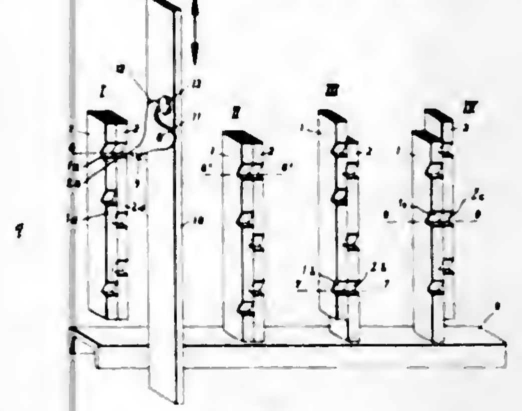
Richard A. Matthews, Chagrin Falls, and Hans A. Johansen, Mantua, Ohio, assignors to Samuel Moore and Company, Mantua, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 250,390, Jan. 9, 1963. This application July 7, 1966, Ser. No. 563,512
10 Claims. (Cl. 138—111)



A composite tubing product for conveying fluids comprising at least one fluid transmitting tube, and at least one heat transmitting tube adapted to transmit heat to the fluid being transmitted therethrough. A heat insulating layer is circumferentially disposed about the transmitting tubes to reduce the heat loss externally of the tube, and a protective sheath is disposed about the insulating layer and transmitting tubes for providing protection for the entire tubing product.

3,400,738
PILE YARN SELECTING ARRANGEMENT FOR A CARPET LOOM

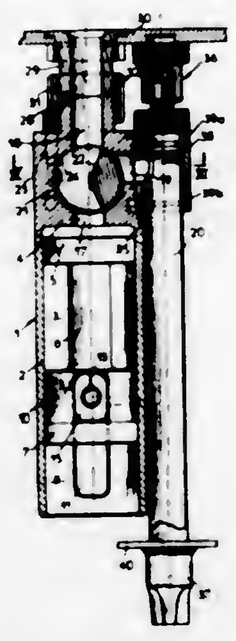
Svend Sigurd Christie Fleischer, Kroyersvej 14, Klampenborg, Denmark; Christen Carl Thomsen, Skovvej 93, Charlottenlund, Denmark; and Gottfried Gerhard Wilhelm Hofmann, am Baum 37, and Werner Heinrich Rossborg, Mooseberg 17c, both of 205 Hamburg 80, Germany
Filed Nov. 28, 1966, Ser. No. 597,324
Claims priority, application Germany, Nov. 30, 1965, F 47,789
16 Claims. (Cl. 139—2)



Each pile yarn carrier of a carpet loom is controlled by two or more selectors which are individually shifted between two positions by a Jacquard mechanism so that the selectors have a great number of different relative positions in each of which they stop the yarn carrier in a different position for supplying different yarns to a working station.

3,400,739
DEVICE FOR METERING LIQUID OR SEMI-FLUID PRODUCTS AND APPARATUS INCORPORATING THE SAME

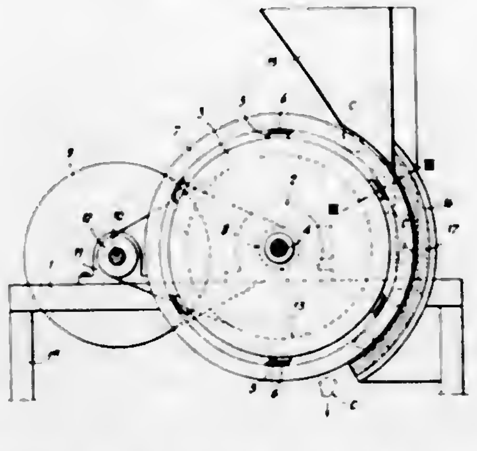
Edgar Jean Marcel Dardaine and Jean-Luc Berry, Poissy, France, assignors to E. P. Remy & Cie, Poissy, France, a French body corporate
Filed Sept. 21, 1965, Ser. No. 488,876
Claims priority, application France, Mar. 29, 1965, 11,127
29 Claims. (Cl. 141—146)



Metering device for dispensing a liquid into containers comprising a vertical piston-pump communicating with a vat and with a dispensing tube by means of a three-way cock, said tube having deformable closing means controlled by the liquid pressure. Means are provided for automatically actuating the pump piston, and the cock, for automatically feeding containers to the metering device and for automatically adjusting the relative position of the dispensing tube and of the container for constant-immersion filling.

3,400,740
VEGETABLE TRIMMING APPARATUS

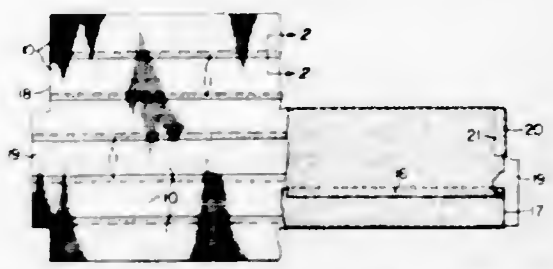
Yngve R. Åkesson, Halsingborg, Sweden, assignor to Produits Findus S.A., Vevey, Switzerland, a corporation
Filed July 6, 1966, Ser. No. 563,236
Claims priority, application Switzerland, July 8, 1965, 9,549/65
10 Claims. (Cl. 146—81)



An apparatus for trimming vegetables, particularly Brussels sprouts, having movable cutters and a channel parallel to the path of the cutters formed from a guide and a holding slide, one of which is movable relative to the other to impart to the vegetables, simultaneously, a rolling over and a translational movement along the channel.

3,400,741
METHOD OF BUILDING FABRIC ELASTOMERIC CONTAINERS AND SAID CONTAINERS

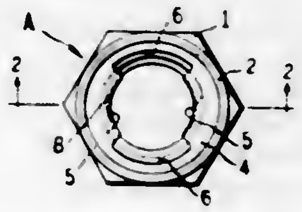
Keith D. Robinson, Mogadore, Ladislav A. Gursky, Kent, and Charles A. Suter, Cuyahoga Falls, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Continuation of application Ser. No. 274,280, Apr. 19, 1963. This application Jan. 25, 1967, Ser. No. 611,773
15 Claims. (Cl. 150—1)



A container and methods of forming said container by forming a body portion with suitable fabric, coating the fabric with a liquid polyurethane reaction mixture and a barrier layer, if desired, turning the body portion inside out to expose the former inside surface, coating the surface with a liquid polyurethane reaction mixture, closing the body portion to complete the container and attaching fittings, the said body portion being displayed by external means to facilitate the coating of the outside surface. Alternately, the closed container is inflated and coated with the liquid polyurethane reaction mixture and a barrier layer, if desired, from inside the container.

3,400,742
LOCKNUT

Katsuhiko Wakabayashi, Osaka, Japan, assignor to Takeji Wade, Osaka, Japan
Continuation-in-part of application Ser. No. 545,961, Apr. 28, 1966. This application Jan. 3, 1968, Ser. No. 695,407
2 Claims. (Cl. 151—30)

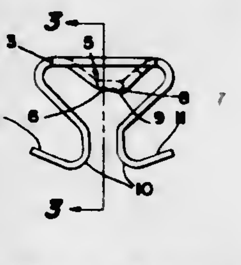


A locknut comprises a nut body and a ring of an elastic material. The upper periphery of the nut body is provided with a protrusion having a groove for receiving the ring. The ring has a diametrically opposite pair of pawls and a diametrically opposite pair of cut out portions. The ring is so disposed that the uppermost cut end of the screw thread of the nut may be positioned beneath the central portion of either of the pawls to permit the upper surface of the thread of the bolt engaged with the nut to be pressed by the pawls.

3,400,743
SHEET METAL FASTENER WITH RESILIENT ARMS

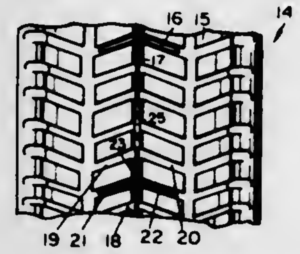
John Strange, Llanishen, Cardiff, Wales, assignor to Tinnerman Products, Inc., Cleveland, Ohio, a corporation of Ohio
Filed May 12, 1966, Ser. No. 549,510
Claims priority, application Great Britain, May 18, 1965, 21,038/65
5 Claims. (Cl. 151—41.73)

A fastening device for securement in a recess in a mounting member for connecting a part to the mounting member upon insertion of a threaded member through the device comprising a body having an aperture for receiving the threaded member, the body having thread engaging construction adjacent the aperture for threaded engagement with the threaded member, a pair of resilient arms depending downwardly from opposed ends of the



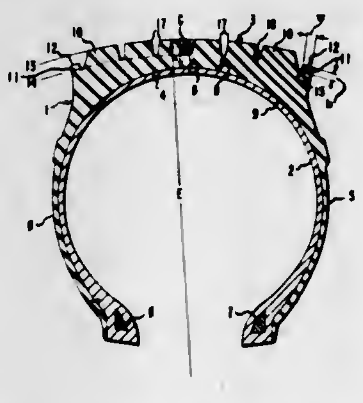
body, and the arms having laterally spaced shoulder portions between which the threaded member is to be inserted so that the extremities of the arms are moved into biting engagement with the material of the mounting member upon insertion of the threaded member through said device.

3,400,744
CLEATED PNEUMATIC TIRE
Arno Gerhard Muller, 1250 W. 102nd Place,
Denver, Colo. 80221
Filed Oct. 23, 1965, Ser. No. 503,900
3 Claims. (Cl. 152—208)



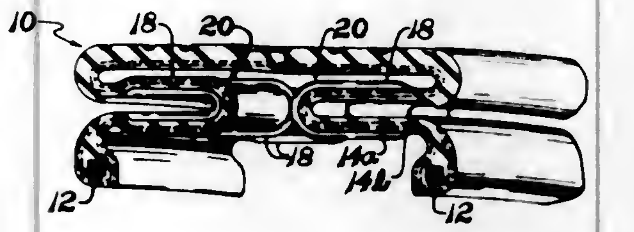
The present invention involves non-skid cleat assemblies for use with vehicular tires which may be either inherent in the tire or a separate unit capable of being removed whenever desired. The cleat assembly is designed to be retracted within the vehicular tire during non-use thereof merely by reducing the pressure of said tire; however, when the cleat assembly is to be used, the tire pressure is raised slightly thereby forcing the cleats to protrude from said tire, thus enabling the said cleats to grip the roadway in a non-skid manner.

3,400,745
PNEUMATIC TIRE
Harold G. Schwartz, Akron, Ohio, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 15, 1966, Ser. No. 565,558
3 Claims. (Cl. 152—209)



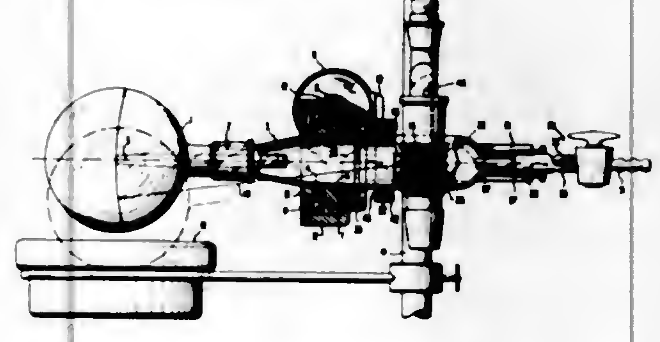
Improper use, excessive wear, and underinflation of a pneumatic tire is signaled by a tread design comprising an "added shoulder rib" adjacent to and outside at least one of the regular shoulder ribs, said "added shoulder rib" comprising a plurality of nubs spaced along the perimeter of the tire.

3,400,746
PNEUMATIC EXPANSIBLE TIRE HAVING RESILIENTLY FOLDING SIDEWALLS
John F. Helmovics, Jr., Stow, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Aug. 11, 1966, Ser. No. 571,930
6 Claims. (Cl. 152—330)



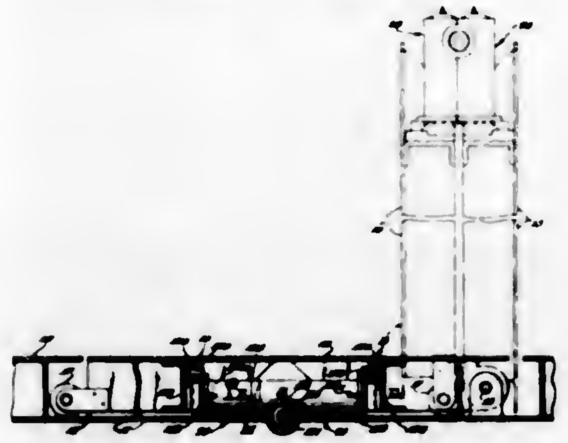
An expansible tire of the type which is inflatable to a generally toroidal shape and which collapses on deflation by having the tread and carcass portions elastically contract to a smaller diameter, and by having the sidewalls fold on themselves inside the tread is provided with a series of grooves or indentations molded in a radial direction across the foldable sidewalls. These grooves extend from a region near the beads to a region adjoining the tread margins, and each groove is narrow compared with its length. The grooves apparently resiliently stiffen the sidewalls thereby augmenting the refolding action during deflation of the tire.

3,400,747
LABORATORY FLASK EVAPORATOR
Fritz Genser, 22A Gfennstrasse, Zurich, Switzerland
Filed June 22, 1964, Ser. No. 376,848
Claims priority, application Germany, July 9, 1963, G 38,125
6 Claims. (Cl. 159—23)



A rotating flask evaporator device in which first and second hollow tube members are axially connected through a rotation joint. A flask is removably connected to the free end of the first hollow tube member and a gear is connected around the other end adjacent the rotation joint and includes a portion forming part of the joint. A motor is connected on an axis normal to the axis of the flask and hollow tube members to rotatably support the gear and also drive it to rotate the first hollow tube member and flask relative to the second hollow tube member, and the motor is also pivotally connected on a support means on an axis parallel with the motor axis and clampingly engages the first hollow tube member such that the flask, hollow tube members and motor are pivotal in a vertical arc. And a novel nozzle means is removably connected in the free end of the second hollow tube member and extends longitudinally interior of the tube members into the flask for conveying fluids thereto.

3,400,748
HATCHWAY COVERS AND PISTON LEVER HATCH ACTUATORS THEREFOR
Rollin Douglas Rumsey, Buffalo, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation
Original application July 6, 1966, Ser. No. 563,257, now Patent No. 3,370,638, dated Feb. 27, 1968. Divided and this application Dec. 1, 1967, Ser. No. 687,309
10 Claims. (Cl. 160—188)

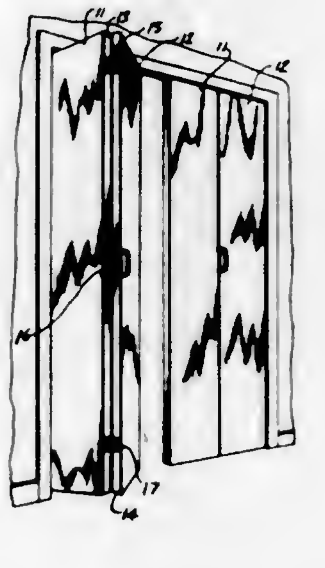


Hatchway covers and the like are operated by rotary actuators of the piston lever type of which comprises a one-piece tubular cylinder having respective opposite end closures defining with a piston reciprocable therein pressure fluid chambers into which pressure fluid is introduced for motivating the actuators. A hollow transverse head member comprising a piece of tubing is welded in an opening in the cylinder and journals a shaft to which the piston is connected by link means.

3,400,749
BIFOLD DOOR HANDLE
Leland C. Smith, 101 Thayer St.,
Syracuse, N.Y. 13210
Filed Apr. 12, 1966, Ser. No. 542,021
3 Claims. (Cl. 160—213)

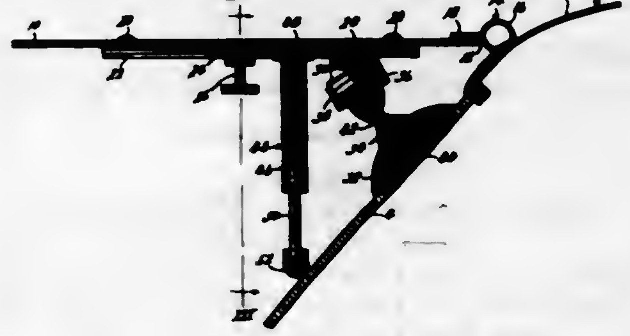
The bifold door, common in domestic and commercial architecture, needs a simple and easily grasped handle, that will be so placed on the bifold doors as to take full advantage of the mechanical leverage action present in the swing geometry of the bifold doors reducing the effort needed to operate the doors, that will keep the hands safely away from the pinching danger present in the gap between the two adjacent hinged doors when opening or closing the doors, that will allow a safe and effective grasp by either hand in operating the bifold doors, that will provide a simply manufactured handle that is inexpensive to manufacture, that will be easily installed, that will gain physical security because of the mounting position on the bifold doors. Bifold doors being constructed of a variety of materials besides the traditional wood, involving metal, plastics, laminates, as well as combinations of materials, involving a construction that uses the materials in their solid forms, or are hollow in shell or thin sheet forms, have the need for fastening the handle to the bifold door to fully take advantage of the normal motions of the swing geometry of the doors. A problem today is keeping the fabrication and assembly simple and direct so that less skilled craftsmen can adequately cope with the assembly. In maintaining the physical effectiveness of the assembly of parts, it is necessary to use edges of surfaces, or slots, or grooves made in a surface, as mechanical positioning features, that will directly absorb some of the forces of normal operation, so that an insecure assembly won't result from loose or improperly secured fasteners. To compete in today's market, simplicity of construction, as well as effectivenes of construction is needed. In the smaller living spaces and crowded quarters encountered today, using the space-saving advantage of bifold doors, the handle must be as effective as possible to fully complement the advantage accrued to the bifold door.

The effectiveness of the present invention is derived from the position of the handle in all the positions it will take, from the fully closed position of the door, to the most open position of the door. As a person stands before a complete setof bifold doors, each hand is directly in front of a handle. The first motion is a pulling to begin the opening of the doors, followed by a swinging outwardly as the door continues to open, turning to an outward push as the doors come to rest in their most open position. As the doors swing, the handle is always turned toward the operator, providing a maximum of control at all times. Reversing the procedure closes the doors.



The simplicity of installing the invention, allows a maximum of mechanical advantage and physical security because the semicircular grooves in the doors receive the ends of the door handle completely and receive a direct transfer of many forces impressed upon the handle. The simplicity of the installation is achieved by drilling a hole through both doors at the same time, the edges of the closed doors being adjacent with near edges touching, forming the centerline for the drilled hole, so that opening the doors reveals a semicircular groove that has been cut into each half of the door at the same time. This groove receives the handle end for mounting.

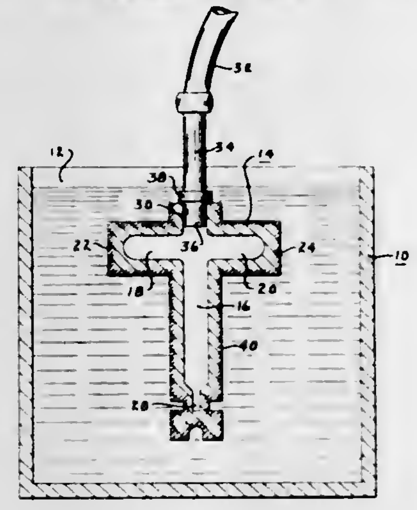
3,400,750
RAIN CANOPY FOR AUTOMOBILE WINDSHIELDS
Albert L. Smarker, 2522 Cissna,
Kansas City, Kans. 66104
Filed Aug. 15, 1966, Ser. No. 572,389
2 Claims. (Cl. 160—368)



A rain canopy for automobile windshields consisting of a flexible waterproof sheet adapted to extend horizontally over the windshield with its rearward edge having a compressible sealing member adapted to engage the automobile, a plurality of suction cups secured pivotally to said sheet beneath and adjacent the rearward edge thereof to engage the windshield, and an adjustable strut carried by said sheet forwardly of each suction cup and extending downwardly to engage the windshield below said suction cup.

3,400,751
METHOD OF TREATING CORES

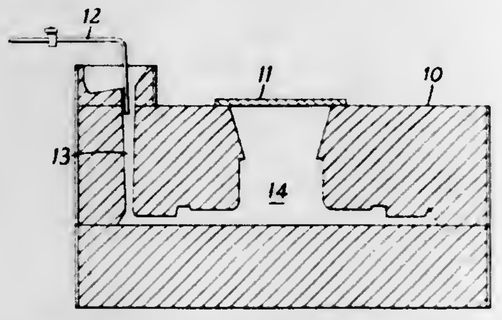
Donald A. Behnke, South Bend, Ind., assignor to Sibley Machine and Foundry Corp., South Bend, Ind., a corporation of Indiana
Filed May 9, 1966, Ser. No. 548,631
9 Claims. (Cl. 164—7)



A method of making cores, molds and similar structures which includes the steps of forming with sand and a binder a firm porous structure of the desired configuration with an internal passage, then submerging the structure in a core solution and applying vacuum to the passage for drawing the wash solution into the pores of the structure.

3,400,752
TREATMENT OF READILY OXIDISABLE METALS

William Unsworth, Swinton, England, assignor to Magnesium Elektron Limited, Swinton, England
Filed Nov. 28, 1967, Ser. No. 686,085
Claims priority, application Great Britain, Dec. 2, 1966, 54,112/66
3 Claims. (Cl. 164—66)

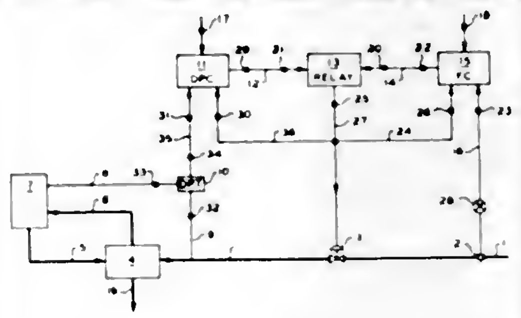


Readily oxidisable metal is protected from oxidation by applying sulphur hexofluoride to the molten metal.

3,400,753
LEAK PREVENTING CONTROL FOR HEAT EXCHANGERS

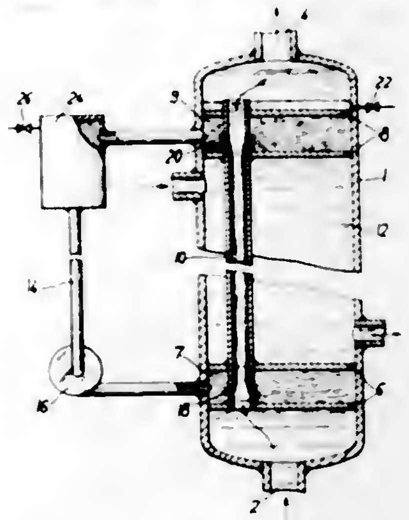
James W. Slover, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 2, 1966, Ser. No. 576,923
8 Claims. (Cl. 165—1)

A control system for an indirect heat exchanger wherein heat is extracted from a hot stream by a cold stream, whereby the flow of one or both of the streams is independently controlled at predetermined levels until a predetermined pressure differential between the two streams is exceeded, at which time the flow rate of one or both of the streams is manipulated solely to yield the predetermined pressure differential.



3,400,754
METHOD AND DEVICE FOR PROVIDING PROTECTION AGAINST SCALE FORMATION ON A HEAT EXCHANGE SURFACE

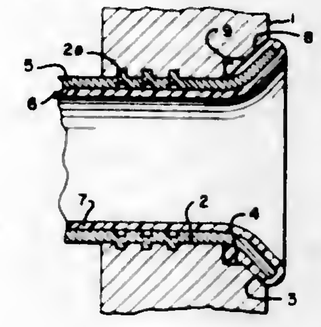
Bernard Barbu and Jean Huyghe, Grenoble, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed Sept. 20, 1966, Ser. No. 580,703
Claims priority, application France, Oct. 4, 1965, 33,671; Aug. 19, 1966, 73,500
8 Claims. (Cl. 165—1)



Scale formation on the walls of heat exchanger tubes is prevented by flowing an auxiliary liquid from an auxiliary liquid reservoir along the wall of the tube between the wall of the tube and the liquid and in the same direction as the liquid to form a protective film. This protective film is recovered from the tubes and received in a second auxiliary reservoir and is returned to the first auxiliary liquid reservoir for recirculation.

3,400,755
METHOD AND ARTICLE FOR PROTECTING CONDENSER TUBES

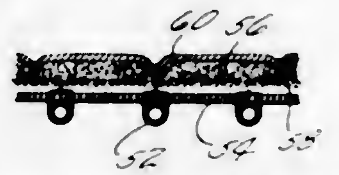
Andrew R. Banta, Bethlehem, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 2, 1967, Ser. No. 613,505
7 Claims. (Cl. 165—1)



This disclosure describes a method of protecting tubes of steam surface condensers or the like from corrosion and deterioration, and sets forth an improved plastic sleeve insert for use with the method.

3,400,756
THERMAL GARMENT AND THE CONSTRUCTION THEREOF

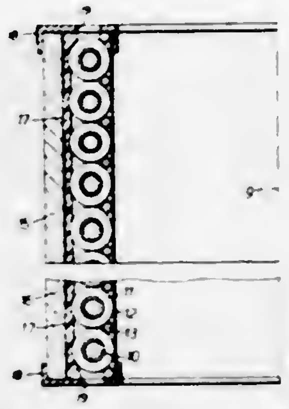
David W. Cogswell, North Wilbraham, Mass., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Jan. 7, 1966, Ser. No. 519,207
4 Claims. (Cl. 165—46)



A thermal garment constructed to include tubes secured to a fabric to encircle the wearer. A stretchable material is utilized along with the fabric so that when the stretchable material is in tension the tubes are urged against the skin of the wearer's body. An insulating covering is attached to the outer surface of the fabric.

3,400,757
TUBULAR HEAT EXCHANGER WITH ELASTOMERIC OUTER SLEEVE

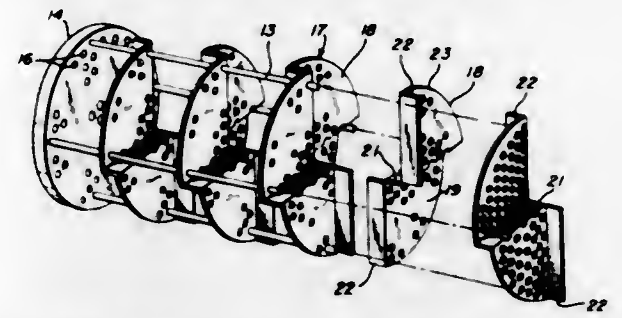
David Neil Campbell, Redditch, England, assignor to The Hymatic Engineering Company Limited, Redditch, Worcestershire, England, a company of Great Britain
Filed Dec. 30, 1966, Ser. No. 606,294
Claims priority, application Great Britain, Jan. 7, 1966, 854/66
5 Claims. (Cl. 165—134)



A heat exchanger comprising a finned tube helically wound round an inner tube which has an elastomeric sleeve shrunk round the finned helical tube and bulging inwards between its convolutions.

3,400,758
HELICAL BAFFLE MEANS IN A TUBULAR HEAT EXCHANGER

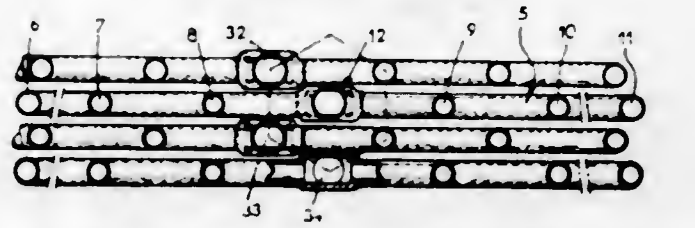
Man Suk Lee, Dayton, Ohio, assignor to United Aircraft Products, Inc., Dayton, Ohio, a corporation of Ohio
Filed May 16, 1966, Ser. No. 550,256
9 Claims. (Cl. 165—159)



A tube and shell type heat exchanger wherein the shell side fluid is caused to flow over the tubes in a helical path, baffle means being provided in the form of longitudinally spaced segmental plate elements having flow control surfaces which are perpendicular to the axes of the tubes simplifying installation and removal of the tubes.

3,400,759
HEAT EXCHANGER WITH IMBRICATED BUNDLES OF EXCHANGE TUBES

Pierre Legrand, 98 Rue de Rennes, Paris, France
Filed Oct. 18, 1965, Ser. No. 497,039
9 Claims. (Cl. 165—173)



This invention relates to a heat exchanger comprising a compact nest of straight and parallel exchange tubes disposed along the nodes of a centered hexagonal lattice, said tubes being distributed among imbricated elementary bundles having particular connections with their headers and each consisting of at least three tubes spaced from each other by pairs by a distance $\sqrt{3}$ times the side of one mesh of the lattice.

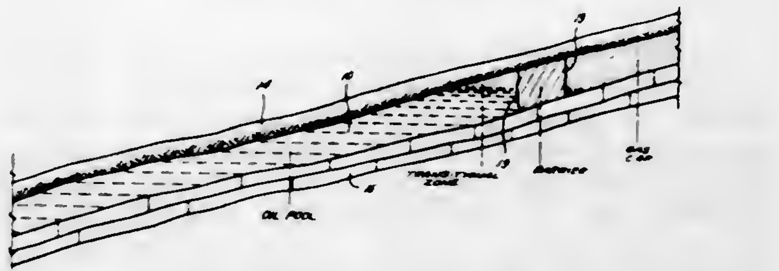
3,400,760
PETROLEUM RECOVERY BY IN SITU COMBUSTION

Joseph Orkiszewski, Houston, Tex., assignor to Esso Production Research Company, a corporation of Delaware
Filed Sept. 14, 1966, Ser. No. 579,290
10 Claims. (Cl. 166—4)

In an in situ combustion process for the recovery of oil, the available fuel is changed to more nearly equal the minimum fuel requirement for the process. The API gravity of the reservoir oil and the temperature of the reservoir are used to determine the total available fuel from the correlations set forth in FIGURES 1 and 2. The available fuel in the reservoir is changed to more nearly equal the minimum fuel requirement for the situ combustion process by injecting a fluid capable of changing either the API gravity of the reservoir oil or the reservoir temperature or both. An oxygen containing gas is then injected into the reservoir to initiate combustion. Oil is recovered from the reservoir as a result of the in situ combustion process.

3,400,761
USE OF FLUID FLOW BARRIERS IN THE SECONDARY RECOVERY OF OIL

James R. Latimer, Jr., and Gene W. Snell, Dallas, Tex., assignors to Hunt Oil Company, Dallas, Tex., a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 516,653
20 Claims. (Cl. 166—9)



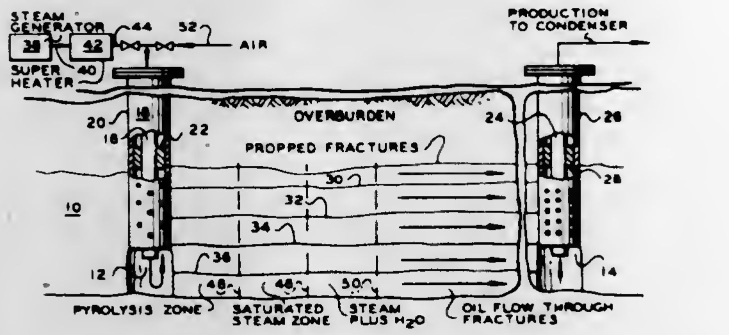
A method for working a subterranean reservoir includes effectively blocking fluid flow between the reservoir and a second reservoir by the injection between the reservoirs of a fluid blocking material having a viscosity and stability sufficient under reservoir conditions to permit maintenance of an effective fluid block; such as an aqueous solution of water-soluble, hydrolyzed polyacrylamids.

3,400,762

IN SITU THERMAL RECOVERY OF OIL FROM AN OIL SHALE

Dixon W. Peacock and Riley B. Needham, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed July 8, 1966, Ser. No. 563,779
5 Claims. (Cl. 166—11)



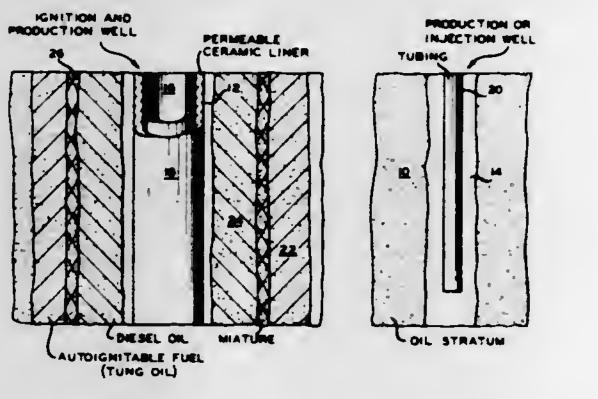
An oil shale formation penetrated by an injection well and a production well is fractured from one well to the other. A portion of the fractured formation extending part of the way between the wells is subjected to superheated steam, and oil is recovered through the production well. The steamed portion of the formation is then subjected to in situ combustion to produce additional oil in the production well. The steaming and combustion of steamed portions are alternately continued until the combustion front reaches the production well.

3,400,763

IGNITING A CARBONACEOUS STRATUM FOR IN SITU COMBUSTION

Frederick A. Klein and Maurice R. Dean, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Continuation-in-part of application Ser. No. 523,408, Jan. 27, 1966. This application June 23, 1966, Ser. No. 559,804
6 Claims. (Cl. 166—38)


IGNITION AND PRODUCTION WELL
PERMEABLE CERAMIC LINER
PRODUCTION OR INJECTION WELL
TUBING
26
16
12
18
20
22
10
20
14
DIESEL OIL
MIXTURE
AUTOIGNITABLE FUEL (TUNG OIL)
OIL STRATUM

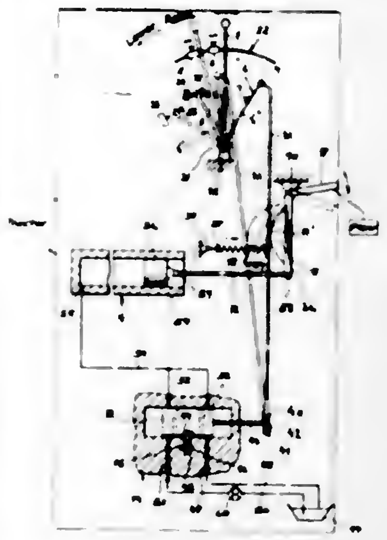
An annulus around a well in an oil stratum is burned out to improve its permeability and subsequent oil production by installing a permeable tubular ceramic liner downhole, injecting a slug of autoignitable fuel, such as tung oil, thru the liner into the oil stratum, injecting a following slug of liquid hydrocarbon miscible with said fuel to free the liner of said fuel, driving the aforesaid slugs deeper into the stratum with injected inert gas, and thereafter injecting air thru the well into the stratum to contact, ignite, and burn out the injected fuel and in-place carbonaceous material.

3,400,764

AUTOMATIC DEPTH-CONTROL DEVICE FOR SOIL-WORKING IMPLEMENTS

Walter Schneider, Schonebeck (Elbe), Germany, assignor to VEB Traktorenwerk Schonebeck, Schonebeck (Elbe), Germany, a corporation of Germany

Filed July 28, 1965, Ser. No. 475,507
6 Claims. (Cl. 172—7)



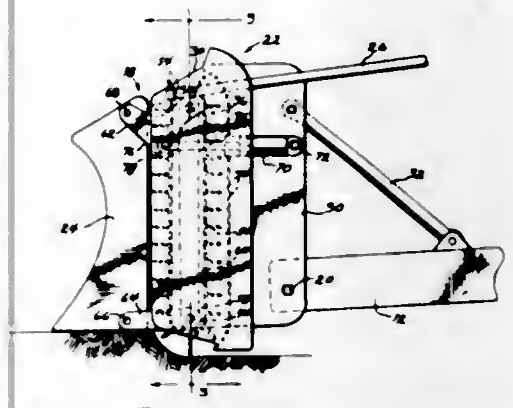
An automatic depth-control device for a plow or other soil-working implement in which a lost-motion linkage is provided for the control member which actuates a main cylinder via a valve, the lost-motion stroke permitting the implement to rise and sink in accordance with soil conditions within a limited range without correction on the part of the control valve.

3,400,765

ELEVATING DOZER BLADE

William J. Askins, Libertyville, Ill., assignor to International Harvester Company, a corporation of Delaware

Filed June 21, 1965, Ser. No. 465,447
14 Claims. (Cl. 172—63)



A material handling attachment positioned behind the dozer blade of a dozer vehicle. The attachment excavates material below the blade, elevates the excavated material above the upper margin of the blade, and deposits the material in front of the blade where it may be efficiently moved during a dozing operation.

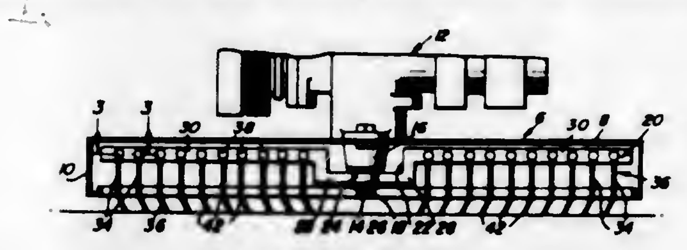
3,400,766

HOUSED ROTARY AGITATOR FOR SMOTHERING FIRES

Norman G. Foley, Rte. 1, Box 14, Matoaka, W. Va. 24736

Filed July 1, 1965, Ser. No. 468,755
2 Claims. (Cl. 172—111)

A ready-to-use attachment. Can be substituted for cutter blade on a rotary power mower. Detach the blade and bolt the attachment in place. Comprises rigid bar having depending U-shaped adapter (attachable to mower's shaft) and elevated coplanar limbs whirlable in orbital path just beneath top of blade housing and which carry distributed



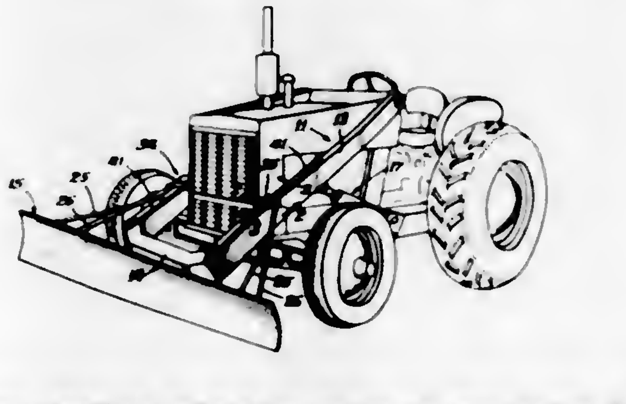
tines having offset claws below skirt of housing which (1) dig in and (2) claw the earth and flammable underbrush with force necessary to beat out the fire.

3,400,767

POWER ANGLING BULLGRADER

Ramiz Y. Hermiz, Melrose Park, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed July 21, 1965, Ser. No. 473,654
7 Claims. (Cl. 172—805)



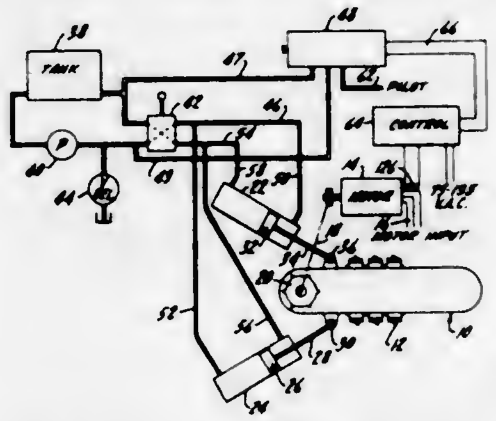
Power angling bullgrader having a supporting frame with longitudinal side arms, a blade angulatingly supported on the front of the frame, longitudinal struts trailing from pivots on the blade ends, a cooperating slide and slider interconnecting the trailing end of the strut at each side of the bullgrader and the side arm at that side, a lock on each slide and slider, including a power cylinder and a pin operated thereby to lock the slider in selected longitudinal positions on the slide, and a power cylinder to pivot the blade, when the lock pins unlock same, into a selected position of angularity.

3,400,768

CUTTING MACHINE LOAD MONITOR CONTROL

John J. Kuipers, Palos Heights, and Mustafa Kemal Ozcan, Chicago, Ill., assignors to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 16, 1966, Ser. No. 557,970
16 Claims. (Cl. 173—1)



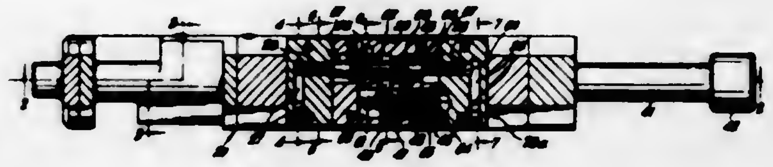
An automatic control for a cutting apparatus driven by electric power. The power used by the cutting apparatus is sensed by an electric circuit compared with a predetermined reference to control the rate of advance of the cutting member into the material to be cut.

3,400,769

HYDRAULIC SPIKE HAMMER OR THE LIKE

Hubert J. Maisonneuve, St. Laurent, Quebec, Canada, assignor to Canada Iron Foundries Limited, Montreal, Quebec, Canada, a company of Canada

Filed Mar. 2, 1966, Ser. No. 531,203
Claims priority, application Canada, Mar. 8, 1965, 925,091
8 Claims. (Cl. 173—15)



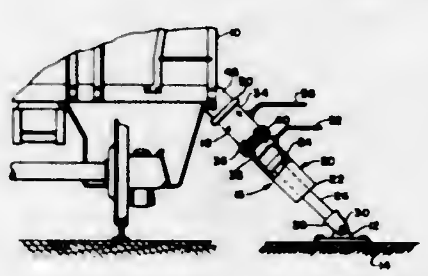
A hydraulic reciprocatory vibrator, especially suited for spike drivers, has a ram reciprocable in a bore in a main housing and a spool of a shuttle valve reciprocable in a secondary housing. Pressurized hydraulic fluid is supplied through the shuttle valve into the bore to act on the ram to move it in each direction and, after substantial movement of the ram, to pass into the shuttle valve to act on the spool to apply the pressurized fluid to the ram to reverse the direction of movement of the ram.

3,400,770

VIBRATOR APPARATUS

Carl G. Matson, 401 E. Central Blvd., Kewanee, Ill. 61443

Filed Dec. 19, 1966, Ser. No. 602,886
10 Claims. (Cl. 173—32)



A combined force-exerting device and piston type vibrator arranged in series to provide an elongated structure in which the force-exerting device is extendible to react against a fixed support and to force the vibrator into engagement with an object to be vibrated, the vibrator piston reciprocating along a path preferably coincident with the longitudinal axis of the structure and functioning to impart jolts or impacts to the object to facilitate material settling, unloading etc. of such object as where the object is a material container such as a railway hopper car or the like.

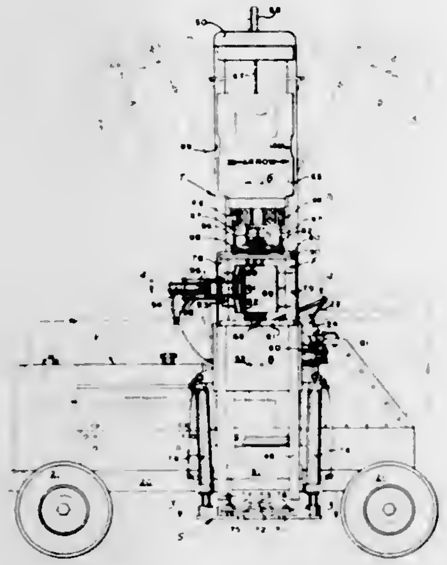
3,400,771

MOBILE PERCUSSION UNIT

Russell John Dorn, Aurora, Colo., assignor to Arrow Manufacturing Company, Denver, Colo., a corporation of Colorado

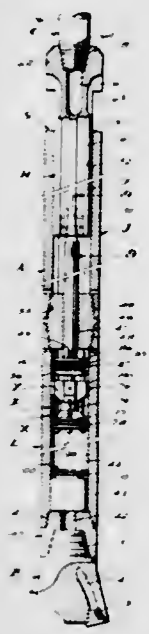
Filed May 9, 1966, Ser. No. 548,659
13 Claims. (Cl. 173—43)

The mobile percussion unit is embodied in a post driver or like apparatus mounted on a vehicle. A carriage assembly is mounted on the vehicle frame and comprises a rigid elongated frame component fixed to the vehicle in a generally horizontal attitude, with separate frame members slidably carried by the frame component for independent extension and retraction longitudinally of the frame component. One of the separate frame members carries a counterweight, while the other frame member carries a hammer tower assembly having a reciprocable hammer supported between parallel rails. The bottom end of the hammer tower is provided with a ground engaging shoe plate for guiding a post while a post guiding follower assembly is mounted between the rails below the hammer.



3,400,772
WELL DRILLING IMPACT TOOL AND APPARATUS

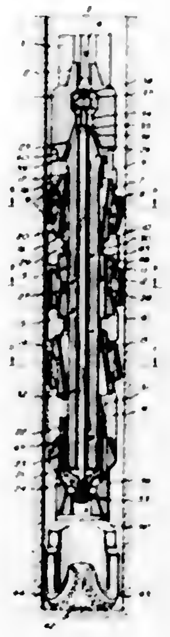
Charles J. Carr, Anaheim, and Marion Dudley Hughes, Long Beach, Calif. (both of 1111 Security Bldg., Long Beach, Calif. 90802)
Filed Aug. 11, 1966, Ser. No. 571,830
12 Claims. (Cl. 175—92)



A combination rotary and impact tool and apparatus for drilling wells including, an elongate string of fluid conducting drill pipe extending downwardly into a well structure, an elongate fluid conducting rotary drive axially extensible sub fixed to the lower end of the string of drill pipe, an elongate fluid conducting drill collar fixed to and depending from the sub, an elongate fluid conducting jack tool fixed to and depending from the lower end of the drill collar and a formation engaging bit fixed to the lower end of the jack tool, said jack tool being driven by fluid conducted through the apparatus and adapted to elevate the drill collar relative to the bit and drill pipe string, to permit the drill collar to drop and to stop downward movement of the drill collar to direct impact forces onto and through the bit.

3,400,773
REAMING TOOLS FOR WELLS BORED IN THE GROUND

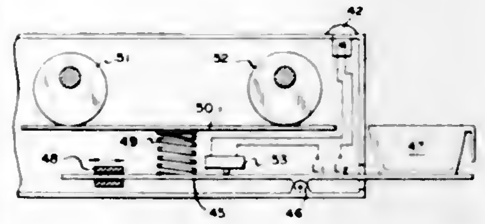
Wladimir Tiraspolsky, Issy les Moulineaux, Guy Baron, Colombes, and André Castela, Rueil Malmaison, France, assignors to Institut Francais du Petrole des Carburants et Lubrifiants, Rueil, Malmaison, France
Filed Feb. 16, 1966, Ser. No. 527,798
Claims priority, application France, Feb. 19, 1965, 6,404
9 Claims. (Cl. 175—107)



A well reaming tool has a rotatable shaft with hubs thereon for the reamers. Adjacent hubs are connected by rings mounted on the shaft. A pair of eccentric socket elements at each end of each hub connects the hub to the adjacent rings.

3,400,774
DETERGENT COMPUTER

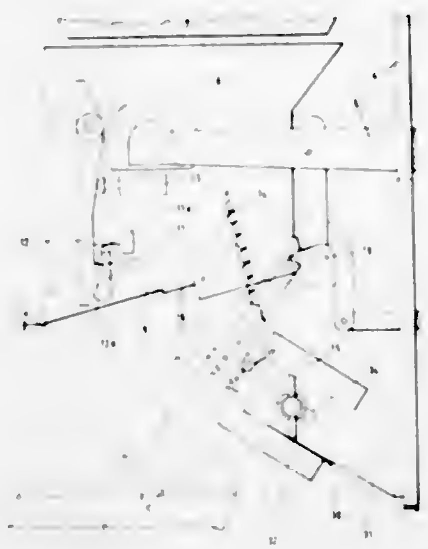
Clifton A. Cobb, St. Joseph, Anthony Mason, Benton Harbor, and James L. McConnell, St. Joseph, Mich., assignors to Whirlpool Corporation, a corporation of Delaware
Filed July 10, 1967, Ser. No. 652,230
15 Claims. (Cl. 177—71)



A detergent computer for determining the proper weight of detergent for use in a washine machine as effected by a plurality of laundry variables in which the computer includes force means for applying a counter-balancing force to the proper weight of detergent and a plurality of separate force applying means each independently variable in proportion to one of the laundry variables and all acting jointly on the force means for applying said counterbalance force.

3,400,775
AUTOMATIC WEIGHER WITH RAPPING MEANS TO AID DISCHARGE OF MATERIALS

Benjamin Mackenzie, Harrow, and Arthur Walter Forman, Ruislip, England, assignors to Driver Southall Limited, South Ruislip, England, a British company
Filed Jan. 14, 1966, Ser. No. 520,598
Claims priority, application Great Britain, Jan. 22, 1965, 2,840/65
7 Claims. (Cl. 177—113)



A weigh pan in a weighing apparatus has a pivoted discharge door which is automatically rapped in open position for more effective discharge of even sticky materials. The discharge door is first opened by the automatic release of hook-like catches when a predetermined weight is reached and then electromagnetic means attract the door to a still further open position and into rapping or impact engagement with armatures of the electromagnetic means.

3,400,776
APPARATUS FOR CONTROLLING THE BRAKING AND ACCELERATION OF MOTORCYCLES AND OTHER MOTOR-DRIVEN VEHICLES

William F. Smith, 13466 Pierce St., Pacoima, Calif. 91331
Filed Nov. 14, 1966, Ser. No. 593,841
9 Claims. (Cl. 180—33)

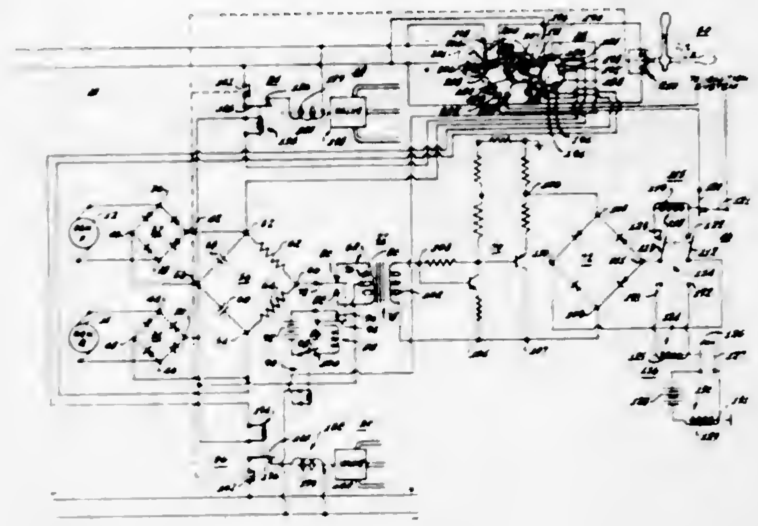
1. Apparatus for controlling the braking and acceleration of a motorcycle or other motor-driven vehicle to prevent the wheels thereof from spinning or locking, the motorcycle including front and rear wheels, a motor drive for turning said rear wheel, and front and rear wheel brakes, said apparatus comprising:

selectively operable motor power reducing means connected to said motor drive for reducing the drive to said rear wheel;

front and rear electrically controllable brake regulator means connected to said front and rear brakes, respectively, for selectively reducing the braking action of said front and rear brakes on said front and rear wheels;

front and rear electrical signal generator means for generating first and second electrical signals indicative of the rotational velocity of said front and rear wheels, respectively;

first circuit means for receiving said first and second electrical signals and for operating said motor power reducing means to reduce the drive to said rear wheel when said electrical signals are of different value and indicating that said rear wheel is turning at a higher velocity than said front wheel thereby maintaining uniform front and rear wheel velocity and thereby preventing dangerous rear wheel spinning during acceleration of said motorcycle;

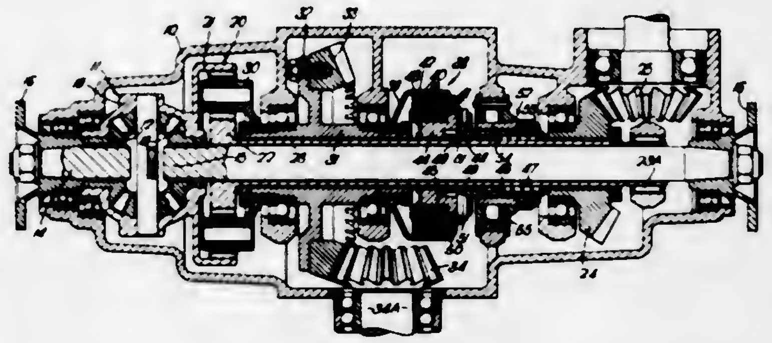


second circuit means for receiving one of said electrical signals and for operating one of said brake regulator means when said one electrical signal assumes a predetermined value to indicate that the wheel associated with said brake regulator means is or is about to lock, thereby preventing said wheel from locking and said motorcycle from skidding;

and switch means for selectively coupling said first circuit means to said motor power reducing means and said second circuit means to said one of said brake regulator means.

3,400,777
MOTOR VEHICLES HAVING FOUR-WHEEL DRIVE

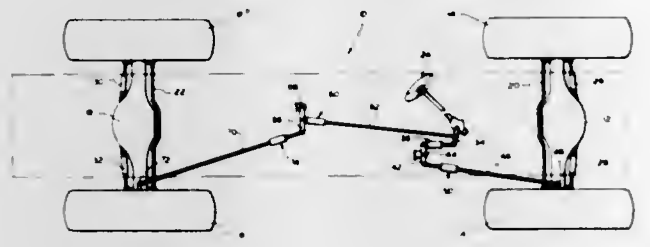
Claude Hill, Kenilworth, England, assignor to Harry Ferguson Research Limited
Filed Jan. 19, 1966, Ser. No. 521,731
Claims priority, application Great Britain, Jan. 23, 1965, 3,070/65
21 Claims. (Cl. 180—44)



In a four-wheel drive motor vehicle, drive is taken from a rear mounted engine by way of a change-speed gear box to a compact transmission unit positioned between the rear wheels and containing, in the one casing, a centre differential gear and the rear interwheel differential gear. The centre differential gear and the rear interwheel differential gear are mutually co-axial. Differential action of the centre differential gear is limited by a one-way overrunning control clutch so that the centre differential gear locks when front wheel speed tends to exceed rear wheel speed by more than a predetermined amount. The casing also incorporates drive transfer gearing to the rear end of a forwardly extending propeller shaft, the front axle ratio and the ratio of the transfer gearing being such that a predetermined "working" of the centre differential gear occurs during normal forward drive, and is used to maintain an unlocked condition of the control clutch during normal forward drive.

3,400,778
FOUR-WHEEL FLUID STEERING SYSTEM

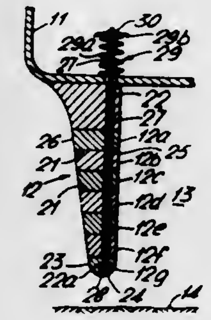
Eugene F. Hand, Stevensville, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Sept. 25, 1967, Ser. No. 670,196
3 Claims. (Cl. 180—79.2)



A vehicle having two pairs of dirigible wheels which are controlled by a steering system. The steering system includes a first valve for controlling pivoting of one of the pairs of wheels and a second valve for controlling pivoting of the other of the pairs of wheels. Follow-up linkage is connected between each valve and the respective pair of wheels and includes fluid operated mechanism for changing the length of the linkage in order to actuate the associated valve so that both pairs of wheels pivot in the same direction. The connection of the mechanism to the source of pressurized fluid is reversible and responsive to the position of the direction selector for the vehicle.

3,400,779
FLEXIBLE WALL STRUCTURE FOR AIR CUSHION VEHICLES

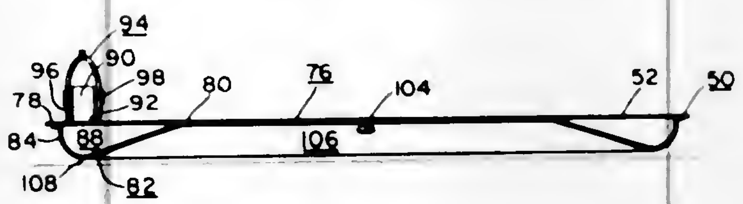
Herbert Willoughby Grace, Northwood, Middlesex, England, assignor to Hovercraft Development Limited, London, England, a British company
Filed May 17, 1966, Ser. No. 550,793
Claims priority, application Great Britain, May 25, 1965, 22,265/65
20 Claims. (Cl. 180—118)



A gas cushion vehicle is provided with a flexible wall structure for laterally containing at least part of the gas cushion which includes one or more stacks of individually formed wall members mounted one on top of the other, each stack including a flexible wire fixed to the wall member at the bottom of the stack and extending upwardly through the stack, and means for resiliently maintaining the wire under tension so as to normally urge adjacent wall members of the stack into abutment with each other. The stacks either are arranged to form a substantially continuous wall structure, or are spaced apart and provided with a flexible impervious membrane which forms a gas-tight enclosure for the cushion. The individual wall members in each stack are arranged to be angularly deflected relative to one another, and may be so constructed that some members may be deflected more easily than others in specified directions. The wall structure may also be provided with means for varying the tension in the wire of each stack so as to vary the resistance of the members of the stack to deflection when the vehicle passes over obstacles.

3,400,780
AIR CUSHION LOAD SUPPORTING DEVICE

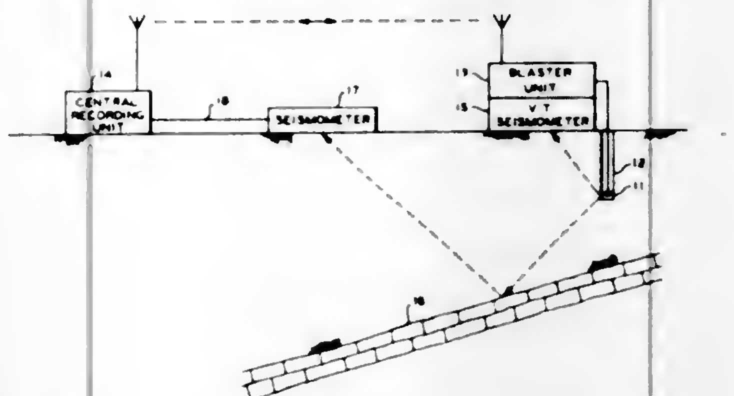
Keith K. Kesling, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 1, 1966, Ser. No. 524,011
5 Claims. (Cl. 180—124)



In preferred form, an air load combination including a load having a base with a predetermined shape, an air cushion device on the base including a rigid plate connected to and congruous with the base, a flexible diaphragm below the rigid plate having outer and inner peripheral edges connected to the plate, a shallow convolution in the diaphragm connecting the edges thereof and defining an inflatable chamber of annular form located immediately below and continuously around the peripheral edge of both the plate and the load base, the convolution being held by the peripheral edges against lateral movement with respect to the plate to maintain a stable inflated air cushion plenum within the convolution in part defined by a planar extent on the rigid plate having an area substantially congruous with the planar area of the plenum chamber itself.

3,400,781
SEISMIC FIRING AND RECORDING SYSTEM

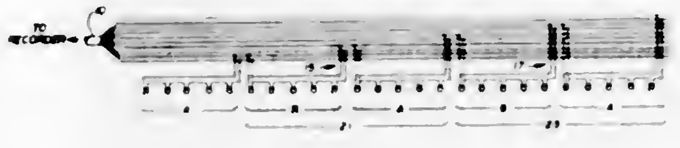
Orin C. Montgomery and William N. Doggett, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 28, 1966, Ser. No. 597,442
9 Claims. (Cl. 181—.5)



The manual actuation of a tone generator in a central seismic control unit produces a first signal of a first predetermined frequency which energizes a manually actuated arming relay to connect the output of the tone generator to a signal transmitting means. A recorder subsequently actuates the tone generator to produce a second signal of a different predetermined frequency which causes a delayed de-energization of the arming relay. The transmitted signals are received at the shot hole unit and are applied to an F.M. detector and a tuned circuit. An arm relay is connected to the output of the tuned circuit to actuate switching means to pass the output of the detector to a firing circuit. A time break signal and a vertical time signal are transmitted from the shot hole unit to a recorder at the central control unit.

3,400,782
CLOSE SUBSURFACE SEISMIC PROFILING SYSTEM

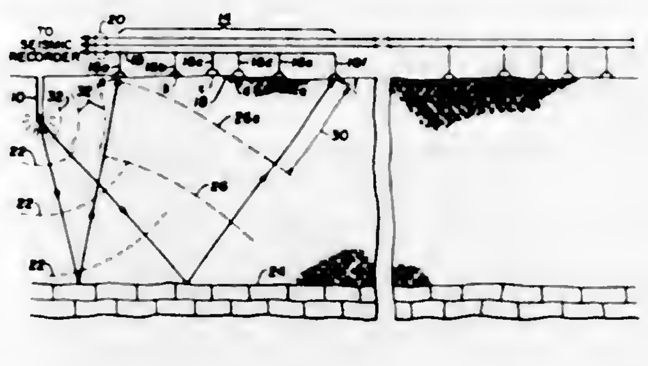
Theodore S. Green, 2919 E. 70th Court, Tulsa, Okla. 74105
Filed Dec. 22, 1966, Ser. No. 603,894
7 Claims. (Cl. 181—.5)



A method of achieving a greater amount of subsurface profiling information in seismic surveying by switching effective geophone spread locations to obtain a synthetic readout without physical movement thereof. The method permits the utilization of typical seismic geophone patterns in conjunction with two separate shots at each given, and usually further spaced, shot points. An additional embodiment discloses a method of achieving closely spaced subsurface profiling or depth points by not only utilizing the first embodiment but also changing the location of subsequent shot holes relative to the fixed geophone locations.

3,400,783
CENTROID SPACED SEISMIC TRANSDUCER ARRAY

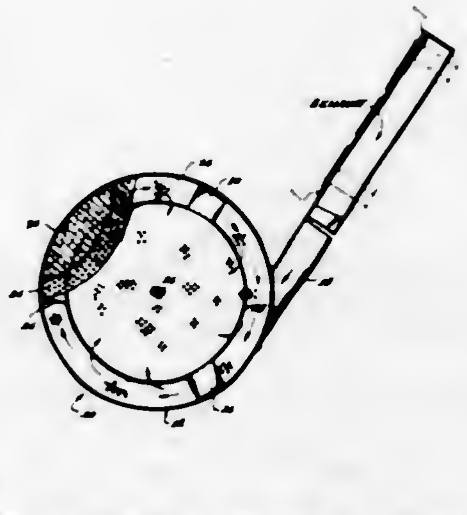
Eugene K. Lee, Dallas, and Clyde W. Kerns, Irving, Tex., assignors to Mobil Oil Corporation, a corporation of New York
Filed Dec. 27, 1966, Ser. No. 604,855
13 Claims. (Cl. 181—.5)



The specification discloses an inline seismic transducer array for attenuating horizontally traveling noise waves. The output of each transducer is combined to produce a wavenumber response which approaches an ideal low-pass filter in the important low wavenumber region near the pass band. The transducers of the array are of substantially equal sensitivity and are spaced apart at unequal intervals that are in relative proportion to each other according to the intervals between the centroids of the same number of equal areas under the curve of a truncated sinc function. (A truncated sinc function is the major lobe of the Fourier transform of the desired ideal low-pass wavenumber filter and is of the form sin x/x.) Thus, the impulse response of the array comprises equally weighted samples, spaced apart unequal distance intervals, which represent, a centroid approximation to equal areas under a truncated sinc function.

3,400,784
MUFFLER WITH TANGENTIAL EXHAUST INTAKE AND POROUS ENDS

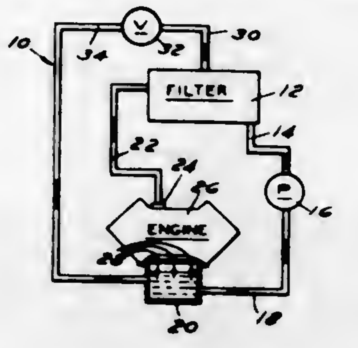
Shannon O. Thrasher, 7116 Laurel Canyon Blvd., North Hollywood, Calif. 91605
Continuation-in-part of application Ser. No. 432,490, Feb. 15, 1965. This application Oct. 19, 1965, Ser. No. 505,124
21 Claims. (Cl. 181—40)



A muffler construction particularly suited for use with low power, 2-cycle internal combustion engines. The muffler comprises generally a cylindrical housing with highly porous ends and a tangential exhaust intake. In two species of the muffler, sound deadening material is placed adjacent the ends within the housing and separated with a porous annular band concentric with the housing. In two other species a series of concentric annular configurations formed of pluralities of arcuate metal plates are mounted between the ends of the housing.

3,400,785
ENGINE LUBRICATION SYSTEM

Ivis J. Allen, Ann Arbor, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 581,847
3 Claims. (Cl. 184—6)



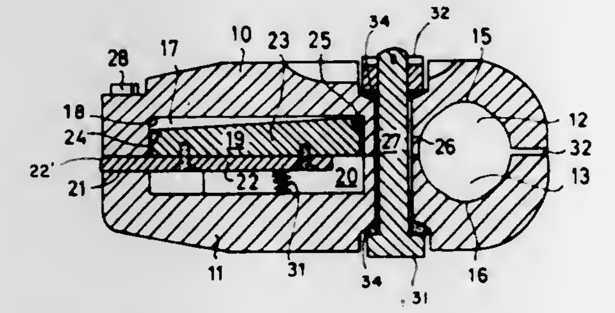
1. A lubrication system for an internal combustion engine having lubricant input means and lubricant exit means communicating with a lubricant sump, the system including a centrifugal filter, first conduit means com-

municating between said sump and said filter, pressure developing means operatively connected with said first conduit means for forcing lubricant under pressure from said sump to said filter, second conduit means communicating between said filter and said engine lubricant input means, third conduit means communicating between said filter and said sump, a pressure relief bypass valve operatively connected with said third conduit means, said filter comprising a housing defining a filtering chamber and having two opposed end walls and a side wall, said housing having an aperture formed through each of said end walls and an aperture formed in said side wall, one of said end wall apertures communicating with said first conduit means, the other of said end wall apertures communicating with said second conduit means, said side wall aperture communicating with said third conduit means, a rotatable shaft journaled in said end walls and extending through said chamber, means operatively connected to said engine for rotating said shaft, impeller means rotatably mounted on said shaft proximate said one end wall aperture, and a plurality of spaced filtering means rotatably mounted on said shaft causing a plurality of laminar lubricant layers to be formed between said spaced filtering means, various of said laminar layers moving at different velocities when measured at points equidistant from said shaft.

3,400,786
FRICTION BRAKE FOR A TUBULAR MEMBER

Albert Meerik, Alvsjo, and Hartvig Soe, Hagersten, Sweden, assignors to Misomex Aktiebolag, Hagersten, Sweden

Filed Nov. 28, 1966, Ser. No. 597,416
Claims priority, application Sweden, Dec. 2, 1965, 15,632/65
15 Claims. (Cl. 188—67)



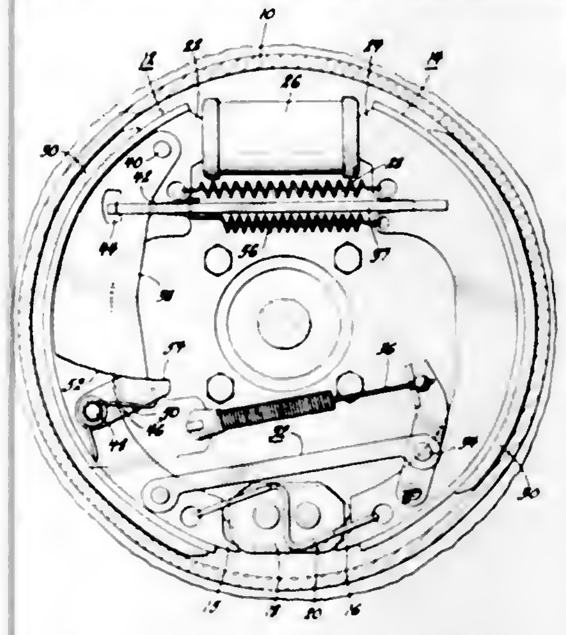
A high precision brake for a longitudinally moving shaft. Two opposing members held in generally abutting relationship with each other for rocking movement about an axis have first recesses on one side of the rocking axis to encircle the shaft and an actuating means on the other side of the rocking axis. The actuating means includes an integral actuating plate in continuous abutting relationship with the first and second members and mounted for pivotal movement, when acted upon by a sufficient force, to urge the first two members apart thereby urging the first two members together on the opposite side of the rocking axis to engage the shaft.

3,400,787
DUO-SERVO PARKING BRAKE COMBINED WITH NON-SERVO SERVICE BRAKE

Norbert L. Keller and Jack T. Cornillaud, Dearborn, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 15, 1965, Ser. No. 514,010
8 Claims. (Cl. 188—106)

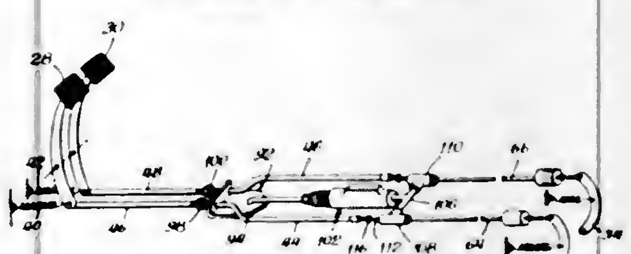
In the preferred form, the present invention relates to the braking mechanism which has a non-servo conventional braking capability with a duo-servo parking brake capability. In addition, a link between the two brake shoes providing the duo-servo parking brake capability also functions as an element in the automatic adjusting mechanism establishing a base from which the brake shoes are adjusted relative to the drum during brake lining wear.



3,400,788
BALANCED BRAKE SYSTEM

Robert S. Brace, Memphis, Tenn., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Original application Dec. 9, 1965, Ser. No. 512,688, now Patent No. 3,376,078, dated Apr. 2, 1968. Divided and this application Aug. 21, 1967, Ser. No. 661,913
2 Claims. (Cl. 188—152)

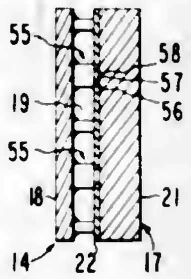


A balanced brake system having a pair of pedals, master cylinder and valve structures interconnected to provide a common body of fluid between the brakes of both wheels when both pedals are simultaneously actuated and independent bodies of fluid when the pedals are individually operated.

3,400,789
DISC BRAKE FRICTION PAD AND DISC BRAKE SYSTEM

Carlo A. Mione, San Leandro, Calif., assignor to Ralph L. Mossino, Foster City, and Harry E. Aine, Palo Alto, Calif.

Filed July 1, 1966, Ser. No. 562,292
25 Claims. (Cl. 188—264)

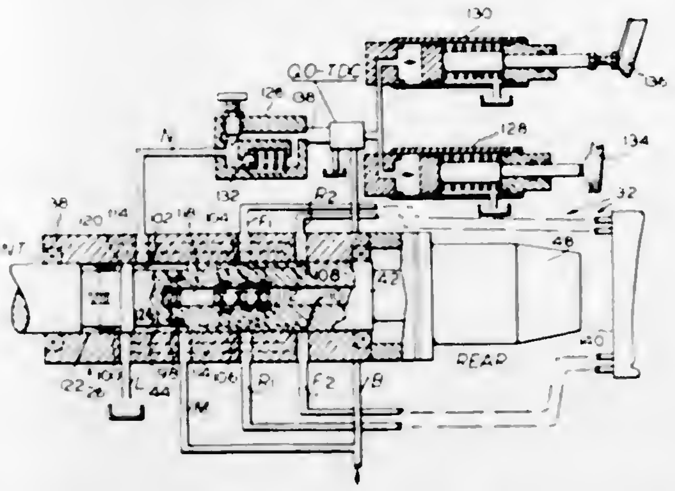


A friction pad assembly includes a pad of metallic brake lining friction material supported by pedestals spaced from a base plate to define an air space between the base plate and pad of friction material vented to the assembly's surroundings. The assembly is positioned between a disc and actuator of a disc brake system.

3,400,790
VALVE AND MOTOR-BRAKE CONTROLS OPERATED THEREBY

Charles A. L. Ruhl, 1 S. 531 Golf Lane, Wheaton, Ill. 60187, and Edward Mayer, 2226 S. 6th Ave., North Riverside, Ill. 60546

Original application Feb. 3, 1966, Ser. No. 524,692. Divided and this application July 31, 1967, Ser. No. 668,978
4 Claims. (Cl. 192—3)

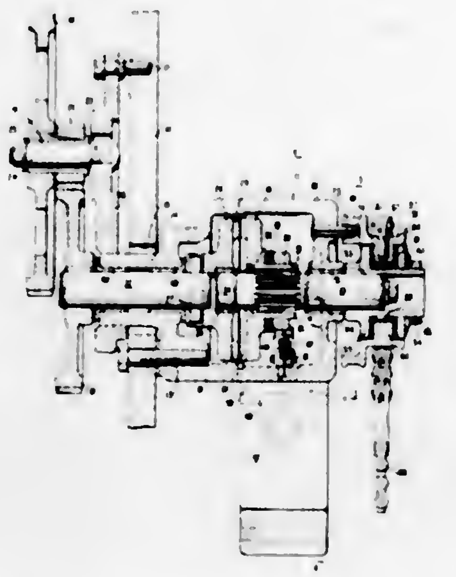


Multiway forward-reverse range valve selectively shiftable from neutral into combined rotated and reciprocated positions to co-ordinate the power components of a vehicle as it is made to reverse direction. The valve is effective to selectively connect, disconnect, or reversely connect clutch pack ports with inlet pressure on angular movement of the value to an angular position with axial movement thereof to a position depressed partially or more, and further effective selectively to connect or disconnect a deceleration and braking cylinder port with inlet pressure upon axial movement respectively to the undepressed position or to any depressed position aforesaid.

3,400,791
RING RAIL LOWERING MECHANISM HAVING OVERLOAD SLIP CLUTCH

Joe Kent Garrison, Greenville, S.C., Walter Engels, Tryon, N.C., and Coy V. Jones, Sr., Greer, S.C., assignors to Southern Machinery Company, Greer, S.C., a corporation of South Carolina

Continuation-in-part of application Ser. No. 549,239, May 11, 1966. This application Nov. 20, 1967, Ser. No. 684,335
11 Claims. (Cl. 192—12)

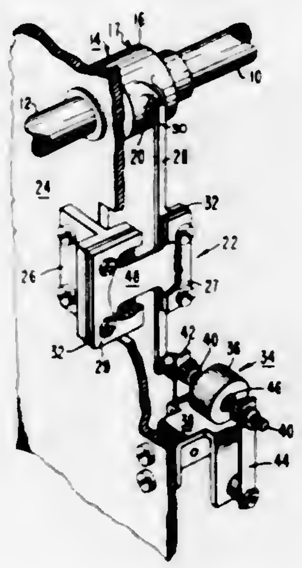


The provision of an overload protection slipping clutch means in the power train between the front draft roll of a spinning frame and the ring rail of such frame so that abrupt stopping of the rail at any time will not produce damage or failure of intervening gears or mechanical clutch parts in the power train.

3,400,792
RESILIENT-CANTILEVER MOUNTING OF IMPACT RECEIVING MEMBERS UTILIZING FLEXIBLE SUSPENSION

Frank A. Houghton, Detroit, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Apr. 21, 1967, Ser. No. 632,763
4 Claims. (Cl. 192—22)

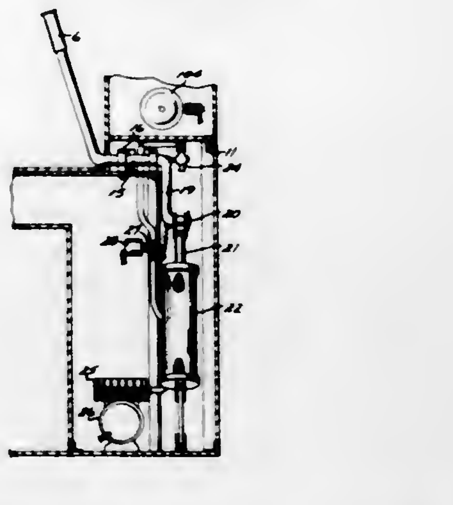


A resilient beam mounting allowing operation of an impact receiving member in different senses of motion. One sense of motion is the deflection of a long cantilever under impact loads applied at the free end. Another sense of motion is the twisting of a short operating beam to rotate the impact receiving member into and out of the path of the impact device. A simple, reliable and accurate mounting provides each of the aforementioned unique beam lengths from a single cantilever spring.

3,400,793
AMUSEMENT DEVICE

Coma F. Norris, 800 E. Ocean Blvd., and Morris B. Buskirk, both of Long Beach, Calif. 90802, and George Winn, 7381 Katella Ave., Stanton, Calif. 90680; said Buskirk assignor to said Norris

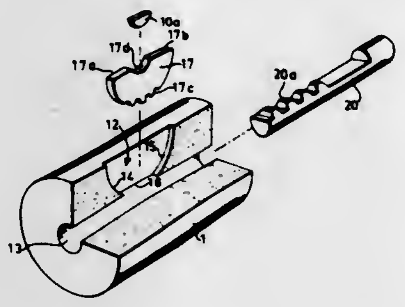
Filed Nov. 23, 1965, Ser. No. 509,272
5 Claims. (Cl. 194—12)



A power operated device with which an operator or player may pit his strength against a pivotally supported arm associated therewith that tends to resist movement.

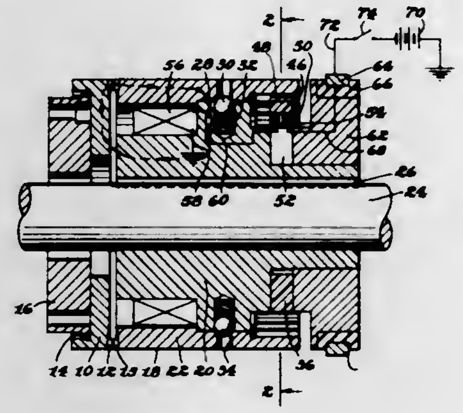
and in so doing, simulates the action obtained in the popular competitive pasttime of Indian wrestling.

3,400,794
SELECTIVE MULTIPLE CLUTCH
Harald Almgren, Roslags-Nasby, Sweden, assignor to Blomqvists Verkstadsaktiebolag
Filed June 20, 1966, Ser. No. 558,766,
Claims priority, application Sweden, July 1, 1965, 8,714/65
4 Claims. (Cl. 192—48.91)



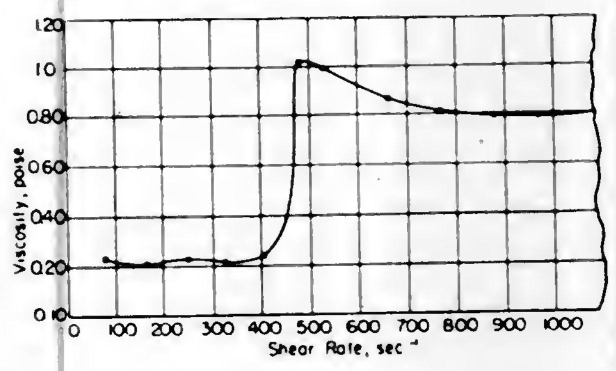
Either of two rotatable members may be selectively coupled to a shaft by means of a clutch in the form of a semicircular plate radially disposed in a slot in the shaft and having teeth that mesh with teeth on an axially slidable control rod within the shaft, so that upon movement of the control rod in either direction, one end or the other of the semicircular segment will project out of the shaft slot into a radially disposed slot in the one of the two rotatable members that it is desired to engage for rotation with the shaft.

3,400,795
ELECTROMAGNETIC CLUTCH WITH TORQUE RESPONSIVE DISCONNECT MEANS
Donald L. Miller, Horseheads, N.Y., assignor to The Bendix Corporation, a corporation of Delaware
Filed Mar. 8, 1967, Ser. No. 621,533
4 Claims. (Cl. 192—56)



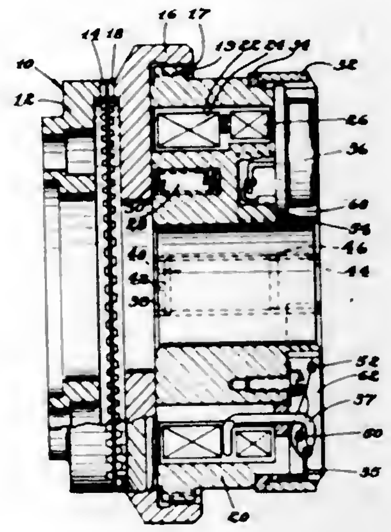
An electromagnetic clutch having an over-torque triggered centrifugal disconnect mechanism. The disconnect mechanism consists of a deactivating switch in a circuit with an electromagnetic actuating coil which is controlled by a centrifugal weight member. The centroid of mass of the weight member is normally offset from its spin axis in a direction such that it has no influence on the deactivating switch. On obtaining an over-torque condition, a slight amount of relative slip between clutch members (slip clutch) causes a displacement of the centrifugal weight member sufficient to move its centroid on the opposite side of the spin axis. This action, in effect, arms the weight member such that by means of centrifugal force, it will deactivate the clutch through the deactivating switch.

3,400,796
POWER TRANSMISSION DEVICE EMPLOYING A SHEAR THICKENING LIQUID
Joseph G. Savins, Dallas, Tex., and Arthur B. Metzner, Wilmington, Del., assignors to Mobil Oil Corporation, a corporation of New York
Filed Aug. 10, 1966, Ser. No. 571,548
8 Claims. (Cl. 192—58)



An improved power transmission device is provided comprising driving and driven members in axially spaced relationship with a shear-thickening liquid in the space between said members. The driving and driven members each comprise a flat or cone-shaped rotatable element and the driving member is able to rotate the driven member through the increased viscous resistance of said liquid.

3,400,797
ELECTROMAGNETIC CLUTCH OR BRAKE WITH DUAL COILS
John W. Horn, Horseheads, and Glenn S. Spencer, Big Flats, N.Y., assignors to The Bendix Corporation, a corporation of Delaware
Filed July 5, 1966, Ser. No. 562,687
4 Claims. (Cl. 192—84)

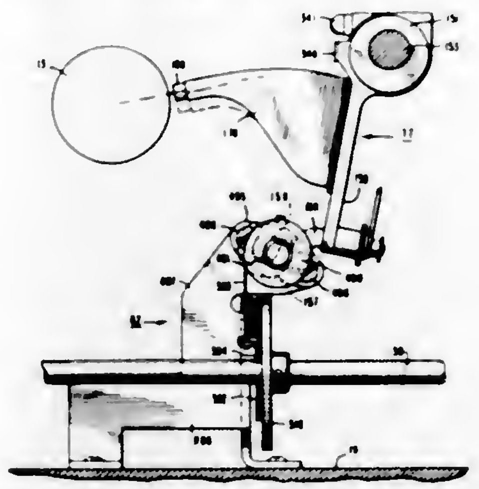


An electromagnetic torque exchanging device. The armature, as one torque exchanging member, is biased toward the other torque exchanging member and the torque exchanging contact is terminated by energization of plural electromagnetic coils which causes the armature to separate from the other torque exchanging member. When the torque exchanging relation is terminated, switching means reduce the flux to a level sufficient to maintain the non-torque exchanging mode by automatically short-circuiting all of the electromagnetic coils but one.

ERRATUM

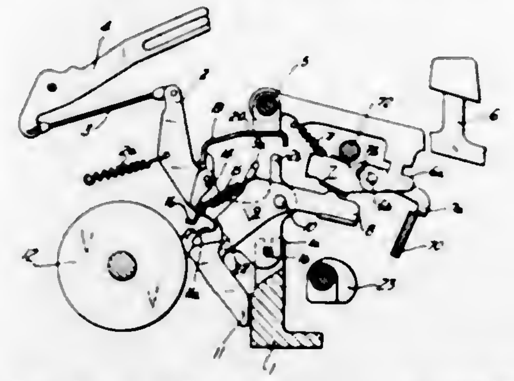
For Class 194—12 see:
Patent No. 3,400,793

3,400,798
LAST CHARACTER VISIBILITY MECHANISM FOR A MATRIX PAGE PRINTER
Henry E. Smith, Brockport, N.Y., assignor to Friden, Inc., a corporation of Delaware
Filed Aug. 21, 1967, Ser. No. 661,915
7 Claims. (Cl. 197—1)



A last character visibility mechanism for a serial character matrix page printer wherein a print head carrier structure is linearly movably guided along a longitudinal platen for character printing in a printing position in response to character signal pulses and the character structure is depressed to a last character visibility position after each character printed in the event that the time period between character signal pulses exceeds a given time period.

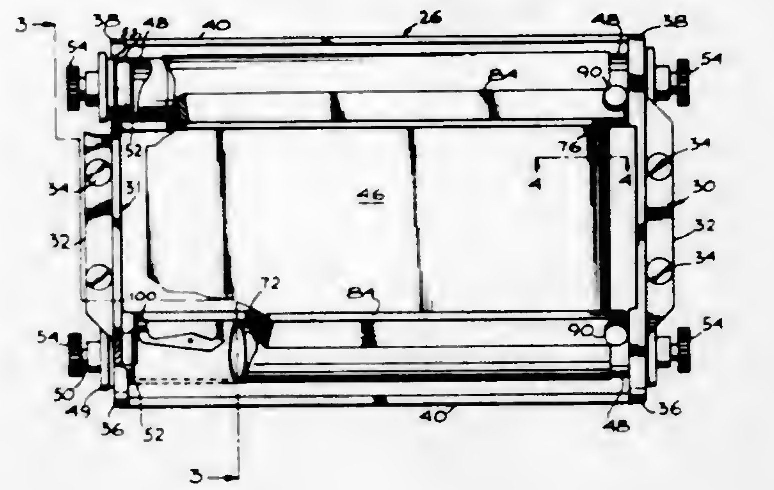
3,400,799
HIGH SPEED TYPE ACTION
Walter Stuiber, Nurnberg, Germany, assignor to Grundig Elektro-Mechanische Versuchsanstalt Inh. Max Grundig, Furth, Bavaria, Germany
Filed Apr. 25, 1967, Ser. No. 633,467
Claims priority, application Germany, Apr. 30, 1966, G 46,751
10 Claims. (Cl. 197—17)



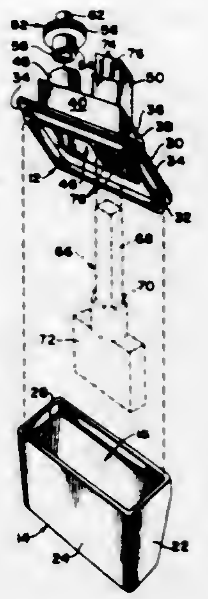
A type action has a first lever connected with the type bar and a second lever driven by power roll, and pivotally connected with the first lever. A spring biased coupling member on the first lever cooperates with a coupling recess on the second lever so that the first and second levers are coupled after the second lever is released by the power roll, and remain coupled until the levers have returned to the position of rest whereby bouncing back of the second lever is prevented.

3,400,800
PRINTING RIBBON SUPPORT APPARATUS INCLUDING RIBBON GUIDE MEANS
Norman McMillan, Santa Monica, Calif., and Claude H. Foret, Toulon, France, assignors to Data Products Corporation, Culver City, Calif., a corporation of Delaware
Filed Aug. 16, 1965, Ser. No. 479,707
3 Claims. (Cl. 197—151)

An apparatus for supporting a printing ribbon for use in a high speed printing system in which the ribbon is moved between a hammer bank and a rotatable character drum. The apparatus includes first and second spaced rotatably mounted mandrels for respectively carrying first and second tubes to which opposite ends of a wide printing ribbon are secured. Guide means are provided adjacent the ribbon edge for preventing lateral ribbon movement. Additionally, closely spaced guide bars are disposed adjacent opposite surfaces of the ribbon for preventing the ribbon from folding upon itself as a reaction to the restricted lateral movement.



3,400,801
REUSABLE INKING CARTRIDGE
Oscar W. Swenson, Cedar Grove, N.J., assignor to The Western Union Telegraph Company, New York, N.Y., a corporation of New York
Filed Oct. 23, 1965, Ser. No. 503,715
4 Claims. (Cl. 197—171)



Simply stated, the present invention contemplates providing a relatively large wick reservoir having a square or rectangular wick opening to accommodate a flat wick of rectangular cross section. In addition a secondary wick, or transfer wick of substantially slender string-like nature is provided on the cover of the reservoir to remain in contact with the square wick and the printing ribbon on a printing machine so as to actually transfer the ink onto the ribbon at a more controlled rate. In addition a removable stopper on the reservoir also functions as a vent. The removable stopper makes possible refilling and reusing of the reservoir.

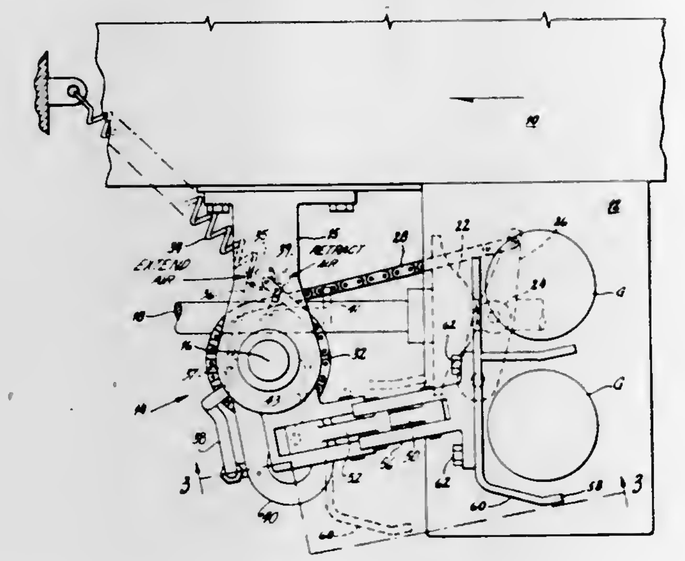
3,400,802

APPARATUS FOR MOVING NEWLY FORMED GLASSWARE ARTICLES ONTO A CONTINUOUSLY MOVING CONVEYOR

George E. Rowe, Wethersfield, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut

Filed Dec. 29, 1966, Ser. No. 605,924

4 Claims. (Cl. 198—20)



A fluid motor is mounted on a base so that both move horizontally through 90 degrees. The motor has a vertically reciprocable portion connected to the longer of two levers, which levers carry glassware engaging means for sweeping the ware from a deadplate onto an adjacent conveyor. As a result of the lengths of the two levers the cantilevered portion of the means for so sweeping the ware drops downwardly toward the ware during retraction of the fluid motor to minimize the likelihood of toppling the ware being taken away by the conveyor.

3,400,803

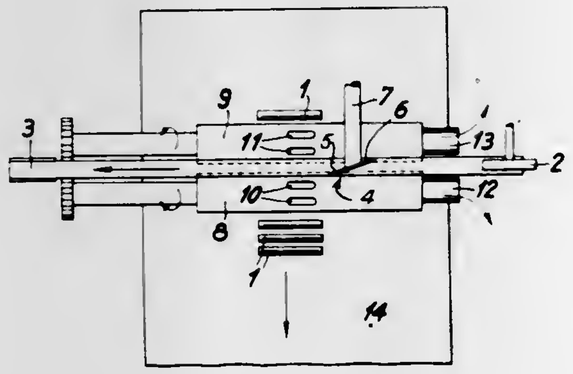
METHOD AND DEVICE FOR SETTING CIGARETTES SIDE BY SIDE

Raymond Lanore, Paris, France, assignor to Usines Decoufle, Societe Anonyme, Paris, France, a French company

Filed Nov. 25, 1966, Ser. No. 596,852

Claims priority, application France, Dec. 22, 1965, 43,305

4 Claims. (Cl. 198—31)



Cigarettes are fed longitudinally on a conveyor and accelerated to form gaps in the line. Cigarette transfer means forms two rows of cigarettes via the expedient of a transverse shaft located over the conveyor wherein planar sector means are attached to the shaft so as to form an angle with the shaft axis.

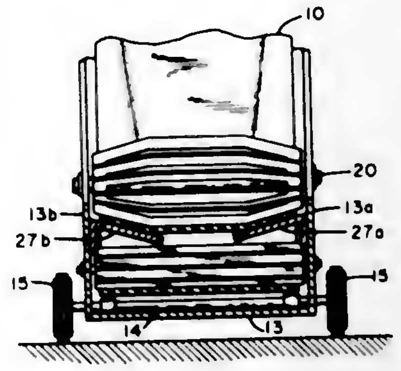
3,400,804

CONTINUOUS BELT CONVEYOR FOR UNLOADING GRANULAR MATERIAL FROM HOPPERS

Charles E. Phillips, Box 65, Downsville, Wis. 54735

Filed Apr. 5, 1967, Ser. No. 628,619

7 Claims. (Cl. 198—53)



An endless belt made of somewhat flexible material has a low lying horizontal section which can be located under a hopper for receiving discharged granular material and an upwardly inclined section by which the granular material is elevated for disposal in a storage bin or a truck or other receptacle. The belt is formed into horizontal and inclined portions by suitably located pulleys. A bladed rotor is located above the conveyor belt at a strategic location to assist in impelling the granular material up the inclined portion of the belt. The blades are constructed in a manner such that they press downward onto the belt to form it into a trough shape and also have suitable openings through which the granular material can pass to prevent a build-up or packing of the granular material between successive blades.

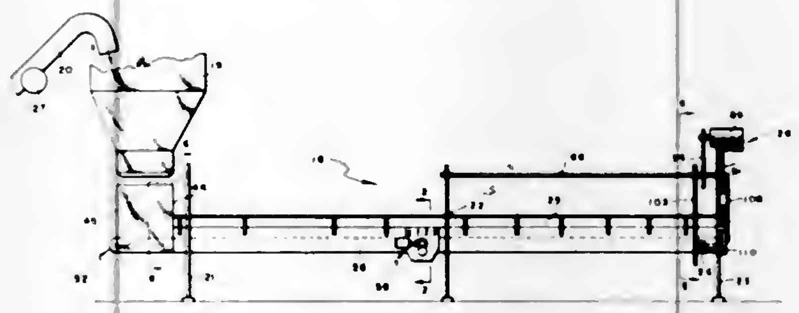
3,400,805

BELT-TYPE AUTOMATIC BUNK FEEDER

Andy L. Thompson, R.R. 2, Courtland, Kans. 66939

Filed May 16, 1966, Ser. No. 550,292

4 Claims. (Cl. 198—56)



This invention relates to an apparatus for conveying and distributing forage and the like to stock animals, and more particularly, to a conveyor type apparatus operable to carry forage from a supply hopper to the feeding area of livestock. Still, more specifically, this invention relates to an apparatus having an endless belt-type conveyor structure used to convey a desired amount of forage to a stock feeding area and means for rotating the conveyor to discharge the forage in the proper location. Finally, more particularly, the invention relates to a rotatable belt-type feed conveyor and interconnected container means having means for controlling the direction and interval of rotation and the stop position after the rotation. Also, the invention relates to a control means having a feed actuated switch means operable to rotate an interconnected endless belt-type feed conveyor and container means and controlling the direction and amount of rotation to the inverted position for the automatic dumping of feed contained thereon.

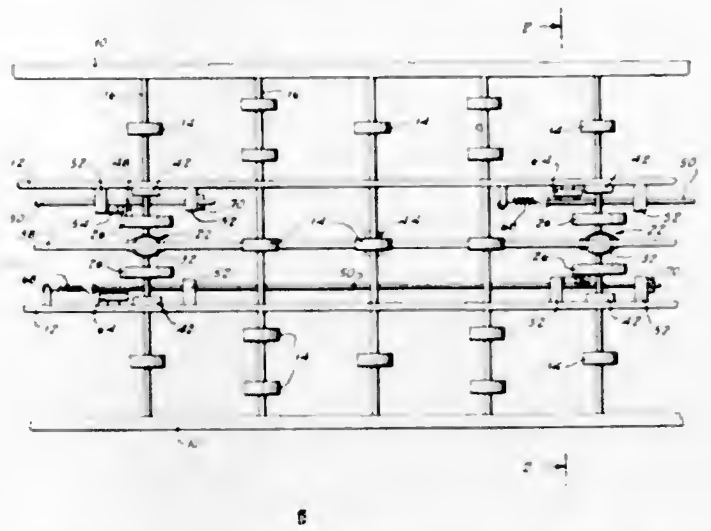
3,400,806

ARTICLE HANDLING CONVEYORS

John M. Leach, P.O. Box 341, Belle Terre, Port Jefferson, N.Y. 11777

Filed Apr. 10, 1967, Ser. No. 629,808

10 Claims. (Cl. 198—127)



This invention relates to power driven article conveyors of the type wherein articles are supported from beneath and propelled by a series of spaced combined article supporting and moving elements which are suitably driven. A series of control elements are also spaced along the conveyor and each is operable by the presence of an article to stop the driving action of an article moving element located behind the article operating the control element relative to the direction of article movement so that an article located behind the control operating article cannot be moved into forcible contact with said last named article.

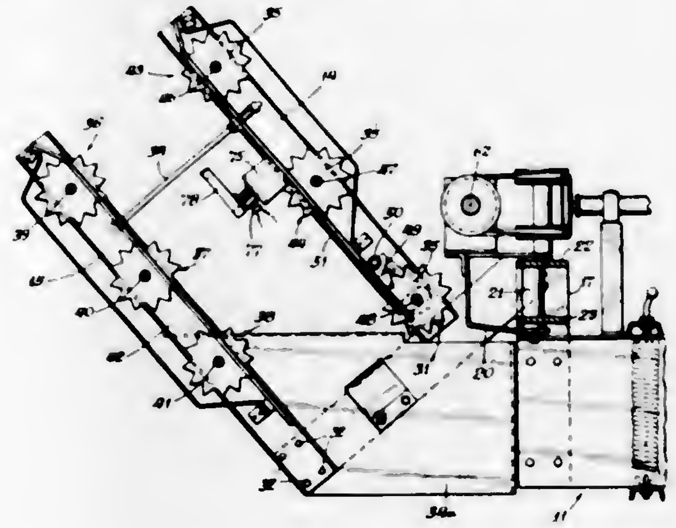
3,400,807

INTERMITTENTLY OPERATED BALE THROWER

Louis E. Nickla and John R. Majkrzak, Memphis, Tenn., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Oct. 19, 1966, Ser. No. 587,779

14 Claims. (Cl. 198—128)



A bale thrower for trajecting a bale discharged from the baling chamber of a baler to a trailing wagon, the bale thrower comprising two sets of rotatable rollers, the sets being spaced to receive a bale therebetween. Each roller includes a plurality of axially spaced star wheels which penetratingly engage the bale thereby providing a contact surface for transmitting trajection forces to the bale. The bale thrower operates intermittently, the operation being responsive to a bale received between the sets of rollers.

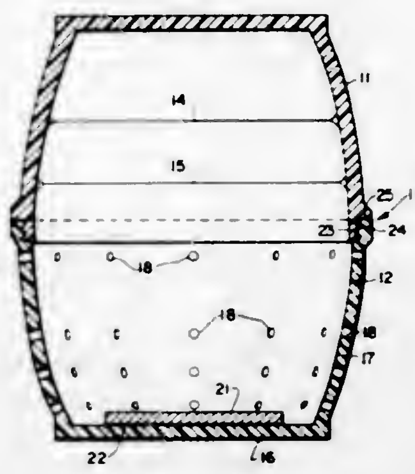
3,400,808

COMBINATION DISPENSING AND MEASURING VESSEL

Virgil John Richter, West Orange, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

Filed Mar. 1, 1966, Ser. No. 530,865

5 Claims. (Cl. 206—.5)



A floating, combination dispenser and measuring vessel for introducing bleaching powder into wash water.

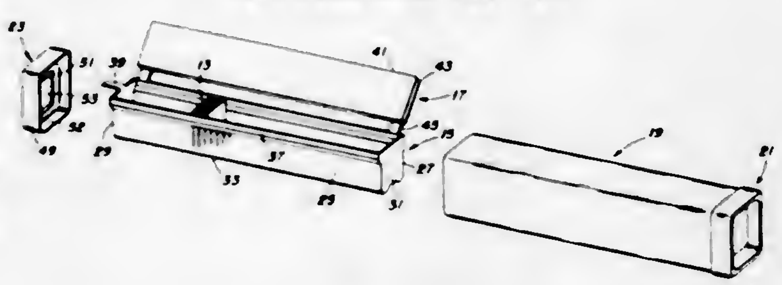
3,400,809

LIGHT TIGHT PACKAGE

Jose R. Puente, Brighton, N.Y., assignor to Product Packaging Corporation, Rochester, N.Y., a corporation of New York

Filed May 22, 1967, Ser. No. 640,271

10 Claims. (Cl. 206—62)



Disclosed is a package useful for the storage and transportation of fragile plates coated with photosensitive material. The package comprises a carrier member in which the plates are positioned on edge and in parallel longitudinally spaced relationship. A cushion member is on top of the plates. Preferably the cushion member is a laminated pad comprising a plate abutting strip of low density open cell flexible plastic foam and on top of that a protective strip of higher density closed cell flexible plastic foam. The carrier member and cushion member are encased in an opaque tubular case member closed at each end by opaque and closure members that engage the ends of the tubular case member in light tight relationship. The carrier member with its load of plates and the cushion member in place occupy substantially all of the interior space of the tubular member between the end closure members. Preferably the fit is such that the cushion member is compressed slightly against the plates by the corresponding adjacent wall of the case member.

3,400,810

PACKAGE AND PACKAGING METHOD

Alexander G. Makowski, 2413 W. Heather Road, Wilmington, Del. 19803

Filed Sept. 28, 1966, Ser. No. 582,720

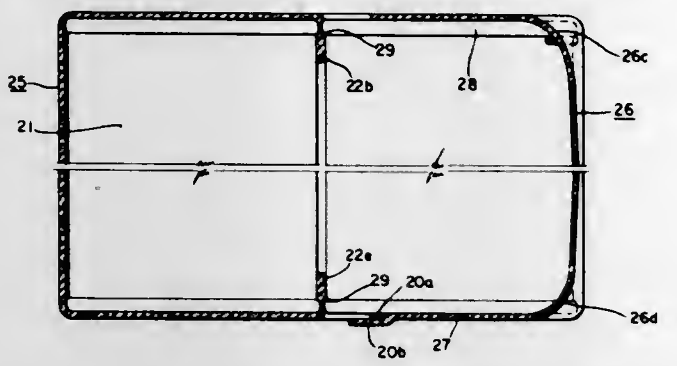
3 Claims. (Cl. 206—65)

3. A package for two or more cans or like articles having substantially flat tops and bottoms comprising a sheet consisting essentially of shrinkable expanded cellu-

lar thermoplastic material shrunk about said articles to form:

(a) a bottom having upstanding locking tabs protruding in between adjacent cans,

(b) a top having downwardly depending locking tabs protruding in between adjacent cans, and



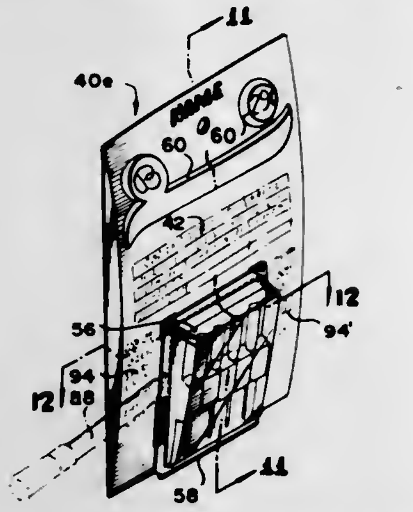
(c) at least a pair of opposing sidewalls connecting said top and bottom, said sidewalls having portions immediately adjacent the sides of said cans which conform substantially to the shape thereof and concave portions intermediate said contour-conforming portions.

3,400,811
DISPLAY PACKAGE

Richard L. Panicci, Westfield, Mass., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine

Filed Sept. 3, 1965, Ser. No. 484,996

9 Claims. (Cl. 206—66)



8. A display package comprising a large display panel, said members being formed in and of said display panel and an appreciably smaller pocket and cover assembly integrally formed with said display panel and positioned along one edge of said display panel for ease of removal therefrom, and means in said panel surrounding said pocket for facilitating the removal of said pocket and cover assembly in an intact and closed condition from cluding a pocket member and a cover member, one of said display panel, said pocket and cover assembly inand the other of said members being hingedly connected to said one member only along a single edge thereof.

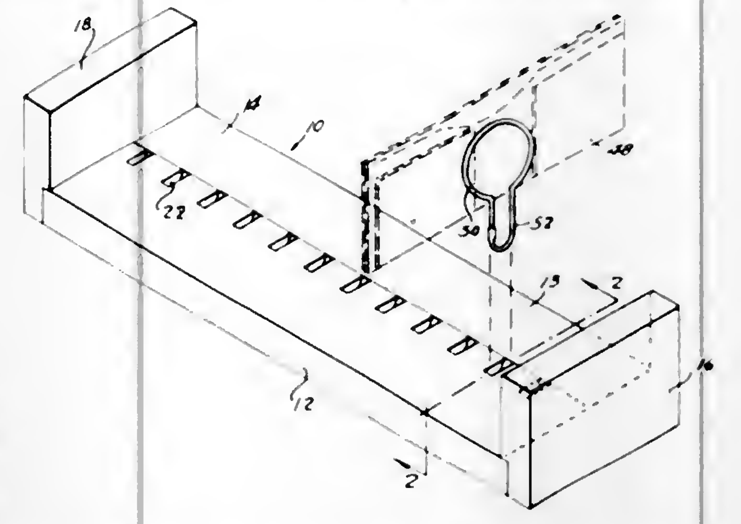
3,400,812
THEFT-PROOF DISPLAY RACK

Gerald A. Snow, 106 7th Ave. NE., Independence, Iowa 50644

Filed Aug. 25, 1967, Ser. No. 667,031

13 Claims. (Cl. 206—72)

A theft-proof display rack for billfolds having a support surface for the billfolds, and a series of slots in the support surface corresponding in number to the number of billfolds to be displayed. A retaining clip having a loop portion is pushed through each billfold and its loop portion is disposed in each of the slots. Beneath the support surface is a slidable locking plate having a plurality of lock fingers corresponding to the number of slots. Each lock finger is adapted to be disposed in intersecting registration with its corresponding slot, and pass through the loop portion of the retaining clip disposed therein to retain it and prevent its removal. A coil spring connected to one end of the lock plate urges each lock finger out of intersecting registration with its corresponding slot so the retaining clips can be removed, but the opposite end of the locking plate can be placed in abutment with a stationary pin to retain the intersecting registration against the bias of the spring.

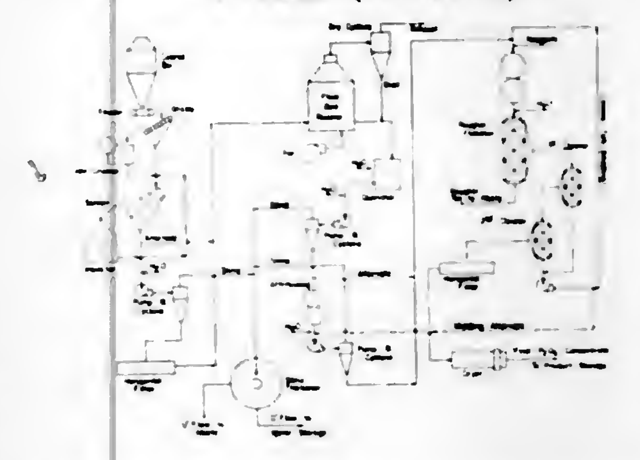


3,400,813
BENEFICIATION OF CERTAIN PHOSPHATE ROCK ORES BY FROTH FLOTATION

Jay B. Clitheroe and Salvatore S. Mele, Salt Lake City, Utah, assignors to Mountain Fuel Supply Company, Salt Lake City, Utah, a corporation of Utah

Filed Sept. 22, 1965, Ser. No. 489,123

6 Claims. (Cl. 209—3)



A process of beneficiating Idaho and Tennessee muck types of phosphate rock ores, which contain considerable quantities of slime-forming, hydrated clays, by combined treatment procedures including roasting the ore at a temperature in the range of 200° to 800° C. and subjecting the roasted ore to froth flotation, either with or without previous scrubbing and desliming, for the recovery of a froth concentrate containing at least 30% by weight P_2O_5.

3,400,814
APPARATUS FOR REMOVING STONES FROM PEANUTS

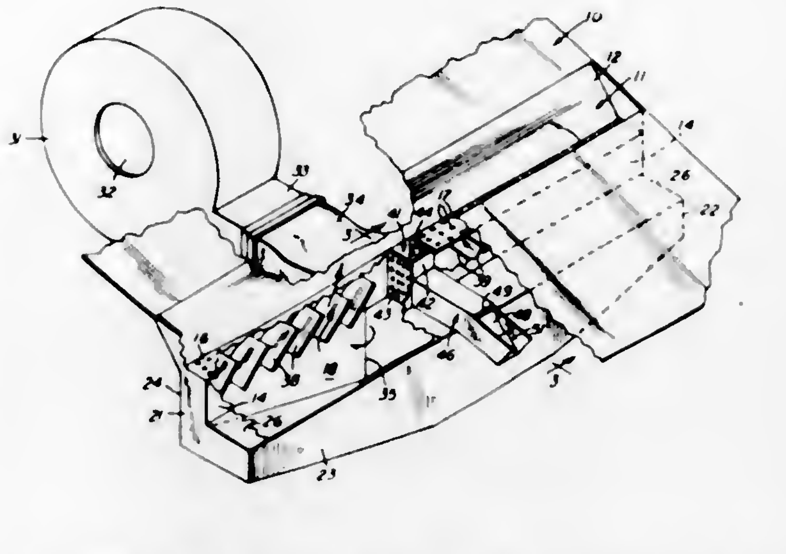
Oliver K. Hobbs, P.O. Box 1306, Suffolk, Va. 23434

Filed June 1, 1966, Ser. No. 554,492

5 Claims. (Cl. 209—20)

1. Apparatus for removing dense articles from peanuts comprising, a plate structure inclined to the horizontal

adapted to receive peanuts with dense articles mixed therewith at the upper end thereof, means for virbrating said plate structure whereby the peanuts and stones move downwardly thereon with the dense articles gravitating below the peanuts, means providing a trough structure disposed transversely with respect to the length of said plate structure, said trough structure having a perforated bottom wall and a vertically disposed downstream wall extending upwardly from the perforated bottom wall, means for delivering air through the perforated bottom wall to provide jet streams of air moving upwardly within said trough to buoy the peanuts over said vertical downstream wall, and means providing a well in the midportion of said trough for collecting the dense articles which settle through said air streams, and means guiding the dense articles from said well.

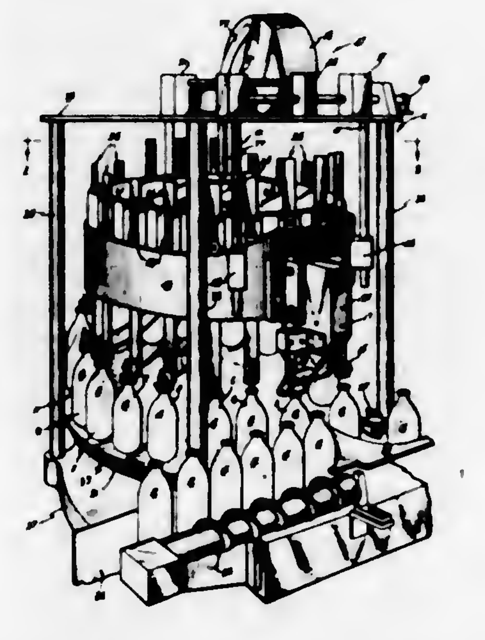


3,400,815
APPARATUS FOR TESTING CONTAINERS ACCORDING TO HEIGHT AND LIP SEAL

Kenneth Bell, Marengo, and Fred J. Kott, Park Ridge, Ill., assignors to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware

Filed July 20, 1966, Ser. No. 566,611

12 Claims. (Cl. 209—73)



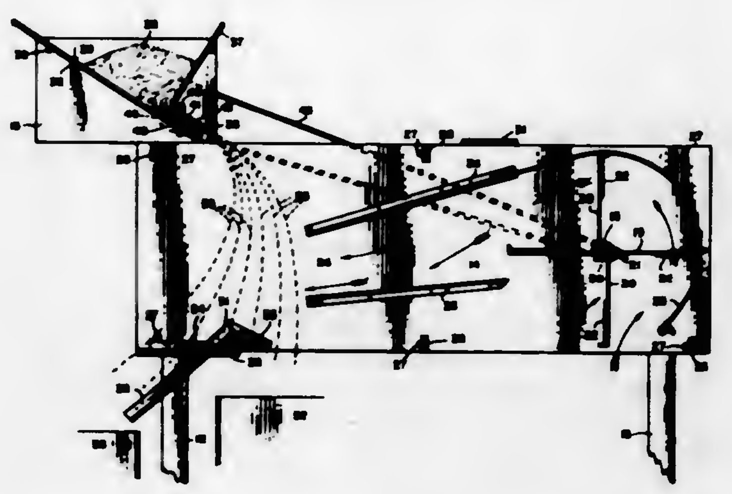
A bottle sorting apparatus wherein the bottles are tested and sorted for height and subsequently tested and sorted according to lip irregularities. The lips are tested by engaging them with a sealing head and evacuating the bottles with a vacuum means. The good bottles are then lifted off a conveyor whereas defective bottles which have a leaky seal at the lip remain on the conveyor and are subsequently discharged.

3,400,816
GRAIN CLEANING MACHINES

Percy E. Hedley, Hamiota, Manitoba, Canada

Filed June 2, 1966, Ser. No. 554,753

5 Claims. (Cl. 209—135)



An air blast machine for seed grain cleaning, wherein a paddle-type blast fan is positioned across one end of a passageway and a grain hopper across the opposite end; a complete crosswise opening is provided through the bottom of the fan casing so air can be fan-sucked therethrough and delivered by said fan in an equalized cross blast toward the hopper; a rotary shaft crosses the hopper for evenly ejecting feeding grain therefrom against the air blast and for gravity-fall therethrough to a lower divider, a step being provided across the hopper feed for controlled grain flow over the step and stoppage of stones thereagainst.

3,400,817
PROCESS AND REAGENT FOR RECOVERY OF MOLYBDENITE FROM COPPER SULFIDE-MOLYBDENITE FLOTATION CONCENTRATES

Blair T. Burwell, Globe, Ariz., assignor to Miami Copper Company Division of Tennessee Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 10, 1966, Ser. No. 533,222

7 Claims. (Cl. 209—167)

Mixed sulfide ore containing molybdenite and one or more other sulfide minerals, notably copper sulfide and/or iron sulfide, is subjected to froth flotation in the presence of a collector reagent for the molybdenite and a depressant reagent for the other sulfide minerals. The depressant reagent is a mixture of a naphthol azoic dye, preferably Acid Red 4, Color Index No. 14710, and an aqueous solution of an alkali metal or alkaline earth metal thiophosphate, preferably sodium thiophosphate.

3,400,818
FROTH FLOTATION

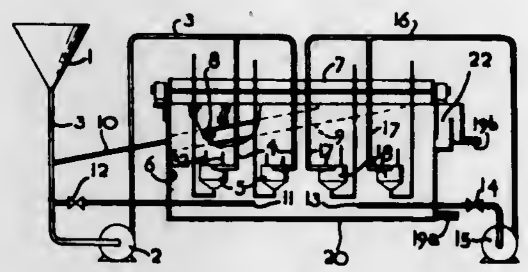
Gusztav Tarjan, Miskolc, Egyetamvaros, Hungary, assignor to Simonacco Limited, Durranhill, Carlisle, Cumberland, England, a British company

Filed Sept. 15, 1966, Ser. No. 579,717

Claims priority, application Hungary, Sept. 28, 1965, TA–866

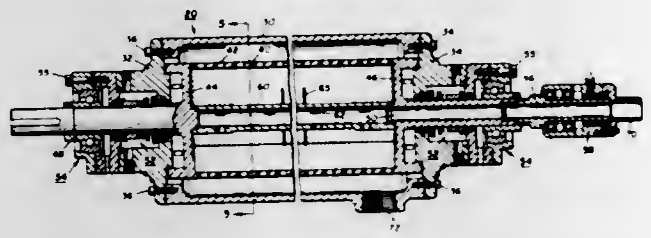
4 Claims. (Cl. 209—170)

In the separation of hydrophobic particles from hydrophilic particles, such as in coal preparation or the beneficiation of metallic ores, in a froth flotation cell, there is provided a static vortex inducer unit to which is fed a slurry of material to be separated and air to be dispersed therein, so that a vortex is induced in the slurry which is then discharged into the container, means also being provided to feed slurry from the container into further static vortex inducer means.



3,400,819
METHOD AND APPARATUS FOR PARTICLE SEGREGATION

Ralph F. Burdyn, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Continuation-in-part of application Ser. No. 161,490, Dec. 22, 1961, which is a continuation-in-part of application Ser. No. 39,071, June 27, 1960. This application Sept. 18, 1964, Ser. No. 397,497
6 Claims. (Cl. 209—270)



4. In a method for effecting selective particle segregation in a fluid mixture containing solid particles of varying weights, the steps which comprise:

introducing said mixture into a closed chamber,

subjecting said mixture within said chamber to a constant pressure differential across a substantially cylindrical permeable boundary formed by rotating within said chamber a substantially cylindrical means provided with openings several times the cross sectional area of the largest particles in said mixture to prevent bridging by said particles over said openings to effect flow of said mixture inwardly toward said boundary, the total area of said openings being between 5 and 30% of the cylindrical surface area of said cylindrical means, said cylindrical means having a length to radius ratio of at least 6.0, and the ratio of the diameter of said openings to the diameter of said cylindrical means being between about 0.01 and 0.1.

creating a zone of rotation at said boundary to impose a centrifugal force upon said mixture whose magnitude is dependent upon the rate of rotation,

regulating the rate of rotation relative to said pressure differential so that the inward flow momentum of solid particles in said mixture having a weight above a predetermined value will be overcome and at least a major quantity of solid particles in said mixture having a weight below said predetermined value will pass through said boundary,

withdrawing as an effluent portion fluid which has passed through said boundary together with said particles having weights below said predetermined value,

withdrawing from a portion of said chamber outside of said boundary an underflow portion comprising fluid together with said particles having weights above said predetermined value, and

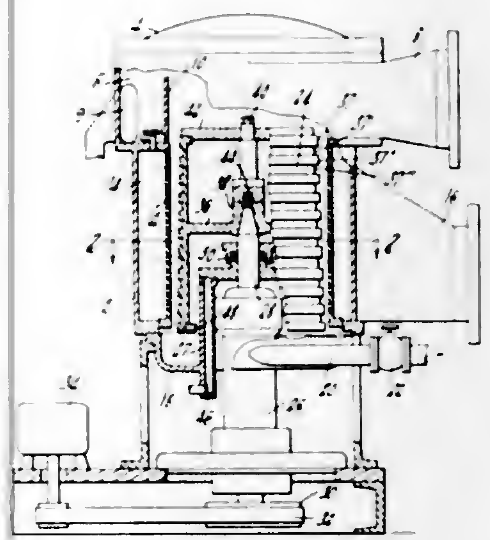
the radius and the length of said cylindrical means being related in accordance with the formula:

$$Q=\pi R^2 L\omega^2\Delta\rho d^{*2}/9\mu$$

Q=the volumetric rate of flow of said effluent portion of said mixture,
R=the radius of said cylindrical means,
L=the length of said cylindrical means,
ω=the speed of said cylindrical means in radians per second,
$\Delta\rho$=the difference in density between the heavy solid particles included with said underflow portion of said mixture and the density of said effluent portion of said mixture,
d^*=the maximum size of particles included with said effluent portion of said mixture, and
μ=the viscosity of said effluent portion of said mixture.

3,400,820
SCREENING APPARATUS WITH ROTARY PULSING MEMBER

George L. Nelson, Westwood, Mass., assignor to Bird Machine Company, South Walpole, Mass., a corporation of Massachusetts
Filed Mar. 30, 1965, Ser. No. 443,957
21 Claims. (Cl. 209—273)

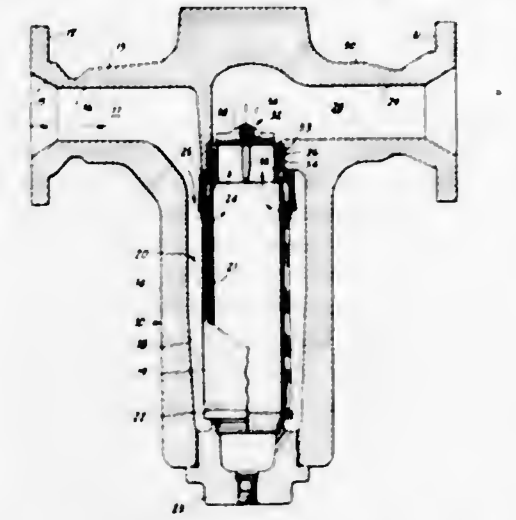


A screening apparatus for fibrous material and liquid mixture including a substantially cylindrical apertured screen member and a rotary pulsing member in the general form of a drum coaxially mounted within the screen defining therewith a screening zone, in which the peripheral fluid contacting surface of the rotary member is defined by a plurality of undulating band portions that are displaced from one another.

3,400,821
FILTER CHECK VALVE

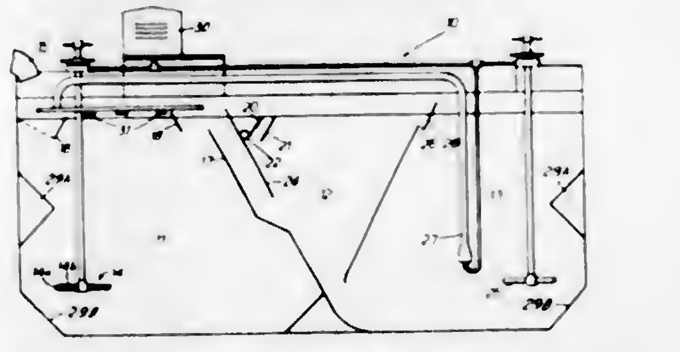
Jack Singleton, Sparta, N.J., assignor to Fluid Dynamics Incorporated, a corporation of New York
Filed Feb. 17, 1967, Ser. No. 616,902
5 Claims. (Cl. 210—136)

A filter having a quick-opening and closing check valve positioned within the outlet channel. The check valve is self-positioning to permit maximum flow with minimum resistance and utilizes the excess energy arising from a quick opening of the valve discs to effect rapid positioning or closure thereof.



3,400,822
EXTENDED AERATION SEWAGE TREATMENT PLANTS

John Bell McKeown, Hamilton, Scotland, assignor to Macleod & Miller Engineers Limited, a British company
Filed Sept. 7, 1966, Ser. No. 578,113
4 Claims. (Cl. 210—195)

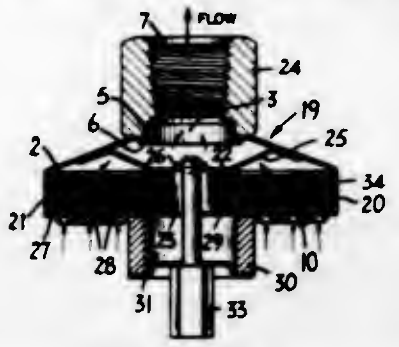


An extended aeration activated sludge sewage treatment plant comprised of a primary aeration compartment, a settling compartment in communication with the primary compartment at its upper end and in communication with a secondary aeration compartment at its lower end. Diffusion means are disposed in both of the aeration compartments for circulating liquid therein. Raw effluent is introduced into the primary aeration compartment and liquid and effluent flows therefrom into the settling compartment where liquid may be removed from the upper end and sludge may be removed from the lower end. The diffusion means imparts a whirling flow path to the liquid in the secondary aeration compartment. The whirling liquid circulating past the passageway communicating between the secondary compartment and the settling compartment withdraws sludge from the lower end of the settling compartment into the secondary compartment. An air lift pump located in the secondary compartment circulates liquid and sludge to the primary compartment.

3,400,823
MAGNETIC FILTER ASSEMBLY

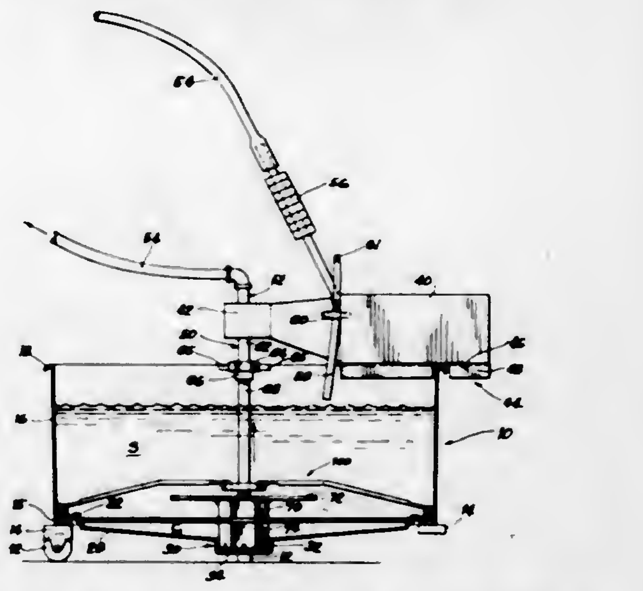
Roydon B. Cooper, Locust Valley, N.Y., assignor to Pall Corporation, Glen Cove, N.Y., a corporation of New York
Filed Jan. 5, 1967, Ser. No. 607,426
5 Claims. (Cl. 210—223)

A magnetic filter assembly which separates both magnetic and non-magnetic particles from a fluid flowing therethrough is provided by the instant invention. Magnetic separation is accomplished by a magnetic separator plate disposed across the line of flow to a filter element. The separator plate has a plurality of nonradial slots, the edges of which are polarized by a magnet disposed centrally in an endwise position on the separator plate. Mechanical separation of non-magnetic particles is accomplished by a filter element disposed within the housing downstream of the separator plate.



3,400,824
FILTERING APPARATUS FOR USED COOKING OILS

Ralph E. Weimer, Lombard, Charles E. Fallis, Park Ridge, and Frank Yud, Jr., Lombard, Ill., assignors to McDonald's System, Inc., a corporation of Illinois
Filed Nov. 14, 1966, Ser. No. 593,834
5 Claims. (Cl. 210—238)

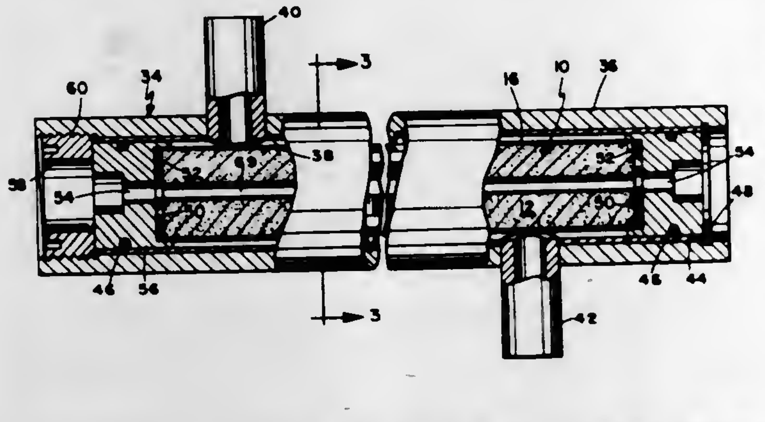


Described and illustrated herein is a portable filter for filtering used cooking oils and the like. The filtering apparatus includes a bowl having an imperforate bottom and a sump at its center from which filtrate is drawn upwardly by a suction pump. A filter screen overlies and is spaced from the bowl bottom and is supported upon a portion of the bowl bottom at its periphery. A filter paper overlying the screen sealingly engages a portion of the bowl bottom beyond the screen periphery. The suction pump is in flow communication with the sump via an intake nut extending into the sump, a releasably connected clamping nut overlying the center of the screen and an upwardly extending intake pipe, the intake and clamping nuts being adapted for easy and ready clamping engagement for removal of the filter paper.

3,400,825
DESALINATION CELL WITH OSMOTIC MEMBRANE ELEMENT

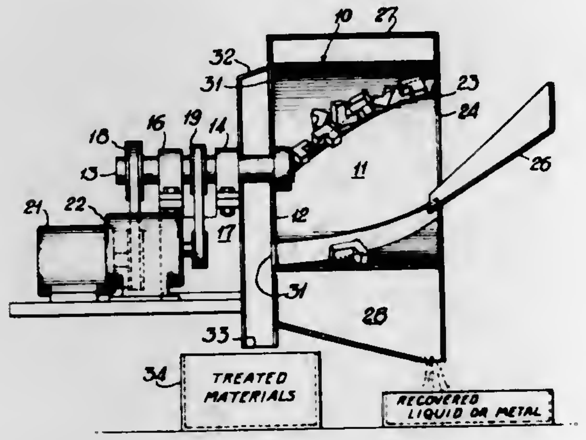
Frank R. Shippey, 760 B Ave.,
Coronado, Calif. 92118
Filed Aug. 22, 1966, Ser. No. 573,897
6 Claims. (Cl. 210—321)

The desalination cell utilizes a rigid porous core or cores having cross sections shaped to provide large surface areas, the cores being covered by a semipermeable membrane except at certain portions of the ends. Each core or group of cores is mounted in a vessel very little larger than the cores themselves, with combined clamping and sealing means holding the cores at the ends under



longitudinal compression. The pure water content of pressurized water in the vessel passes through the membrane and through the porous cores to collecting means and outlets incorporated in the clamping and sealing means at both ends.

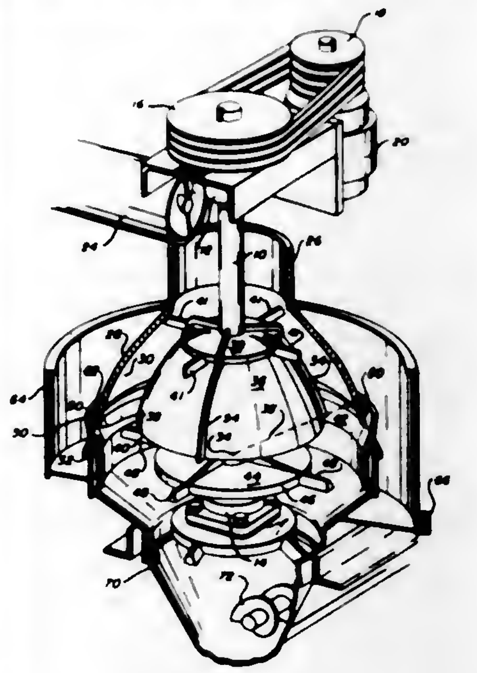
3,400,826
AUTOMATIC DISPENSING CENTRIFUGES
Thorvald F. Hammer, Branford, Conn., assignor to MIF Industries, Inc., Branford, Conn.
Filed July 5, 1967, Ser. No. 651,209
4 Claims. (Cl. 210—372)



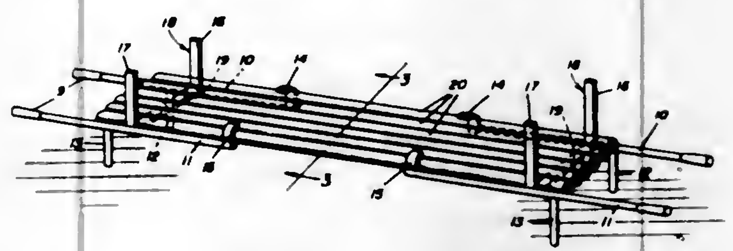
A two-speed dispensing centrifuge having a perforated cylindrical drum with a central loading port formed in one end for charging materials to be treated, with inclined helical vanes forming ramps extending inwardly from the perforated cylindrical drum, and with discharge ports positioned in the opposite end wall of the drum to release treated materials sliding under the influence of gravity down the ramps during slow rotation of the device.

3,400,827
LIQUID AND CHIP SEPARATOR
Frank A. Ziherl, Richmond Heights, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 444,906, Mar. 16, 1965. This application Feb. 7, 1966, Ser. No. 530,743
7 Claims. (Cl. 210—377)

1. In a liquid from scrap separator for recovering substantially all of the liquid from a liquid-scrap mixture and adapted for rotation about an axis of symmetry, the improvement in means for continuously directing substantially all of the liquid of a liquid-scrap mixture radially outwardly from said axis of symmetry from its entry into, to its exit from said separator, comprising a first liquid impervious hollow frusto-conical member open at opposite upper and lower ends and extending radially outwardly and downwardly from said upper end to said lower end, deflector means located concentrically within and spaced from said member adjacent said upper end for deflecting a liquid-scrap mixture received through said upper end radially outwardly, said deflector means being secured to said first member for rotation therewith about said axis of symmetry, a second liquid impervious hollow inverted frusto-conical member open at opposite upper and lower ends and extending radially outwardly and upwardly from its said lower end to its said upper end, said second member secured to said first member for rotation therewith about said axis of symmetry with the upper end of said second member located adjacent the lower end of said member, the upper end of said second member overlies and extends above the lower end of said first member, and said upper end of said second member is spaced radially outwardly of the lower end of said first member to define an annular upwardly and outwardly directed passageway therebetween having a width sufficient to permit liquid but not scrap to pass therethrough, means for rotating said members in unison about said axis of symmetry at sufficient angular velocity that substantially all of the liquid of said liquid-scrap mixture is centrifugally forced outwardly against and directed by said first and second members to said liquid passageway, whereby substantially all of the liquid of said liquid-scrap mixture is continuously directed radially outwardly from said axis of symmetry from its entry into, to its exit from said separator.

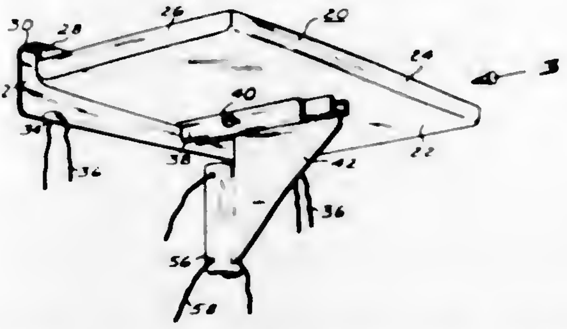


3,400,828
RACK FOR SLENDER ARTICLES
James May, Rte. 1, Louisburg, N.C. 27549
Filed Dec. 12, 1966, Ser. No. 600,931
6 Claims. (Cl. 211—60)



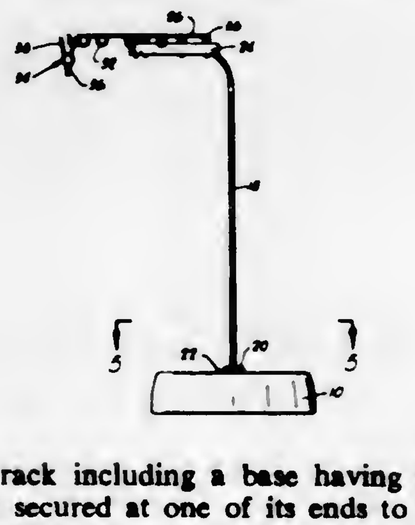
A holder and transporter for slender articles of great length including two identical units, each of which has parallel integrally connected arm members serving as both hand holds and pipe-gripping means. The pipes are supported between the holders with two pipes being gripped thereby to form a portion of the transporter itself.

3,400,829
BABY CRIB TRAY
Sydney M. Youngson, 1235 Parker Place, San Diego, Calif. 92109
Filed Sept. 12, 1966, Ser. No. 578,558
3 Claims. (Cl. 211—86)



This baby crib tray has an upper plate for supporting articles with a channel member for fitting on the upper bar of a baby crib and having a slidable supporting member for contacting a spoke member of the baby crib.

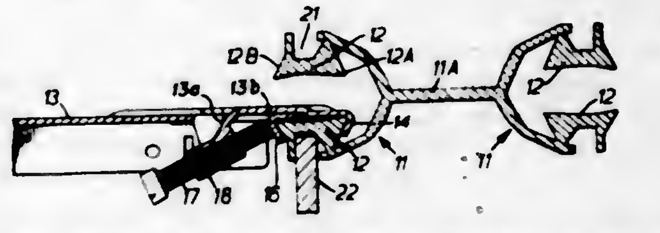
3,400,830
DISPLAY RACK
Robert N. Colombe, 207 E. Grand, Tonkawa, Okla. 74653
Filed May 1, 1967, Ser. No. 634,973
8 Claims. (Cl. 211—165)



A display rack including a base having an angulated stem swivelly secured at one of its ends to the base and extending vertically therefrom. A horizontally extending upper end portion of the stem is secured to the center of a substantially horizontal arcuate bar. A plurality of elongated supporting arms are swivelly secured to the bar at horizontally spaced points along the bar and extend outwardly from the bar in a horizontal direction. The outer end of each of the arms is formed as a hook upon which document clips may be hung.

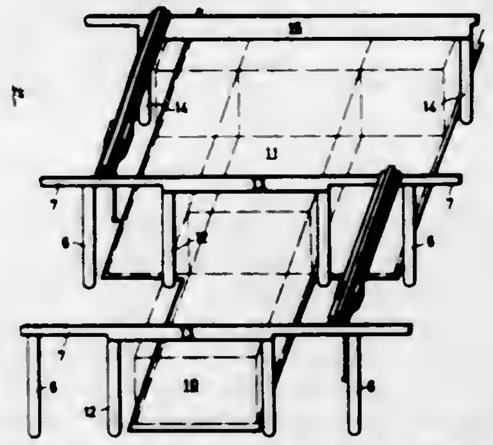
3,400,831
BRACKETS
Johan Marie Daniel De Niet, 2/21 Northwood Hall, London N. 6, England
Filed July 11, 1966, Ser. No. 564,097
Claims priority, application Great Britain, July 12, 1965, 29,529/65
3 Claims. (Cl. 211—176)

Adjustable bracket means for shelving comprising aluminium extrusion support members, channel shaped in cross-section, each of the channels having an inwardly extending vertically arranged dove tailed projection, each bracket comprising a vertical web having a fixed jaw formed on the end thereof, an adjustable jaw slidable in a vertical plane on the inner end of the web with both jaws being convergent, and screw-threaded means for



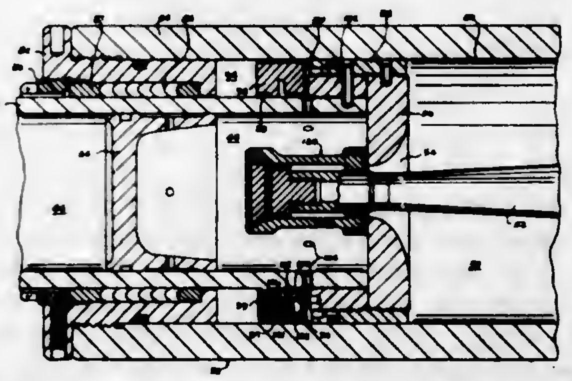
moving the adjustable jaw toward the fixed jaw to clamp the opposed side faces of the projections and thereby support the bracket in its intended position of use.

3,400,832
WORKSHOP
Nils Verner Svensson, Goteborg, Sweden, assignor to Aktiebolaget Gotaverken, Goteborg, Sweden, a corporation of Sweden
Filed July 5, 1967, Ser. No. 651,218
Claims priority, application Sweden, Aug. 15, 1966, 10,997/66
5 Claims. (Cl. 212—1)



A workshop adapted for the erection of large building structures is provided with at least two parallel overhead crane systems having rails carried by pillars and a common erection platform arranged below the said crane systems. The platform is designed to permit the building structure, between steps in the erection work, to be displaced laterally in respect to the paths of the cranes towards an opening in the side wall of the workshop and consists of a narrower portion arranged below at least one crane system remote from said opening and of a broader portion below at least one crane system adjacent to the opening.

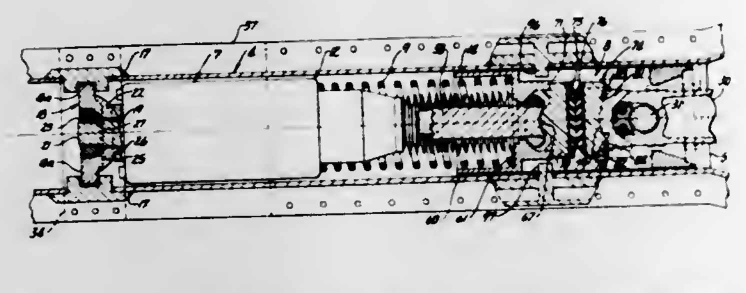
3,400,833
RAILWAY CAR CUSHIONING DEVICE
Richard G. Powell, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Apr. 22, 1966, Ser. No. 544,548
10 Claims. (Cl. 213—8)



An oleo-pneumatic cushioning device for railway cars which collapses and achieves internal metered transfer of hydraulic fluid between a pair of hydraulic chambers in addition to achieving compression of a compressible fluid within the unit to dissipate energy applied thereto. The unit includes a lockup device which is operative to prevent the interchange of hydraulic fluid between the hydraulic chambers upon the application to the unit of forces of low magnitude, but which is responsive to a predetermined increase in fluid pressure within one of the hydraulic chambers developed by the application of forces in excess of a predetermined magnitude to unlock and allow the interchange of hydraulic fluid between the hydraulic chambers thereby allowing the unit to collapse and dissipate energy.

3,400,834
DRAFT RIGGING WITH CROSSHEAD

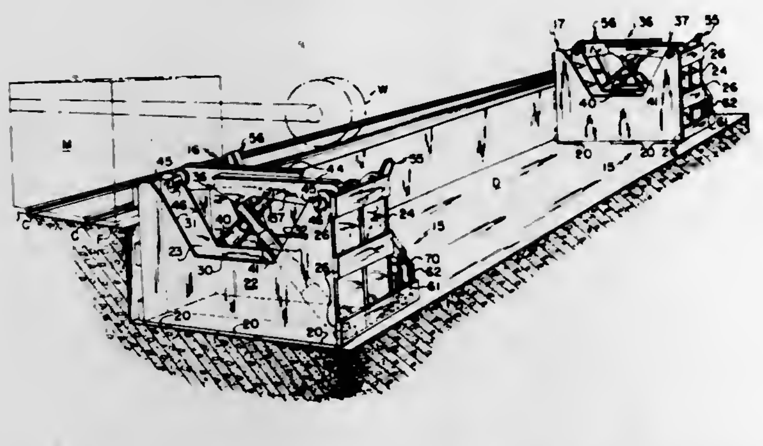
Andrey L. Zanow, Cleveland, Ohio, assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 30, 1967, Ser. No. 612,626
11 Claims. (Cl. 213—64)



A railway car draft rigging of a type having its inward end anchored to a point longitudinally inward of the car body whereby the cushioning unit thereof undergoes compression or extension as the car coupler attached thereto moves toward and away from the anchor point in response to buff and draft forces, respectively. By this invention, crosshead structure is incorporated into the draft rigging between the cushioning unit and the coupler for interception of lateral force components imposed on the draft rigging which otherwise would reach the cushioning unit.

3,400,835
BILLET TURNING APPARATUS

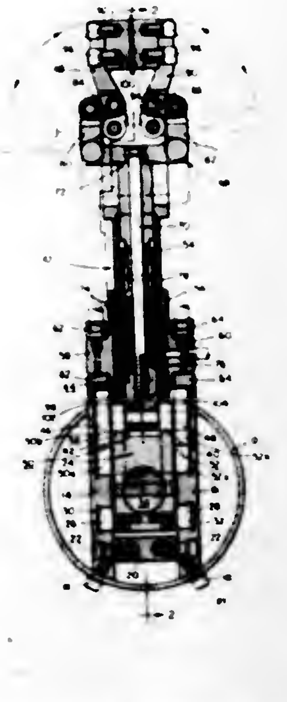
Edwin E. Rhoads, Solon, Ohio, assignor, by mesne assignments, to Pettibone Mulliken Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 7, 1965, Ser. No. 493,733
9 Claims. (Cl. 214—1)



A billet turning apparatus comprised of interdigitating billet supporting arms extending inwardly from opposite sides of the apparatus with the arms being operable by power to lowered inclined positions which face each other with the arms moving on one side of the apparatus being operable independently of the arms of the opposite side of the apparatus. Power operated clamp arms are provided for moving a billet on the billet supporting arms and holding the billet in an upright position when the billet is lowered to rest on a billet support member disposed below the billet supporting arms.

3,400,836
RETRACTING CLAMP

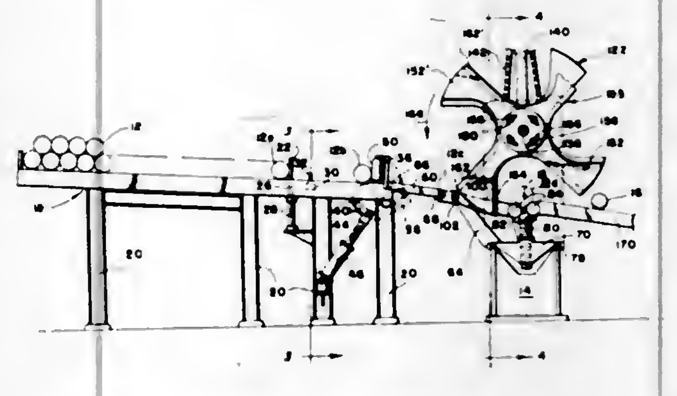
Albert Bende, Haddon Heights, N.J., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 28, 1966, Ser. No. 605,420
9 Claims. (Cl. 214—1)



An apparatus for grasping, holding and transferring a work piece on a high speed production line. The clamp is biased to the closed position to prevent slippage of the work piece during transfer. Cam controls regulate the movement of the clamp from a folded or stored position to a grasping position and then close and open the clamp at the appropriate time in the cycle of the apparatus.

3,400,837
AUTOMATIC FEEDING AND DISCHARGING SYSTEM FOR MACHINE TOOLS

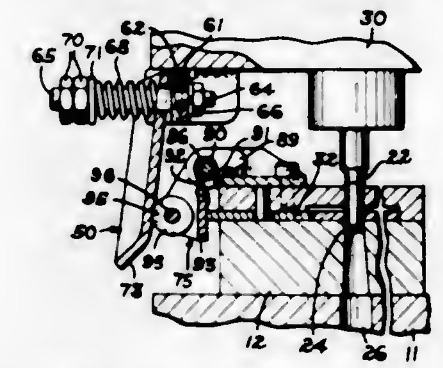
Herbert A. Dalik, Stow, Ohio, assignor to The Flintkote Company, New York, N.Y., a corporation of Massachusetts
Filed June 22, 1967, Ser. No. 648,131
10 Claims. (Cl. 214—1)



A pipe handling system for transferring pipe to and from a machine tool. The system automatically removes pipe, one at a time, from a feed table containing a plurality of pipes, aligns them with a respect to the machine tool, feeds them in sequence to the machine tool, machines them, and discharges them from the machine tool upon completion of the machining operation.

3,400,838
STOCK PUSHER

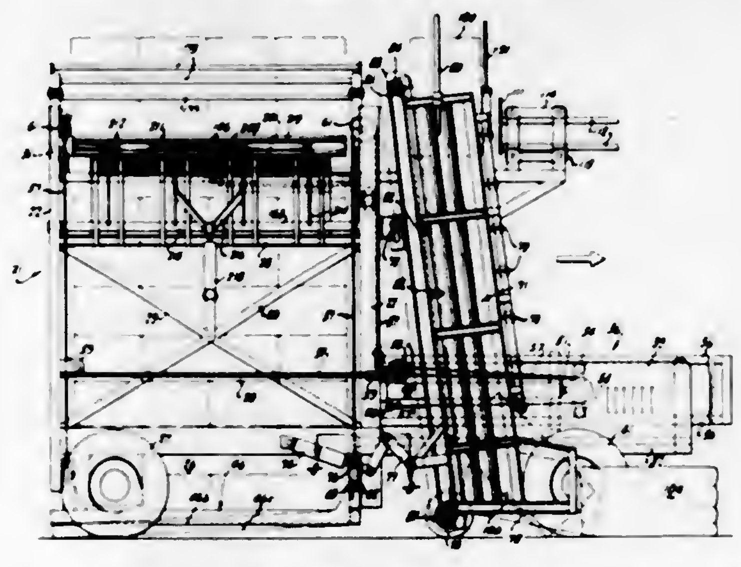
Arthur F. Leis and Charles A. Leis, both ℅ A. F. Leis Co., Inc., 611 Ewing St., Dayton, Ohio 45404
Filed Oct. 6, 1965, Ser. No. 493,441
4 Claims. (Cl. 214—1.3)



A stock pusher for urging stock in a metal forming press toward a reference surface so that close tolerances are maintained in the finished product. The stock pusher includes a pivotal arm supported by a bracket directly on the stripper plate and an arm mounted on the movable die shoe for engaging a cam roller on the pivotal arm to apply a force perpendicular to the edge of the pusher plate.

3,400,839
BALE STACKING APPARATUS AND METHOD

George Jay and Everett V. Rankins, both ℅ Jay and Rankins, P.O. Box 132, Manteca, Calif. 95336
Filed Aug. 1, 1966, Ser. No. 569,503
21 Claims. (Cl. 214—6)

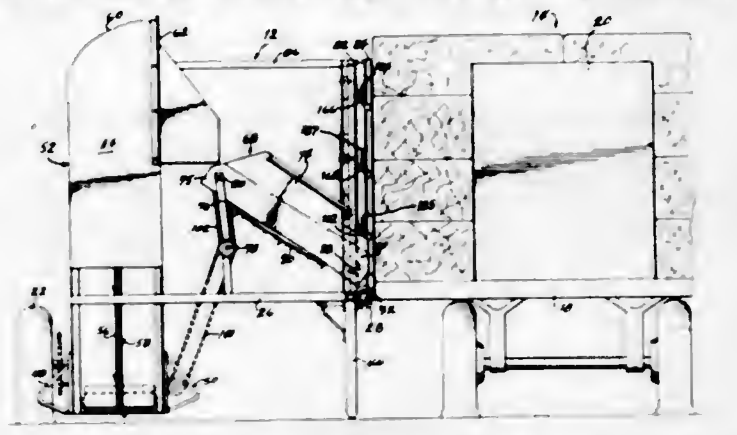


1. Bale stacking apparatus comprising a wheeled frame, a platform vertically reciprocable in said frame, an elevator chute having elevating means for lifting bales from the ground as the frame is moved forwardly to an elevation above said frame adjacent one edge of said platform, a bale support on the top of said frame overhanging said platform, bale transfer means for moving at least one of said bales from the top of said chute onto said bale support, and bale discharging means for discharging said bales off said bale support downwardly onto said platform.

3,400,840
AUTOMATIC BALE LOADING MACHINE

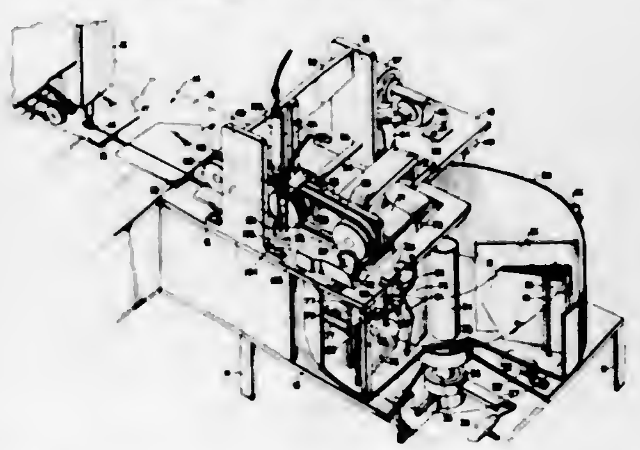
Raymond C. Fischer, Hinsdale, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed May 12, 1967, Ser. No. 638,124
10 Claims. (Cl. 214—6)

An automatic bale loading machine attachable to a bale carrying wagon with an elevator to pick up and lift the bales and a transverse conveyor to distribute the bales onto the wagon at successive levels for a series of tiers. A vertical indexing mechanism responsive to the number of bales loaded operates to position the end of the conveyor at each level on the wagon for bale delivery while a longitudinal indexing mechanism operates so that the machine moves rearwardly to successive tiers until the wagon is completely loaded.



3,400,841
WORKPIECE STACKING DEVICES

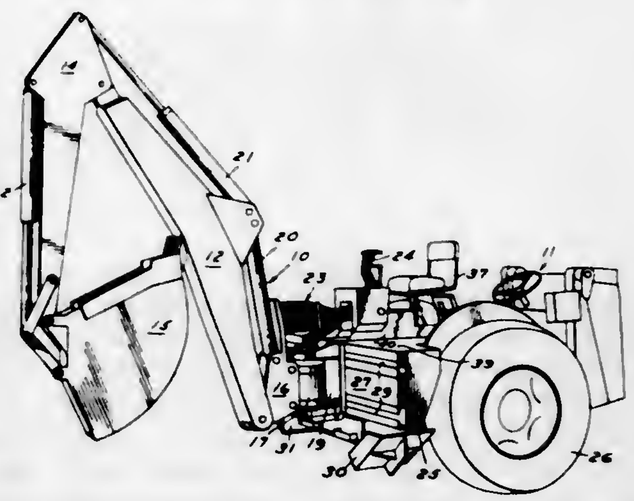
Joseph W. A. Off, Succasunna, and John A. Raudonis, Jr., Elizabeth, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed July 9, 1965, Ser. No. 470,836
5 Claims. (Cl. 214—6.5)



A stacking device for fabric articles is disclosed in which the fabric articles are arranged edgewise in the stack. The device stacks the fabric articles in annular array in a cylindrical drum thereby to accommodate articles of tapered thickness in a minimum of space.

3,400,842
OFFSET BACKHOE

Robert R. Owen, Birmingham, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 29, 1966, Ser. No. 597,700
5 Claims. (Cl. 214—138)

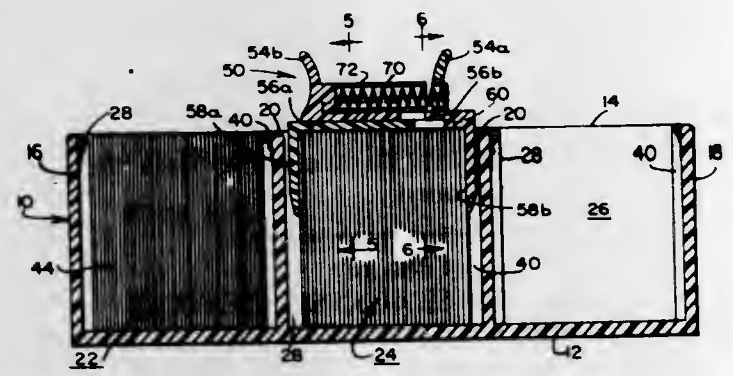


An offset backhoe in which the transversely adjustable carriage for the boom is attached to an elongated member centrally pivoted within a slot on a platform which extends on both sides of the center line of the tractor.

3,400,843

PHOTOGRAPHIC SLIDE STORAGE AND DISPENSING APPARATUS

Edward F. Johnson, Rte. 1, Box 150, Brule, Wis. 54820
Filed Aug. 15, 1967, Ser. No. 660,675
6 Claims. (Cl. 214—309)

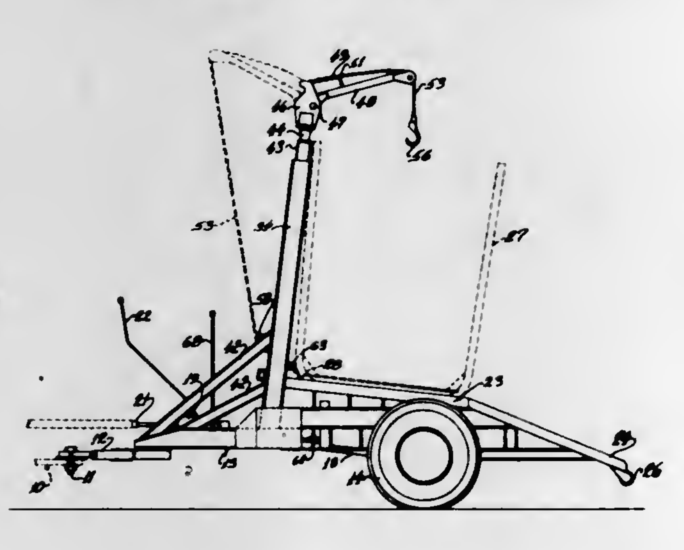


A system for storing and dispensing photographic slides in a predetermined order includes a multicompartmented storage container and a slide gripping cartridge. The compartments in the container are box-shaped, adapted to hold stacks of slides, and include abutments along the inside, vertical edges. The abutments form three-sided, vertical slots along opposite ends of the compartments, which are of unequal width. A slide gripping cartridge, having gripping members of unequal width, is adapted to fit the slots and penetrate the compartments with only one directional orientation. The cartridge is a hand-operated, spring-loaded device, and includes means for maintaining proper directional orientation in the hand.

3,400,844

APPARATUS FOR LOADING AND TRANSPORTING PALLET-LIKE UNITS

John F. Overstreet, Thomasville, Ala. 36784
Filed Feb. 6, 1967, Ser. No. 614,142
5 Claims. (Cl. 214—517)

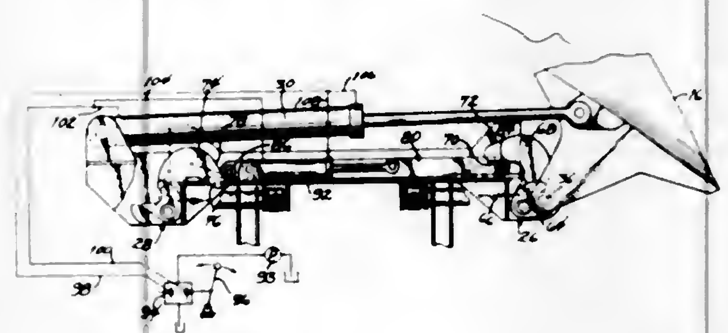


A wheel supported frame having its wheels operatively connected to and its forward end pivotally connected to a translatable power unit. A downwardly and rearwardly inclined support frame is carried by the wheel supported frame with the rear end thereof terminating rearwardly of and below the wheel supported frame. A column, boom and winch unit is mounted adjacent the forward end of the support frame to pull pallet-like members up the inclined support frame and means detachably connects the pallet-like member to the support frame.

3,400,845

SIDE DUMP BUCKET

Karl Salna, Mundelein, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 9, 1967, Ser. No. 614,869
10 Claims. (Cl. 214—768)

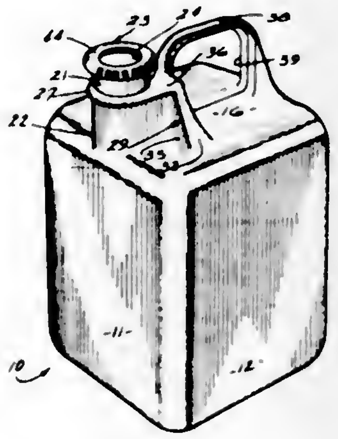


A side dump bucket for a tractor loader having a bucket latching device incorporating lock mechanisms which operate to alternatively lock either side of the bucket to a bucket carrier. A lock actuator is moved from a center position in which both locks are latched to either of two side positions in which a selected one of the locks is unlatched while the other lock is latched.

3,400,846

CONTAINER CONSTRUCTION

Norman A. Kelly, Wayne Township, Kosciusko County, Ind., assignor to Haskon, Inc., Warsaw, Ind., a corporation of Delaware
Filed Aug. 31, 1966, Ser. No. 582,788
6 Claims. (Cl. 215—1)



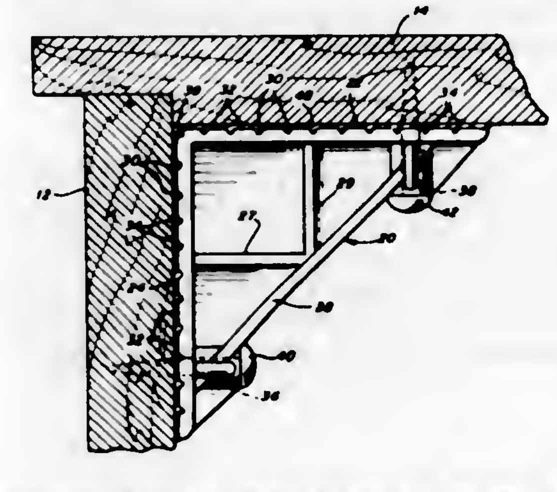
The plastic jug is blow-molded and its relatively thin side walls, top wall and bottom wall define a liquid-holding chamber which is preferably rectangular in cross section. The jug includes an integral neck extending upwardly from the top wall and having a platform at its upper end from which a pouring spout extends. The neck is offset toward one side wall and a handle extends from the upper end of the neck to the opposite side wall of the jug, the center line of the pouring spout and the neck preferably being located within a central plane which bisects the chamber vertically. The neck includes downwardly and outwardly sloping wall means which rigidify the upper part of the jug.

3,400,847

CABINET SUPPORT MEMBER

Carlton F. Stute, Riverdale, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 21, 1967, Ser. No. 632,695
3 Claims. (Cl. 217—69)

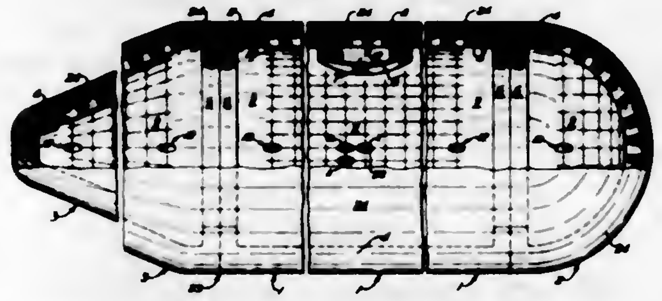
A molded plastic corner bracket for supporting the intersection of a pair of cabinet walls. The plastic bracket includes a plurality of grooves which receive conventional furniture glue for establishing a glue struture for resisting movement.



3,400 848

HULL STRUCTURE WITH HONEYCOMBED INTERIOR SURFACE FOR DEEP SUBMERGENCE VESSELS

Amos J. Shaler and Joseph C. Conway, State College, Pa., assignors to Pennsylvania State University, University Park, Pa.
Filed Feb. 2, 1967, Ser. No. 613,569
11 Claims. (Cl. 220—5)

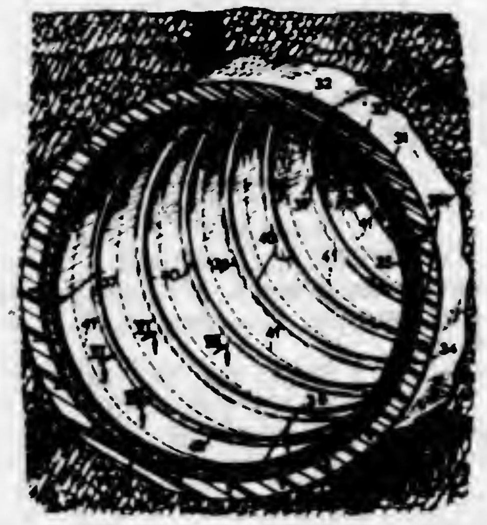


A vessel for resisting high external fluid pressure having a smooth exterior and a honeycombed interior surface.

3,400,849

TANKS FOR THE STORAGE AND TRANSPORT OF CRYOGENIC FLUIDS

Michel Bernard Auguste Pottier, La Plaine Saint-Denis, and Charles Bernard Roux, Paris, France, assignors to Service National dit: Gaz de France, Paris, France, a National Service of France
Filed Apr. 1, 1966, Ser. No. 539,417
Claims priority, application France, Apr. 2, 1965, 52,946, 11,788
6 Claims. (Cl. 220—9)

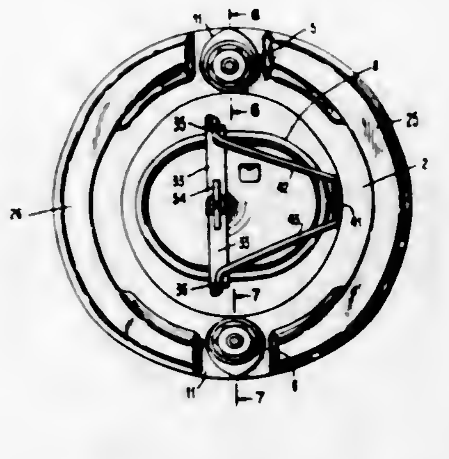


A tank for cryogenic fluid, comprising an internal heat insulating lining consisting of a plurality of superimposed layers made in alternance of a heat insulating rigid material and of a flexible material, said layers of flexible material being thin and the thickness of layers of rigid insulating material gradually increasing from the inner layers to the outer ones.

3,400,850

TOP CLOSURE OPERATOR FOR TANKS

Vertus P. Johannsen, St. Paul, Minn., assignor to John Wood Company, East Orange, N.J., a corporation of Delaware
Filed Jan. 6, 1967, Ser. No. 607,774
2 Claims. (Cl. 220—25)

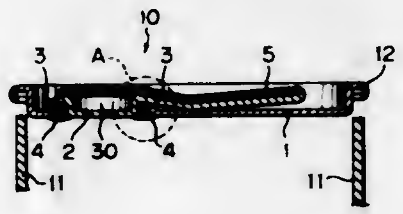


My invention relates to a top closure for premix or postmix tanks of the types which recently have come into common usage. In the premix tank, a soft drink is mixed ready for delivery to the customer, and discharged from the tank by means of a gaseous pressure expellant introduced into the tank. In the postmix tank, only the syrup for the soft drink is contained within the tank, and expelled by a gaseous pressure medium injected into the tank. The syrup is discharged through valve-controlled piping means into the glass or other receptacle, and carbonated water or other vehicle then added to the syrup to make the finished drink.

3,400,851

CLOSURE FOR CONTAINERS EMBODYING LIFT TAB OPENING MEANS

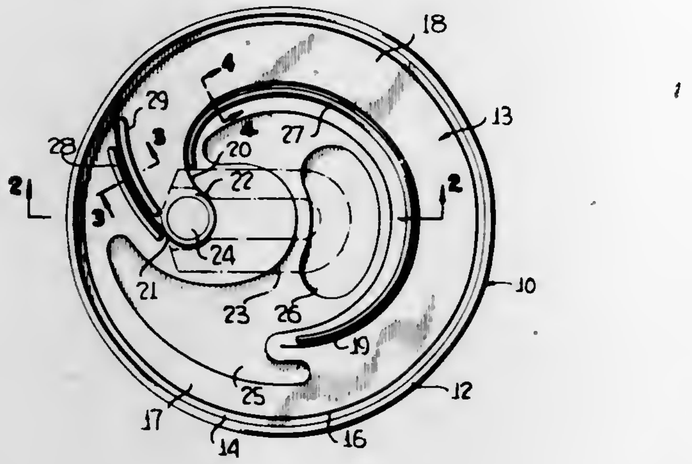
Yonekichi Morikawa, Simizu, and Hisayoshi Hihara, Sagamihara, Japan, assignors to Daiwa Can Co., Ltd., Osaka, Japan
Filed Apr. 12, 1967, Ser. No. 630,410
Claims priority, application Japan, Apr. 23, 1966, 41/37,378
6 Claims. (Cl. 220—43)



An easily openable closure for containers in which the closure is a cup-shaped plug received in an opening in the top wall of a container, the closure plug having an enlarged lower body portion which bears against a raised skirt formed in the container top wall as an inverted trough extending around the opening with a force tending to crimp the skirt and thereby establishing a tight joint between the closure and top wall. The trough provided by the raised skirt is filled with a plastic sealant which also extends onto the surface of the closure adjacent therewith, the sealant completely filling the joint and rendering the closure air tight. A lifting tab with which the container can be opened extends laterally of the plug-like body and over the raised skirt.

3,400,852
PROTECTION BEAD FOR EASY-OPENING CAN ENDS

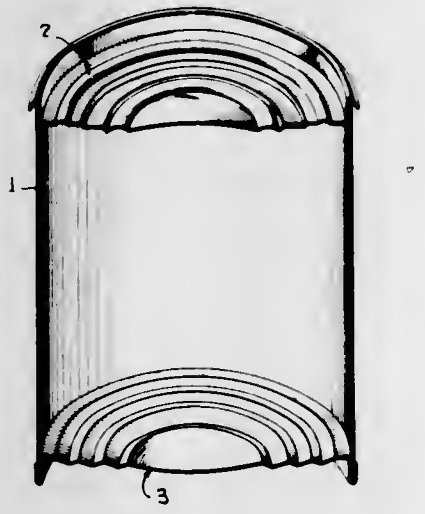
Nick S. Khoury, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 7, 1966, Ser. No. 525,511
10 Claims. (Cl. 220—54)



This disclosure specifically relates to an easy-opening can end of the type having a tear strip and particularly has to do with the provision of a bead arrangement disposed immediately adjacent certain of the score lines of the can end, which bead arrangement not only protects the score line, but which will also combine the tearings of the end panel of the can end along that score line so that the tearing will definitely continue in the intended manner.

3,400,853
CAN FOR FILLING WITH HOT GOODS

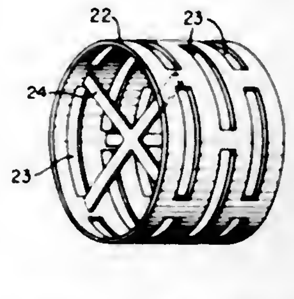
Kjell Mosvoll Jacobsen, Hohog, Sweden, assignor to AB Platmanufakter, Malmo, Sweden
Filed Jan. 18, 1965, Ser. No. 426,129
13 Claims. (Cl. 220—66)



The present invention relates generally to can structures to be employed in packaging, and more particularly to cans intended for use in the packaging of hot goods. The can complement comprising a body, a top end closure closing one end of the body and a bottom end closure closing the other end of the body. Each said end closure of the can body having the quality of assuming a convex or concave position depending upon differential pressure application thereon internally and externally of the can.

3,400,854
ANTI-SLOSH MEDIA FOR FUEL TANKS

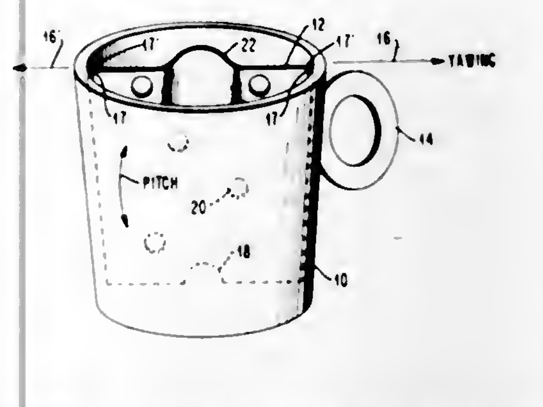
Robert W. Conaway and James S. Spindler, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Original application Sept. 17, 1965, Ser. No. 488,222, now Patent No. 3,349,953, dated Oct. 31, 1967. Divided and this application Oct. 26, 1967, Ser. No. 678,291
3 Claims. (Cl. 220—85)



A baffle system which may be inserted into fuel tanks or other liquid containers to prevent sloshing of the liquid. The tank is filled with hollow plastic objects. Each object has a perforated wall to permit liquid in the container to fill both the inside of the objects and the voids between the objects and to prevent entrapment of liquid in the tank as it is emptied.

3,400,855
SPILLPROOF CONTAINERS

Edwin S. Alexander, 26 Deerfield Drive, Florham Park, N.J. 07932
Filed June 7, 1965, Ser. No. 461,758
2 Claims. (Cl. 220—90.4)

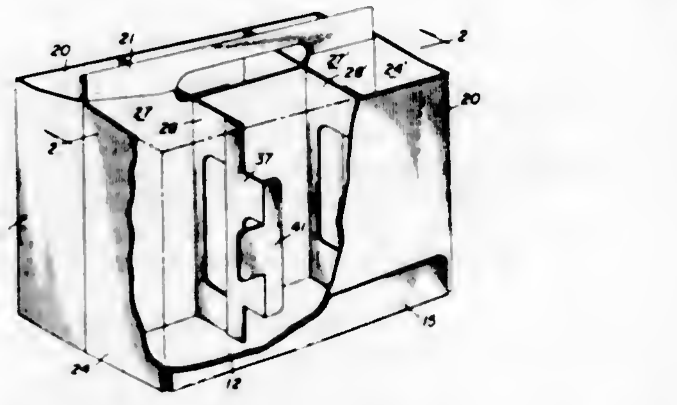


This invention relates to containers. More particularly, this invention relates to spillproof containers.

3,400,856
ARTICLE CARRIER

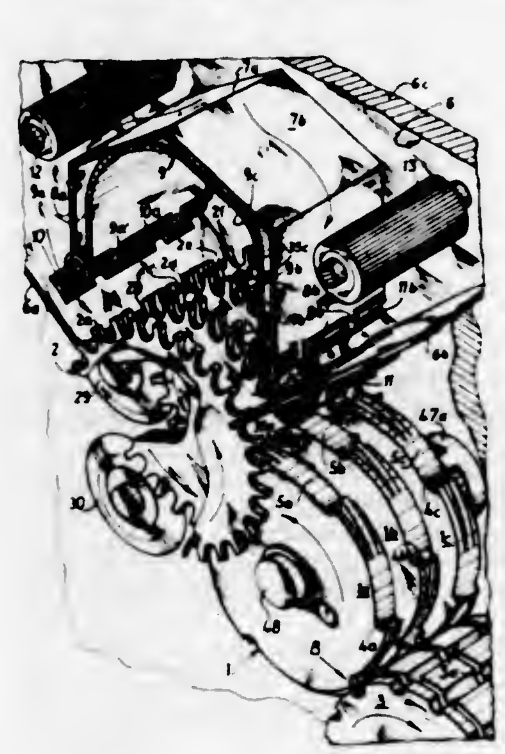
Edwin L. Arneson, Hackensack, N.J., assignor to Federal Paper Board Company, Inc., Bogota, N.J., a corporation of New York
Filed June 1, 1967, Ser. No. 642,934
11 Claims. (Cl. 220—113)

A collapsible carrier for bottled beverages which is formed from a blank of paperboard or similar material, cut and creased so that it may be folded and glued to provide, when set up, a bottom, upstanding side and end walls, and a handle and partition structure which includes a longitudinal center partition and a pair of cross partitions on opposite sides thereof so as to divide the carrier into bottle receiving cells with the cross partitions providing two plies of the blank material between points of bottle contact and with the center partition providing two full plies of material between the end pairs of bottles and a reinforcing panel folded upwardly from a hinge connection with a longitudinal partition panel and also folded upon itself so as to provide two plies of the material between the center pair of bottles.



3,400,857
APPARATUS FOR MANIPULATING ROD-LIKE ARTICLES

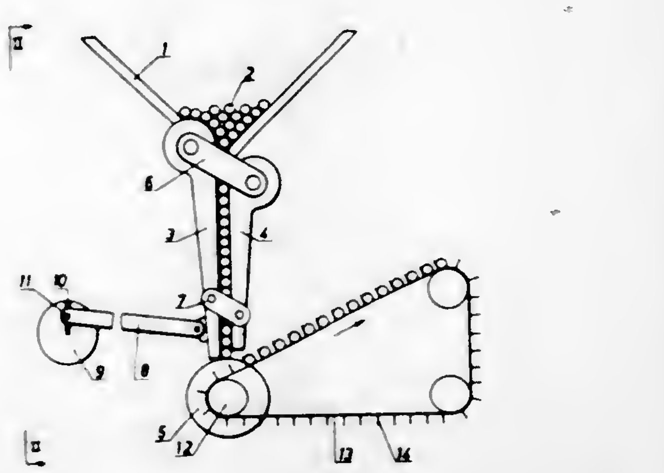
Bernhard Schubert, Hamburg-Lohbrugge, Germany, assignor to Hauni Werke Korber & Co., KG, Hamburg, Germany
Original application Nov. 14, 1963, Ser. No. 323,694, now Patent No. 3,270,601, dated Sept. 6, 1966. Divided and this application Sept. 12, 1966, Ser. No. 578,874
Claims priority, application Germany, Nov. 17, 1962, H 47,424
8 Claims. (Cl. 221—93)



A magazine which dispenses rod-shaped articles into axially parallel pockets of a rotating wheel has a chamber for a supply of articles, two chutes along which the articles can leave the magazine by gravity, and a housing defining a compartment disposed between the two chutes and adapted to receive from either chute one article at a time. The housing shields the articles in the compartment from articles in the chamber. The wheel extends into the lower part of the compartment and advances its holders past the lower ends of the chutes so that the holders can receive articles from either chute or directly from the compartment.

3,400,858
APPARATUS FOR FEEDING SIMILAR ARTICLES

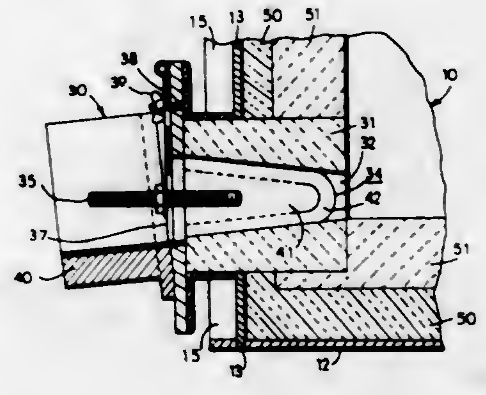
Harald Strohmeier and Bertram Hebenstreit, Kapfenberg, Austria, assignors to Gebr. Bohler & Co. Aktiengesellschaft, Vienna, Austria
Filed Nov. 1, 1966, Ser. No. 591,294
Claims priority, application Austria, Nov. 10, 1965, A 10,113/65
6 Claims. (Cl. 221—225)



A rod feeding machine, particularly adapted to feed welding electrodes from a hopper or chute to a revolving conveyor belt. Underneath the hopper or chute, there are disposed a pair of guide walls, which are adjustably connected to each other by means of a pair of straps, which are pivotally connected at their respective ends to the pair of guide walls, so that the passage defined between the pair of guide walls can be adjusted in accordance with the diameter of the welding electrodes. A cylinder is operatively mounted underneath the pair of guide walls. One of the guide walls extends close to the periphery of the cylinder, whereas the lower end of the other guide wall is spaced from the periphery of the cylinder a distance which is approximately equal to the diameter of the welding electrodes being fed from the chute or hopper. The pair of guide walls is operatively connected to means which oscillate it at a predetermined frequency. The revolving conveyor and cylinder rotate at speeds which are synchronized with the oscillating frequency of the pair of guide walls.

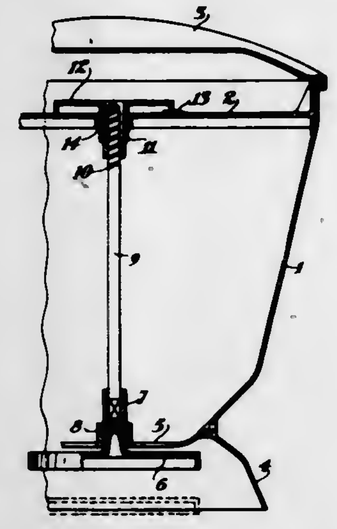
3,400,859
LADLE AND COVER

David H. Thakar and George A. Nagel, Wabash, Ind., assignors to Wabash Smelting, Inc., Wabash, Ind., a corporation of Indiana
Filed June 14, 1966, Ser. No. 557,579
6 Claims. (Cl. 222—183)



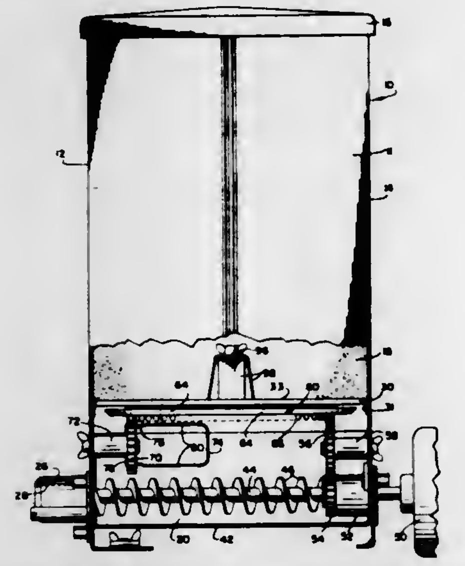
A transportable container for molten metal has a cylindrical ladle with a heat resistant lining and a tap hole in a refractory block in a side of the ladle. The ladle is closed with a lid that has a heat resistant lining.

3,400,860
SHAKER TYPE DISPENSER
Douglas Collins, London, England, assignor to Sutton and Sons Limited, Reading, Berkshire, England, a corporation of the United Kingdom
Filed May 25, 1967, Ser. No. 641,311
Claims priority, application Great Britain, June 29, 1966, 29,208/66
4 Claims. (Cl. 222—184)



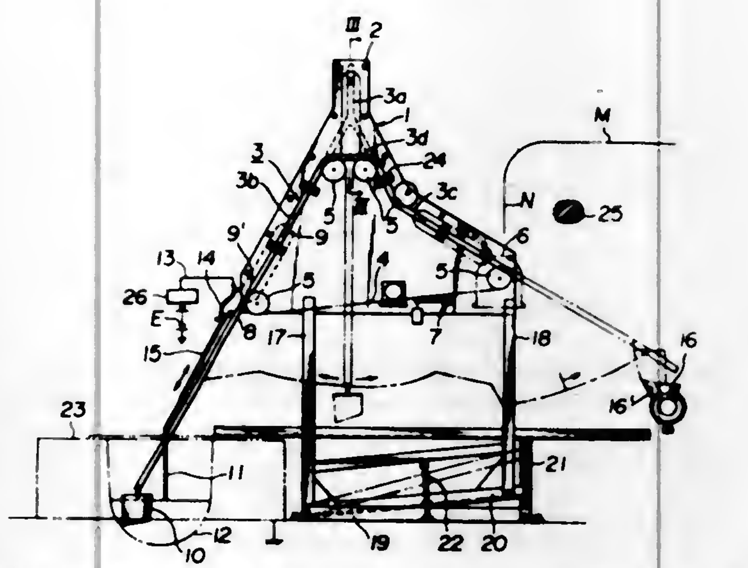
A dispenser for distributing manually powder, seeds, granules or other particulate material, comprising a hand held hopper, one or more orifices of substantial size in the base of the hopper, a disc member beneath and parallel to the base of the hopper and underlying the orifices, the disc member being restrained from free rotation relative to the hopper, and means whereby the distance between the disc and the base of the hopper may be varied from a minimum of zero. Preferably screw means are provided for varying this distance, and an outwardly extending depending skirt surrounds the base of the hopper.

3,400,861
DRY PRODUCT STORING AND DISPENSING APPARATUS
Donald C. Pearl, Lake Zurich, Ill., assignor to Canteen Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 12, 1967, Ser. No. 609,993
3 Claims. (Cl. 222—227)



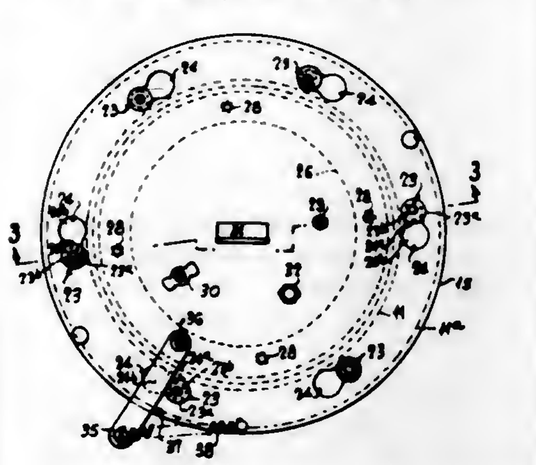
The apparatus is used for dispensing dry products such as granular or powdered material, in controlled amounts from a closed storage hopper by the action of a feed screw or auger. The feed screw is operated for a timed period whenever dispensing is to take place. The feed screw shaft drives a gear train which in turn drives an agitator in the hopper above the feed outlet opening to stir the material being dispensed. The hopper has an internal horizontal wall dividing the feed screw area from a main storage area above. In this main storage, a centrally mounted set of blades and a set of agitating wires are driven by the gear train to loosen the material in storage and to allow the material to flow gravitationally through openings in the divider wall to the feed screw area for subsequent dispensing.

3,400,862
AUTOMATIC TRANSMITTING DEVICE FOR METAL CASTING
Toshio Watanabe, Yono, Japan, assignor to Furukawa Casting Company, Limited, Kawasaki, Japan
Filed Apr. 3, 1967, Ser. No. 627,710
Claims priority, application Japan, Apr. 8. 1966 41/21,871
5 Claims. (Cl. 222—333)



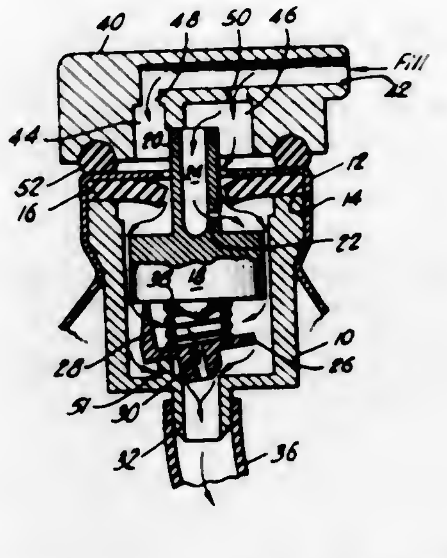
An automatic device for pouring molten metal into a pouring basin, wherein a lever having a ladle pivotally connected thereto is reciprocated by a driving means along an inverse-Y-shaped guide means, thereby the ladle is dipped in a molten metal bath for ladling molten metal when the lever is at one side lower end of the guide means and the ladle is transported to the pouring basin as the lever is moved along the guide means to the other side lower end of the guide means for pouring the molten metal thereto.

3,400,863
SAFETY ACCESS COVERS FOR PNEUMATIC PRESSURE COMPARTMENTS OF PRESSURE-FEEDING GREASE CONTAINERS
William Y. Brown, Charlotte, N.C., assignor to Brown Grease Gun Company, Inc., Charlotte, N.C., a corporation of North Carolina
Filed Sept. 2, 1966, Ser. No. 576,981
3 Claims. (Cl. 222—397)



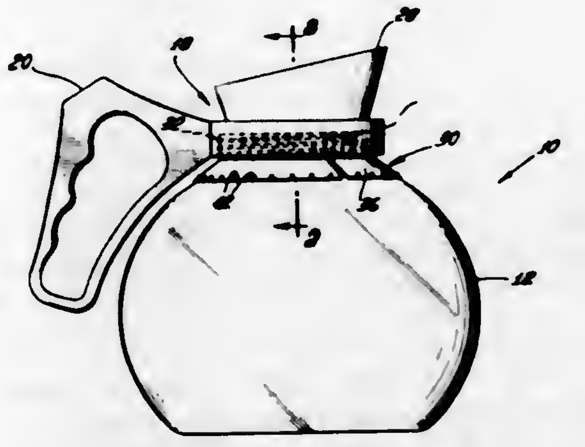
A safety access cover for the pneumatic pressure compartment of a pressure-feeding grease container in which the cover for the access opening is held either in ajar position or else in a fastened closed position, in combination with means for preventing the cover from assuming a position intermediate the two first-named positions.

3,400,864
QUICK FILLING VALVE FOR PRESSURIZED CONTAINERS
John Frangos, Brooklyn, N.Y., assignor to Revlon, Inc., New York, N.Y., a corporation of Delaware
Filed May 10, 1967, Ser. No. 637,423
13 Claims. (Cl. 222—402.16)



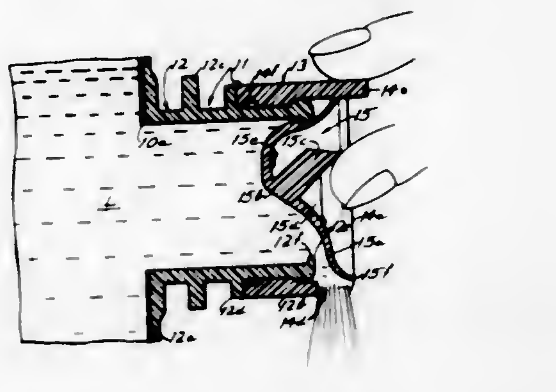
For filling a container with pressurized fluid and for dispensing the same, a valve having a valve body within said container, a valve stem in said valve body, and a pivotable adapter seated in a passage between the valve body and the container. When dispensing, fluid passes from the container through a constricted orifice in the adapter, which remains seated in said passage. When filling, the valve stem is deeply depressed to engage, pivot, and unseat the adapter, opening said passage to permit rapid fluid flow into the container.

3,400,865
BEVERAGE DECANTER CONSTRUCTION
John P. Hester, Lakewood, Calif., assignor, by mesne assignments, to Margaret A. Curtis, North Hollywood, Calif.
Filed Dec. 2, 1966, Ser. No. 598,651
2 Claims. (Cl. 222—475)



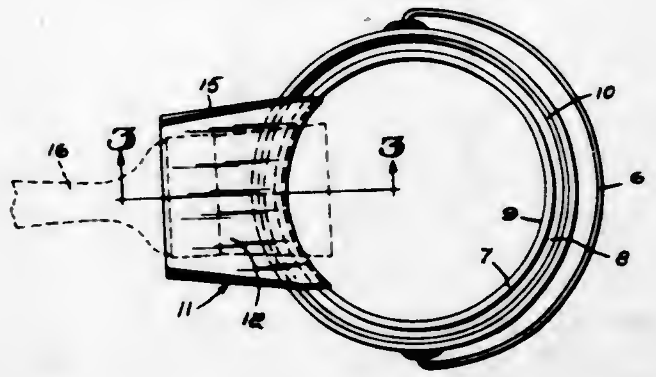
Apparatus for attaching a handle and pouring spout assembly to the neck of a glass flask having an outwardly beaded upper edge. A split locking sleeve engages around the neck of the flask under the bead, and a collar forming a part of the handle and spout assembly is threadedly engaged over the locking sleeve.

3,400,866
TAP DISPENSER-CLOSURE WITH DIAPHRAGMIC TOGGLE
Lazzaro A. Fattori, Woodcliff Lake, N.J. 07675
Filed Nov. 4, 1966, Ser. No. 592,122
13 Claims. (Cl. 222—511)



A container delivery spout has a lateral opening inwardly of its delivery end and a transverse diaphragmic wall mounted on the spout outwardly of said opening. The diaphragmic wall extends concavely into the spout beyond said opening where it is contacted and distended by radially inwardly extending annular means of the spout forming a closure or pressure seal therebetween. Distortion of the wall by finger manipulation resiliently disengages said closure for delivering fluid through the opening, the pressure seal resiliently closing upon release.

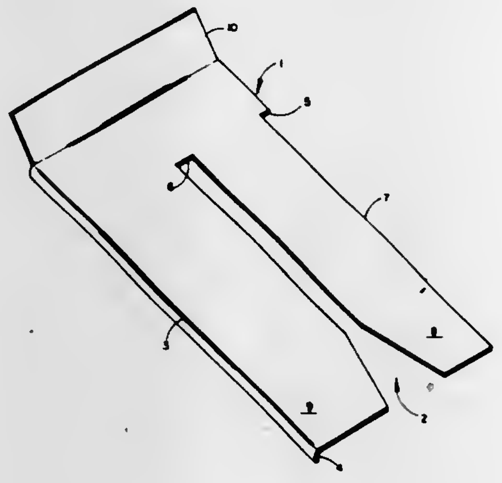
3,400,867
SPOUT ATTACHMENT FOR PAINT CONTAINERS
Dominic S. Giammone, 125 Green St., North Weymouth, Mass. 02191
Filed May 27, 1966, Ser. No. 553,551
1 Claim. (Cl. 222—570)



Pouring spout for paint pails, the spout tapering forwardly and inwardly and having a flat bottom and sides of approximately the same height throughout their length, the sides defining an increasingly obtuse angle relative to the bottom as they converge.

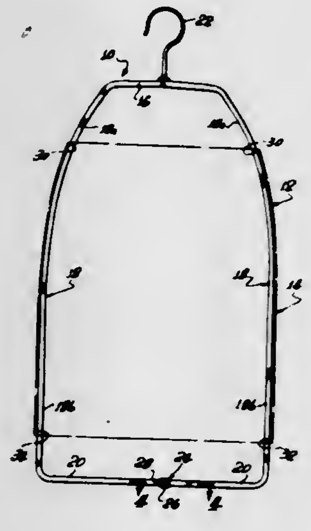
3,400,868
PROCESS FOR MAKING CURTAINS USING IMPROVED PLEATER GUIDE
Rosendo M. Ezzarraga, 2043 Embassy St., Anaheim, Calif. 92804
Filed Apr. 8, 1966, Ser. No. 541,149
2 Claims. (Cl. 223—34)

Sewing the lower edge of a perforated tape to the top edge of a drapery material and folding the tape and material so that the tape is enclosed within the material, and then folding the enclosed tape and material to form a loop. A pleater guide is inserted into the loop for defining the lines which should be sewed together to form a pleat.



The process is repeated until the number of required pleats have been formed.

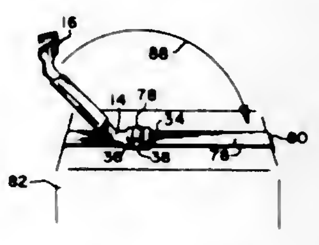
3,400,869
SKIRT HANGER
Larlyn C. Jensen and Paul R. Jensen, both of 1127 Elsberry Ave., Valinda, Calif. 91744
Filed Aug. 22, 1966, Ser. No. 574,071
1 Claim. (Cl. 223—95)



A skirt hanger having a wire frame with depending arms including upper arcuate portions which curve inwardly toward and join one another at their upper ends along the longitudinal center line of the hanger and lower straight portions which substantially parallel one another and merge tangentially with the upper arm portions closely adjacent the midpoints of the arms, whereby the outline shape of the hanger conforms generally to the flat outline shape of a woman's skirt, and means for adjusting the spacing between the arms to stretch a skirt positioned on the hanger.

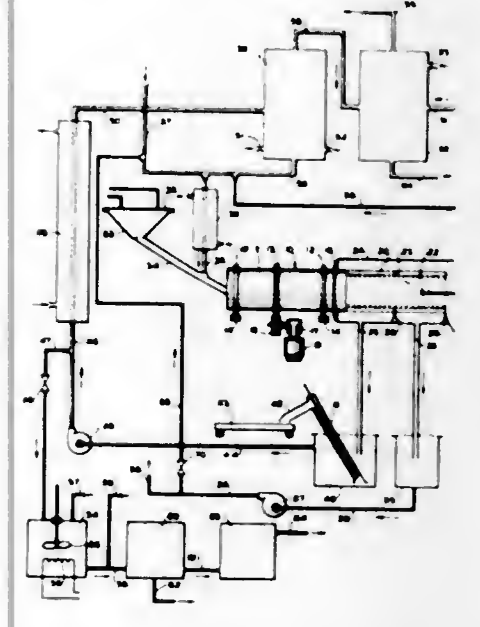
3,400,870
COMBINATION BELT TIGHTENING AND HANDLE DEVICE
John J. Di Vietri, 652 88th St., Brooklyn, N.Y. 11228
Filed Apr. 7, 1967, Ser. No. 629,289
5 Claims. (Cl. 224—58)

A device for tightening a belt about an article and serving as a handle for transporting the article in the form of a unitary body having an elongated central shank terminating at each end in an angularly inclined arm. One of the arms has a pair of spaced slots through which the belt may be threaded, and for forming vertically-spaced bights in the belt when the device is turned to a position in



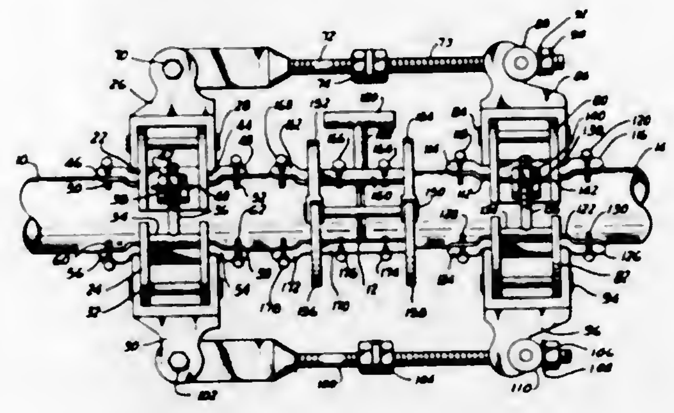
which the arms rest upon the article or the belt thereon and position the shank spaced above and parallel to the luggage in position to serve as a handle. The other arm has retaining means for releasably locking said arm to the belt.

3,400,871
APPARATUS FOR CONTINUOUS METAL EXTRACTION
Walter M. Davis, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed July 22, 1965, Ser. No. 474,072
6 Claims. (Cl. 266—12)



The present disclosure relates to an apparatus for extracting solubles from solids. The apparatus comprises an elongated cylindrical hollow vessel mounted to rotate substantially about its longitudinal axis. This vessel has an outer shell wall and a charge end into which a solvent-extractant liquid and a metal value-containing material are charged. Such vessel also has a discharge end through which solids and liquids are discharged. The discharge end comprises a substantial longitudinal length of the shell wall which has peripheral perforations therein through which liquid is discharged and an elongated screen which is spaced inwardly from the outer shell wall and extends substantially the length of the perforated wall section. The discharge end also includes means such as a single helix for positively moving solid particles of matter out of the discharge end of the vessel. Furthermore, there is included in the discharge end a first stage means for separately collecting the metal value-containing solvent liquid discharged through said perforations, a second stage means for washing the solids passing said first stage means and including a first baffle means for separating the resultant wash liquid discharged through said perforations from said metal value-containing solvent liquid, and a third stage means including a second baffle means for separating the insoluble solid material passing the second stage means from said wash liquid. The discharge end of the aforementioned vessel is also provided with a stationary housing enclosing the discharge end and has in combination therewith means including a third baffle means for segregating the said liquids and solids being discharged from said vessel.

3,400,872
LINEUP CLAMP
Dick Rogers, 608 Don, Pasadena, Tex. 77502
Filed Oct. 4, 1965, Ser. No. 492,480
1 Claim. (Cl. 228—44)

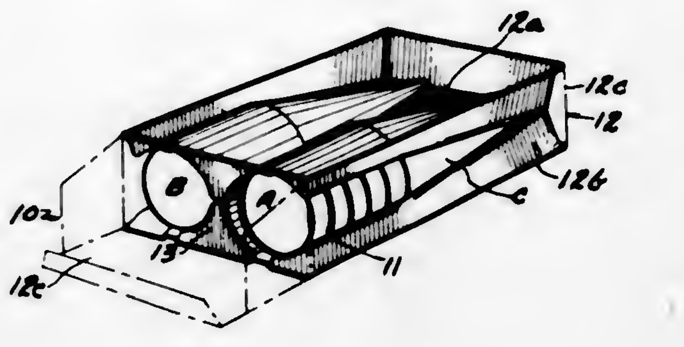


Pipe welding lineup clamp apparatus comprising a first clamp means and a second clamp means adjustably linked together by draw bolts. Each of these clamp means are hinged in two sections to allow slipping over pipe sections and a swing bolt is provided on one hinged section and adapted to engage a slotted lug on the other hinged section to latch the clamp in complete encirclement of the pipe. Ears or projected portions are attached to both sides of these clamp sections and are provided with threaded bolts which project radially inward for adjustment to contact the pipe sections to be aligned for rigidly affixing the clamps thereto. The linking draw bolts are pivotally attached at one end to one of the clamp means and are engageable at the other end with a dog hook affixed to the other clamp means. Draw bolt nuts may be rotated either to pull the two clamps together or push them apart, depending on the initial position of the pipe sections to be joined, until the pipe sections are in alignment.

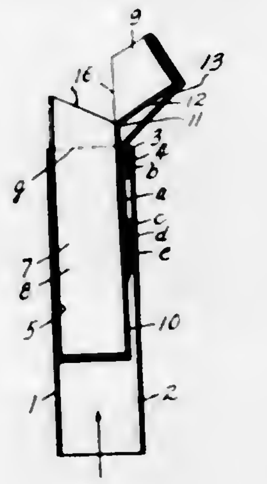
Another clamp useful in aligning pipe sections for welding, also disclosed herein, comprises two sections also hinged for engaging two pipe sections and latched together by a swing bolt and slotted lug similar to the one described previously. Each section includes two semi-circular longitudinally spaced frames yoked together by steel straps. These straps are provided with a plurality of engagement means such as bolts arranged in spaced apart circular fashion providing radial contacts on either side of the junction of the two pipe sections to be joined. The latching swing bolt may be adjustable by hand for drawing the pipe sections into alignment. Another variation of this clamp includes a circular clamp and draw bolt adjustably linked to the frame of the hinged clamp for engagement with the upturned end of a pipe T for alignment with a section of pipe to which it is to be welded.

3,400,873
MOLDED RECEPTACLE
Clifford H. Bessett, South Holland, Ill., assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware
Filed July 22, 1966, Ser. No. 567,277
4 Claims. (Cl. 229—2.5)

A molded receptacle for accommodating a fragile product. The molded receptacle includes a pair of hingedly connected complemental sections which, when in superposed relation, accommodate the product therebetween. Each section is provided with flange means which extends from a product supporting surface and causes the accommodated product and any portion of the surface to be spaced from a predetermined reference plane engaged by the flange means.



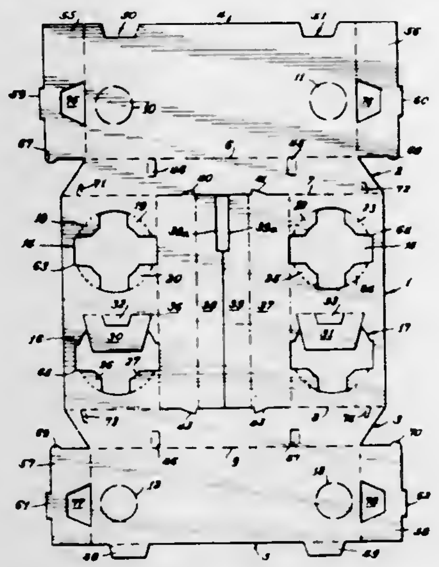
3,400,874
DRAWER-TYPE CARTON
Katsuji Shimada, 31 Uchide Midorigaoka-cho, Ashiya-shi, Japan, and Katsuyuki Shimada, 5–9 Mitsuya Minami-dori, Higashi, Yodogawa-ku, Osaka-shi, Japan
Filed Feb. 7, 1966, Ser. No. 525,405
Claims priority, application Japan, Dec. 4, 1965, 40/98,910
2 Claims. (Cl. 229—11)



The present invention concerns a drawer-type carton containing means for automatically opening the lid. Said means are characterized in that a flap is provided at the upper edge of a back wall of the inner case of the carton and a hook portion, bent back outwardly and upwardly and having elastic properties, is provided on the back of said flap. An extension bent inwardly and also having elastic properties, is provided at the upper edge of the back wall of the outer case. When the inner case is pushed upward, the hook portion of the flap of the inner case interlocks with the extension of the outer case by the action of their mutual traction, and the upper edge of the inner case is opened and bent backward.

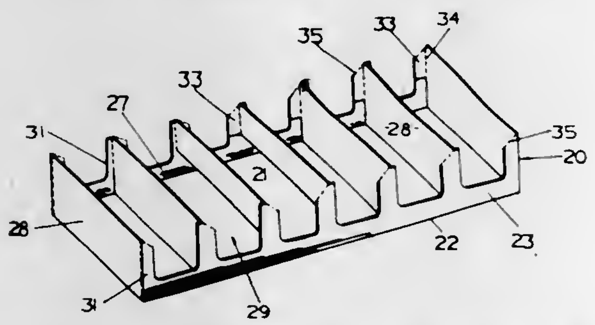
3,400,875
CARRY-OUT TRAY
Merrill J. Coe, Kalamazoo, Mich., assignor to Brown Company, Kalamazoo, Mich., a corporation of Delaware
Filed Sept. 2, 1966, Ser. No. 576,991
15 Claims. (Cl. 229—28)

A serving tray formed of an integral blank comprising a top panel, side panels, a bottom panel formed of bottom panel members adhesively affixed to each other at an overlapping common margin, the top panel being suitably cut to provide a plurality of receptacle openings and having longitudinal struts struck therefrom at some of the



receptacle openings, and adhesive tabs struck from an overlapping margin of one of the bottom panel members and adhesively affixed to the ends of the longitudinal struts.

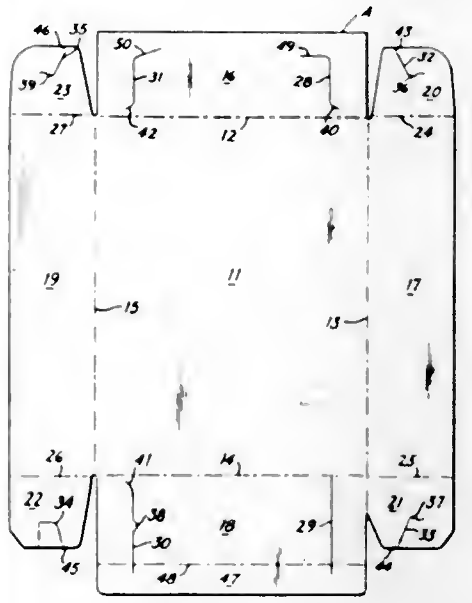
3,400,876
CARTONS
Daniel Wainberg, 4755 Blvd. des Grandes Prairies, St. Leonard, Montreal 38, Quebec, Canada
Filed Aug. 10, 1967, Ser. No. 665,661
5 Claims. (Cl. 229—28)



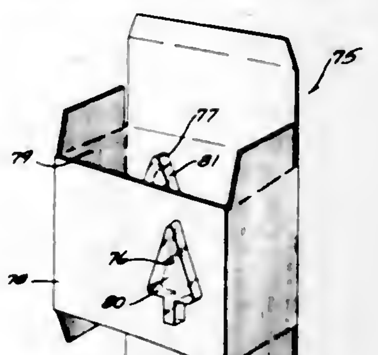
The invention refers to a carton made from a one piece pre-cut blank and in which the bottom wall is flanked by integral longitudinal upright walls, the upright walls having cutout portions to form parallel upright poses with their upper ends integrally connected with lateral extensions, which in turn are integrally connected to transverse members that extend across the width of the carton. The transverse members are in a horizontal position prior to carton erection and having their lateral extensions in approximately vertical alignment with the upright posts, the extensions adapted to be expanded outwardly from the transverse members during application of pressure against the transverse members for changing their horizontal positions to appoximately vertical positions and adapted to swing inwardly for back-to-back abutment with the inner faces of the upright posts and thereby automatically self-locking the transverse members with the posts and completing the erection of the carton.

3,400,877
GLUELESS PANEL LOCKS, PARTICULARLY CORNER LOCKS FOR FOLDING BOXES
Chester J. Pierce, Jr., Palo Alto, Calif., assignor to Kliklok Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 10, 1966, Ser. No. 585,435
23 Claims. (Cl. 229—32)

The present improvements provide a folding box panel interlock of the general type in which a tab is inserted into an insertion slot and in which an interlock results between the insertion slot and a coinciding portion of a slot in the tab. A pointed tip at the outer end portion of the tab slot is directed towards the box bottom panel. This precludes interference with the insertion of the tight fitting box contents or interference with the top edge of the box body in case the structure serves as a telescoping cover. A lug on the insertion slot or on the tab slot is snapped past an edge of the interlock and serves as a safety catch in this position. A bridge is optionally provided at the tab tip to prevent the tip from catching on an edge of the insertion slot. This bridge is severed after insertion of the tip.



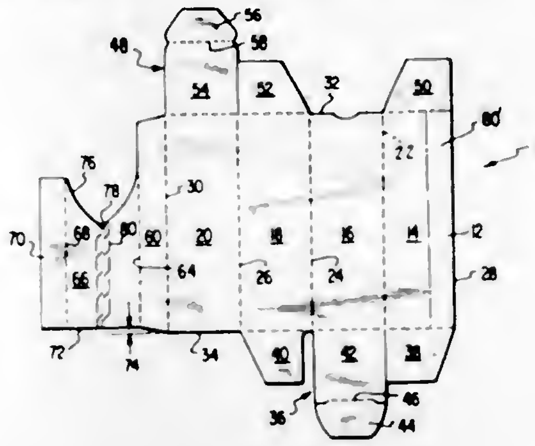
3,400,878
CARTON BLANK AND COMMODITY CONTAINER
William C. Heller, Jr., 1840 N. Farwell Ave., Milwaukee, Wis. 53202, and Donald W. Davis, Milwaukee, Wis.; said Davis assignor to said Heller
Filed Sept. 2, 1966, Ser. No. 576,959
10 Claims (Cl. 229—37)



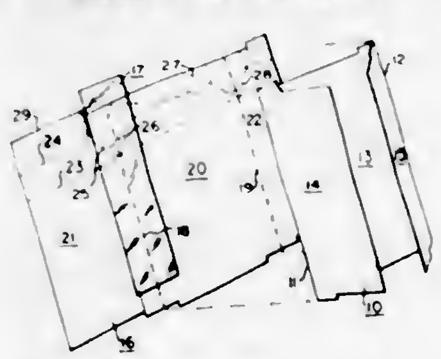
A carton blank and a carton produced therefrom having a predetermined area in at least one panel defined by a thermoformed portion which is shaped to extend laterally beyond the plane of the panel.

3,400,879
CARTON WITH CUSHIONING PLATFORM AND BLANK FOR PRODUCING THE SAME
Alexander G. O'Brien, Louisville, Ky., and Kenneth D. Bixler, Huntington, N.Y., assignors to Diamond International Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 28, 1967, Ser. No. 619,353
12 Claims. (Cl. 229—39)

This discolsure relates to improvements in tubular cartons and blanks for accommodating and protecting different size fragile articles and forming a rupturable support platform inside the carton after the carton has been erected from an assembled blank.



3,400,880
FREE FILM SLEEVED VALVE IN MULTIWALL BAG
Jean H. Lessard, Repentigny, Quebec, Canada, assignor to Canadian International Paper Company, Montreal, Quebec, Canada, a corporation of Canada
Filed Aug. 16, 1965, Ser. No. 479,927
Claims priority, application Canada, June 30, 1965, 934,688
6 Claims. (Cl. 229—62.5)

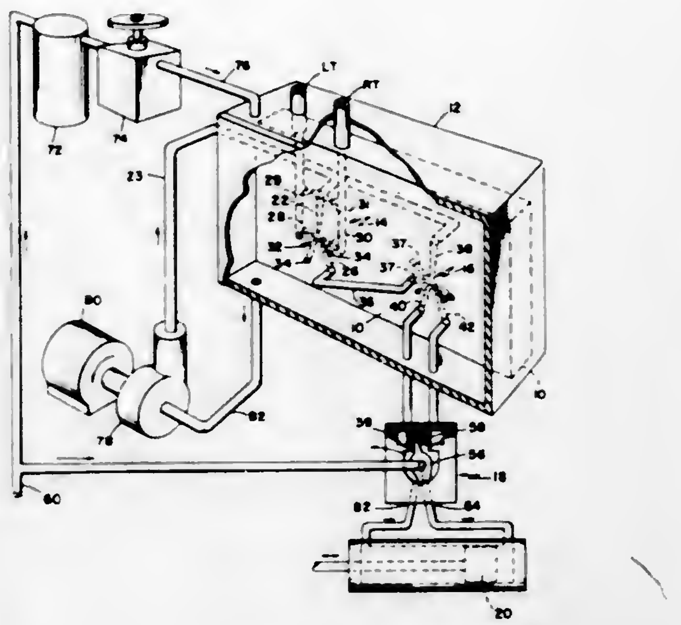


Multilayer pasted end paper bags are adapted for filling and subsequent closure through one corner thereof. A free-filmed sleeved valve is provided for ease of filling and subsequent sealing to prevent sifting of the material. The valve consists of a sheet of synthetic thermo-plastic material such as polyethylene or polypropylene which lies between two plies of the bag protruding therefrom sufficiently to form a free-filmed sleeve.

3,400,881
COMPRESSED AIR ECONOMIZER FOR FLUIDIC CONTROLS
George Napoleon Levesque, Warwick, R.I., assignor to Brown & Sharpe Manufacturing Company, North Kingstown, R.I., a corporation of Rhode Island
Filed Dec. 15, 1966, Ser. No. 601,897
6 Claims. (Cl. 230—1)

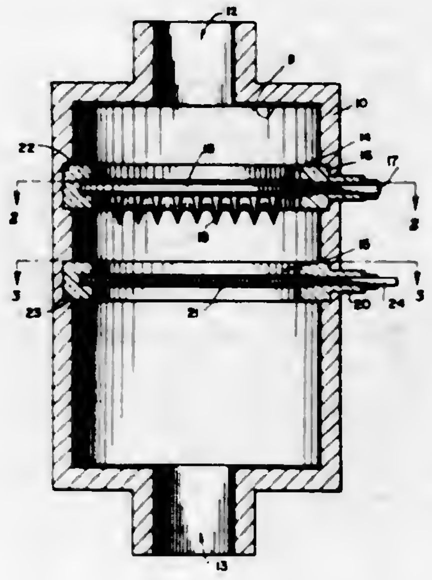
The disclosure of the present invention comprises a plurality of fluidic control elements having inlet and discharge apertures thereto, a gas confining enclosure within which said fluidic control elements are housed including said discharge apertures, a low pressure gaseous fluid pump connected between the enclosure and said fluidic control elements providing a circuit to withdraw from said disclosure and to supply a filtered compressed gaseous fluid to said fluidic control elements at a predetermined fluidic element operating pressure, and means for supplying additional filtered compressed gaseous fluid to said circuit to maintain a fluid pressure in said enclosure slightly above atmosphere.

In one form of the invention additional filtered compressed gaseous fluid is supplied directly to the enclosure from an outside source at slightly above atmospheric pressure.



In another form of the invention additional filtered compressed gaseous fluid is supplied to said fluidic control elements at said operating pressure, and a restricted outlet is provided from said enclosure for exhausting filtered gaseous fluid therefrom at slightly above atmospheric pressure.

3,400,882
ION PUMP
John A. McManus, Oakville, Ontario, Canada, assignor to Mallory Battery Company of Canada Ltd., Ontario, Canada, a corporation of Canada
Filed June 24, 1966, Ser. No. 560,139
10 Claims. (Cl. 230—69)

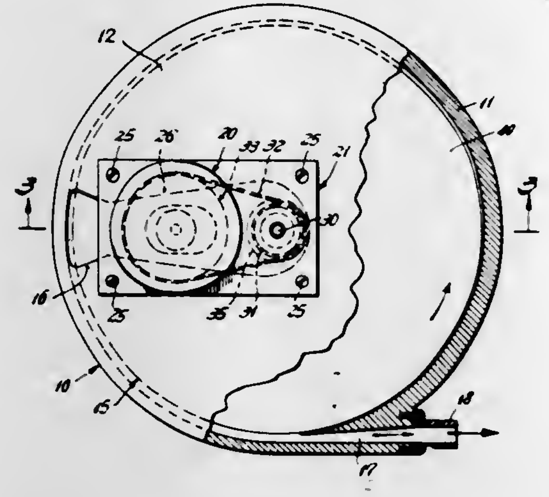


An apparatus for scavenging gases from a partially evacuated environment including a chamber having intake and exhaust ports. The intake port is connected to the partially evacuated environment. A high voltage electric field of the apparatus substantially converts surrounding gases to ions. An ion attracting means is disposed between the electric field and the exhaust port so as to attract ions thereto thereby sweeping neutral gas particles out of the exhaust port. The efficiency of the apparatus increases as the vacuum becomes harder.

3,400,883

FLUID PUMP

Herbert Tramposch, Riverside, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed Oct. 17, 1966, Ser. No. 587,303
6 Claims. (Cl. 230—118)

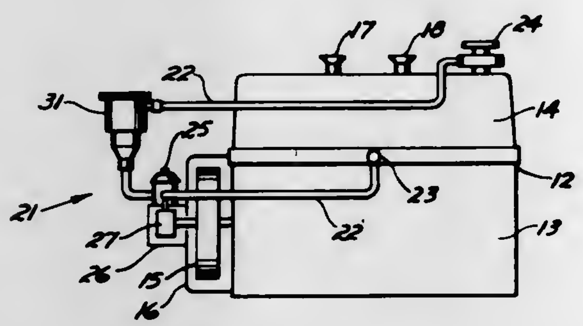


1. In a friction type compressor: having
a housing;
a main shaft rotatably mounted in said housing; and drive means for rotating said shaft:
 the improvement comprising
  a plurality of friction discs carried by said shaft and disposed with said housing, said discs being mutual spaced progressively farther axial distances apart;
  said discs varying in thickness and rigidity with the two axially outermost ones of said discs being thicker and more rigid than the axially inner ones of said discs.

3,400,884

VACUUM PUMP ADSORBENT FILTER APPARATUS

Peter Hundenborn, Cologne-Bickendorf, and Klaus Kutzke, Cologne-Ostheim, Germany, assignors to Leybold Holding AG, Zug, Switzerland, a Swiss joint-stock company
Filed May 31, 1966, Ser. No. 559,664
Claims priority, application Germany, Aug. 23, 1965, L 51,450
12 Claims. (Cl. 230—206)

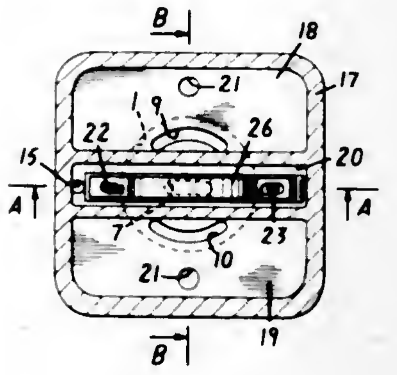


The oil filter casing includes an upper cylindrical portion and a lower conical portion which extends downwardly tapering to an inlet port at its lower apex. An outlet port opens from the upper cylindrical wall adjacent to the top; and a sleeve-like outlet filter element defines with the cylindrical wall an annular free space which communicates with the outlet port. An inlet filter element is positioned at the bottom of the conical portion adjacent to the inlet port to intercept all of the oil flowing into the casing. The casing is partially filled with adsorbent clay particles through which the oil is percolated.

3,400,885

PISTON-TYPE COMPRESSOR PARTICULARLY FOR SMALL REFRIGERATING UNITS

Arne F. Enemark, Sonderborg, Knud V. Valbjorn, Nordborg, and Bendt W. Larsen, Augustenborg, Denmark, assignors to Danfos A/S, Nordborg, Denmark, a company of Denmark
Filed Oct. 10, 1966, Ser. No. 585,500
4 Claims. (Cl. 230—231)

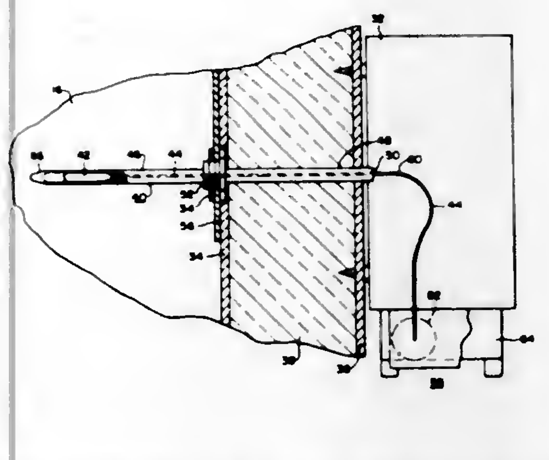


A compressor of the reciprocating piston type for small refrigeration units in which gas flow is carried out without excessive velocities and in which temperature distribution is kept substantially symmetrical. The compressor has a valve plate having a pressure valve seat about the longitudinal axis of the compressor cylinder circumferentially of a discharge port. Suction ports are disposed spaced about the axis concentric therewith. A pair of flat flexible springs bear on opposite sides of the valve plate and are clamped at one end. The springs function as valves as a suction valve and discharge valve.

3,400,886

THERMOSTAT ARRANGEMENT FOR HEAT CLEANING COOKING OVEN

Calvin J. Holtkamp, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 10, 1967, Ser. No. 637,566
4 Claims. (Cl. 236—15)

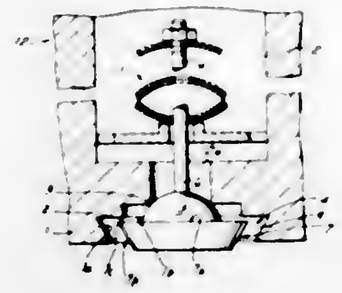


Thermostat apparatus for a heat cleaning type cooking oven in which a mercury filled sensing element operative to terminate heating in the oven in response to the upper temperature limit of the heat cleaning temperature range is disposed in a hollow tube fixed to the oven walls to project into the oven cavity. The tube is preferably closed on the inner end and serves to minimize the likelihood of damage to the mercury element and the possibility of loss of mercury into the oven if the element is ruptured, and finally introduces a thermal delay in the response of the element to intermittent combustion in the over cavity during a heat cleaning cycle.

3,400,887

DISCHARGE VALVE FOR STEAM TRAPS OR THE LIKE

Werner Foeller, Luxembourg, Luxembourg, assignor to Klein Schanzlin & Becker Aktiengesellschaft, Frankenthal, Pfalz, Germany
Filed Mar. 17, 1967, Ser. No. 623,881
Claims priority, application Germany, Mar. 18, 1966, K 58,761
10 Claims. (Cl. 236—59)

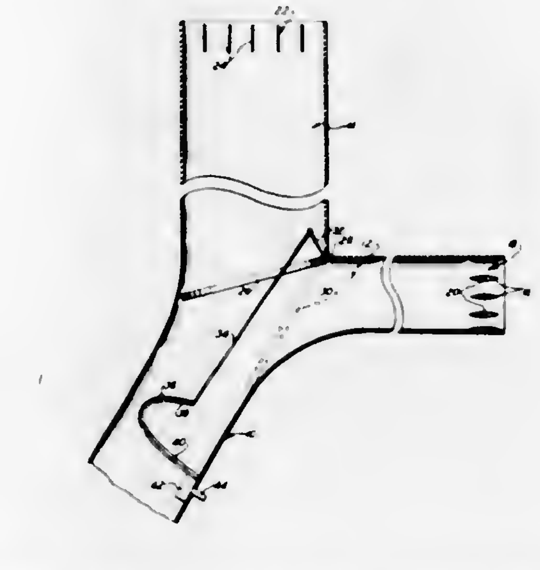


A discharge valve for effecting automatic evacuation of condensate from steam traps. The valve body defines a plenum chamber which collects condensate and can discharge such condensate into a channel via an annular seat which is normally closed by a first valve member connected with a bimetallic thermostat whose bias varies as a function of temperature changes in the plenum chamber. A second valve member which is movable with the first valve member defines with the valve body a series of successive flow-restricting orifices located downstream of the seat. This cross-sectional area of the second orifice first decreases and thereupon increases while the first valve member respectively moves to and beyond a position at a preselected distance from the seat. When the cross-sectional area of the second orifice decreases, the pressure of condensate upstream of the second orifice builds up and such pressure is communicated to the second valve member to effect movement of the first valve member further away from the seat.

3,400,888

FLUID DISTRIBUTING AND FLOW VOLUME CONTROL

Dimitri Kosacheff, New Boston, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 17, 1966, Ser. No. 558,351
2 Claims. (Cl. 236—93)

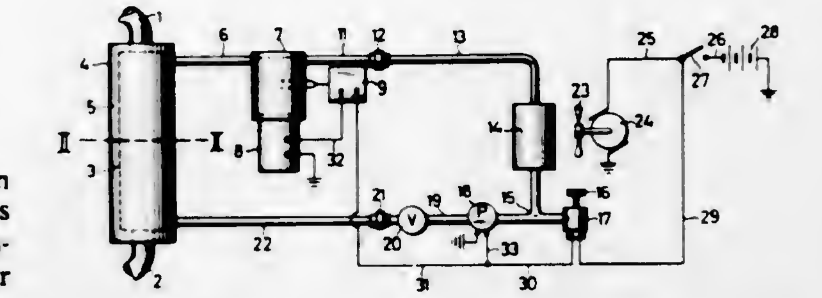


An air flow manifolding for controlling flow volume, velocity and direction of flow; a movable shuttle gate initially provides flow through a low volume branch outlet having an orifice in the discharge to increase flow velocity, a decrease in temperature moving the gate to provide flow through an unrestricted outlet branch having an area comparable to that of the main duct.

3,400,889

AUTOMOTIVE VEHICLE SPACE HEATER SYSTEM

Karl Hoyer, Leinfelden, Wurttemberg, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany, a limited-liability company of Germany
Filed Mar. 23, 1966, Ser. No. 536,828
Claims priority, application Germany, Apr. 30, 1965, B 81,681
1 Claim. (Cl. 237—9)

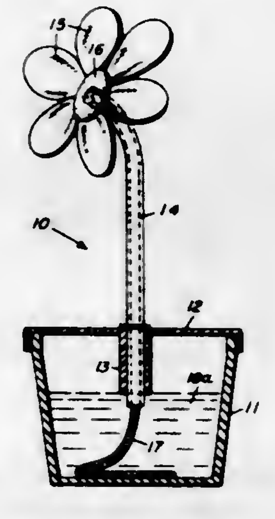


An evaporative type heat exchange fluid, such as Freon, is placed in a heat exchange circuit including, in series: an evaporator type heat exchanger placed around the muffler; a second evaporator type heat exchanger, separately powered by the gasoline burner; a condenser, to operate as a space heater; and a circulating pump. A pressure sensing device, sensing the heat exchange fluid pressure, is included in the circuit, as well as a thermostat sensing temperature at the second, gasoline fired heat exchanger. Upon starting of the system, heat will be applied to the evaporator by the second, gasoline fired heat exchanger if: (a) the pressure in the system is low (indicating absence of sufficient heat from the muffler-type heat exchanger) and (b) the temperature at the gasoline fired heat exchanger is below a predetermined value indicating that heat may be supplied.

3,400,890

FRAGRANCE RELEASING DEVICE

Francis E. Gould, Princeton, N.J., assignor to National Patent Development Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 7, 1966, Ser. No. 599,911
30 Claims. (Cl. 239—36)

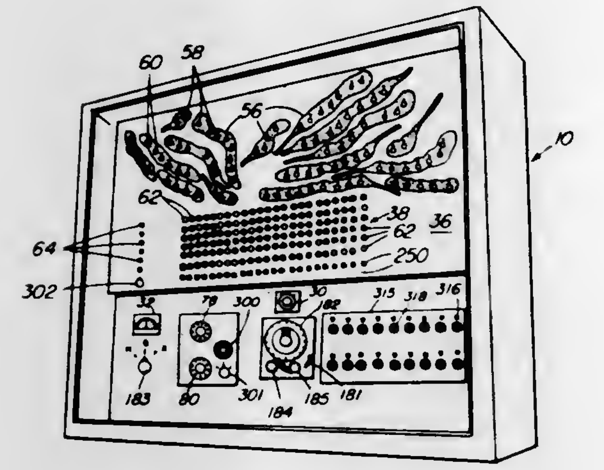


An ornamental article simulating natural fragrant flora fabricated from synthetic material including at least in part a hydrophilic hydrogel.

3,400,891

IRRIGATION SYSTEM

Michael O. Mattwell, 1 Daniel Drive,
Glen Cove, N.Y. 11542
Filed July 8, 1966, Ser. No. 563,910
15 Claims. (Cl. 239—66)

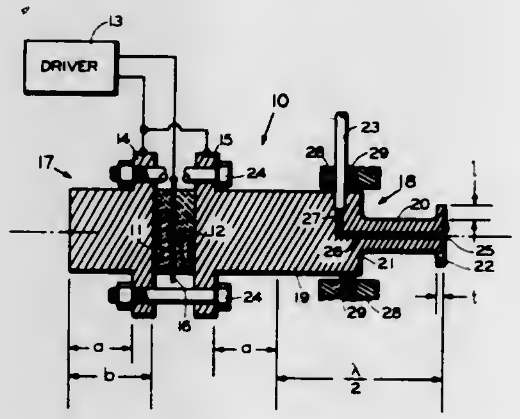


An irrigation system for watering a land area at a plurality of locations by controlling with a designated number of controlling circuits, a corresponding plurality of solenoid operated sprinkler valves. Each controlling circuit is associated with and controls the valves of only certain sprinkler heads selected on the basis of having substantially equal operating pressure requirements. A central control unit having a panel board on which is depicted pictorially the land area being watered is provided, the board having a plurality of terminal means thereon in correspondence to the number of sprinkler heads in the field, the terminal means comprising part of the respective controlling circuits. A programmer is provided for connecting the respective controlling circuits with electrical power in predetermined sequential order.

3,400,892

RESONANT VIBRATORY APPARATUS

Dale Ensminger, Columbus, Ohio, assignor to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware
Filed Dec. 2, 1965, Ser. No. 531,319
2 Claims. (Cl. 239—102)

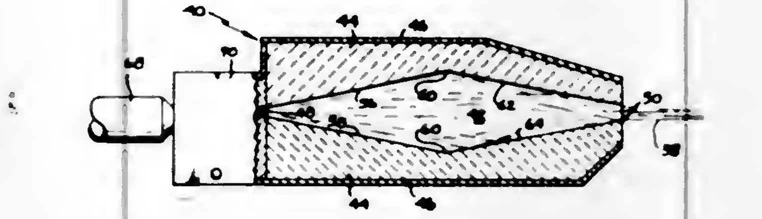


A full-wave resonant ultrasonic horn atomizer comprising, from the left: a quarter-wave section 17, two electronically driven, clamped piezoelectric disks 11, 12, and a half-wave section 19, all of full diameter; a quarter-wave section 20 of reduced diameter for mechanical amplification; and a flange 22, supplied with liquid, at the displacement antinode 25, and "tuned" to flex resonantly at the operating frequency.

3,400,893

APPARATUS FOR FORMING GLASS FIBER PRODUCTS

Dominick Labino, Grand Rapids, Ohio, assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed June 14, 1965, Ser. No. 463,572
6 Claims. (Cl. 239—592)

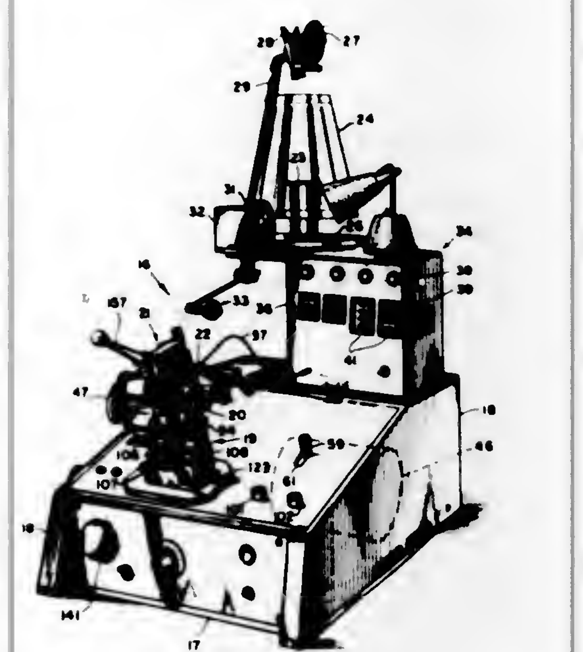


A glass fiber flame attenuating burner comprising a combustion chamber of increasing transverse cross-sectional configuration in an axial direction from the fuel and air inlet orifice to approximately the mid-section of the chamber and of decreasing transverse cross-sectional configuration in an axial direction from the mid-section to its discharge orifice.

3,400,894

TOROIDAL COIL WINDING MACHINE

Ralph A. McIntosh, Danbury, Joseph D. Hornak, Bethel, and Leon J. Yarrish, Danbury, Conn., assignors, by mesne assignments, to Bertrand J. Labranche, New Milford, Conn.
Filed Mar. 21, 1966, Ser. No. 536,053
8 Claims. (Cl. 242—4)

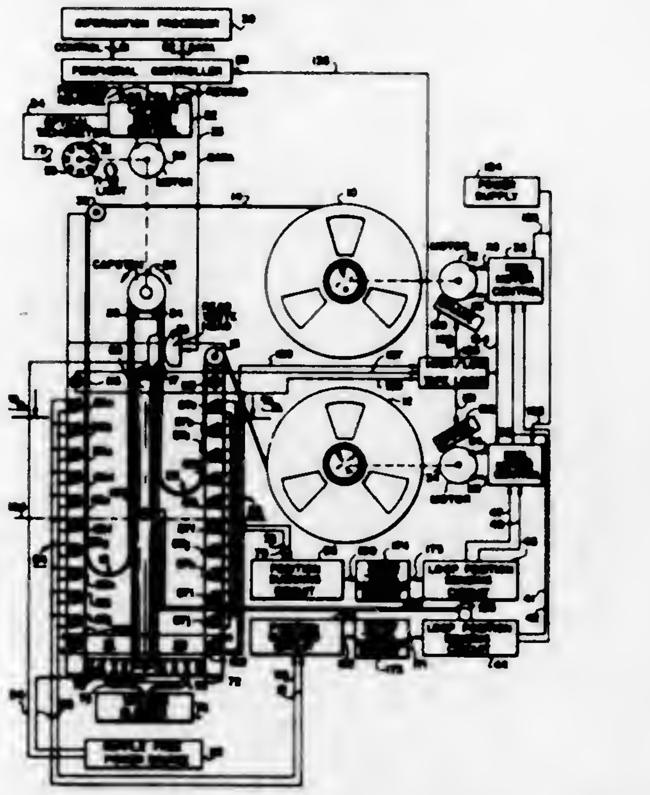


A toroidal coil winding machine having a base supporting in cooperative juxtaposition a core holder assembly constructed to support and revolve a toroidal core about its own axis and a head assembly constructed to support and rotate about its own axis a ring-shaped, wire-carrying shuttle interlinked with the core, with disengageably retractable roller means movable into rotary supporting and driving engagement with the core and with the shuttle, with a longitudinally and laterally adjustable head indexing mechanism, and with a stripping plunger positioned for retractable extension into the path of wire being wound from the rotating shuttle onto the rotating core.

3,400,895

TAPE HANDLER REEL CONTROL SYSTEM

Robert E. Cole, Carl C. Roecks, Raymond Sommerer, and Edward D. Welle, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York
Filed Apr. 14, 1966, Ser. No. 542,617
25 Claims. (Cl. 242—55.12)

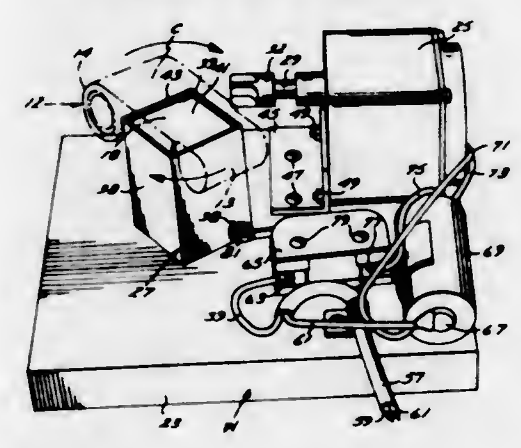


A control apparatus for a tape transport employing sensors responsive to radiant energy for deriving a signal which is corrected for variations in the quantity of radiant energy supplied and which is representative of a tape loop deviation from a desired reference position.

3,400,896

FILM WINDER

John N. Harman, Jr., La Canada, Calif., assignor to Drewry Photocolor Corporation, Burbank, Calif., a corporation of California
Filed Feb. 23, 1967, Ser. No. 618,177
5 Claims. (Cl. 242—71.6)

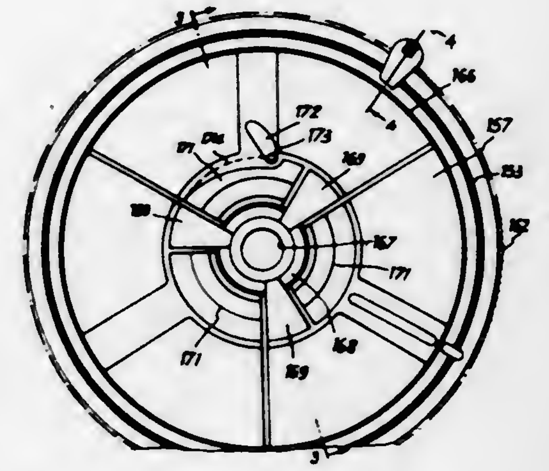


A film winder for winding film on the storage spool of a film cartridge of the type that includes a housing forming a feed chamber, a spool chamber and an intermediate portion defining a film path and having a through opening from one side of the film path which is framed by a projecting lip. The winder includes a base for supporting a winding means and a cartridge support. The cartridge mount is opaque and includes a projecting light shield for overfitting and cooperating with the lip framing the cartridge opening to shield the opening from the surrounding light.

3,400,897

REEL FOR STORAGE AND SUPPLY OF TAPE OR FILM

Jacques Guernet, La Celle-St-Cloud, Yvelines, France, assignor to Compagnie d'Applications Mecaniques à l'Atomistique (C.A.M.E.C.A.), Paris, France, a French corporation
Continuation-in-part of application Ser. No. 483,192, Aug. 27, 1965. This application Aug. 30, 1966, Ser. No. 576,066
Claims priority, application France, Apr. 29, 1966, 59,594
6 Claims. (Cl. 242—74)

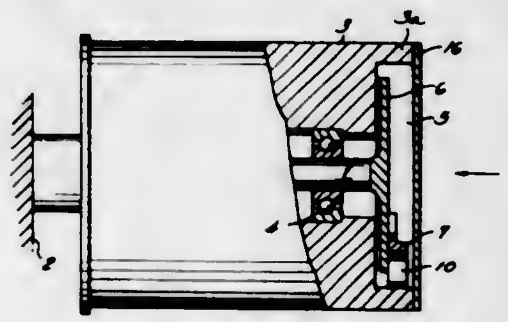


A supply reel for strip material such as tape or film having a hub and flanges, the flanges being provided with teeth on their peripheries which cooperate with mating teeth on a clip resiliently mounted on the flanges, so that the clip thus holds the end of a tape wound on the hub in position on the reel flanges. The flanges are provided with circumferential ribs to hold the clip, the ribs being at different radial distances on the flanges, thus assuring proper positioning of the clip and also providing for stacking of reels for storage. Additionally, the reel is formed with recesses to make handling thereof easy and is provided with means to signal when the tape is unwound to a predetermined degree and with means to detachably hold the inner tape end in position on the hub.

3,400,898

LET-OFF DEVICE

Ladislav Čivrný and Zdeněk Havránek, Usti nad Orlici, Czechoslovakia, assignors to Vyzkumny Ustav Bavlnarsky, Usti nad Orlici, Czechoslovakia
Filed Aug. 31, 1966, Ser. No. 576,446
Claims priority, application Czechoslovakia, Sept. 2, 1965, 5,408/65
11 Claims. (Cl. 242—130)

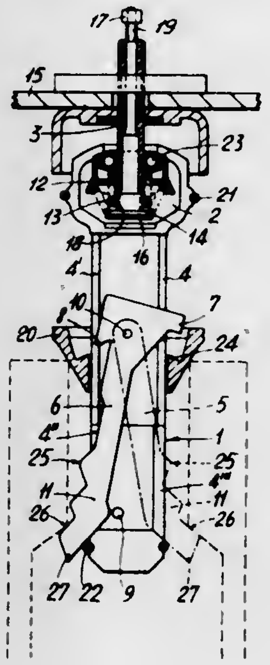


The bobbin support of a let-off device is blocked by a gravity operated clamping roller located in a wedge-shaped gap, when the bobbin support with an unbalanced sliver package undesirably tends to rotate rearward in a direction of rotation opposite to the normal forward unwinding direction of rotation of the sliver package.

3,400,899

BOBBIN HOLDER FOR FASTENING YARN BOBBINS TO THE BOBBIN CREEL OF CONTENTS TO BE SPUN

Georges Tytgath, Kouterstraat 93, Wondelgem, Belgium
Filed May 12, 1967, Ser. No. 637,963
Claims priority, application Belgium, May 13, 1966, 4,213
4 Claims. (Cl. 242—130.2)

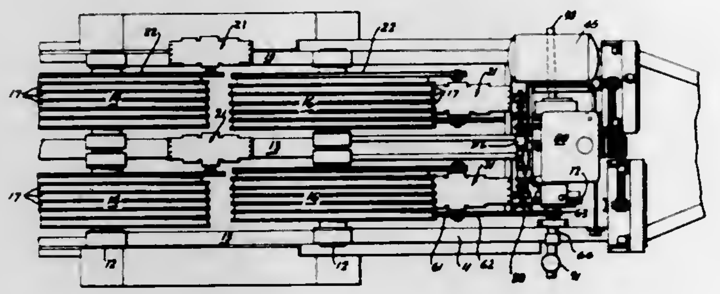


A bobbin holder for fastening yarn bobbins to a bobbin creel, comprising two movable plates for bobbin clamping, exiting from side slots in the bobbin holder, a centering ring and an adjustable braking device, characterized in that the movable plates are of a different length and pivoted to each other at the upper end thereof; the upper end of said longer plate being provided with two opposite projecting parts or elements, adapted to be alternatively engaged by an inner rib of the centering ring during the fastening operation of the bobbin, there being also provided a braking device directly adjustable from outside.

3,400,900

DUAL TENSIONER PHASE AND BRAKE CONTROL

Robert W. Goode, Morgan Hill, Calif., assignor to Gerald A. Petersen, Sunnyvale, Calif.
Filed June 21, 1966, Ser. No. 559,255
8 Claims. (Cl. 242—155)

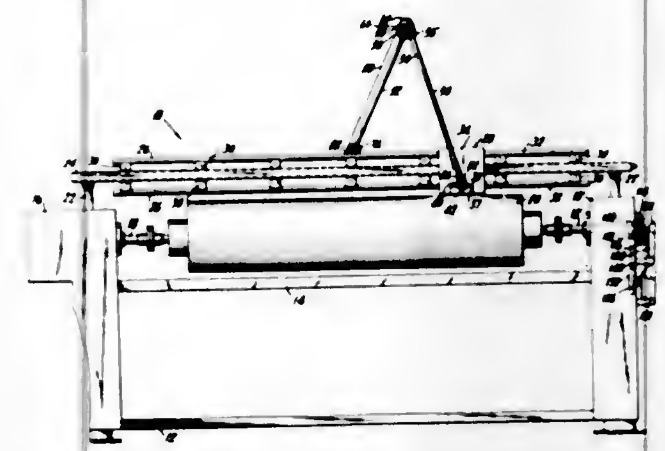


Tension stringing equipment for stringing multiple conductors each over an individual set of bull wheels has phase control to maintain equal slack on each conductor. Further, a braking system for the bull wheels is provided wherein two separate pumps for brake fluid are provided, one driven by a prime mover and the other from a bull wheel. The output of the two pumps is combined and controlled so that a uniform braking force is applied to the brake disk substantially continuously.

3,400,901

WINDING APPARATUS FOR FORMING FILAMENT WOUND OBJECTS

Arthur R. Parilla, Mountain Lakes, Robert C. Knauer, Millington, and Robert V. Daigle, Parsippany, N.J., assignors to Dynetics, Inc., Mountain Lakes, N.J., a corporation of New Jersey
Filed Nov. 8, 1965, Ser. No. 506,629
15 Claims. (Cl. 242—158)

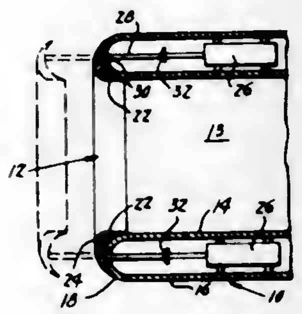


This invention relates to a winding machine for forming filament wound objects comprising a rotatable mandrel adapted to receive filament which forms the object and a reciprocating carriage for movement along the mandrel to deliver filament thereto. First circuit means are provided to generate a first electrical signal as a function of the mandrel position and second circuit means for generating a second electrical signal as a function of the carriage position. The electrical signals are combined to produce a resultant control signal which operates means for controlling the movement of the carriage to achieve the relative movement between the carriage and mandrel which produce the desired filament wound object.

3,400,902

GAS INLET CONVERSION AND PROTECTION MEANS

Ben J. King, 119 Whitecap Circle, Maitland, Fla. 32751
Filed Jan. 13, 1966, Ser. No. 520,337
3 Claims. (Cl. 244—53)

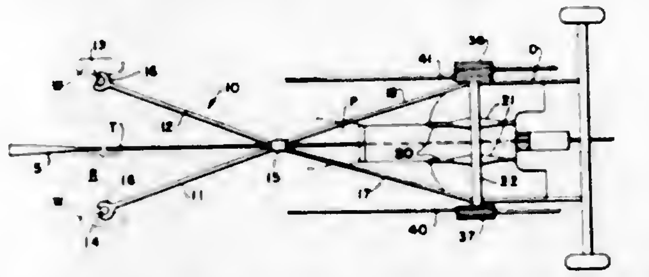


An arrangement for converting the inlet of a duct through which gas flows so that it operates efficiently under varying gas dynamic conditions that may also include a means for preventing ingestion of foreign objects; more specifically it constitutes a device for modifying the inlet to a gas duct leading to the propulsion unit of an aircraft by providing the inlet to the gas ingestion duct with a forward extension means that may be positioned to render it effective or ineffective so that a high degree of efficiency may be had when operating at either sonic, subsonic or supersonic speeds.

3,400,903

THRUST AUGMENTER MEANS

Robert B. Cotton, Media, Pa., assignor to All American Engineering Company, Wilmington, Del., a corporation of Delaware
Filed June 14, 1966, Ser. No. 557,448
21 Claims. (Cl. 244—63)

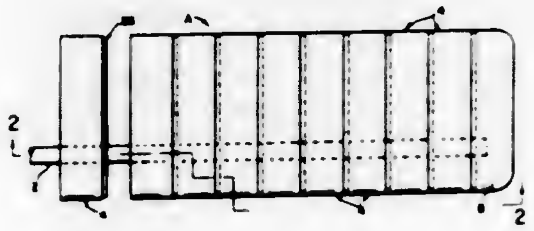


The thrust of a jet propelled object such as a jet airline or a jet car is augmented by directing the exhaust gases from the jet powered object to a following vehicle in driving engagement. A reactive means, such as a turbine, on the vehicle operates an output drive, such as a capstan, to propel the vehicle and push the jet powered object forward.

3,400,904

AIRFOIL CONSTRUCTION

James R. Bede, 355 Richmond Road, Cleveland, Ohio 44124
Filed Dec. 19, 1966, Ser. No. 602,993
3 Claims. (Cl. 244—124)



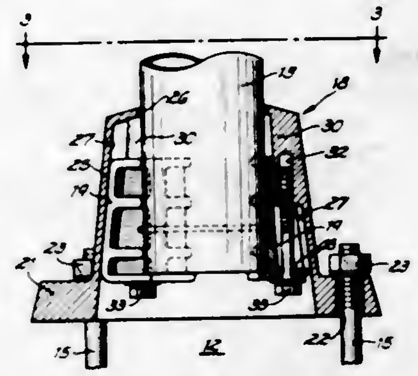
An airplane wing structure including a longitudinally extending spar member of uniform cross-section throughout its longitudinal extent and a plurality integral, rib and skin-forming sections positioned longitudinally of the spar and surrounding relationship thereto. Each of the rib and skin-forming sections include a rib portion having an outer periphery of a configuration corresponding to the desired cross-section of the wing and a flanged opening adapted to closely receive the spar. An integrally formed skin-forming portion extends completely around a periphery of each rib portion and generally perpendicular thereto. Each end of the skin-forming portions are formed so as to permit the ends to mate with the opposite end of the next adjacent rib and skin-forming section. The elements are joined to form a rigid wing by having the mating portions of rib and skin-forming sections connected to each other, and flanges of the rib portions connected to the spar by adhesive bonding means.

3,400,905

SUPPORT POLE ASSEMBLY FOR ELECTRICAL APPARATUS

Harold A. Van Dusen, Jr., South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Oct. 5, 1966, Ser. No. 584,403
3 Claims. (Cl. 248—44)

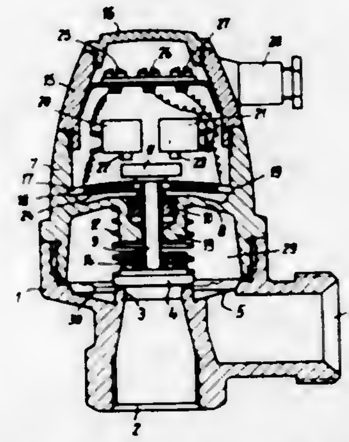
A pole supporting assembly for attaching a pole to a base structure including a base member with an interior frustoconical surface into which the lower end of the pole is inserted. The assembly further includes a plurality of wedge-like collets which are forcefully inserted between the interior surface of the base member and the lower exterior surface of the pole. The assembly further includes rim means, or inwardly projecting means, for supportingly engaging the lower end of the pole.



3,400,906

REMOTE CONTROL VALVE FOR HEATING INSTALLATIONS

Emilio Stocklin, Schulstrasse 20, Urdorf, Zurich, Switzerland
Filed Dec. 23, 1965, Ser. No. 515,946
Claims priority, application Switzerland, Dec. 23, 1964, 16,576/64
10 Claims. (Cl. 251—11)

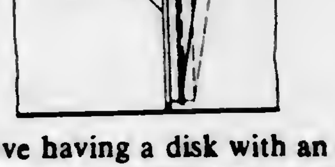


A hot water zone valve having a heat motor for opening and closing the valve under control of a thermostat. The heat motor comprises a beam restrained at its ends so as to bow when heated to actuate the valve element of the valve.

3,400,907

BUTTERFLY VALVE WITH MOVABLE PIVOT AXIS

John M. Horn and Howard A. Mayo, Jr., York, Pa., assignors to Allis Chalmers Manufacturing Company, Milwaukee, Wis.
Filed June 20, 1967, Ser. No. 647,383
4 Claims. (Cl. 251—31)



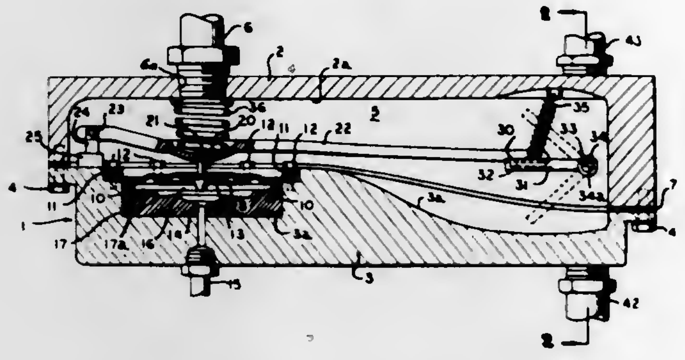
A butterfly valve having a disk with an offset pivot axis to permit uninterrupted 360° seating, including power means to move the pivot axis relative to the valve seat to permit rotation of the disk without interfering with the valve seat.

3,400,908
THROTTLE VALVE CONSTRUCTION

Peter Bauer, Germantown, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland

Filed Jan. 8, 1965, Ser. No. 424,319

8 Claims. (Cl. 251—58)



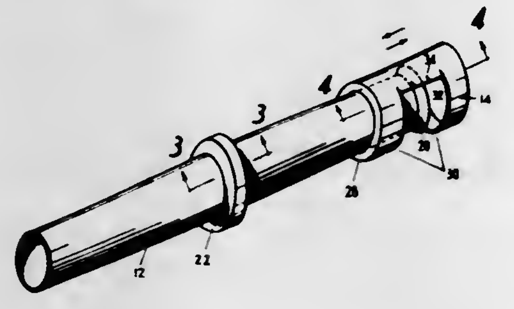
1. A control means for actuating a throttle valve comprising a housing having an elongated chamber, a throttle valve actuating shaft extending from one end of said chamber through a wall of said housing, a control arm connected to said shaft, said arm having a free end, and an actuator for said arm including an elongated lever pivoted about a pivot point at the other end of said chamber and terminating in an operating portion adjacent said one end, said operating portion being slidably engageable with said free end of said arm, and a rod substantially perpendicular to said lever and fixed thereto adjacent said pivot point whereby a relatively small actuating movement of said rod generates a substantial movement of said arm.

3,400,909
IRRIGATION CONTROL

Ralph E. Shettel, Rte. 1, Twin Falls, Idaho 83301

Filed July 25, 1966, Ser. No. 567,444

2 Claims. (Cl. 251—147)



A water metering apparatus having an adjustable inlet device which regulates the flow of water to the field corrugates through a tube.

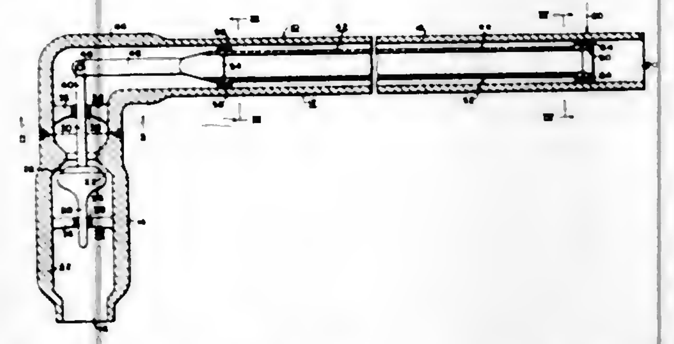
3,400,910
HERMETICALLY SEALED VALVE

Harold O. Blinn, Monroeville, Pitcairn, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 24, 1966, Ser. No. 529,793

8 Claims. (Cl. 251—342)

1. A valve comprising a tubular outer casing having a first section extending laterally from an elongated second casing section, said casing having an inlet and outlet formed respectively in said casing sections and a flow path between said inlet and outlet passing serially through said first and second casing sections, a valve seat formed in said first section, a valve disc located in said first section and mounted for movement toward and away from seating engagement with said valve seat, an elongated operating member connected at one end to said valve disc and extending into said second casing section, means fixedly securing the other end of said operating member to said second casing section at a position thereon remote from said first casing section, and said second casing section being formed from a material which permits substantial elastic lateral displacement of said remote position thereon, said operating member being connected to said valve disc to move said valve disc either toward or away from seating engagement with said valve seat upon lateral displacement of said remote position.

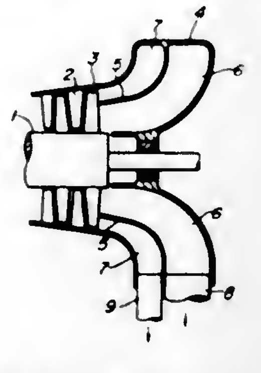


3,400,911
STRUCTURE OF EXHAUST CHAMBER IN GAS TURBINES

Hideo Kojima, Hitachi-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Continuation of application Ser. No. 587,496, Oct. 18, 1966. This application Dec. 4, 1967, Ser. No. 691,102

5 Claims. (Cl. 253—39)



The present disclosure relates to a power system and method employing an axial gas turbine having exhaust ducts immediately adjacent to the last symmetrical blade set of the gas turbine last stage for separately collecting the outermost high-pressure exhaust gas and the innermost low-pressure exhaust gas. A transducer, preferably a steam boiler, is operatively powered by the high-pressure exhaust gases and the low-pressure exhaust gases are directly vented to the atmosphere. The ducts are positioned so that the difference between the high and low-pressure exhaust gases is substantially equal to the friction losses within the boiler.

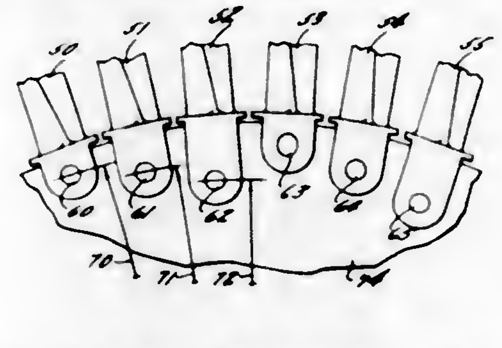
3,400,912
HIGH PERFORMANCE PINNED ROOT ROTOR

Franklin O. Carta, West Hartford, and Hans Stargardter, Bloomfield, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Aug. 16, 1967, Ser. No. 660,945

9 Claims. (Cl. 253—77)

A rotor of a turbofan engine has blades disposed thereon by pinned roots which include, singly or in various combinations, any of the following differences in mechanical configuration of one blade from the mechanical configuration of the next adjacent blade on the rotor: radial distance of pin from axis of rotor; size of pin; clearance between pin and either the blade hole or the rotor hole or both; size of blade hole or size of rotor hole.

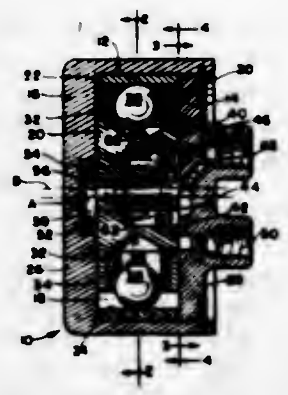


3,400,913
VIBRATOR

Carl G. Matson, 401 E. Central Blvd., Kewanee, Ill. 61443

Filed Oct. 21, 1966, Ser. No. 588,387

10 Claims. (Cl. 259—1)



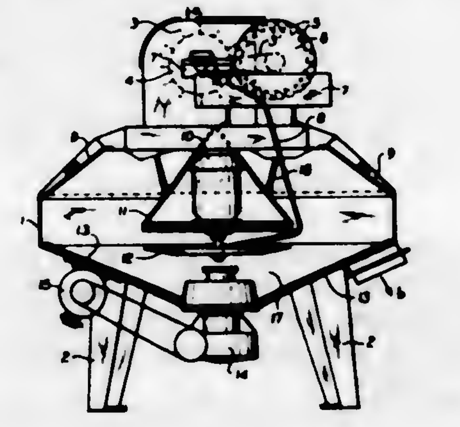
A vibrator comprising a casing-enclosed member having alternately pressurized and depressurized pistons reacting on the casing wall to give the member a gyrating and oscillating motion and wherein the radial cooperative walls of the member and casing are in confronting relationship and have ports serving a valve means.

3,400,914
MOISTENING APPARATUS PARTICULARLY FOR USE IN MIXING ARGILLACEOUS PRODUCTS

Raffaello Benassi, Via F. Turati 4, Sassuolo, Modena, Italy

Filed June 17, 1966, Ser. No. 558,439

4 Claims. (Cl. 259—8)



A moistening apparatus for argillaceous products comprising a hopper having an opening at its top for receiving the products. A housing is disposed below the hopper and a cone is mounted in the housing with its apex pointing upwardly for receiving the products from the hopper. A tank is disposed at the bottom of the housing and a mixing reel having blades secured thereto is rotatably mounted in the tank, the tank having an outlet for removing the products therefrom. A pan is rotatably mounted below the cone and means for feeding water from the water tank into the pan is provided. Due to the rotation of the pan, water is sprayed upon the products falling off the cone into the first-mentioned tank, and means are provided for operatively sensing the products received through the opening of the hopper and for controlling the feeding means to control the amount of water fed onto the pan in proportion to the quantity of the products passing through the hopper.

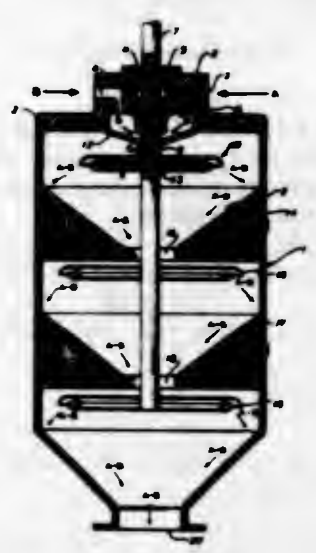
3,400,915
RAPID MIXING APPARATUS

Tsuneo Onishi, Yoshiro Higashiyama, and Katsuo Akao, Toyama, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki-shi, Okayama Prefecture, Japan, a corporation of Japan

Continuation of application Ser. No. 363,554, Apr. 29, 1964. This application Nov. 28, 1966, Ser. No. 597,475

Claims priority, application Japan, May 11, 1963, 38/24,810

3 Claims. (Cl. 259—8)



A multi-stage mixer for rapidly mixing two or more liquids of different viscosities comprising a chamber with a vertical longitudinal axis having a central vertical rotatable shaft therein mounting a first centrifugal mixer composed of three closely-spaced horizontal plates followed by a funnel-shaped stage partition below, which, in turn, is followed by one or more centrifugal mixers each composed of two closely-spaced horizontal plates, with other funnel-shaped stage partitions serving to separate the mixing stages below the first. Two or more liquids are fed centrally into the first stage through separate channels and progress downwardly through the various stages, exiting through a central discharge outlet.

3,400,916
METHOD AND APPARATUS FOR CONDITIONING PARTICULATE MATERIALS

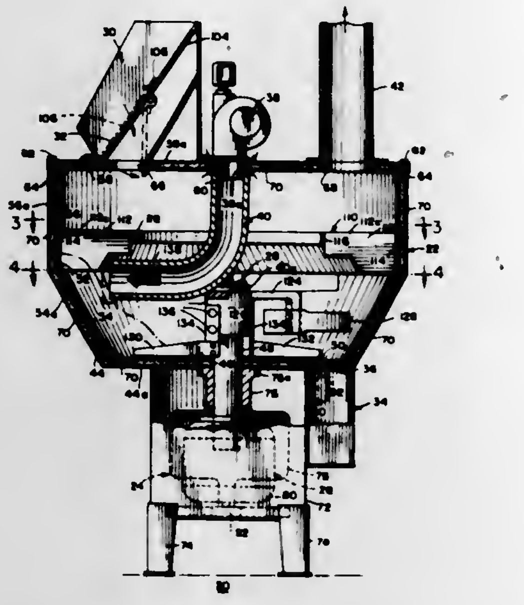
Elbert C. Troy, Highland Park, Ill., and Robert M. Hutchins, Mishawaka, Ind., assignors to National Engineering Company, Chicago, Ill., a corporation of Delaware

Filed May 4, 1966, Ser. No. 547,555

35 Claims. (Cl. 259—147)

28. A method of treating particulate material comprising mixing a mass of said material by circular movement around a confined area, lifting a fractional portion

of said mass upwardly above the remaining portion, dropping said lifted fractional portion of material to return back to said remaining portions, dividing said dropping fractional portion of material into plural streams, and retarding the downward velocity of said diverse streams above said remaining portion of said material mass.



3,400,917

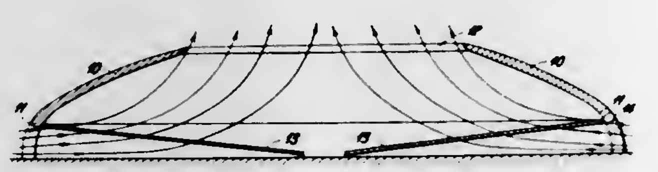
COOLING TOWERS

Derek Jess Wilton Richards, London, England, assignor to Central Electricity Generating Board, London, England, a British body corporate

Filed Feb. 21, 1966, Ser. No. 528,741

Claims priority, application Great Britain, Feb. 23, 1965, 7,815/65

14 Claims. (Cl. 261—29)



A cooling tower comprises a hollow structure of circular section in horizontal planes and externally of uniform convex aerofoil form in all diametral planes. Conveniently it is semi-ellipsoidal, the major axis of the ellipsoid coinciding with or being slightly above the ground plane. The structure has apertures forming an air inlet around the base. At the top there is an aperture forming an air outlet. The aerofoil section is chosen so that the flow separation point due to a horizontal wind occurs downstream of the outlet aperture. Typically the base diameter is between 3 and 5 times the height of the tower and the air outlet aperture is between 0.4 and 0.6 of the diameter of the base of the tower.

3,400,918

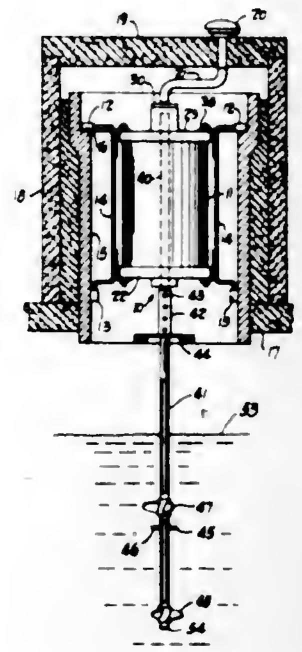
SEWAGE AERATOR

David S. MacLaren, 21176 Bantley Road, Shaker Heights, Ohio 44120

Continuation of application Ser. No. 552,829, May 25, 1966. This application Mar. 8, 1967, Ser. No. 621,648

5 Claims. (Cl. 261—87)

A sewage aerator including a treatment tank with a covered enclosure located on top thereof. A sealed casing or housing is mounted in the enclosure and an electric motor with a stator and rotor is positioned therein. A motor shaft is rotatably mounted on bearings in the upper and lower end walls of the motor casing and has a lower extension which extends beyond the surface of sewage in the tank. An axially extending passage is provided in the shaft and extension and conduit means connect the upper end of the passage to atmosphere. Aspirator tubes which extend in a radial direction connect the lower end of the passage to the interior of the tank and upon rotation of the shaft cause an aspirating effect to draw air down the passage and into the tank. Screw means on the shaft serve to agitate the sewage.



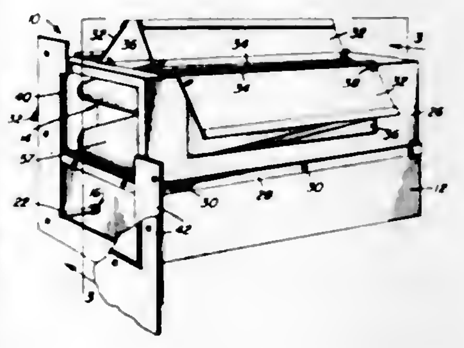
3,400,919

FURNACE AIR HUMIDIFIER

Bernard J. Schall, 2624 S. Thomas Court, McHenry, Ill. 60050

Filed Sept. 20, 1966, Ser. No. 580,793

11 Claims. (Cl. 261—102)



A furnace air humidifier and comprising a bendable metal skeleton on which is a wick or vapor pad which has been secured in a suitable manner. It is used in combination with a water pan in which it stands so as to draw water up and expose the water to a current of air that will pass across or through the top and sides of the pan, the pan being placed in an air furnace duct, air chamber or plenum.

3,400,920

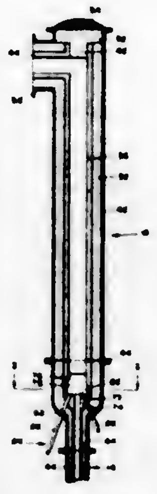
HIGH TEMPERATURE TRANSFER LINE HEATER

Byron Victor Molstedt, East Baton Rouge, La., and Robert L. Scheuermann, Florham Park, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Continuation-in-part of application Ser. No. 298,916, July 31, 1963. This application June 22, 1967, Ser. No. 652,391

8 Claims. (Cl. 263—21)

A transfer line heater is described for heating solids particles by first radiating heat from burning gases in full view of the solids and then mixing the hot combustion products of the burning gases with the solids particles. The invention is especially useful in high temperature coking process.



ERRATUM

For Class 266—12 see:
Patent No. 3,400,871

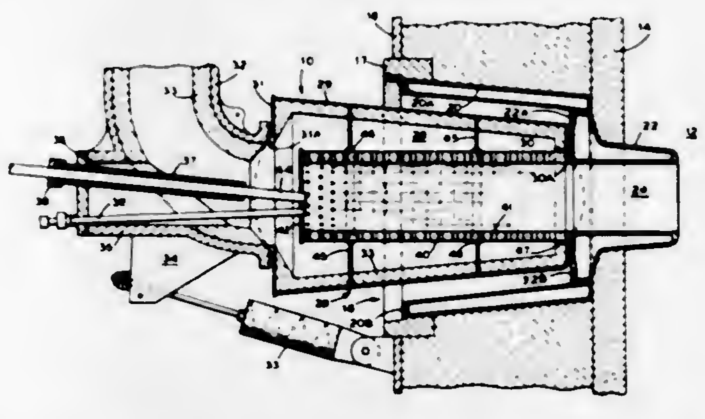
3,400,921

FUEL BURNER

Fritz L. Hemker, Wadsworth, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

Filed Oct. 6, 1965, Ser. No. 493,458

11 Claims. (Cl. 266—29)



A burner arrangement whereby the major portion of an ash containing fuel is burned in a combustion chamber prior to introduction into a blast furnace. This is accomplished by radially introducing all of the combustion air into the chamber through a plurality of regularly spaced openings covering the circumferential area of the combustion chamber. This radially introduced air forms a protective layer of air between the fuel stream and the inner surface of the combustion chamber thus protecting the chamber walls from the intense heat required for achieving this more complete burning of the fuel.

3,400,922

METALLURGICAL VESSEL CONSTRUCTION

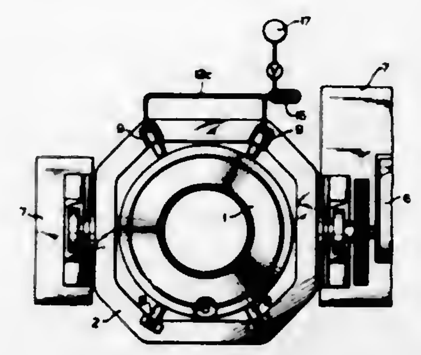
Karl-Heinz Langlitz, Mulheim (Ruhr), Germany, assignor to Demag Aktiengesellschaft, Duisburg, Germany

Filed Apr. 6, 1966, Ser. No. 540,688

Claims priority, application Germany, Apr. 12, 1965, D 47,015

16 Claims. (Cl. 266—36)

1. A metallurgical vessel construction comprising a vessel housing, a ring surrounding the housing for supporting the vessel housing at a predetermined orientation, and resilient supporting means connected between said ring and said housing at a plurality of locations for resiliently supporting said vessel housing on said ring.



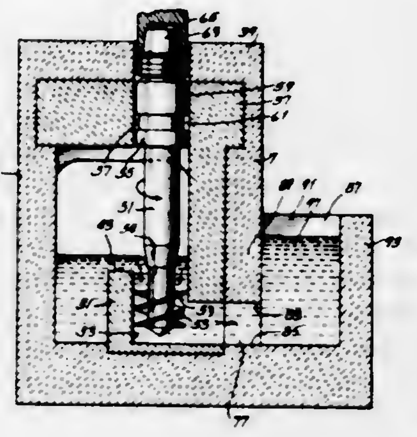
3,400,923

APPARATUS FOR SEPARATION OF MATERIALS FROM LIQUID

Henry James Howie, Thomas Barnett Rance, Bryan Rapson, and Frederick William Southam, Arvida, Quebec, Canada, assignors to Aluminium Laboratories Limited, Quebec, Quebec, Canada, a corporation of Canada

Filed May 15, 1964, Ser. No. 368,456

9 Claims. (Cl. 266—37)



1. In combination with a confined chamber having a floor and filled with a body of liquid at least to a predetermined level above said floor, apparatus for removing from the chamber refuse material carried on the surface of said body, said apparatus comprising:

(a) means including a wall extending upwardly from the floor of said chamber for defining a pool within said chamber, said wall having an upper edge with at least a portion lower than said predetermined level for admitting liquid and refuse material carried therewith from the surface of said body to said pool, said wall being disposed and adapted to permit flow of liquid from said body into said pool only over said upper edge, and said wall and chamber being mutually arranged to permit direct flow of liquid into said pool from the entire surface of said liquid body;

(b) means providing a well disposed externally of said chamber and extending below said predetermined level for receiving liquid from said pool, said well communicating with the interior of said pool through a first passage opening into said pool at a level below the level of said upper wall edge portion, said well communicating directly with said chamber through a second passage opening into said chamber externally of said pool and at a level below said predetermined level, said well being arranged to permit separation of said refuse material from liquid therein; and

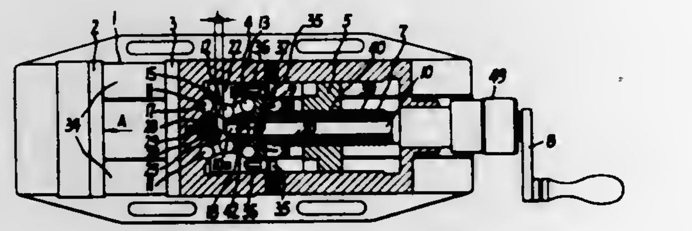
(c) means for advancing liquid and refuse material downwardly in said pool, to cause circulation of liquid from said pool into said well through said first passage and thence into said chamber through said second passage while drawing liquid from the surface of said body together with said refuse material into said pool over said wall edge thereby to effect delivery of said refuse material with said liquid into said well.

3,400,924

CLAMPING DEVICE

Franz Arnold, Spirtzenweg 48, Kempten, Allgau, Germany; Charles Wermuth, Oberdorf 166, Wengi, Switzerland, and Heinz Wagner, Santisstrasse, Aadorf, Switzerland

Filed Apr. 6, 1965, Ser. No. 445,922
Claims priority, application Germany, Apr. 7, 1964, A 45,689
15 Claims. (Cl. 269—228)



A clamping device having a fixed and a movable jaw, the movable jaw being actuated and moved by a rotatable spindle, the spindle being connected to a handcrank and being driven through an overload release clutch. The movable jaw is moved into engagement with the workpiece by simultaneous rotation of the handcrank and the spindle. Upon engagement of the workpiece by the movable jaw, the overload clutch releases whereby further rotation of the handcrank causes a pushrod coaxially mounted within the spindle to axially extend. The pushrod has a pressure member mounted on the end thereof, which member coacts with a pair of toggle mechanisms so as to exert a high clamping pressure onto the movable jaw. Each toggle mechanism comprises a pair of links and three cylindrical pressure rollers, each of the links being provided with partial cylindrical recesses on opposite ends thereof for receiving the pressure members therein. The links and the rollers have a large axial length whereby large bearing areas are provided between the respective members of the toggle mechanism to permit transfer therethrough of large clamping pressures. The toggle mechanisms are mounted within a U-shaped frame member comprising the movable jaw whereby the jaw member can withstand the large clamping pressures applied thereto.

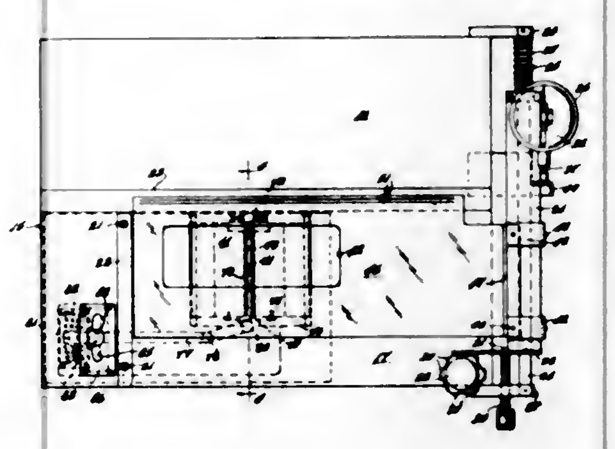
3,400,925

PHOTOCOMPOSITION CORRECTOR

Philip E. Tobias, 1872 Watson Road, Abington, Pa. 19001

Filed Mar. 10, 1966, Ser. No. 533,194
8 Claims. (Cl. 269—293)

The invention relates to a workholder for making photocomposition corrections in transparent work having textual material arranged in lines, each of which has a reference or base line, which workholder includes a base for supporting the work, a shear line on the base on which shearing can be conducted, a transparent indexing plate on the base, means for mounting the indexing plate slidably toward the shear line, an index line on the surface of the indexing plate adjoining the base and a micrometer mounting on the base and accurately adjusting the relative distance between the indexing line and the shear line. A carriage slidable with respect to the base advances work toward the shear line.

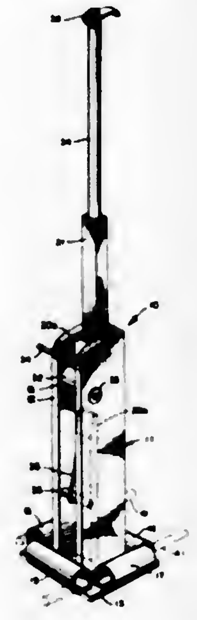


3,400,926

ADJUSTABLE SUPPORT DEVICE FOR MODELMAKING

John P. Stoltz, 737 N. Broadway, Hastings-on-Hudson, N.Y. 10706

Filed Sept. 19, 1966, Ser. No. 580,292
5 Claims. (Cl. 269—309)



1. An adjustable modelmaking support device for holding miniature model parts in a fixed position during assembly of a model comprising:

(a) an upright support body having a longitudinal channel extending completely therethrough from top to bottom,

(b) a base portion on the bottom of said support body on which the body seats in an upright position,

(c) a longitudinally adjustable support arm having a first portion slideably positioned within the channel and a second portion projecting out of one end of the channel,

(d) locking means on said body for contacting the first portion of the arm and retaining it in a fixed position with respect to the channel,

(e) means on said body for receiving suspension means for suspending the body with its base spaced above a surface so that the arm can be extended from the bottom of the channel, and

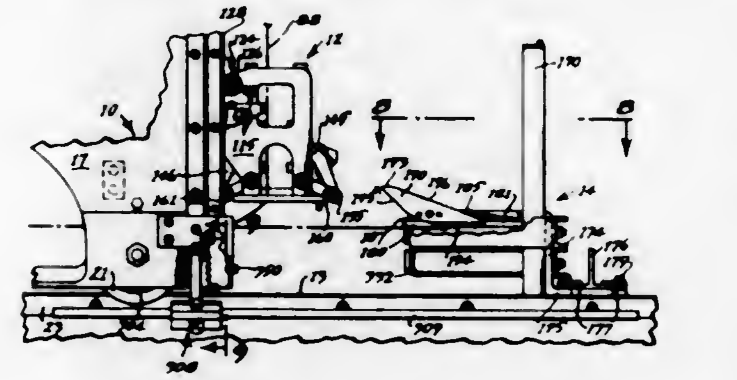
(f) a support fitting attached to the extended end of the second portion of the arm and having first seating means thereon for supporting a part when the arm is extended from the top of the body and a second seating means for supporting a part when the arm is extended from the bottom of the body.

3,400,927

CLOTH SPREADING MACHINE

Thomas W. Martin, Sr., and Asa Scobey Rogers, Jr., Nashville, and Shirley B. Ashton, Lavergne, Tenn., assignors to Cutters Machine Company, Inc., Nashville, Tenn., a corporation of Tennessee.

Filed Apr. 4, 1966, Ser. No. 540,026
6 Claims. (Cl. 270—31)



A cloth spreading machine including a catcher mechanism and a reciprocably movable frame carrying a vertically reciprocable spreader unit having vertically movable fold blades in the spreader unit, a cloth supply and means for guiding the cloth from the supply to the fold blades, a first cam on the catcher mechanism and a first cam follower fixed to the leading fold blade for engagement with the first cam to raise and lower the leading fold blade as the frame moves toward and away from the catcher mechanism, a second cam fixed to the catcher mechanism and a second cam follower reciprocably mounted upon the spreader unit for engagement with the second cam to raise and lower the catcher mechanism in relationship to the trailing fold blade as the frame approaches and leaves the catcher mechanism.

3,400,928

SYSTEM FOR CONTROLLING THE STARTS IN RUNNING CONTESTS

Michael Weidacher, Munich, Germany, assignor to Montres Longines Francillon S.A., Saint-Imier, Bern, Switzerland, a firm

Filed Oct. 13, 1964, Ser. No. 403,664
Claims priority, application Germany, Oct. 15, 1963, W 35,430; Oct. 23, 1963, W 35,495
8 Claims. (Cl. 272—59)

1. Race start system comprising a circuit having therein:

(a) a race-start indicator having electromagnetic locking means;

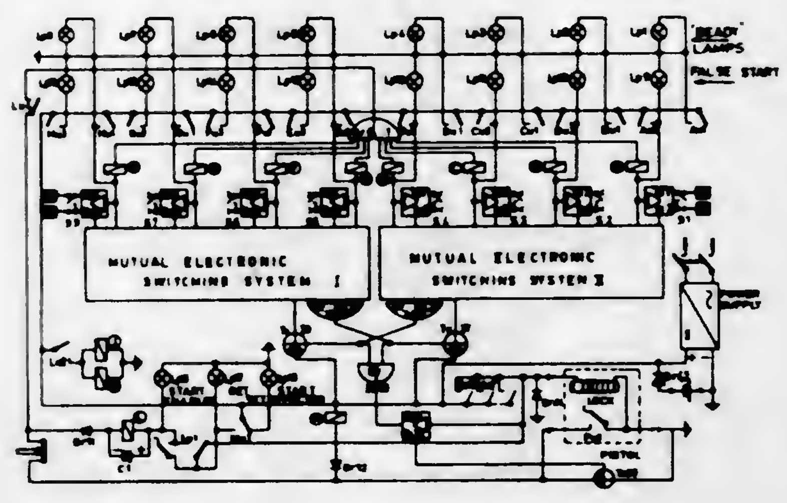
(b) at least one starting plate adapted to be laid on the ground at the starting place of each racer, and having two electrodes bridged by the racer when in the ready position;

(c) each plate having electronic switching means having at least one transistor, an input and an output circuit, said electrodes being in said input circuit, said switching means being in one state when said electrodes are bridged by the racer and in another state when not bridged;

(d) a plurality of relays, each relay being in the output circuit of said switching means, said relays being in the nonenergized state when said electrodes are bridged, and in the energized state when not bridged each relay being connected to a common energizing source;

(e) a plurality of contacts for each of said relays, (1) one of said contacts being connected to an energizing source having therein a false start lamp, said lamp being identified with a given starting place; (2) another of said contacts serving as a self-sustaining contact for said relay to maintain the same in the energized state; (3) another contact in the circuit of said locking means;

(f) means connected to said relays adapted to be actuated, when one of said electronic switching means is energized as a result of the premature cessation of the bridging of the electrodes connected therewith to disconnect all the other relays from said energizing source;



BEACH LAMPS
FALSE START
MUTUAL ELECTRONIC SWITCHING SYSTEM I
MUTUAL ELECTRONIC SWITCHING SYSTEM II
PISTOL

(g) an auxiliary contact in series with said common energizing source and connected with said race start indicator, said contact being closed before the actuation of said indicator and open when said indicator is actuated thereby disconnecting relays from the energizing source;

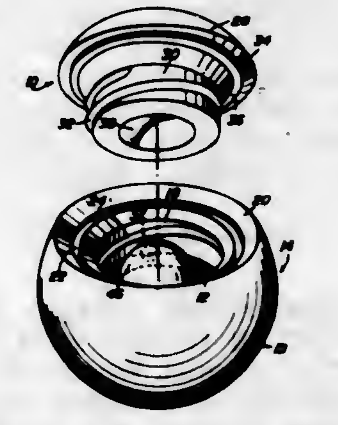
(h) and means including said contact in the circuit of said locking means energizing said locking means to prevent actuation of said indicator if cessation of the bridging of only two electrodes occurs before the indicator is actuated.

3,400,929

BOWLING BALL WITH REPLACEABLE GRIP AND ADJUSTABLE WEIGHT

John P. Fabanich, 4301 Colorado Ave., Lorain, Ohio 44054

Filed Oct. 19, 1965, Ser. No. 497,750
6 Claims. (Cl. 273—63)

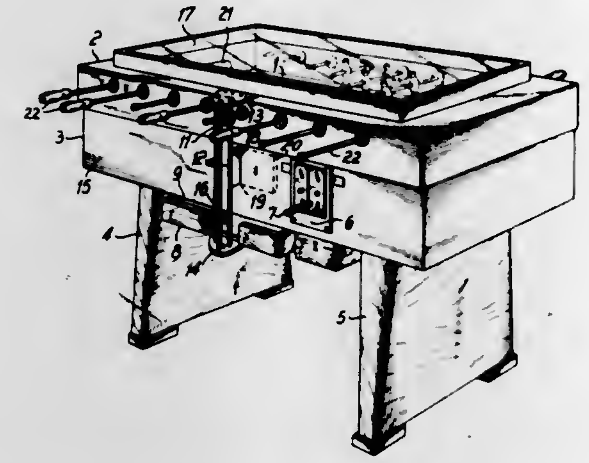


The ball disclosed is convertible. It comprises a base unit having a solid hemispherical bottom portion and a part-spherical top portion. The recessed portion of the top side of the bottom portion is provided with an upwardly opening socket. A removable insert embodies a main ball weight having a complemental weight embedded therein. This ball-like insert can be set relative to a vertical centerline to impart to the over-all bowling ball a positive hook or curve of the degree desired. The grip unit has a depending cylindrical component screwed into a cylindrical part of the recess and providing joining means for the base and grip units, respectively, and clamping means for the shiftable insert. This weighted insert or converter can range from one-quarter to seven pounds, more or less.

3,400,930

PLAYING PIECE GUARD DEVICE FOR TABLE GAMES

Xaver Leonhart, 8381 Harburg, near Landau, Isar, Germany
Filed June 29, 1966, Ser. No. 561,532
Claims priority, application Germany, July 20, 1965, L 51,178
6 Claims. (Cl. 273—85)



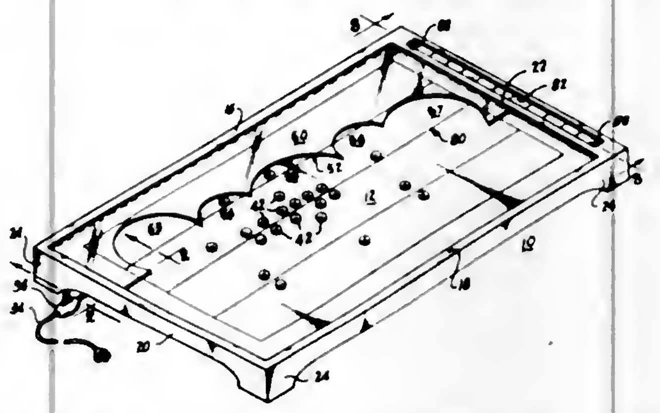
1. A playing piece guard device for table games of the type having outer wall means disposed about a game surface, a playing piece injection opening in one outer wall means for introducing a playing piece into play on the game surface, and a playing piece dispensing means for retaining a plurality of playing pieces and having a dispensing opening for the playing pieces adjacent the lower edge of the one outer wall means, comprising an upper plate member connected to said one outer wall means above the playing piece injection opening, a bottom plate member positioned beneath the dispensing opening, a plurality or rod members connected between said upper plate member and said bottom plate member and disposed substantially parallel with said one outer wall means, said rod members and said one outer wall means defining a closed outwardly extending playing piece conveying channel between said dispensing opening and said injection opening and adapted to receive and retain a playing piece dispensed from said dispensing opening, and said rod members spaced from each other a distance sufficient to enable the player's fingers to extend between said rod members and grasp a playing piece for movement from said dispensing opening to said injection opening.

3,400,931

VIBRATING GAME BOARD HAVING PLAYER GUIDE MEANS

Richard C. Thornton, Woodinville, Wash.
(702 19th St. NW., Washington, D.C. 20006)
Filed Aug. 17, 1965, Ser. No. 480,275
1 Claim. (Cl. 273—94)

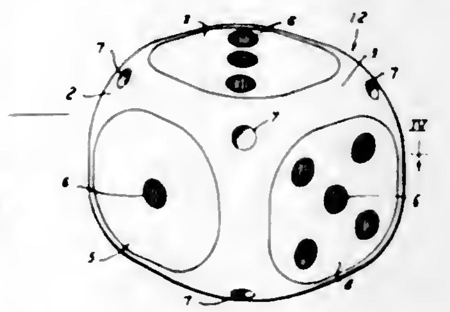
On a vibratory surface a simulated football playing field is presented to receive a plurality of players divided into two teams. Vibration of the playing surface produces random movement of the players. Edged means, disposed over portions of the playing surface are contacted by the moving players and tend to guide them into patterns simulating plays of a football game.



3,400,932

LAWN DICE HAVING FINGER HOLES

Ernest W. Conrad, 6475 Glendora, Dallas, Tex. 75230
Filed June 10, 1965, Ser. No. 462,943
5 Claims. (Cl. 273—146)

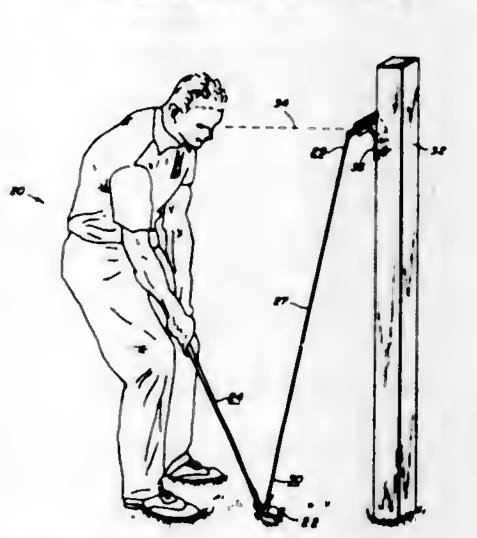


A lawn die with finger holes to facilitate rolling and a hollow interior having the shape of a truncated octahedron containing a ball having an eccentric center of gravity.

3,400,933

GOLF PRACTICING DEVICE

Charles D. Heiser, 2424 Euclid Ave., Cleveland, Ohio 44115
Filed June 30, 1965, Ser. No. 468,398
3 Claims. (Cl. 273—186)

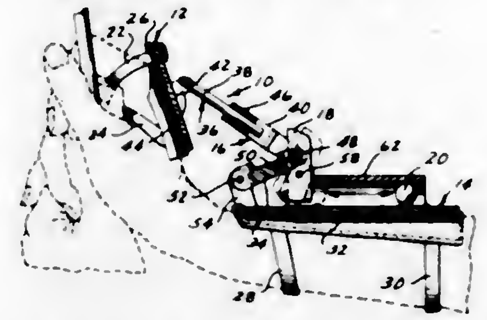


A golf swing practicing apparatus which comprises a rigid rod universally connected at one end to a fixed support surface and universally connected at the other end portion to the hosel or neck of the golf club. The length of the rod is such that it will permit unimpeded a proper swing of the club at a golf ball positioned on a horizontal surface and impede an improper swing of said club at said ball by forcing the club head to strike the horizontal surface.

3,400,934

WRIST LOCK APPARATUS

Herman D. Muehl, 10851 Drury Lane, Lynwood, Calif. 90262
Filed Oct. 12, 1965, Ser. No. 495,253
8 Claims. (Cl. 273—189)

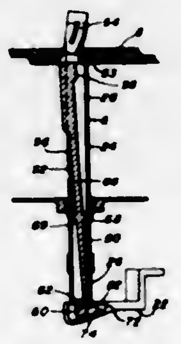


Wrist lock apparatus attachable to the hand and forearm of a golfer and including a mechanism to lock the wrist during the backswing, the mechanism having a weight centrifugally movable during the downswing to release the mechanism for wrist uncocking.

3,400,935

PHONOGRAPH SPINDLE

George Kolomayets, Chicago, and Allen J. Bury, Prospect Heights, Ill., assignors to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Original application July 26, 1965, Ser. No. 474,904, now Patent No. 3,346,261. Divided and this application Aug. 24, 1967, Ser. No. 663,112
2 Claims. (Cl. 274—10)

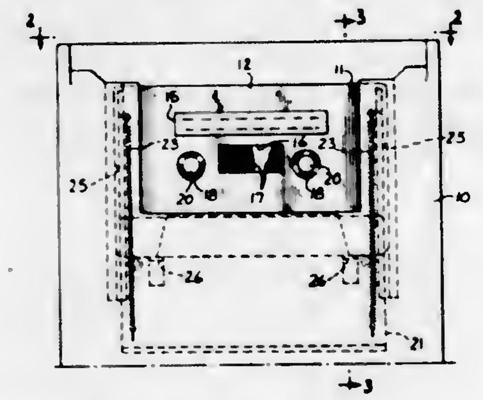


A loose fitting, pinless spindle ejector for an automatic record changing phonograph. The ejector is captivated solely by the walls of the spindle and a return spring.

3,400,936

SCREEN OVER WINDOW OPENING IN TAPE PLAYER

Theophiel Clement Jozef Lodewijk Staar, Kraainem, Belgium, assignor to Staar, S.A., Brussels, Belgium, a corporation of Belgium
Filed July 22, 1966, Ser. No. 567,220
Claims priority, application Belgium, Dec. 3, 1965, Patent 673,258
2 Claims. (Cl. 274—11)

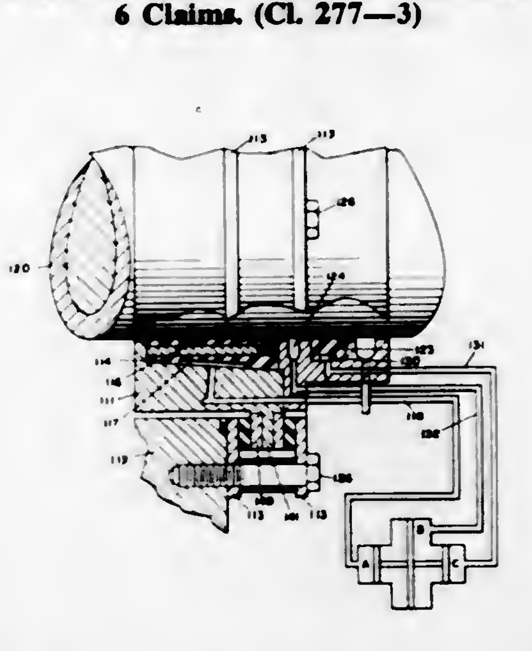


A retractable cover is provided over a window opening of a cartridge-type tape player. Insertion of the cartridge to the play position retracts the cover to allow visual access to the cartridge, and withdrawal of the cartridge allows the cover under the action of a return spring to enclose and protect the player drive mechanism.

3,400,937

SEALING ARRANGEMENT

John H. Crankshaw, 439 Shawnee Drive, Erie, Pa. 16505
Filed Mar. 11, 1965, Ser. No. 438,903
6 Claims. (Cl. 277—3)

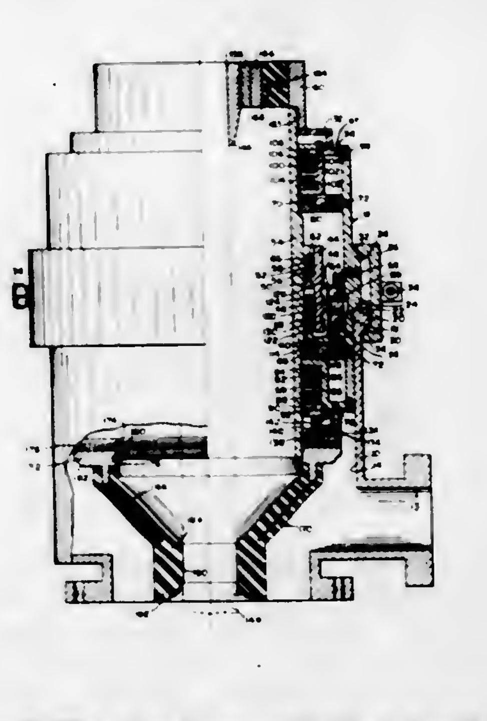


A shaft seal on a shaft wherein the seal is of resilient material and has circumferentially spaced rigid members imbedded therein so that the areas between the rigid members are rendered soft and deform to provide a passageway for lubricant.

3,400,938

DRILLING HEAD ASSEMBLY

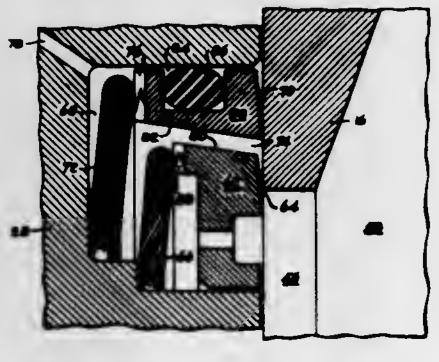
Bob Williams, 823 Cavanaugh Road, Fort Smith, Ark. 72901
Continuation-in-part of application Ser. No. 503,555, Oct. 23, 1965. This application Sept. 16, 1966, Ser. No. 586,912
15 Claims. (Cl. 277—31)



A rotary drilling head assembly for a well bore comprising a stationary housing and a seal assembly supported by the stationary housing. The seal assembly comprises a rotatable sleeve member having a stationary sleeve member therearound, with a chamber provided between the sleeves for receiving a lubricating fluid. Bearing means is interposed between the two sleeves and upper and lower sealing members are provided in order to preclude leakage of fluid from the chamber, and auxiliary seal means is provided for additional protection of the bearing means. In addition, quick opening and closing clamping means is provided for facilitating the installation of the assembly at the well site.

3,400,939
OIL SEAL CONSTRUCTION FOR ROTARY ENGINES

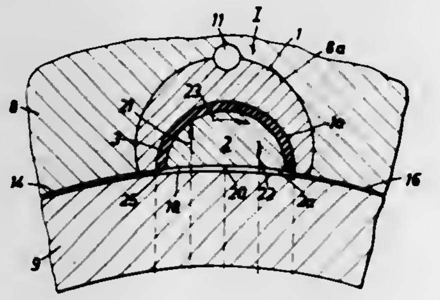
Charles Jones, Hillsdale, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 518,301
13 Claims. (Cl. 277—59)



A dual-ring oil sealing construction for rotary engines, the dual rings and associated apparatus being borne in the end faces of the rotor in grooves coaxial therewith and sealing between the rotor and the end walls of the housing, with provision for draining the oil from the annular space between the seal rings.

3,400,940
SEALING CONSTRUCTION WITH TILTABLE SEALING STRIP

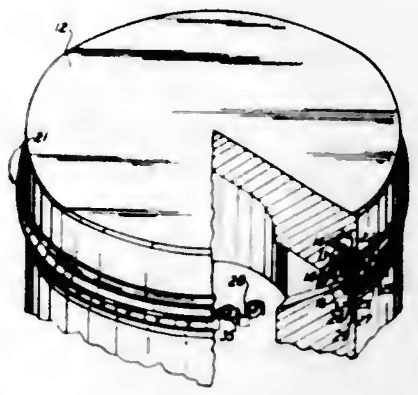
Hans-Joachim Conrad, Essen-Bredeney, and Werner Schröder, Essen, Germany, assignors to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany
Filed Apr. 12, 1965, Ser. No. 447,391
Claims priority, application Germany, Apr. 16, 1964, B 76,357
2 Claims. (Cl. 277—94)



The present invention concerns a sealing structure with tiltable sealing strip between two members movable relative to each other and defining therebetween a gap. The tiltable sealing strip tiltably journalled in one of said members defines in its intermediate position an intermediate gap with the other member, said intermediate gap dividing said first mentioned gap into two gap sections. When a pressure drop occurs between said two gap sections, a torque is exerted upon said sealing strip so that the latter tilts in one or the other direction to thereby seal said intermediate gap relative to one or the other gap section.

3,400,941
PISTON RING ASSEMBLY

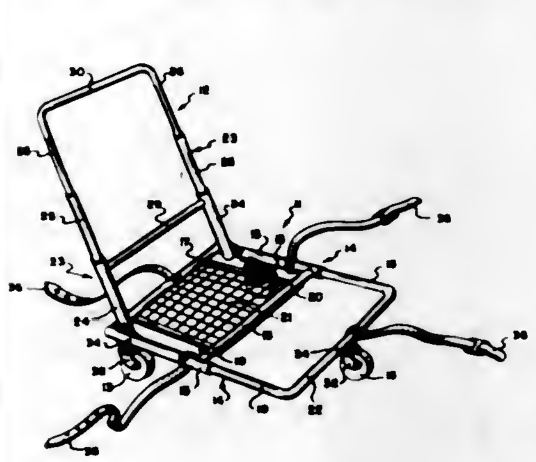
Frank C. Hutto, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 24, 1967, Ser. No. 641,044
16 Claims. (Cl. 277—123)



A multiple element, single groove, combination compression and oil control piston ring assembly having a number of radially inwardly extending annular tongues extending into a number of corresponding annular recesses in the base of the ring groove. The tongues of the piston ring elements overlie the sides of the annular recesses in the piston groove forming seals which prevent losses of compression around the rear portions of the piston ring elements.

3,400,942
COLLAPSIBLE LUGGAGE CARRIER

Marie E. Hull, 734 Wendel Place, Teaneck, N.J. 07666
Filed June 16, 1967, Ser. No. 646,540
6 Claims. (Cl. 280—39)

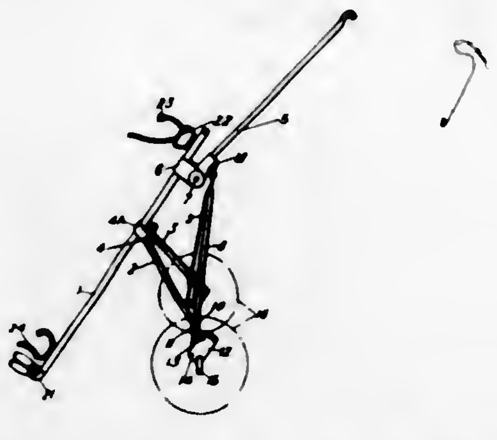


A collapsible and foldable wheeled luggage carrier is disclosed which comprises a collapsible bottom frame assembly, a collapsible back frame assembly hingeably connected to the bottom frame assembly, and a plurality of wheels rotatably mounted in wheel brackets that are also hingeably connected to the bottom frame assembly, the back frame assembly fitting within the perimeter of the bottom frame assembly when both assemblies are collapsed and folded together.

3,400,943
HAND-PROPELLED TROLLEYS

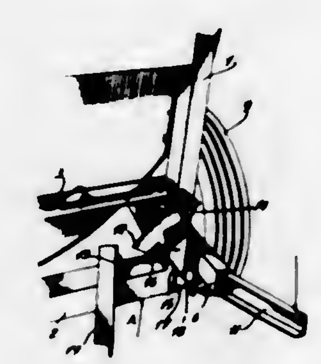
Ian G. Meiklejohn, Kirkcaldy, Scotland, assignor to I. G. Meiklejohn & Co., Limited
Filed July 28, 1966, Ser. No. 568,627
10 Claims. (Cl. 280—41)

A collapsible hand-propelled trolley has a spine, splayed apart wheel-carrying legs on the spine pivotal to stowed position alongside the spine, a pivotal hand arm on the spine, and struts connecting the handle with the legs so that movement of the handle moves the legs. Wheel parallelism in the collapsed position of the trolley is obtained by mounting the wheels on end links on the legs, and connecting the struts to the legs and to the end links in such a way that the struts perform the dual function of moving the legs and simultaneously maintaining the end links against any substantial fore-and-aft tilting movement.



3,400,944
MANUALLY OPERABLE RETRACTABLE WHEEL MOUNT FOR SEMI-PORTABLE FARM EQUIPMENT AND THE LIKE

Narcisse Dion, Ste-Therese-de-Blainville, Quebec, Canada, assignor to Dion Freres, Inc., Ste-Therese-de-Blainville, Quebec, Canada
Filed Dec. 19, 1966, Ser. No. 602,605
3 Claims. (Cl. 280—43.24)

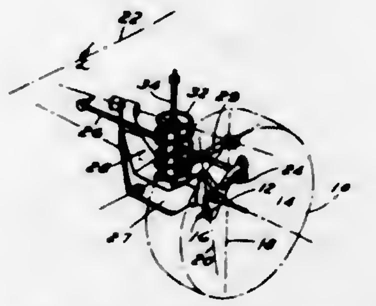


Retractable wheels for a vehicle having two wheels so that the frame of the vehicle may contact the ground and establish a solid stand for the vehicle. Each wheel is mounted on a lever pivoting on an axle mounted on the frame and eccentrically located with the axis of the wheel. The lever may be immobilized in a lower position so as to provide contact between the wheel and the ground for the transport position. The lever may be disengaged from the transport position so as to be brought in an upper position with the wheel until the frame of the vehicle contacts the ground.

3,400,945
VEHICLE LEADING ARM SUSPENSION SYSTEM

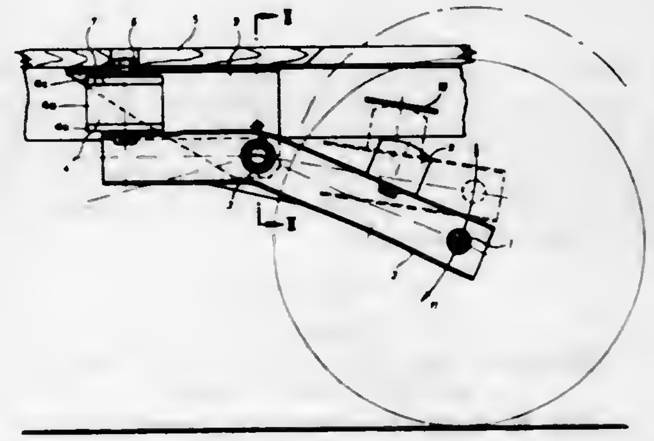
Achille C. Sampietro, Bloomfield Hills, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 3, 1966, Ser. No. 591,784
10 Claims. (Cl. 280—96.2)

1. A suspension system for a vehicle having a frame extending longitudinally from front to rear and a pair of steerable road wheels independently mounted thereon adjacent a forward portion thereof, comprising, a pair of arms each extending obliquely in opposite directions from said frame both in an essentially forward and upward direction and each having forward and rearward pivotal connections respectively to one of said wheels and said frame, each of the rearward pivotal connections including a laterally extending arm pivotal axis inclined essentially downwardly and rearwardly with respect to a longitudinally extending horizontal plane containing the horizontal centerline of said vehicle for an arcuate swinging movement of said arm with respect to said frame about an obliquely disposed axis, each of the forward pivotal connections including an essentially horizontally disposed shaft rotatably mounting one of said wheels, and pivot means pivotally connecting each of said shafts to its associated arm, said pivot means being so constructed and arranged to provide a shaft axis of pivotal movement for each wheel that is inclined laterally and rearwardly with respect to a plane containing the vertical centerline of the wheel, and spring means between each of said arms and frame resisting relative pivotal movement therebetween upon movement of said wheels in jounce and rebound.



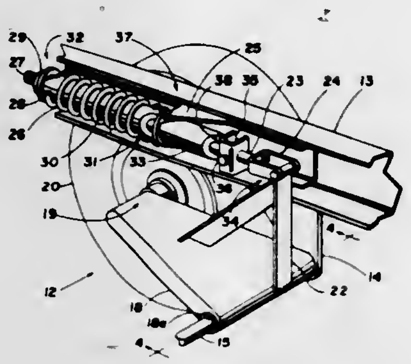
3,400,946
SPRING UNIT FOR SPRING SUSPENSION OF AXLES FOR TRANSPORTATION VEHICLES

Ludwig Bacher, 3496 Rankin Ave., Windsor, Ontario, Canada
Filed Feb. 10, 1966, Ser. No. 526,522
Claims priority, application Germany, Feb. 13, 1965, B 80,523
5 Claims. (Cl. 280—124)



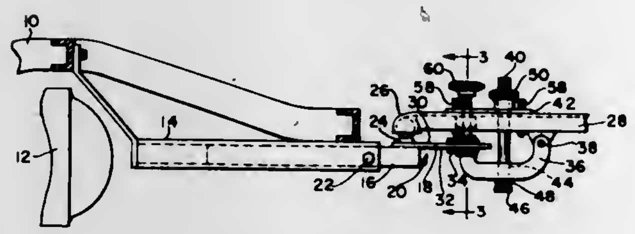
The vehicle suspension assembly comprises a lever pivoted intermediate its ends on an axle, having a ground engaging wheel on one end of the lever and a spring unit connected to the other end of the lever and also connected to the frame of the vehicle. The spring unit comprises a rubber body acting in compression, and top and bottom plates permanently secured as by vulcanization to the top and bottom surfaces of the rubber body.

3,400,947
TWO-WHEEL SUSPENSION SYSTEM
John Edward Cottrill, Grimsby, Ontario, Canada, assignor to George Hugh Stallard and Doreen Elizabeth Allen
Filed Aug. 3, 1966, Ser. No. 569,962
6 Claims. (Cl. 280—124)



This specification discloses a suspension system, such as a suspension system used on trailers and the like although obviously it may be used in other types of equipment, which suspension unit incorporates both spring means for carrying the load, and rubber means acting as shock absorbers and damping out the movement of the spring means. In addition, an axle member is provided extending between the pivot points of the two suspension units, which axle means is slightly curved and is adjustable so as to permit the adjustment of the "tow in" of the wheels on the suspension units.

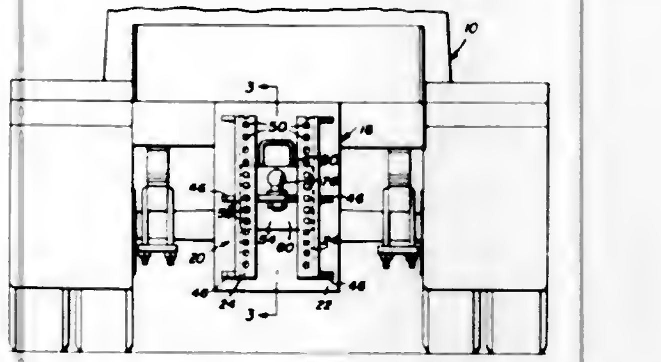
3,400,948
TRAILER LOAD-TRANSFERRING AND ANTISWAY HITCH
Carl G. Matson, 401 E. Central Blvd., Kewanee, Ill. 61443
Filed Jan. 9, 1967, Ser. No. 608,086
2 Claims. (Cl. 280—406)



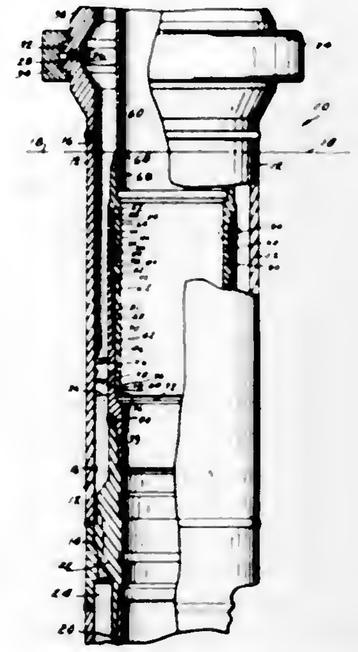
A hitch for connecting a trailer to an automobile or like draft vehicle and having cooperatively engageable parts for applying an adjustable lifting force to the rear of the draft vehicle and further having means for applying a braking force for inhibiting relative swinging of the trailer about a vertical axis.

3,400,949
TRAILER HITCH WITH VERTICALLY ADJUSTABLE BALL
Ray E. Kendall, Evergreen Trailer Park, Alamogordo, N. Mex.
Filed July 19, 1966, Ser. No. 566,418
2 Claims. (Cl. 280—490)

An upstanding channel-defining construction including closed and partially open front and rear sides, respectively, adapted to have its closed front side secured to the rear end of a towing vehicle with the partially open rear side opening rearwardly of the towing vehicle. The partially open rear side is defined by a pair of generally parallel upstanding flanges extending toward each other and overlying and spaced rearwardly of the closed front side of the channel-defining structure. The flanges are spaced apart along their adjacent edge portions and have sets of vertically spaced openings formed therein. A hitch member mounting plate is disposed within the channel-defining assembly and includes vertically spaced rearwardly projecting pins along opposite upstanding marginal edge portions thereof removably receivable in the openings formed in the flanges with the plate in one of selected vertically shifted positions within the channel-defining structure and the rear face of the plate abutted against the front faces of the flanges. In addition, the front face of the plate is inclined upwardly and rearwardly and a wedge locking plate is displaceable downwardly in the channel-defining structure between the plate and the closed front side of the channel-defining structure to wedge the plate rearwardly against the flanges and releasably prevent forward displacement of the plate and axial withdrawal of the pins from the openings.

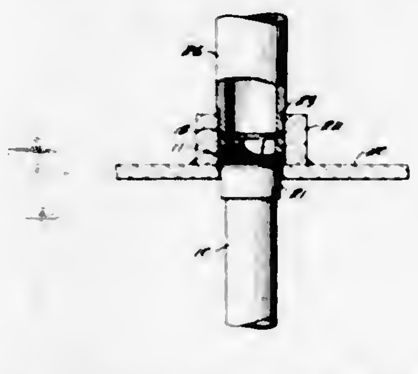


3,400,950
STAB-IN CONDUIT COUPLINGS
Herbert O. Quebe and Robert L. Crain, Houston, Tex., assignors to Gray Tool Company, Houston, Tex., a corporation of Texas
Filed May 26, 1966, Ser. No. 553,245
10 Claims. (Cl. 285—18)



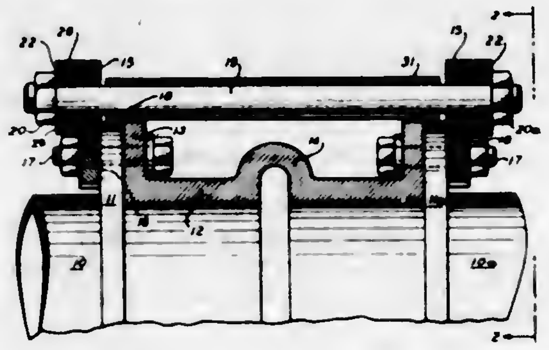
A stab-in tie-back sub for reestablishing communication with the cylindrical bore of a sub-sea well conduit comprising a tubular fluid confining element; means defining at least one circumferential groove in the exterior of said element and opening radially outwardly thereof, a unitary circumferentially extending slip received in said groove and protruding radially outwardly therefrom; means defining a circumferential inclined plane on said slip facing radially outwardly and slightly downwardly and having an upper edge portion arranged to frictionally engage and slide along the sub-sea well conduit bore when the sub is lowered into the bore, means defining a circumferential upwardly and outwardly facing surface on said slip intersecting said inclined plane at said upper edge portion and defining a sharp circumferential ridge on said slip at the intersection; and camming means between said groove and said slip responsive to incipient withdrawal of said sub from said sub-sea well conduit for moving said ridge angularly clockwise and radially outwardly into gouging engagement with said sub-sea well conduit.

3,400,951
DIP TUBE HANGER
Irvin D. Jacobson, 10 Bryn Mawr Drive, Painesville, Ohio 44077
Filed Feb. 17, 1965, Ser. No. 433,342
4 Claims. (Cl. 285—39)



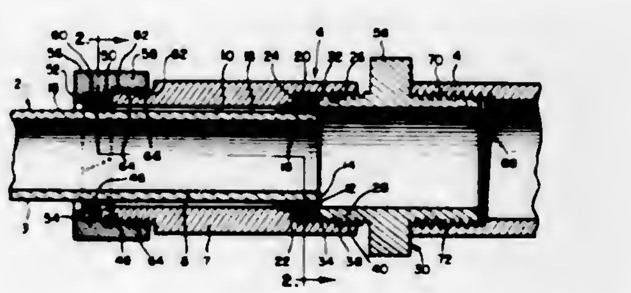
A dip-tube combination for use with a hot water tank wherein the elongated tubular member is provided with an externally threaded sleeve molded about one end of the member to provide a unitary sleeve-member construction. The sleeve has external threads for engagement with a spud on a hot water tank for convenient insertion and replacement of the tubular member-sleeve combination within the tank. The internal surface of the sleeve is provided with tool pads for receiving an appropriate wrench when securing the sleeve and tube combination to the spud. The tubular member, in a preferred embodiment, is disclosed as being flared radially outwardly and has an aperture formed in the wall of the member for receiving a lug of the sleeve to provide a positive interlock between the tube and the sleeve. The sleeve is further provided with a flexible, circumferential flange extending longitudinally in the direction away from the dip-tube member which is deformed radially and compressed into a sealing engagement with the threaded wall of the spud on the water heater when an inlet conduit is threaded into the spud.

3,400,952
EXPANSION JOINT ASSEMBLY
Robert L. Swenson, Upper Montclair, and John L. Clark, Haworth, N.J., assignors to General Rubber Corporation, Tenafly, N.J., a corporation of New Jersey
Filed Sept. 14, 1966, Ser. No. 579,296
1 Claim. (Cl. 285—47)



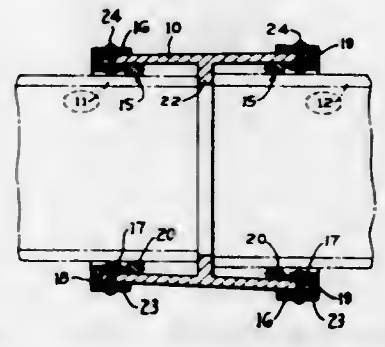
An assembly for connecting rigid extensions of flanged ends of pipe sections to a flexible intermediate expansion joint including elastomeric bearing members positioned in apertures in said flange extensions and formed to permit easy sliding motion therein of a tie rod having means at its ends abutting the bearing members, thereby avoiding metal to metal contact between the flanges and eliminating objectionable vibration and sound transmission between the so connected pipe sections, and a sleeve positioned on the tie rod and of less length than the distance between the gusset plates, preventing excess movement of the flanges toward each other.

3,400,953
HYDRAULIC TUBING CONNECTOR WITH VIBRATION DAMPING MEANS
Herbert D. Sullivan, Hinsdale, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed June 27, 1966, Ser. No. 560,766
1 Claim. (Cl. 285—50)



A hydraulic tubing connection having a fluid carrying tube enclosed within a support tube, a connecting tube, a metal to metal sphero-conical seal connecting the fluid carrying tube to the connecting tube, and a resilient packing between the fluid carrying tube and the support tube spaced from the connection a distance equal to at least one and a half outside diameters of the fluid carrying tube.

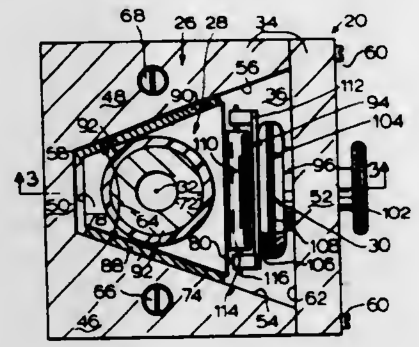
3,400,954
PIPE COUPLING
Jack L. Brown, 22149 Douglas Road, Shaker Heights, Ohio 44122
Filed Jan. 31, 1967, Ser. No. 613,041
1 Claim. (Cl. 285—110)



A pipe coupling for connecting two pipes in fluid tight relationship in which a body member has a sealing gasket at either end. Each gasket has an axially inwardly extending circumferentially continuous pipe receiving flange which terminates at its inner end in an annular enlarged bead for sealing engagement with a pipe end. An annular cap member is telescopically clamped onto the gasket and encloses the flange to secure the gasket to the body member.

3,400,955
OVERLOAD LIMITING MECHANISM

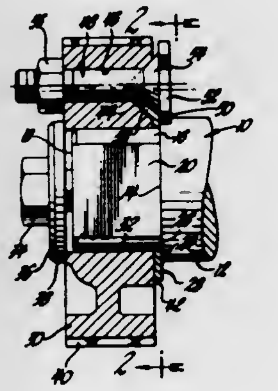
Seymour L. Spira, Ridgewood, and Mitchell Aron, Harrington Park, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Dec. 18, 1964, Ser. No. 419,383
5 Claims. (Cl. 287—20)



A vibration overload limiting mechanism for connecting a test specimen to a vibration table comprising an outer body connecting to said vibration table and an inner body connecting to said test specimen. Said outer body has a peripheral wall with side walls having inner surfaces forming a cavity with a longitudinal axis. Said inner body is disposed within said cavity with an axis parallel to said outer body axis. Said inner body has radially outer surfaces facing said inner surfaces and in frictional engagement therewith for minimizing slight relative displacement between said inner body and said outer body during vibration testing and for providing a preset-force level range for testing said specimen.

3,400,956
UNIVERSALLY INDEXING LOCK MEANS

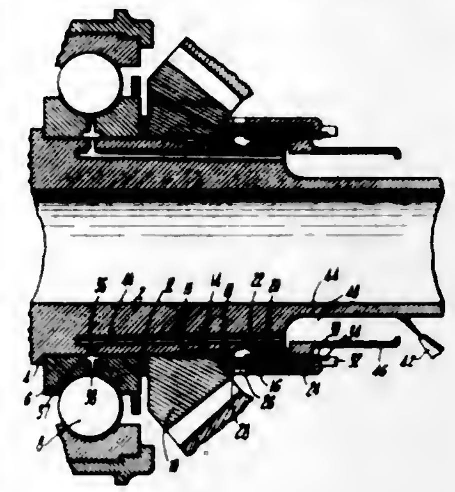
Robert M. Buchwald, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 10, 1965, Ser. No. 512,937
5 Claims. (Cl. 287—53)



The preferred embodiment shows a camshaft universally indexed and lockingly secured to its drive gear by a locking plate non-rotatably retained on the camshaft between the gear and a shoulder of the camshaft. A portion of the circular edge of the locking plae is deformed into a conical recess in the face of the gear by a special bolt received in an opening extending from the recess. The bolt may engage the locking plate at any point on its edge, but once deformed, the plate provides a permanent index for the parts. The indexing may be changed, if desired, by flattening the plate and deforming it at a new location.

3,400,957
NUT LOCKING MEANS

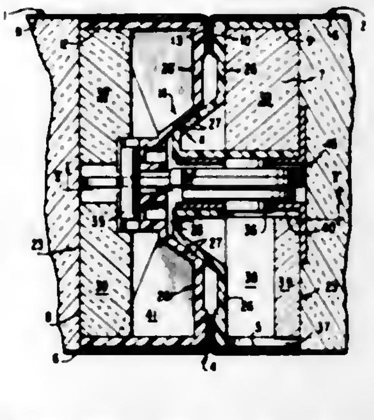
John C. Selden, Avon, Conn., assignor to United Aircraft Corporation, Hartford, Conn., a corporation of Delaware
Filed Sept. 12, 1966, Ser. No. 578,568
9 Claims. (Cl. 287—53)



A locking device for assembly over a clamping nut and shaft that requires no modification of the shaft, and that is applicable without deformation so that it may be used repeatedly and which nut has axially extending lugs on one end and a sleeve fitting over said nut and having slots on one end to receive said lugs and projections on its other end received in grooves in an adjacent member.

3,400,958
INTERLOCKING CLOSURE

Leonard Haimes, 674 NW. 62nd St., Miami, Fla. 33150; and Frank Perryman, Miami, Fla.; said Perryman assignor to said Haimes
Filed Oct. 3, 1966, Ser. No. 583,674
22 Claims. (Cl. 287—189.36)

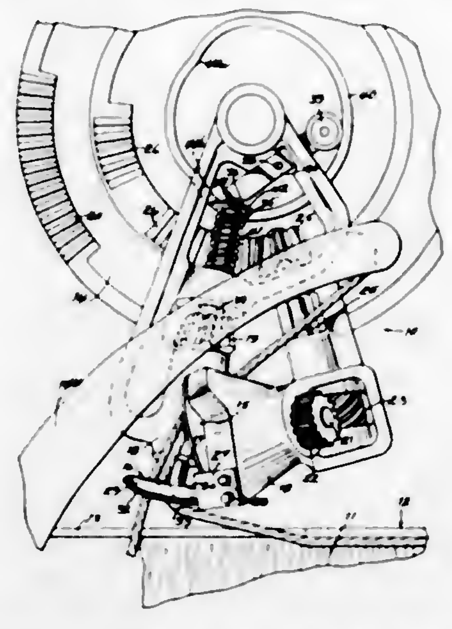


An insulated enclosure having at least two wall members joined at adjacent surfaces provided with respectively a tongue and groove sealing by a latch mechanism carried within housings mounted respectively within the two wall members. The housings are molded from synthetic plastic with mating tongues and grooves, and extend substantially the entire width of the wall members. The housings are provided with additional wall members forming a well for the latch mechanism and with reinforcing webs extending between their outside walls and the additional walls.

3,400,959
TYING MECHANISM

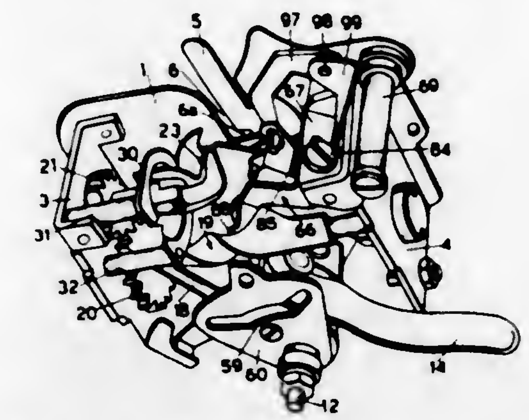
Homer N. Grillot, Naperville, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 26, 1966, Ser. No. 589,596
11 Claims. (Cl. 289—2)

A knotter assembly for use in hay balers and comprising a shank having a pair of laterally and diametrically projecting hooks, and a pair of jaw members normally engageable with said hooks, said hooks and said jaw members being cooperatively arranged for gripping strands disposed therebetween.



3,400,960
APPARATUS FOR KNOTTING THREADS WITH THE SO-CALLED WEAVER'S KNOT

Messa Daniele, Salo, Italy, assignor to Mes Dan Annodatori Tessili di Pietro Messa, Salo, Brescia, Italy, an Italian firm
Filed Oct. 25, 1966, Ser. No. 589,305
Claims priority, application Italy, Oct. 28, 1965,
10,628
22 Claims. (Cl. 289—3)



Apparatus for tying a weaver's knot which has two slotted sidewalls for introducing the threads. A rotary hook with scissors and a pincer cuts and holds one thread end, overlapping and deflecting mechanisms bring the threads into register with the sidewalls, and a cutting device removes the end of the other thread. The apparatus includes cams returning the overlapping mechanisms to home position, an extractor withdrawn from the hook during removal movement, and actuators for the several mechanisms and parts, all of which are adjustable to different kinds and counts of yarns.

3,400,961
DOOR LATCH MECHANISM

Edward M. Koch, Grosse Pointe Farms, and William L. Schlichter, Livonia, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Sept. 19, 1966, Ser. No. 580,402
14 Claims. (Cl. 292—216)

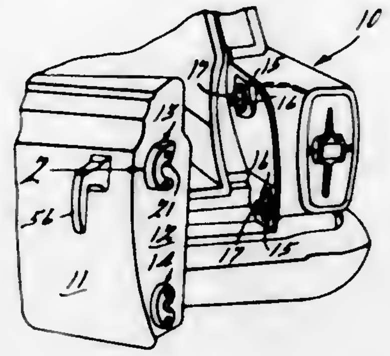
1. In a latch mechanism for a door selectively swingable about a plurality of hinge axes, comprising:

a support,

latch device means pivotally mounted on said support for movement between door latched and door unlatched positions,

detent means pivotally mounted on said support engageable with said latch device means for releasably holding the same in door latched position,

a first actuating means mounted on said support operable when said door is to be swung about one of said hinge axes to release said detent means from said latch device means,

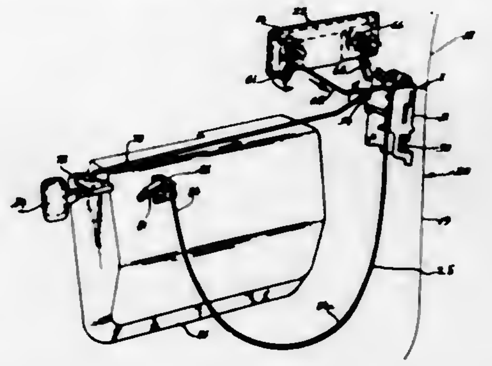


a second actuating means mounted on said support operable when said door is to be swung about a second one of said hinge axes to release said detent means from said latch device means,

said first and second actuating means and said detent means having interengageable members positionable to prevent operation of one of said actuating means after actuation of the other to release said detent means.

3,400,962
SAFETY DOOR LATCH ARRANGEMENT

Jack E. Martens, Bloomfield Hills, Mich., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland
Filed Sept. 7, 1967, Ser. No. 666,012
9 Claims. (Cl. 292—216)

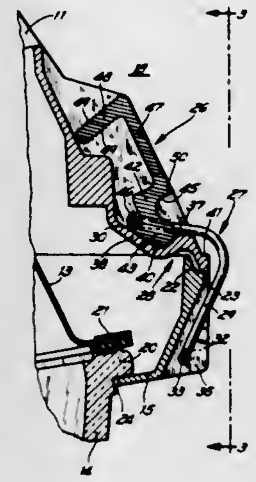


A vehicle door having a closure-operated forked latch bolt mechanism including a contactor with selective abutment connection with a latch bolt pawl, through a locking member pivoted on the pawl. Inside and outside handles swing away from the door on vertical axes for safety and are connected to rods which move in direction opposite to forward motion of the vehicle to actuate the contactor for release of the bolt, so that impact inertia will not move the rods to inadvertently release the bolt.

3,400,963
SAFETY LATCH FOR LUMINAIRES

Edward R. Jablonski, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Feb. 13, 1967, Ser. No. 615,649
16 Claims. (Cl. 292—247)

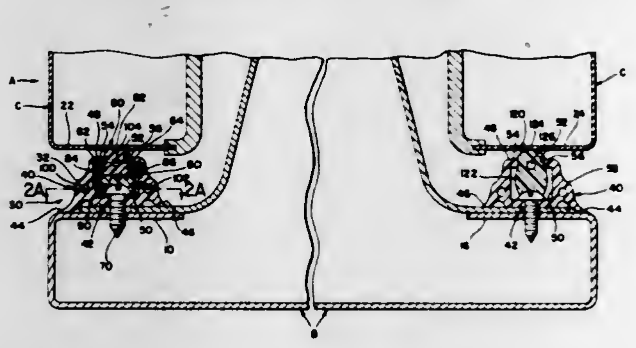
A luminaire having an open-bottomed housing and a bottom closure member which is hingedly mounted at one side to the housing and secured at its other side by a latch assembly consisting of an overcenter latch member pivotally connetced to a resilient tension spring member which is, in turn, pivotally connected to the closure member. The latch member has a first catch engaging portion for fully latching the bottom closure member in its closed position and a second catch engaging portion which is engageable as the latch member is moved from its fully latched position towards its open position to a stable intermediate position for locking the bottom closure member in its stable, fully closed position prior to movement of the latch member and closure member to their fully open positions.



3,400,964

MAGNETIC CLOSURE DEVICE

Max Baermann, 506 Bensberg Bezirk,
Cologne (Rhine), Germany
Filed Mar. 3, 1966, Ser. No. 531,408
Claims priority, application Germany, Mar. 18, 1965,
B 81,049; Nov. 26, 1965, B 84,713
10 Claims. (Cl. 292—251.5)



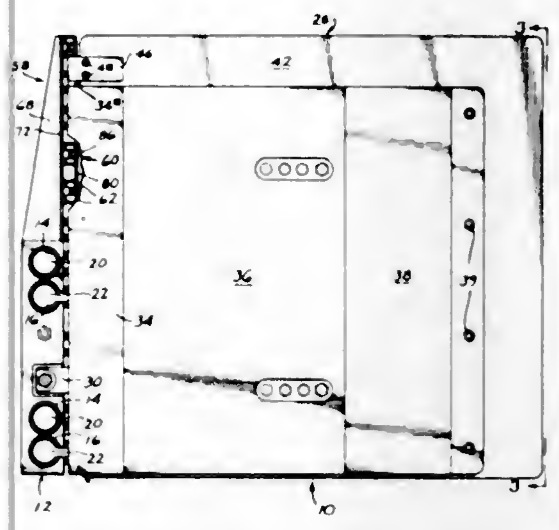
There is provided a magnetic closure device for a door comprising an elongated carrier having a mounting base secured to the door at one side and an outwardly facing portion opposite the mounting base. The carrier includes a longitudinal cavity and a longitudinally extending slot in the facing portion and communicated with the cavity. This slot defines spaced ribs which hold an elongated flexible permanent magnet secured to a mounting element within the cavity and adapted to bias the magnet outwardly for contact with a door frame to hold the door closed and to seal the periphery of the door.

3,400,965

BACKREST FOR LOAD HANDLING APPARATUS

Harlan D. Olson, Sandy, Oreg., assignor to Cascade Corporation, Portland, Oreg., a corporation of Oregon
Filed May 15, 1967, Ser. No. 638,421
7 Claims. (Cl. 294—86)

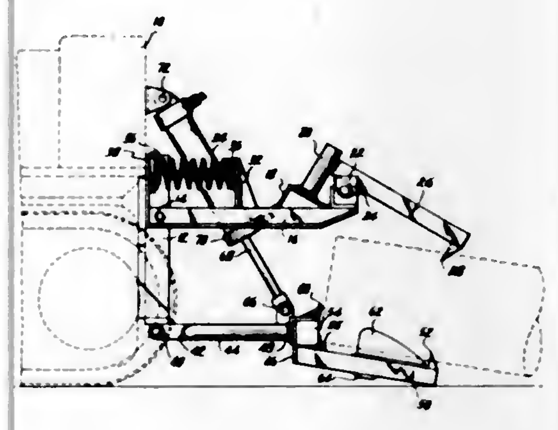
A backrest for supporting a load held between a pair of opposed relatively movable arms in load-handling apparatus, comprising a frame between the arms formed of multiple guides disposed, one above the other, and elongated fingers telescopically received within the guides. Alternate fingers are pivotally connected at one set of ends to one of the arms and the remaining fingers are pivotally connected at a set of ends to the other arm, and the fingers move in the guides as the arms are moved. The fingers have shoes journaled on other sets of ends which slide within the guides to control movement of the fingers.



3,400,966

HYDRAULIC LOG TONG

William Elbert Creel, Rte. 1, Brent, Ala. 35034, and Edward Farley, Rte. 1, Duncanville, Ala. 35456
Filed Sept. 21, 1966, Ser. No. 580,979
3 Claims. (Cl. 294—87)



A tractor-mounted frame has an upper plurality of forwardly extending and separately pivoted arms spring urged to swing downwardly and each has a downwardly facing pointed prong at its front end. A lower assembly is pivoted to the frame and has upwardly facing pointed prongs at its forward end. A hydraulic motor lifts the lower assembly to grip the end of a log between the opposed upper and lower prongs and the tractor can then drag the log endways.

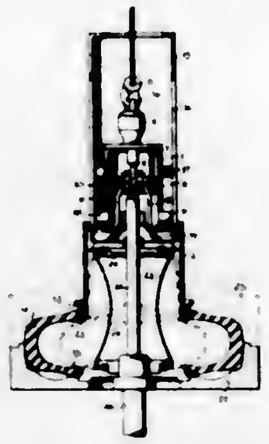
3,400,967

GRIPPER FOR HOISTING EQUIPMENT

Karl Heinz Heller, Georg Pietzuch, and Gunther Heidelmann, Hannover, Germany, assignors to Continental Gummi-Werke AG., Hannover, Germany
Filed May 24, 1967, Ser. No. 640,911
Claims priority, application Germany, May 26, 1966,
C 39,169; Sept. 17, 1966, C 40,128
6 Claims. (Cl. 294—93)

The gripper is designed for grasping raw tires and finished tires, by means of circularly arranged gripping fingers to grasp the inner margin of a tire lying on one

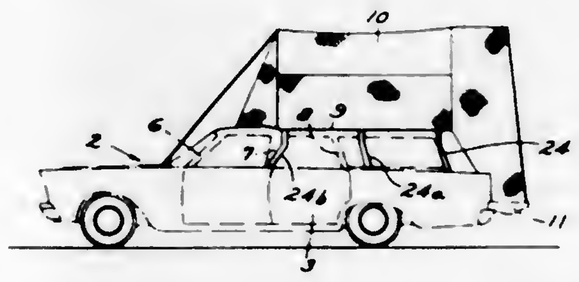
of its sidewalls, and is characterized primarily in that in the space defined by the gripping fingers there is axially, vertically, displaceably arranged a centering funnel open toward the bottom thereof, said funnel being adapted to be displaced at least within the range of the height of the tire to be grasped for cenering the gripping fingers relative to said tire.



3,400,968

MOTOR VEHICLE STATION WAGON CAMPER BODY

Raymond P. Smith, Southfield, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 4, 1967, Ser. No. 607,225
8 Claims. (Cl. 296—23)



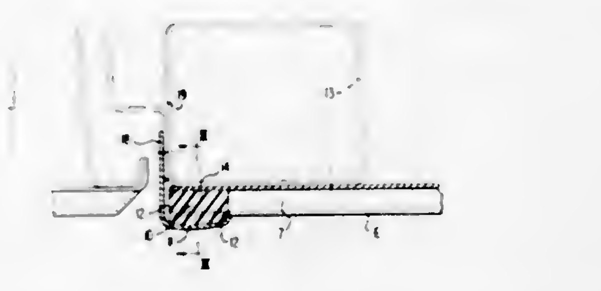
A motor vehicle station wagon body convertible into a self-contained camper including a pair of distinct roof panels pivotably supported on the body side walls for swinging movement to a substantially horizontal position outboard of the walls. A removable ceiling panel secured to the walls below the roof and spaced therefrom defines a cargo storage space for storage of a tent which may be erected on the vehicle body to provide housing for the campers.

3,400,969

COVER ARRANGEMENT FOR THE OUTER PANELING OF LARGE-SPACE VEHICLES, ESPECIALLY BUSES

Hermann H. Fr. Ahrens, Stuttgart-Vaihingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Dec. 5, 1966, Ser. No. 599,012
Claims priority, application Germany, Dec. 7, 1965,
D 48,846
11 Claims. (Cl. 296—28)

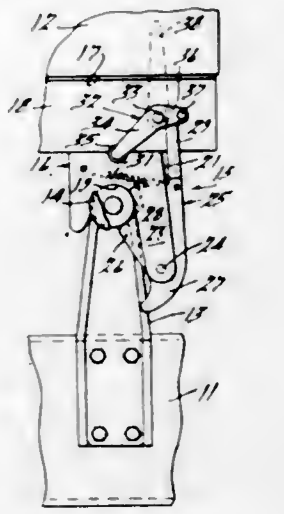
An outer cover structure for covering the exposed edges of profiled outer panels, as occur in the door openings, luggage space openings, etc., of large-space vehicles, especially buses, whereby, within the area of the exposed edges, plugs are inserted into the hollow interior spaces of the profiled panels, a strip or strips of substantially complementary shape are placed over the profiled outer panels and an outer sheet metal strip having two angular disposed legs is placed with one leg over the first-mentioned strip in a plane parallel to the plane of the outer panel while the other leg extends approximately transversely over the exposed edge and is secured at a fixed part of the vehicle. The plugs as well as the strip material placed over the outer surface of the profiled panel may be made from oil and water impermeable, temperature-resistant, and elastically yielding synthetic plastic resin material.



3,400,970

TILT CAB LATCH MECHANISM

Jerzy Daniluk, Taylor, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 29, 1967, Ser. No. 641,984
6 Claims. (Cl. 296—35)



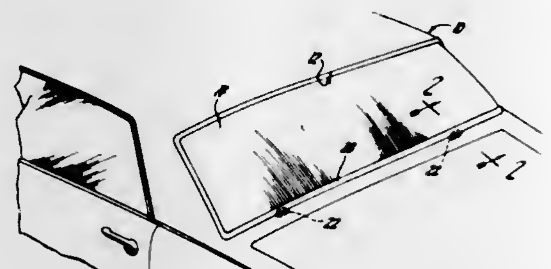
A latch mechanism for latching a movable vehicle body structure, such as a truck cab mounted for tilting movement relative to a fixed body structure, such as a chassis or engine compartment frame structure. The latch mechanism coacts with a striker bar on the fixed body structure through a detent means. The detent means is movable out of latching engagement with the striker bar or is locked against such movement by a lever means responsive to an operating means.

3,400,971

VEHICLE WINDOW MOUNTING

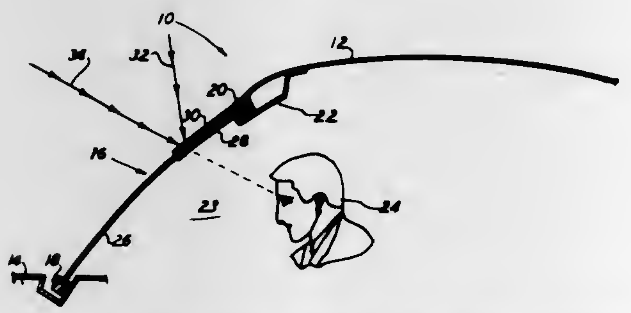
Robert L. Rentz, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 9, 1966, Ser. No. 578,367
1 Claim. (Cl. 296—84)

A vehicle body window opening includes a lower wall having a center crown portion higher than the outboard end portions. Water soluble spacer blocks are mounted on the end portions to support the vehicle window while the adhesive between the inside edge of the window and



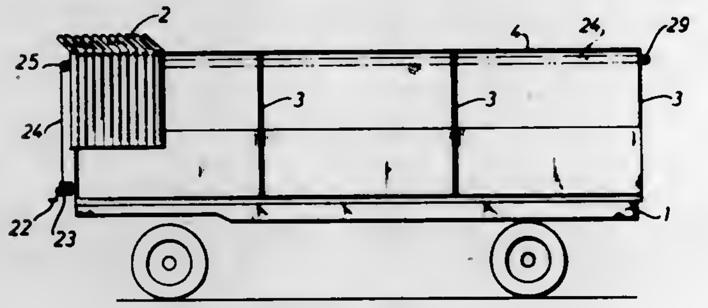
an adjacent wall of the window opening is being cured. The blocks are gradually dissolved by water which collects on the lower wall.

3,400,972
VEHICLE WINDSHIELD HAVING INTEGRAL SUN SHIELD
Raymond David McIntyre and Fred W. Woodward, Livonia, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 15, 1967, Ser. No. 623,388
6 Claims. (Cl. 296—97)



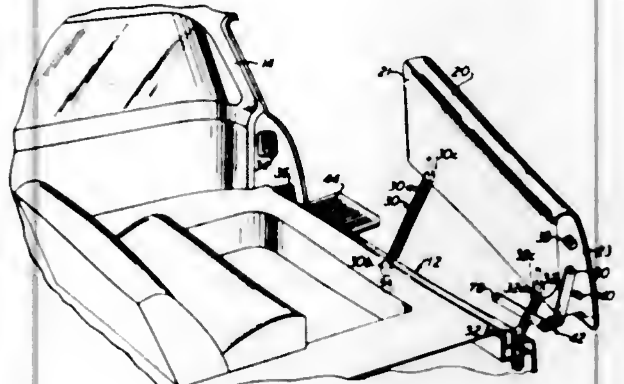
A vehicle windshield having its upper portion coated with a light sensitive photochromic material. A light grating, coextensive with the photochromic material and located exteriorly of the latter, allows forward visibility to a predetermined extent and allows only rays of the sun that would blind the eyes of the vehicle operator or front seat passenger to impinge upon the photochromic material.

3,400,973
SUPERSTRUCTURE FOR LOAD VEHICLES
Lars Börje Svante Herou, 24 Slatvarsgatan, Vastra Frolunda, Sweden
Filed Sept. 1, 1966, Ser. No. 576,589
Claims priority, application Sweden, Apr. 28, 1966, 5,765/66
12 Claims. (Cl. 296—100)



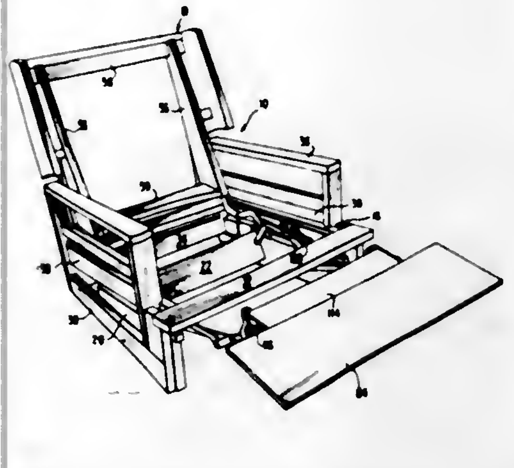
The present invention relates to superstructures for load vehicles and of the kind comprising a flexible covering supported by a frame, the roof-supporting portion of which comprises a number of cross-pieces connected to the covering in spaced relationship and having their ends supported in such a manner by longitudinally extending rails or the like that the cross-pieces are displaceable for folding or collapsing the covering.

3,400,974
DOUBLE ACTION HINGE
Raymond T. Gage, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Feb. 18, 1966, Ser. No. 528,641
10 Claims. (Cl. 296—146)



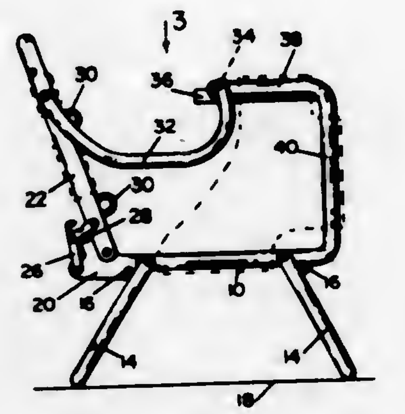
Two L-shaped hinge members have their longer legs hinged to each other, the shorter leg of one member pivoted to a vehicle body, and the shorter leg of the other member pivoted to a door. When the door is closed, the hinge axis of the longer legs lies approximately parallel to one side of the door and the door is opened by swinging movement about the hinge axis. In addition, the door can be bodily shifted out of the body opening by simultaneously turning the door about its pivot connection to the hinge and turning the hinge about its pivot connection to the body.

3,400,975
FOOTREST AND ASSOCIATED LINKAGE FOR CHAIR
Walter Clark Rogers, Jr., High Point, N.C., assignor to Royal Development Company, Inc., High Point, N.C., a corporation of North Carolina
Filed Feb. 1, 1967, Ser. No. 613,362
26 Claims. (Cl. 297—75)



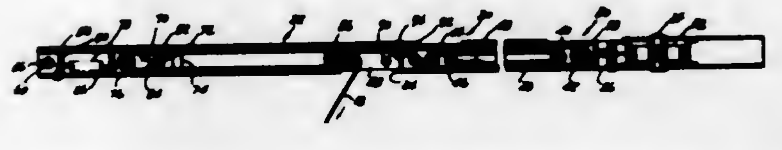
In a reclining chair movable between normal and reclining positions, dual footrests movable from retracted positions to extended, use positions in response to movement of the chair into a reclining position.

3,400,976
CONVERTIBLE CHAIR CONSTRUCTION FOR INFANTS
Leo J. Messier, 43 N. Main St., North Grafton, Mass. 01536
Filed June 21, 1967, Ser. No. 647,733
1 Claim. (Cl. 297—118)



A convertible multi-use chair construction for infants comprising a seat, a backrest pivoted and latched with respect to the seat either in an upright or a semi-reclining position, together with folding legs at the lower surface of the seat, and hanger-hooks pivotally mounted with respect to the backrest for supporting the device in a bathtub, sink, or on a car seat, or acting as a safety enclosure.

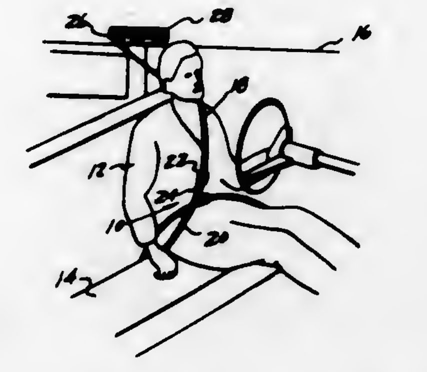
3,400,977
BELT MOUNTING DEVICE WITH TUBULAR ENERGY ABSORPTION MEMBER
David P. Jones, Detroit, Mich., assignor to Jim Robbins Seat Belt Co., Royal Oak, Mich.
Filed May 15, 1967, Ser. No. 638,215
11 Claims. (Cl. 297—386)



A vehicle safety seat belt mounting attached to the roof of the vehicle. Spring-biased retracting means mounted within an elongated tube withdrawing the belt toward a stored position within the tube. Locking means responsive to a sharply increased belt feedout rate from the tube, clamping the belt to a longitudinally movable guide member disposed within the tube and having teeth engaging the tube walls. A predetermined tensile force acting on the belt extends the belt at a controlled and reduced rate as the teeth of the guide member abrade the tube walls.

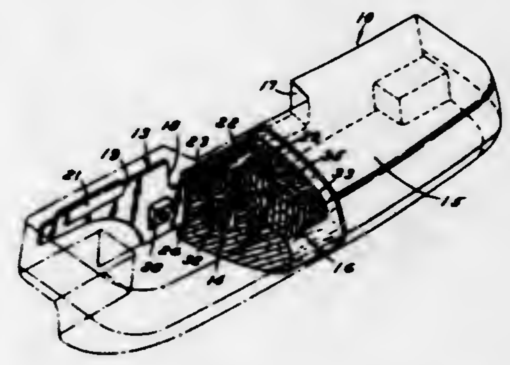
3,400,978
SAFETY BELT CONTAINER
Ralph P. Totten, Berkley, Mich., assignor to Jim Robbins Seat Belt Company, Royal Oak, Mich., a corporation of Delaware
Filed Apr. 3, 1967, Ser. No. 627,719
12 Claims. (Cl. 297—389)

A container for storing a safety seat belt anchored to an upper portion of the vehicle. The container has a bottom, upwardly directed side walls and an open top. The belt anchor bolt secures one of the side walls to the vehicle so that the belt can be folded into a series of parallel lengths and inserted through the open top for storage adjacent its anchored end. The side walls and bottom of the container are open adjacent the anchor bolt to permit extension of the belt to an operating position without interference with the container structure.



An alternate container has a tongue-shaped section formed in a side wall for positively engaging the belt buckle.

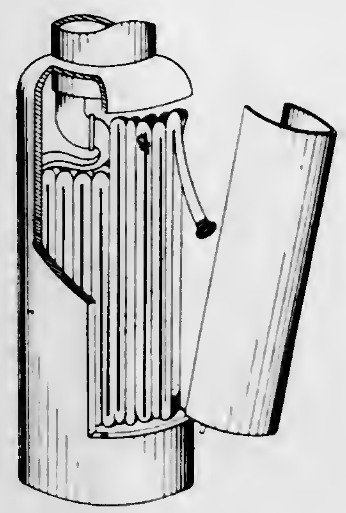
3,400,979
SAFETY ARMREST
Ivor F. James, Southfield, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 3, 1966, Ser. No. 583,535
7 Claims. (Cl. 297—412)



An upholstered unit, such as an armrest, for attachment to a vehicle body panel. The upholstered unit comprises a support plate and a plurality of support plate paralleling cells adapted to collapse under nonvertical forces applied toward the support plate but being resistant to collapse under forces applied in a direction substantially parallel to the support plate. The support plate and honeycomb member are covered by a formed plastic outer skin. The upholstered unit is given body or shape and cushioning function by a plastic form filler material which fills the outer skin and the interstices of the honeycomb member.

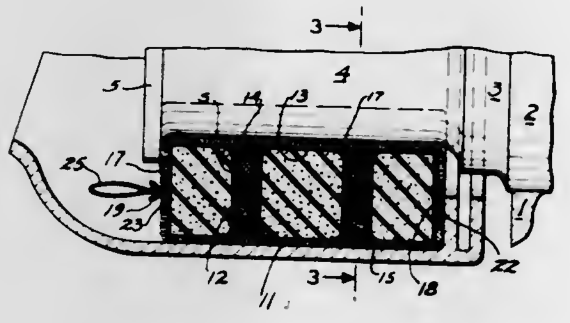
3,400,980
APPARATUS FOR INSERTING DOWN HOLE MECHANISM THROUGH BORE HOLES
James B. Dahms, New Martinsville, W. Va., and Byron P. Edmonds, Regina, Saskatchewan, Canada, assignors to Kalium Chemicals Limited, Regina, Saskatchewan, Canada, a corporation of Canada
Filed Mar. 11, 1966, Ser. No. 533,558
9 Claims. (Cl. 299—5)

An apparatus for introducing a device into a subterranean cavity is disclosed which includes a container for the device and a hatch means associated with the container. A cover member is associated with the hatch means and arranged so that it protects the device in the container while it is in the well casing but adapted to fall away as the container passes from the casing into the cavity.



3,400,981
RAILWAY JOURNAL LUBRICATING PAD

James J. Hennessy, Jr., Chambersburg, Pa., assignor to Hennessy Lubricator Co., Inc., Chambersburg, Pa., a corporation of Delaware
Filed Sept. 6, 1966, Ser. No. 577,378
5 Claims. (Cl. 308—243)

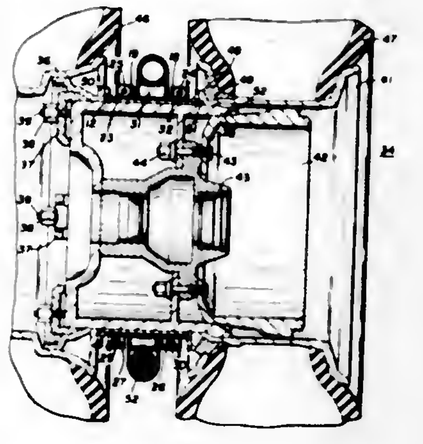


1. A railway axle journal box lubricant distributor pad comprising a single, rectangular block of yielding rubber-like material, oil feeding wicks extending through said block from its bottom to its top and projecting from the bottom and top surfaces and disposed along the longitudinal center line of said block only and substantially spaced from each other throughout their length and also substantially spaced from the sides and ends of said block, and an enclosing casing for the block ind wicks consisting of woven fabric material with tufted cable yarn projecting from the exterior face of the casing throughout the cutter surfaces of the pad bottom, top, sides and ends, the ends of said wicks being in contact with the woven fabric material.

3,400,982
WHEEL BALANCER FOR DUAL TIRED VEHICLE

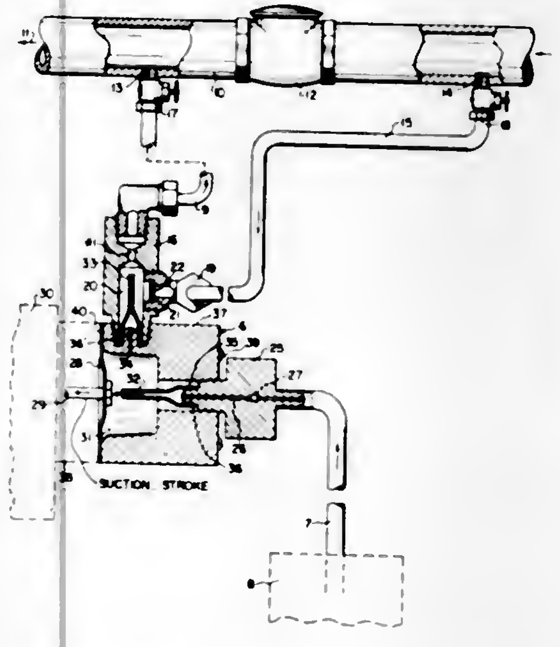
Donald W. Cole, Fort Worth, Tex., and Arlan E. Mitchell and Beauford I. Whitlock, Stafford, Kans., assignors to AWB Manufacturing Co., Inc., Stafford, Kans., a corporation of Kansas
Filed June 28, 1967, Ser. No. 649,507
5 Claims. (Cl. 301—5)

A wheel balancer for a dual-wheeled vehicle including a ring containing freely movable balancing elements which is adapted to be concentrically mounted upon the spacer band normally employed to separate the two tire and rim assemblies of the dual array. A resilient shim is positioned between the balancer and the spacer band to urge the ring into snug accommodation within a retainer cage, and to minimize heat transfer from the wheel assembly to the balancer.



3,400,983
SLURRY FEED PUMP

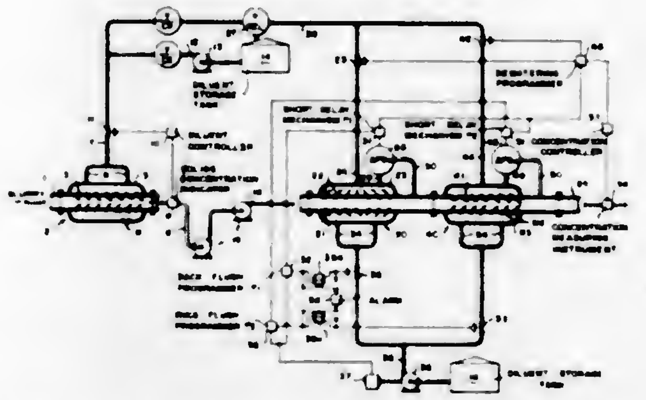
De Wayne Wessel, Elgin, Ill., assignor to Elgin Softener, Inc., Elgin, Ill., a corporation of Illinois
Filed Sept. 8, 1966, Ser. No. 578,083
13 Claims. (Cl. 302—14)



The present pump is used for pumping a liquid slurry of solid material like that of diatomaceous earth suspended in water passed through diatomite filters used in connection with swimming pools and other process application having similar requirements. Two conduits are connected to the slurry feed line at longitudinally spaced points with a rearwardly seating check valve therebetween and these conduits are connected to the discharge chamber of the pump at spaced points with a flow regulator in the first conduit that is responsive to pressure change therein to maintain a substantially constant flow despite changes in pressure in the conduit. The pump is equipped with specially designed snifter valves on the inlet and discharge side thereof designed to handle the very abrasive particles of diatomaceous earth without leakage in the event of any particles becoming lodged in the valves. A further conduit interconnects the first conduit with the inlet side of the pump so that a flushing valve in this further conduit, when opened during intervals while the pump is not operating, serves to flush out the suction pipe and pump and also the second conduit with fluid from the first conduit.

3,400,984
SYSTEM FOR PUMPING SLURRIES OF HIGH CONCENTRATIONS

Kent R. Shellene, John P. Fraser, and Paul T. Chu, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 13, 1967, Ser. No. 646,420
8 Claims. (Cl. 302—14)



An apparatus for pumping a liquid-solids mixture with a high enough solids content to prevent stratification consisting of a liquid adder upstream from a pump and a liquid extractor downstream of the pump.

3,400,985
HANDLING FINELY DIVIDED SOLID MATERIALS

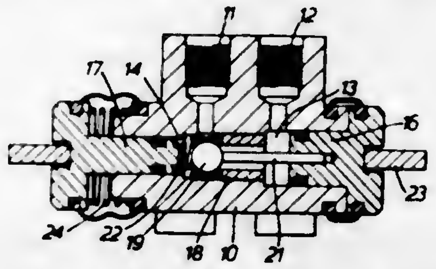
John J. Potter, Jr., and John M. Hurt, St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York
Filed Nov. 7, 1966, Ser. No. 592,661
3 Claims. (Cl. 302—36)

1. An apparatus for transferring solid materials from one pressure zone to a zone of higher pressure comprising, in combination, a cylindrical body with an upper end and a lower end and having a chamber therein, a cylindrical body member coaxially disposed within said cylindrical body so as to define an annular space therewith, means for providing a seal between the lower end of said cylindrical body and said cylindrical member, drive means connected to the lower end of said cylindrical member and adapted to impart reciprocal motion thereto between a first position and a second position, said first position being the end of the discharge stroke and said second position being the end of the suction stroke of said cylindrical member, said chamber in said cylindrical body being defined between said first position and said second position, means for providing a seal between the upper end of said cylindrical member and said cylindrical body, a gas inlet means at the lower end of said cylindrical body communicating with said annular space, a perforated plate member disposed in the upper end of said cylindrical member, a closure means sealably disposed at the upper end of said cylindrical body, a first passage means extending centrally within said closure means and communicating with said chamber, means for introducing solids into said chamber and passage means for providing communication between said annular space and said chamber.

3,400,986
HYDRAULIC BRAKE CONTROL VALVES

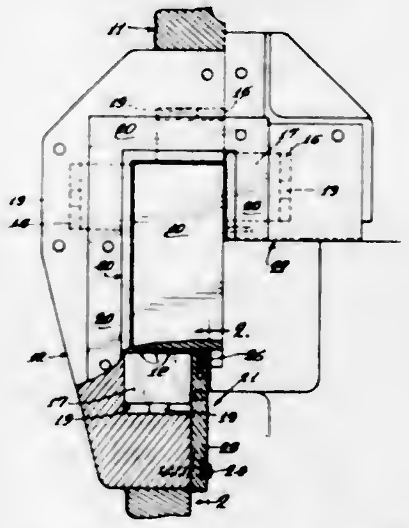
Thomas G. Lawson and Robert J. Cummings, Tyseley, Birmingham, England, assignors to Girling Limited, Tyseley, Birmingham, England, a British company
Filed Apr. 3, 1967, Ser. No. 627,875
Claims priority, application Great Britain, Apr. 7, 1966, 15,581/66
5 Claims. (Cl. 303—6)

In a pressure regulating valve for hydraulic brake systems of the type in which communication between the inlet and outlet is controlled by piston-actuated internal valve means, production is facilitated by providing two separate pistons of different diameter in place of the known stepped piston. The pistons are mechanically coupled externally of the valve body for transmitting thrust between them. The internal valve may comprise a seat fixed between the two pistons, one of which controls the position of a valve member which co-operates with the seat.



3,400,987
MACHINE TOOL

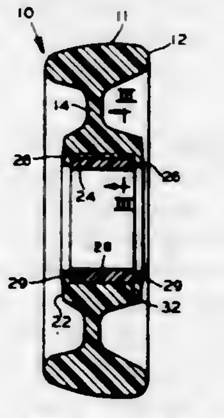
Carl F. Erikson, Belvidere, Ill., assignor to Sundstrand Corporation, a corporation of Illinois
Filed July 8, 1966, Ser. No. 563,783
3 Claims. (Cl. 308—3.5)



Sealing mechanism for bearing mount having anti-friction way bearings wherein seal members disposed both transversely and longitudinally of the component movement make an effective seal by being in overlapped relation, with the longitudinal seal member being a relatively slippery member yieldably urged toward the way.

3,400,988
UNITIZED PLASTIC WHEEL AND BEARING

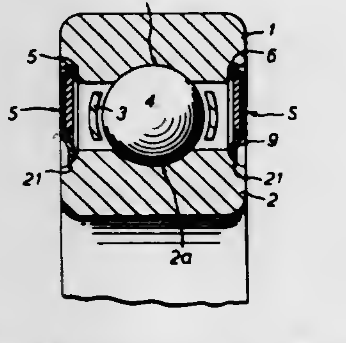
Raymond A. Hudson, Albany, Ga., and David L. Walchle and James G. Varney, Milan, Mich., assignors to The Mather Company, Toledo, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 369,676, May 25, 1964. This application Feb. 6, 1967, Ser. No. 614,144
4 Claims. (Cl. 308—20)



A unitized plastic wheel comprising an annular sleeve bearing element of reinforced tetrafluoroethylene (TFE) having a rigid backing in the form of a wheel body capable of being molded, or formed around the bearing element in intimate and fixed contact therewith, including also flanges and/or radial means for further anchoring said sleeve to the rigid backing. The contacting surface of the tetrafluoroethylene with the rigid backing is deep etched to be sufficiently rough so that the rigid backing may be intimately molded thereinto.

3,400,989
BEARING SEALS

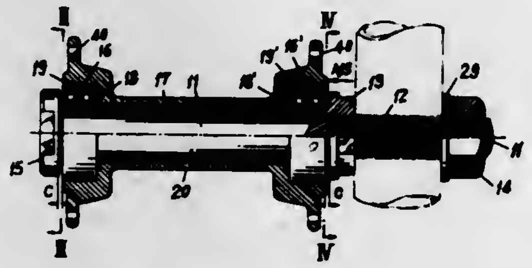
Sidney Dixon and Reginald H. Chinnery, Newcastle-upon-Tyne, England, assignors to George Angus & Company Limited, Newcastle-upon-Tyne, England
Filed Feb. 2, 1966, Ser. No. 524,604
Claims priority, application Great Britain, Feb. 23, 1965, 7,740/65
2 Claims. (Cl. 308—187.2)



A seal for rolling bearings has a radial web joining a flexible lip at one periphery and a bead at its other periphery, which web is reinforced by a flat rigid ring extending radially into the bead, the bead having a plane radial surface substantially in the medial plane of the rigid ring, a frusto-conical lead-in surface meeting the radial surface in a feather edge and an annular surface extending to the plane surface and forming with it a rabbett, the frusto-conical surface and the rabbett facing in opposite directions.

3,400,990
WHEEL-FITTING DEVICE FOR WHEELCHAIRS

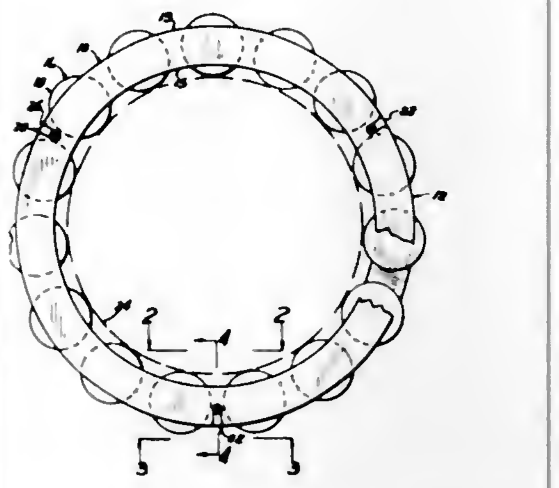
Yoshiko Sato, 8–4 1-chome, Hongo, Bunkyoku, Tokyo, Japan
Filed Nov. 23, 1966, Ser. No. 596,668
Claims priority, application Japan, Dec. 30, 1965, 40/108,526
4 Claims. (Cl. 308—191)



1. Wheel shaft-fitting device for wheelchairs, wherein a shaft is externally threaded at one end portion to which a clamping nut and lock nut are threadedly engaged, a flange integrally formed at the other end of the shaft, two ball bearings provided between said flange and clamping nut, an intermediate pipe provided between said ball bearings, a hub of a wheel abuttingly engaging the outside of said ball bearings, a leg frame having a bore, and the threaded end of said wheel shaft passed through said bore provided in said leg frame, said leg frame secured between said clamping nut and lock nut.

3,400,991
ROLLER BEARING ASSEMBLY

John Haller, Northville, Mich., assignor to Federal-Mogul Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 30, 1966, Ser. No. 538,762
8 Claims. (Cl. 308—217)



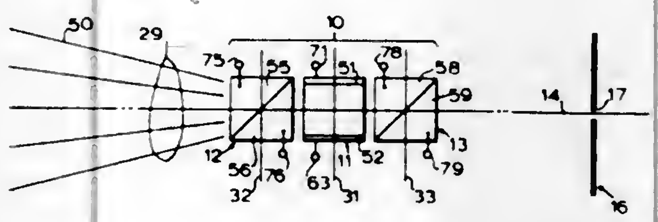
This roller bearing assembly includes a retainer cage having a pair of oppositely-facing annular roller retainers with roller-receiving end recesses therein formed by molding powdered material, such as powdered metal or powdered nylon plastic. Circumferentially-spaced aligned peripheral grooves in the retainers snugly receive spacing tie bars having radially-projecting outer ends which are seated in corresponding radial notches in the outer faces of the retainer rings, with their inner ends staked into indentations in said notches.

ERRATUM

For Class 308—243 see:
Patent No. 3,400,981

3,400,992
COPLANAR LIGHT BEAM DEFLECTION AND SELECTION APPARATUS

Joseph T. McNaney, 8548 Boulder Drive, La Mesa, Calif. 92041
Filed June 9, 1965, Ser. No. 462,494
2 Claims. (Cl. 350—160)

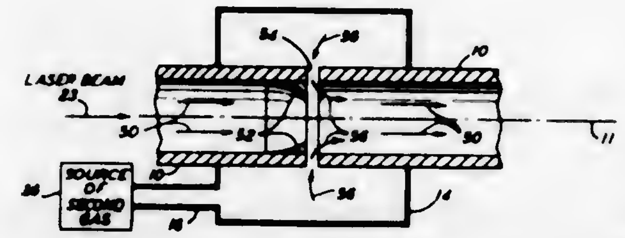


Specified herein is an electro-optical light beam deflection system utilized primarily for effecting deflections, and thereby axial alignments, of light beams converging on and crossing an optical axis of the system from a plurality of vertical and horizontal off-axis positions. More particularly this deflection system is designed to deflect the beams from their initial convergent paths about a point along the axis which is intersected by a common plane of the system whereby any one of the beams will be deflected, before crossing the axis, and directed along the axis. In a principal embodiment utilizing this system each of the plurality of beams is made to assume the shape of an individual character so that predetermined character

shaped beams may be directed along the axis, selected through a limiting aperture and thereupon directed to the surface of a display medium.

3,400,993
GAS LENS FOR OPTICAL FREQUENCY RANGE USING TWO OR MORE GASES HAVING UNEQUAL REFRACTIVE INDICES

Alfred C. Beck, Red Bank, Glenn E. Conklin, Middletown, and Andrew R. Hutson, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 30, 1964, Ser. No. 379,112
15 Claims. (Cl. 350—179)

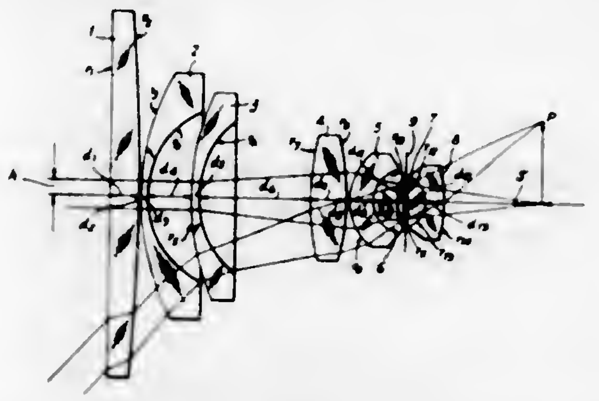


This application describes a gas lens in which focusing action is produced by injecting a second gas into a conduit along which a first gas is flowing. Since the injected gas tends to remain within the outer laminas of the first gas over an extended interval, positive or negative focusing can be produced by the use of a second gas whose refractive index is either smaller or larger than that of the first gas.

Various arrangements for introducing the second gas are described.

3,400,994
TWO COMPONENT WIDE ANGLE CAMERA LENS

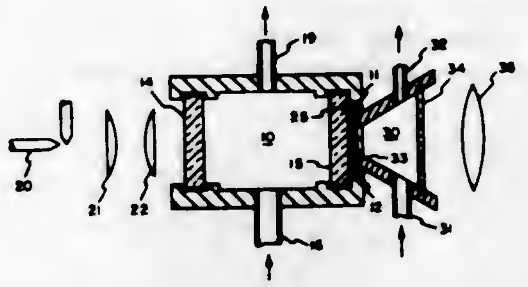
Mikhail Mikhailovich Roosinov and Petr Dmitrievich Ivanov, Leningrad, and Falk Solomonovich Novik, Moscow, U.S.S.R., assignors to Leningradsky Institute Tochnoi Mekhaniki i Optiki, Leningrad, U.S.S.R.
Filed Aug. 13, 1964, Ser. No. 389,494
1 Claim. (Cl. 350—215)



A wide angle camera lens constituted by first and second components arranged one ahead of the other on the optical axis. The first component has an angular magnification less than unity and comprises two negative meniscus lenses and two postive correction lenses, one of which is plano-convex and is positioned in front of the negative lenses, while the second mentioned positive lens is convexo-convex and is set behind the negative lenses. The second component is constituted by two cemented lens elements of which two are negative lenses and two are positive lenses set between the latter negative lenses and cemented to them. The lenses of both components have spherical surfaces.

3,400,995
HEAT DISSIPATING FILM GATE

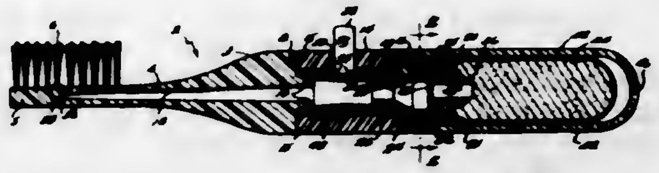
Willy Borberg, Briarcliff Manor, and Reginald A. White, Chappaqua, N. Y., assignors to General Precision Systems Inc., a corporation of Delaware
Filed Dec. 9, 1965, Ser. No. 512,736
7 Claims. (Cl. 352—222)



An improved film gate in which a cooling chamber having a sapphire wall is used between the light source and the film. The emulsion surface of the film is held in intimate contact with the sapphire plate for improved heat transfer. In addition the circulation of the coolant through the cooling chamber has been made to be uniform, without air traps in the system. The inlet and outlet of the chamber are each a plurality of parts so as to avoid dead flow spaces. Air bubbles are eliminated by use of a closed, non-sealed system. Intimate contact is made by use of air pressure.

3,400,996
TOOTHBRUSH WITH INTEGRAL DENTIFRICE DISPENSER

Alice M. Vandergrift, Pittsburgh, Pa., assignor of one-third interest each to Edward W. Macrum, Beaver Falls, Pa., and Kenneth W. Coates, Jr., Madison, Ind.
Filed Nov. 15, 1966, Ser. No. 594,610
5 Claims. (Cl. 401—184)

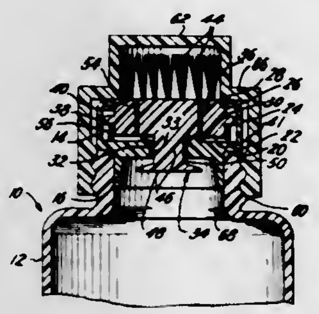


1. A toothbrush with means for supplying dentifrice thereto comprising, in combination, a base member having a necked-down portion and a flattened bristle-carrying area extending from one end thereof; a sleeve connected at one end to the opposite end of said base member; a ferrule connected to the opposite end of said sleeve; a dentifrice container communicating with said ferrule; an intake check valve carried by said ferrule; said base member and its necked-down portion and flattened bristle-carrying area having a common bore; the bore of said sleeve being substantially larger than said aforementioned common bore; a flexible tube disposed in said sleeve and communicating with said aforementioned bore and with the interior of said ferrule; said ferrule being mounted in a cup having a rearwardly disposed centrally apertured bottom, a short tube disposed in the central aperture in the bottom of said cup and projecting forwardly and rearwardly with respect thereto; said intake check valve being operable to close the forward end of said short tube; the rearward end of said short tube being sharpened for a cartridge-piercing means; means extending through the wall of said sleeve for enabling the manual compression of at least a portion of said flexible tube; the flattened bristle-carrying area of said base member having a recess on its outer face and a passage providing communication between said recess and said common bore; and a discharge check valve in said recess; whereby the manual compression of the dentifrice con-

tainer will draw dentifrice through said intake check valve and pump the same through said common bore and onto the bristle carrying area of said base member.

3,400,997
SQUEEZE CONTAINER APPLICATOR

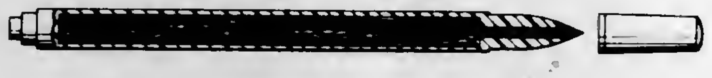
Gilbert Schwartzman, 20 Wilmot Circle,
Scarsdale, N.Y. 10583
Filed Mar. 26, 1965, Ser. No. 443,021
8 Claims. (Cl. 401—186)



An applicator comprising a squeezable container having a cylindrical body secured thereto. The body includes a transverse web having an opening with a raised peripheral rib about the opening and forming a valve seat. A valve member is movable with respect to the valve seat and controls fluid flow through the opening. The valve member includes an applicator head above the web engageable with the rib to control fluid flow from the container to the head. A helical coil spring disposed entirely below the web is provided for urging the head away from the rib. A cap is provided which is threadedly engageable with the container and has a shoulder engageable with the head for forcing the head against the rib when the cap is closed.

3,400,998
FOUNTAIN PEN HAVING A POROUS ROD TYPE NIB

Phillip M. Daugherty, Decatur, and Charles K. Lovejoy and Harry L. Vaughan, Atlanta, Ga., assignors to Scripto, Inc., a corporation of Georgia
Filed May 17, 1965, Ser. No. 456,169
4 Claims. (Cl. 401—198)

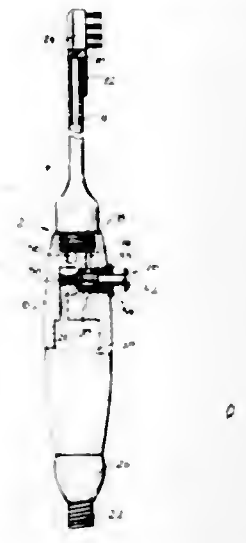


1. In a fountain pen having a barrel forming an ink reservoir and a nib extending from said barrel and communicating with said reservoir, the improvement of said nib being a porous substantially rigid rod comprising a bundle of longitudinally arranged tows of highly bulked kinked and twisted linear polyester filaments bonded together with epoxy resin to form a micro-reticulate structure having substantially uniform interconnecting interstices of capillary dimensions.

3,400,999
DENTAL APPLIANCE

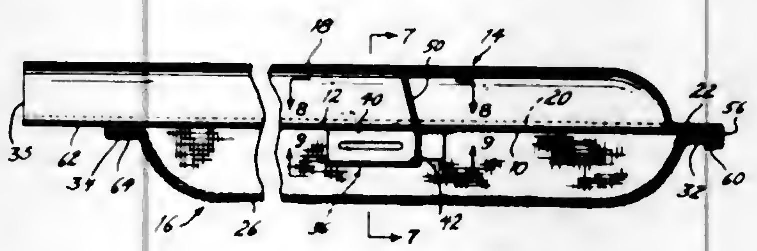
Shalom Goldstein, 7a Ben-Yehuda St.,
Tel Aviv, Israel
Filed Sept. 2, 1965, Ser. No. 484,599
Claims priority, application Israel, Sept. 4, 1964,
22,041
4 Claims. (Cl. 401—278)

A dental appliance comprising a handle connectible at one end to a source of water and formed with a passageway conducting the water to a location adjacent to the opposite end where the passageway terminates in a plurality of transverse openings forming a spraying head, a separable brush unit being releasably secured to the spraying head by an axial pin carried by one received in an axial opening in the other, the pin being formed with a rib and the opening being formed with an accommodating recess to prevent relative rotation between the two.



3,401,000
DOMED SCREEN RADIANT BURNER

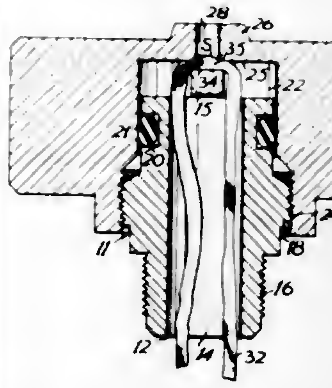
Domenick Spaonara, Allentown, and Edward M. Redstreake, Macungie, Pa., assignors to Caloric Corporation, Topton, Pa., a corporation of Pennsylvania
Filed June 29, 1966, Ser. No. 561,595
4 Claims. (Cl. 431—329)



Gas burning infrared ray generator made of sheet metal and seamless. Also embodies means for insuring uniform combustion, and is not readily extinguished by ordinary gusts of wind.

3,401,001
BURNER VALVE

Charles K. Lovejoy, 1832 Meredith Drive NW.,
Atlanta, Ga. 30318
Filed Mar. 1, 1966, Ser. No. 530,847
4 Claims. (Cl. 431—344)



This invention relates to a burner valve construction for gas fuel lighters that has a flame height adjustment wheel that is mounted on a wick support means, said adjustment wheel having an orifice formed therein which communicates directly with the wick. This orifice defines a passage between the wick and an exteriorly positioned closure member that (1) presents a selected surface area of the wick for exposure to the atmosphere when the closure member is opened that insures complete evaporation of the fuel at said surface, said surface area being selected in keeping with the ratio of said exposed surface to the fuel flow rate in said wick means, and (2) limits the volumetric space between the wick and the closure member to prevent initial flare up.

CHEMICAL

3,401,002
DYEING PREPARATIONS FOR THE MANUFACTURE OF WATER-INSOLUBLE AZO DYESTUFFS ON TEXTILE MATERIAL OF AROMATIC POLYESTERS OR TRIACETYLCELLULOSE

Helmut Arm, Langen, Hesse, and Rudolf Löwenfeld, Buchschlag, near Sprendlingen, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed June 8, 1965, Ser. No. 462,416
Claims priority, application Germany, June 16, 1964,
F 43,183
2 Claims. (Cl. 8—46)

Dyeing compositions consisting of (a) about 10–30% by weight of an arylamide of the 2,3-hydroxynaphthoic acid, (b) about 10–30% of a 4-aminoazo-naphthalene, (a) and (b) being present in equimolar amounts, (c) about 10–20% by weight of a water soluble condensation product of an aromatic hydroxy-compound e.g. 4,4′-dihydroxydiphenylmethane, and a 1-ω-sulfomethyl-2-hydroxynaphthalene-sulfonic acid, and (d) water for the use in dyeing aromatic polyester and triacetyl cellulose textile materials.

3,401,003
DIAMINOANTHRAQUINONES AND THEIR USE AS HUMAN HAIR DYES

Karl-Josef Boosen, Dusseldorf-Holthausen, and Günter Reese, Dusseldorf, Germany, assignors to Therachemie Chemisch Therapeutische Gesellschaft m.b.H., Dusseldorf, Germany
No Drawing. Filed Aug. 27, 1964, Ser. No. 392,607
Claims priority, application Germany, Sept. 4, 1963,
T 24,640
5 Claims. (Cl. 8—10.1)

Agents for dyeing of human hair at room temperature which have as active ingredient diaminoanthraquinone compounds which are devoid of acid groups in the ring; a hydrogen atom in the ring is replaced by oxygen or nitrogen which is linked to a hydrocarbon group which, in turn, is linked to a secondary or tertiary nitrogen in an aliphatic chain or in a pyridine-type ring. The agents can be combined with wetting agents, thickeners, perfumes and permanent waving agents and can be applied in the form of a cream.

3,401,004
PROCESS FOR THE DYEING OF SYNTHETIC POLYAMIDE FIBERS

Horst Krumme, Munster, Westphalia, and Hans-Helmut Schoor and Günter Jakob, Grenzach, Germany, assignors to J. R. Geigy A.G., Basel, Switzerland
No Drawing. Filed June 8, 1964, Ser. No. 373,536
Claims priority, application Switzerland, Mar. 26, 1964,
3,916/64
8 Claims. (Cl. 8—55)

Process for the dyeing of synthetic polyamide fiber textile material, comprising dyeing the said material with an aqueous dyestuff preparation which contains:

(a) Neutral- to weakly acid-drawing anionic wool dyestuff as coloring agent,

(b) Hydrophilic surface-active dye assistant consisting essentially of, per molecule, a hydrophobic organic radical and at least one polyglycol ether radical;

(c) At least one water-soluble aldehyde condensation product containing basic nitrogen, and

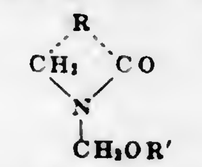
(d) The pH of said preparation at the beginning of dyeing being less than 7.5 but not less than 3.

3,401,005
GERMICIDAL MATERIAL PRODUCED BY MODIFYING TEXTILE FIBERS WITH A METHYLOLATED LACTAM AND TREATING SAME WITH IODINE

Leon Katz, Springfield, N.J., assignor to GAF Corporation, a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,618
6 Claims. (Cl. 8—115.5)

1. A process for producing germicidal fibrous materials which comprises applying a halogen containing germicidal agent selected from the group consisting of iodine, iodine monochloride and iodine monobromide to cellulosic fibrous material obtained by reacting a lactam derivative of the formula

(I)



$$\begin{array}{c} R \\ CH_2 \quad CO \\ N \\ | \\ CH_2OR' \end{array}$$

and ring carbon-lower alkyl substituted derivatives thereof, and wherein R represents a lower alkylene group necessary to complete a 5 to 7 membered heterocycle and R′ is selected from the group consisting of hydrogen and lower alkyl, and then drying and curing the fibrous material at a temperature of at least about 120° C.

3,401,006
TREATMENT OF CELLULOSE TEXTILES WITH A CREASE-PROOFING AGENT AND WITH MIXTURES OF N-METHYLOLSTEARAMIDE AND POLYETHYLENE

Albert C. Perrino, Cranston, R.I., assignor to I.C.I./Organics/Inc., a corporation of Rhode Island
No Drawing. Filed July 8, 1963, Ser. No. 293,268
6 Claims. (Cl. 8—115.6)

1. A method of treating a textile material containing cellulose textile which comprises applying to said textile a cellulose-reactive cross-linking crease-proofing agent and a mixture containing about 25–80% of N-monomethylol monoamide of a higher carboxylic acid containing about 12 to 22 carbon atoms and about 20–75% of fiber-lubricating emulsified polyethylene, and thereafter curing by heating the material to an elevated temperature.

3,401,007
PROCESS FOR CLEANING NATURAL AND SYNTHETIC FIBROUS MATERIALS

Helmut Hoffmann, Steinau, Kreis, Schluchtern, and Wilhelm Melloh, Salmunster, Germany, assignors to Rewo Chemische Fabrik GmbH, Schluchtern, Germany, a corporation of Germany
No Drawing. Filed Jan. 22, 1965, Ser. No. 427,462
Claims priority, application Germany, Jan. 31, 1964,
R 37,106
5 Claims. (Cl. 8—137)

Natural and synthetic fibrous materials, especially carpets and floor coverings, are cleaned with an aqueous solution containing a detergent composition which consists of 70–30% of a detergent substance selected from fatty alcohol sulfates and alkyl benzene sulfonates, and 30–70% of a derivative of sulfosuccinic acid of the type described. Said aqueous solution dries to a powdery residue which can be separated from the fibrous material by a mechanical procedure.

3,401,008
PREPARATION OF THE CARBONATES OF THE RARE EARTHS

Earl L. Head, Los Alamos, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Sept. 27, 1965, Ser. No. 490,750
6 Claims. (Cl. 23—23).

An improved process for the preparation of rare earth carbonates by the application of carbon dioxide pressure to aqueous solutions of the formates, acetates, propionates and butyrates at or above room temperature with an extended reaction period.

3,401,009
EXTRACTION OF ALUMINA FROM BAUXITE

Allen Joseph Gittos, Brisbane, Queensland, Australia, assignor, by mesne assignments, to Commonwealth Aluminium Corporation Limited, Melbourne, Victoria, Australia, a company of Australia
No Drawing. Filed July 6, 1964, Ser. No. 380,644
Claims priority, application Australia, July 29, 1963, 33,510/63
7 Claims. (Cl. 23—52)

Improved Bayer process for extraction of high silica bauxite containing alumina as monohydrate and trihydrate and substantial amounts of silica as quartz involving rapid, high-temperature pressure digestion with dilute alkali liquor around 100 g./l. Na_2O and pregnant liquor ratios between 1.06 to 1.12 Al_2O_3/Na_2O as defined to reduce loss of caustic values by inhibition of alkali quartz attack in an optimum reaction time of around 15 minutes.

3,401,010
PREPARATION OF ALKALI METAL CARBONATES FROM THE CORRESPONDING SULFATES OR SULFIDES

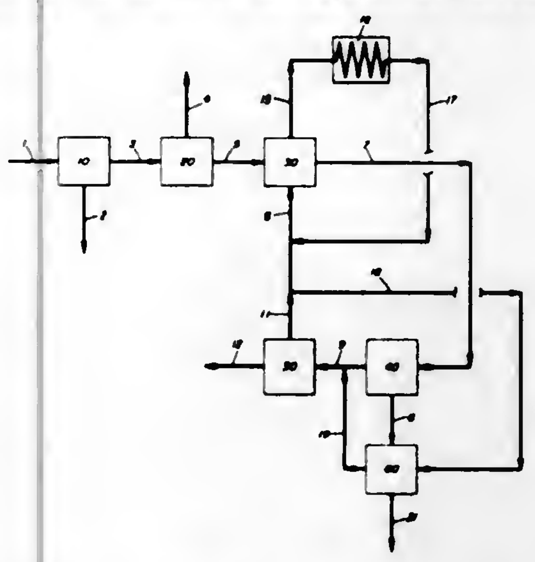
Salvatore Guerrieri, Rowayton, Conn., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware
Filed Sept. 17, 1964, Ser. No. 397,340
9 Claims. (Cl. 23—63)

A process and apparatus for producing alkali metal carbonates by countercurrently contacting the corresponding sulfates and sulfides with a reaction gas containing either hydrogen and carbon monoxide or water and carbon dioxide, respectively, the contacting being effected at a temperature above 1200 F. and below the softening point of the carbonate. The apparatus comprises a plurality of perforated trays arranged in a tortuous path in an upper portion of a vessel, a combustion chamber for producing the reaction gas, heat transfer surfaces for regulating the temperature of the combustion gas in the lower portion of the vessel and a perforated plate to reduce radiation to the perforated trays.

3,401,011
DEHYDRATION MAGNESIUM CHLORIDE ROASTING AND SOLVENT

Charles Newton Kimberlin, Jr., Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed June 21, 1965, Ser. No. 465,495
5 Claims. (Cl. 23—91)

Anhydrous magnesium chloride is produced from carnallite by heating to remove the water of hydration. The dehydrated mixture is then contacted with boiling methyl alcohol to dissolve the magnesium chloride which is passed through a filtering zone to remove impurities. The solution is then treated to remove the methyl alcohol and secure anhydrous magnesium chloride.



3,401,012
PROCESS FOR PRODUCING MULTIVALENT METAL PYROPHOSPHATES

George D. Nelson, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Dec. 27, 1966, Ser. No. 604,599
11 Claims. (Cl. 23—105)

1. A process for producing metal pyrophosphates comprising reacting pyrophosphoric acid and a metal source selected from the group consisting of iron, zinc, lead, copper, cobalt, aluminum, nickel and tin in an aqueous medium containing at least about 84 weight percent of water, at a temperature below about 50° C. and at a pH from about 1.5 to about 7 to thereby form a metal pyrophosphate precipitate selected from the group consisting of iron, zinc, lead, copper, cobalt, aluminum, nickel and tin and recovering said metal pyrophosphate.

3,401,013
PROCESS FOR THE MANUFACTURE OF METAL FLUOROPHOSPHATES

Hans Adolf Rohlfs and Heinz Schmidt, Wiesbaden-Biebrich, Germany, assignors to Chemische Werke Albert, Wiesbaden-Biebrich, Germany, a corporation of Germany
No Drawing. Filed Feb. 8, 1966, Ser. No. 525,844
Claims priority, application Germany, Dec. 23, 1965, C 37,747
11 Claims. (Cl. 23—107)

Process for the manufacture of metal fluorophosphates and products containing them comprising reacting at a temperature of about 140 to 600° C. (A) phosphoric acid, an ammonium phosphate, a metal phosphate or an adduct of a phosphoric acid and nitrogen-containing compounds delivering ammonia at said temperature with (B) hydrofluoric acid, hydrogen fluoride, an ammonium fluoride or a metal fluoride, and, at least where the starting materials (A) and (B) contain an insufficient amount of metal equivalents to comply with the desired ratio of metal equivalents to phosphorus atoms, (C) at least one basic reacting compound.

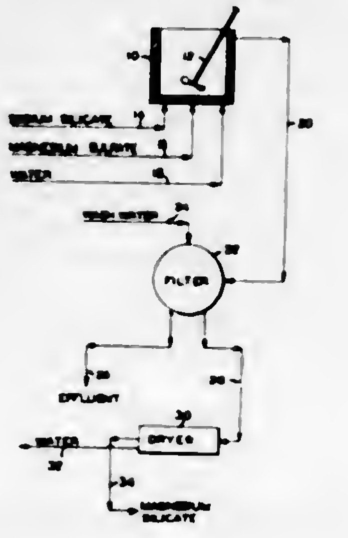
3,401,014
PREPARATION OF PURE MONOCALCIUM PHOSPHATE

Walter C. Saeman, Orange, Conn., assignor to Olin Mathieson Chemical Corporation
Filed Nov. 26, 1965, Ser. No. 509,961
4 Claims. (Cl. 23—109)

Pure monocalcium phosphate is prepared from impure phosphoric acid and phosphate rock or other lime source by forming monocalcium phosphate in solution, crystallizing to produce a liquor containing coarse crystals of monocalcium phosphate and suspended impurities in finely divided form, elutriating hydraulically to separate said coarse crystals from said finely divided impurities and recovering the thus purified monocalcium phosphate. The latter is also converted further to pure dicalcium phosphate or pure phosphoric acid.

3,401,015
MAGNESIUM SILICATE AND PROCESS FOR MAKING SAME

Fred C. Ninger, Livingston, Arthur J. Sikora, Bernardsville, and Herbert T. Snyder, Morris Plains, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
Filed Apr. 15, 1965, Ser. No. 448,319
4 Claims. (Cl. 23—110)



1. A method for the continuous preparation of magnesium silicate having a $MgO:SiO_2$ ratio of about 1.2:1 to about 1.3:1 which comprises continuously reacting magnesium sulfate with sodium silicate in an aqueous reaction medium having a pH maintained at about 9 to about 10 and at a reaction temperature of about 65° C. to about 75° C., said sodium silicate having an $Na_2O:SiO_2$ ratio of from about 1.0:1 to about 1.2:1.

3,401,016
PROCESS FOR THE PREPARATION OF HYDROGEN FLUORIDE FROM AMMONIUM HYDROGEN FLUORIDE AND SULPHURIC ACID

Jadwiga Chmiel, Ul Raclawicka 5/3, Gleiwitz, Poland
No Drawing. Filed Aug. 18, 1965, Ser. No. 480,773
Claims priority, application Poland, Aug. 21, 1964, 105,522
4 Claims. (Cl. 23—153)

An improved process for producing hydrogen fluoride by heating ammonium bifluoride and concentrated sulfuric acid at a temperature of about 150° C., followed by adding steam or water to the reaction mixture and lowering the pressure to about 0.3 atm. while maintaining the temperature at about 150° C.

3,401,017
MODIFIED SILICA PIGMENTS AND PROCESSES FOR PRODUCING THE SAME

Oliver W. Burke, Jr., Fort Lauderdale, Fla.
(P.O. Box 1266, Pompano Beach, Fla. 33061)
Filed Aug. 16, 1965, Ser. No. 479,806
14 Claims. (Cl. 23—182)

The removal of water from wet silica pigment has been difficult because of the slimy or low sedimental character of the silica pigment. To filter well, such pigments must have structures yielding filter cakes of low solids content, which increase drying loads. Herein, the wet silica pigment is subjected to freezing, preferably a slow freezing, followed by thawing. This treatment imparts to the pigment a more sedimental structure and more granuliferous form, which has improved filterability in further treatment, and a reduced drying load. The treatment may also be applied with advantage to wet silica pigment filter cake which has been fluidized by high shear working.

3,401,018
METHOD OF PRODUCING BORON CARBIDE

Hirokatsu Ogura, Ohta-ku, Tokyo, and Sadayuki Iwamoto, Totsuka-ku, Yokohama, Japan, assignors to Denki Kagaku Kogyo Kabushiki Kaisha, Tokyo, Japan
Filed Oct. 20, 1965, Ser. No. 498,772
Claims priority, application Japan, Apr. 15, 1965, 40/21,818
2 Claims. (Cl. 23—208)

A method for producing boron carbide comprising mixing boron oxide, carbon material and boron nitride in an amount of about 5% to about 90% by weight based on said boron oxide, heating and melting the mixture at a temperature from 500° to 1000° C., solidifying the melt mixture, grinding the solidified mixture and again heating the ground mixture at a temperature of more than about 2000° C. The boron nitride acts as a binder for the reaction mixture. Alternatively, the boron nitride can be produced by preliminary reacting boric acid, carbon material and a nitrogen compound having a decomposition temperature of more than about 200° C.

3,401,019
PROCESS FOR SYNTHESIZING DIAMOND

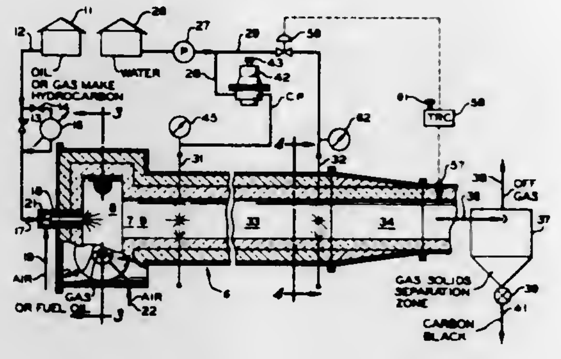
George R. Cowan, Woodbury, N.J., Bruce W. Dunnington, Penn Wood, West Chester, Pa., and Arnold H. Holtzman, Cherry Hill Township, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 516,824, Nov. 24, 1965. This application Nov. 21, 1966, Ser. No. 602,445
12 Claims. (Cl. 23—209.1)

An improved process and assembly for synthesizing diamond from carbon with high-pressure shock waves, and a novel crystalline form of diamond (i.e., hexagonal diamond) thus obtained. The improvement resides in shocking a mixture of the carbon and a cooling medium, i.e., a medium that will rapidly quench the diamond formed so that loss of diamond through graphitization is reduced, and the yield of the diamond product is correspondingly increased. As used herein, "carbon" means all of the elemental, nondiamond carbons, e.g., graphite, carbon black, charcoal, etc.

3,401,020
PROCESS AND APPARATUS FOR THE PRODUCTION OF CARBON BLACK

Harry F. Kester and Paul R. Woollett, Orange, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 25, 1964, Ser. No. 413,792
5 Claims. (Cl. 23—209.4)

The present invention lies in the discovery that a regulated partial quench can permit the carbon black modulus reducing reaction to proceed at a reduced rate, whereas the prior art believed the position of the first quench set the modulus. In a process and a system for producing carbon black, comprising pyrolyzing a hydrocarbon in the presence of a free oxygen-containing gas to produce smoke of a carbon black that if unquenched would have a lower modulus than desired, and which smoke has a temperature high enough to maintain a reaction causing a lowering of this modulus with time, passing said smoke downstream through said system and quenching the same, the improvement comprising partially quenching said reaction in said smoke with a cooling fluid at a first point in said system to the degree necessary to slow said reaction down to the extent necessary to produce a carbon black of the desired predetermined modulus if said reaction is completely quenched when it sometime later reaches a second point in said system spaced downstream of said first point, and completely quenching said smoke with a cooling fluid at said second point to a temperature at which said reaction will not substantially further change the modulus of the produced carbon black below a predetermined desired modulus. Empirical tests of the modulus produced versus the water rate to the first quench can be run to discover the water rate to the first quench necessary to maintain the desired modulus.

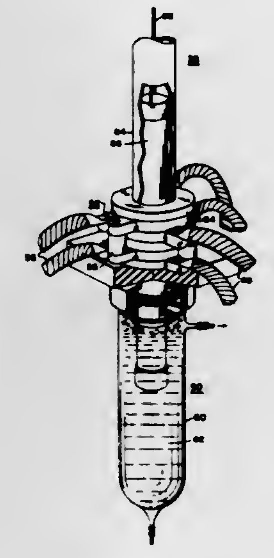


3,401,021
APPARATUS OF ZONE REFINING AND CONTROLLING SOLUTE SEGREGATION IN SOLIDIFYING MELTS BY ELECTROMAGNETIC MEANS

William A. Tiller, Menlo Park, Calif., and William C. Johnston, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Original application Aug. 1, 1961, Ser. No. 128,446, now Patent No. 3,203,768. Divided and this application Aug. 26, 1965, Ser. No. 482,733

5 Claims. (Cl. 23—273)



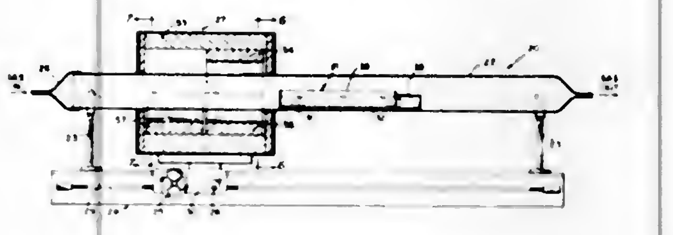
Apparatus for controlled solification of molten materials which comprises a series of coils, usually a plurality of single turn coils, disposed adjacent the solid-liquid interface of the body of molten material being solidified, the coils being sequentially energized by alternating current to cause movement of the melt at such interface by a magnetic field varying in force and direction.

3,401,022
APPARATUS FOR HORIZONTAL ZONE REFINING OF SEMICONDUCTIVE MATERIALS

William B. Marshall, deceased, late of Tempe, Ariz., by Carol E. Marshall, administratrix, Burlington, Mass., and Howard W. Norman, Scottsdale, Ariz.; said Norman assignor to Motorola Inc., Franklin Park, Ill., a corporation of Illinois

Original application Mar. 26, 1964, Ser. No. 356,007, now Patent No. 3,335,035. Divided and this application Mar. 13, 1967, Ser. No. 635,281

5 Claims. (Cl. 23—273)



Apparatus for zone refining semiconductive material, especially germanium, wherein a horizontal quartz boat has a liner of carbon fiber cloth for holding an ingot. The quartz boat preferably has an included angle of 60° for forming an equilateral triangular ingot. A carbon block at one end of the ingot serves as a heat conducting member to form a thermal continuation of the ingot for controlling temperature gradients therein.

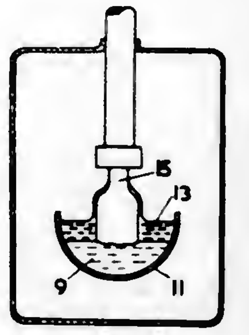
3,401,023
CRYSTAL MELT-GROWTH PROCESS WHEREIN THE MELT SURFACE IS COVERED WITH AN INERT LIQUID

John Brian Mullin, Malvern, England, assignor to National Research Development Corporation, London, England

Filed July 27, 1965, Ser. No. 475,063

Claims priority, application Great Britain, July 29, 1964, 30,055/64

5 Claims. (Cl. 23—301)



Crystalline material is placed in a crucible within a closed housing and heat is applied from an external source to cause the crystalline material to become molten. Over the molten crystalline material there is disposed a less dense inert liquid selected from boric oxide, barium oxide and alternately these oxides in admixture with barium chloride and sodium fluoride or mixtures thereof. An inert gas is introduced into the housing to provide a pressure in excess of the vapor pressure of the moist volatile component or impurity of the material to be crystallized. Thereafter the molten crystalline material is cooled while covered with the inert less dense liquid. The crystalline materials suitable for use with the present process are those having the formula $A_{III}B_V$, where A_{III} is an element selected from Group III of the Periodic Table and B_V is an element selected from Group V of the Periodic Table.

3,401,024
ELECTRICAL CONTACT MATERIAL

Edman F. Holt and Peter C. Murphy, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed Oct. 4, 1965, Ser. No. 492,763

11 Claims. (Cl. 29—182.2)

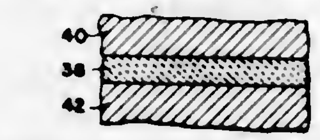
An electrically and thermally conductive composite consisting of two highly conductive materials, e.g., copper and silver. At least one of said materials having a coating of a barrier material e.g., iron, nickel, cobalt or their alloys to separate the conductive materials, such that each of said materials retain its own identity.

3,401,025
BONDED ARTICLE COMPRISING TWO METALLIC MEMBERS JOINED BY AN INTERMEDIATE LAYER

John B. Whitney, Wichita, Kans., assignor to The Boeing Company, a corporation of Delaware

Original application May 3, 1965, Ser. No. 464,592, now Patent No. 3,284,891, dated Nov. 15, 1966. Divided and this application Oct. 1, 1965, Ser. No. 511,004

2 Claims. (Cl. 29—191)



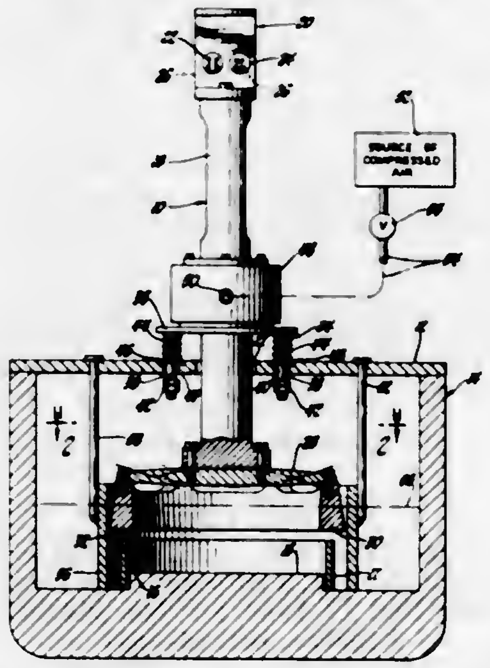
1. A bonded article comprising two metallic members joined by an intermediate layer; said intermediate layer comprising a residue obtained by fusing a ceramic material and a brazing material; said ceramic material including alkaline borosilicate in an effective amount to permit bonding to the members; said brazing material having a major ingredient selected from the group consisting of noble metal alloys and nickel base alloys and a minor ingredient capable of wetting and bonding to the ceramic material; said minor ingredient being selected from the group consisting of indium, lithium, titanium, iron, manganese, metalloids and mixtures thereof.

3,401,026
METHOD OF FORMING A BIMETALLIC ARTICLE

James B. Walker, Almont, and Raymond S. Amala, Oak Park, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Continuation-in-part of application Ser. No. 450,043, Apr. 22, 1965. This application Jan. 19, 1966, Ser. No. 521,586

14 Claims. (Cl. 29—196.2)



A bimetallic article having a higher melting metal portion and a lower melting metal portion with a strong metallurgical and interlocking mechanical bond therebetween is formed by providing the higher melting portion with an irregular surface at the intended interfacial area, which surface is characterized by a multiplicity of cavities, interstices and recesses; contacting this irregular surface with the lower melting metal in the molten state; subjecting the molten metal in the region of the irregular surface to high frequency sonic vibrations so that the molten metal quickly and thoroughly wets the irregular surface to form a layer of lower melting metal over all of the interfacial area bonded thereto by an integral metallurgical bond; and immediately inserting said higher melting portion into a mold and casting molten lower melting metal into the mold against the wetted surface of the higher melting portion.

3,401,027
LIGHT HYDROCARBON LIQUIDS CONTAINING A JELLIFYING AGENT COMPRISING POLYUREAS

John L. Dreher, Berkeley, and Dean W. Criddle, Pleasant Hill, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Continuation-in-part of application Ser. No. 505,957, Nov. 1, 1965. This application Apr. 10, 1967, Ser. No. 629,697

8 Claims. (Cl. 44—7)

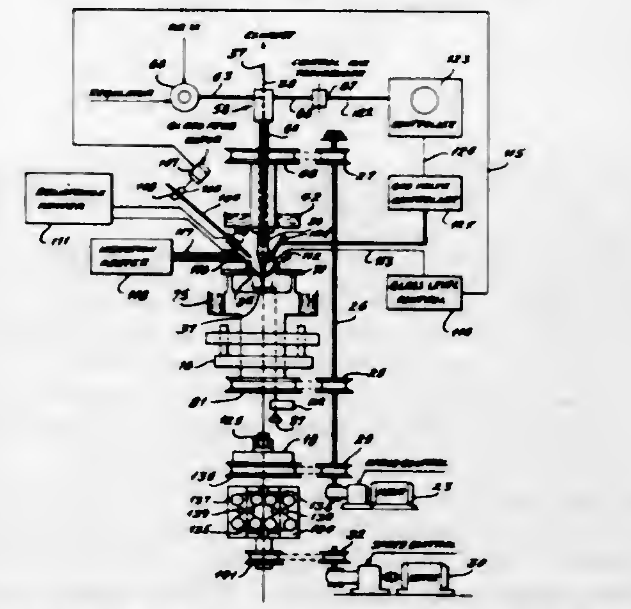
Gelled liquid having a light hydrocarbon or hydrocarbon miscible liquid base, produced by reacting in the base amines and isocyanates in amounts sufficient to produce a diurea-tetraurea mixture having a ratio of diurea to tetraurea of from 1.5:1 to 9:1.

3,401,028
APPARATUS FOR FORMING PRECISION GLASS TUBING FROM A MOLTEN GLASS SUPPLY

Vaughan Morrill, Jr., Creve Coeur, Mo.
(26 S. Spoede, St. Louis, Mo. 63141)

Filed Aug. 3, 1964, Ser. No. 386,818

4 Claims. (Cl. 65—161)

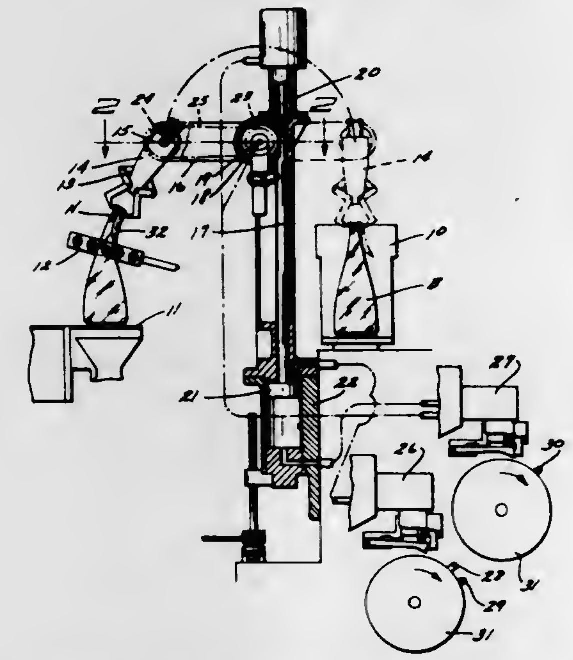


4. Apparatus for forming high-precision tubing from material which is hard at normal atmospheric temperatures and which is rendered flowable and workable upon heating and for controlling the bore of said tubing within very close tolerances, which comprises: a cup for holding said material formed with a central opening in the bottom thereof; heating means at said cup for heating the material therein to flowable and workable condition; forming means including a smooth tapered surface surrounding the opening in the cup and a conical, tubular member disposed in the opening and projecting outwardly therefrom and having a smooth exterior surface for forming the heated material into a tube as it flows through the opening; a control member extending outwardly from and

beyond said conical member and spaced concentrically inwardly therefrom for use in controlling the bore of the tube to uniform diameter; tube drawing means spaced outwardly from said control member for drawing the tube thus formed outwardly through said opening and over said conical member and control member to reduce its diameter and while it is subjected to cooling action to an area where the tube has cooled sufficiently to maintain its physical configuration; and means for controlling minor variations in the dimensions of the tubing, including means for supplying gas under pressure at a metered rate of flow through the conical tubular member to the annular zone surrounding the control member and for withdrawing said gas through the control member to thereby provide an air bearing for said tubing between the end portion of the control member and the tubing.

3,401,029
BOTTLE FORMING APPARATUS

George I. Roberts, Atlanta, Ga., assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Oct. 21, 1965, Ser. No. 499,479
6 Claims. (Cl. 65—260)



1. In an apparatus for making bottles with a neck bent with respect to the axis of the main portion of the bottle, the combination comprising
   means for transferring a bottle from a bottle receiving station wherein the bottle is upright in hot deformable condition to a bottle delivery station,
   said means including means for grasping the neck of the bottle and moving it to a position overlying the bottle delivery station in which position the neck is held at an angle to the vertical,
   and heating means at the delivery station for heating an area of the bottle beneath the neck to cause the bottle to soften and bend under its own weight at the heated area under the action of gravity so that the neck is at an angle to the main portion of the body of the bottle.

3,401,030
METHOD OF DEFOLIATING COTTON PLANTS

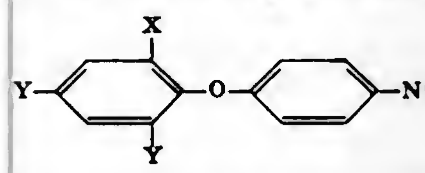
Robert V. Berthold, South Charleston, W. Va., and Richard A. Herrett, Raleigh, N.C., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Sept. 9, 1964, Ser. No. 395,298
3 Claims. (Cl. 71—69)

Cotton plants are defoliated by applying to them imidazopyridines especially 3H - 6 - chloroimidazo[4,5-b] pyridine.

3,401,031
MONOFLUOROPHENYL-4′-NITROPHENYLETHER DERIVATIVES AS HERBICIDES

Takayuki Inoue, Kichiro Kato, Hiroshi Fujita, Yukio Kiyohisa, Teruhiko Toyama, and Takeo Yoshimoto, Ohmuta-shi, Japan, assignors to Mitsui Kagaku Kogyo Kabushiki Kaisha (Mitsui Chemical Industry Co., Ltd.), Tokyo, Japan, a corporation of Japan
No Drawing. Filed Apr. 11, 1966, Ser. No. 541,525
Claims priority, application Japan, Apr. 15, 1965, 40/21,849
5 Claims. (Cl. 71—124)

A method of inhibiting the growth of weeds which comprises applying to the locus to be protected a herbicidal amount of a compound of the general formula:



wherein X is selected from the group consisting of hydrogen and chlorine and of the two Y's, one is chlorine and the other is fluorine.

3,401,032
REMOVAL OF IMPURITIES FROM NICKEL OXIDE GRANULES

Louis Secondo Renzoni, Willowdale, Ontario, Walter Curlook and Alexander Illis, Copper Cliff, Ontario, and Gyula Borbely, Welland, Ontario, Canada, assignors to The International Nickel Company, Inc., New York, N.Y., a company of Delaware
No Drawing. Filed Nov. 8, 1965, Ser. No. 506,898
Claims priority, application Canada, July 9, 1965, 935,455
13 Claims. (Cl. 75—1)

Impurities such as copper, lead, zinc and arsenic along with the precious metals are removed from granular, high temperature nickel-containing oxide by heating a bed of the oxide to a temperature of at least about 2000° F. in an atmosphere non-reducing to nickel oxide and passing therethrough a small but effective amount of chlorine to chlorinate and volatilize the impurities and the precious metals.

3,401,033
METHOD OF BLENDING POWDERED METAL AND LUBRICANT PRIOR TO SINTERING

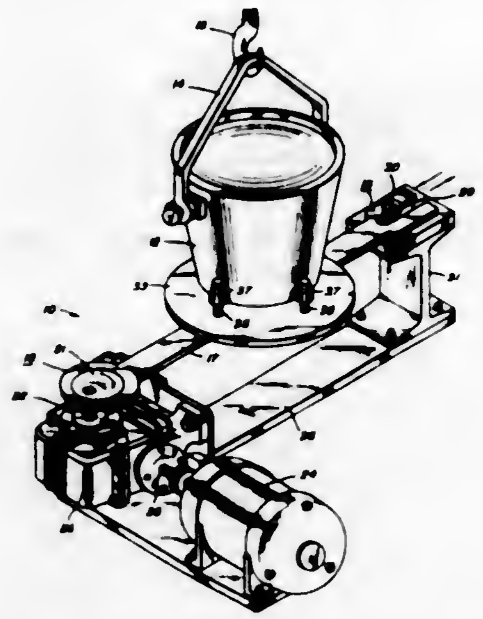
Theodore J. Bartz, Marcellus, N.Y., assignor, by mesne assignments, to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Original application Mar. 9, 1961, Ser. No. 94,487, now Patent No. 3,293,006, dated Dec. 20, 1966. Divided and this application June 7, 1966, Ser. No. 571,351
3 Claims. (Cl. 75—.5)

The disclosure pertains to the art of mixing powdered metal and lubricant in powdered form to achieve a blended mixture for use in forming green compacts. A quantity of powdered metal is separated from the original batch and is preblended with lubricant by feeding both through a series of sieves in a prescribed manner. Thereafter, the preblended batch is added to the original batch of powdered metal and the entire batch intermixed until blended with the lubricant.

3,401,034
MIXING LADLE

William H. Moore, Purchase, N.Y., assignor to Meehanite Metal Corporation, a corporation of Missouri
Filed Dec. 15, 1965, Ser. No. 514,000
7 Claims. (Cl. 75—61)

Apparatus and a method for incorporating additives into molten metal which includes the suspending of a ladle preferably by means of a cable so that substantially the entire weight is carried by the cable. An additive is added to the molten metal and the ladle is vigorously moved by apparatus connectable to the ladle. The apparatus disclosed herein may move the ladle through a generally elliptical path, a circular path, a combination of an oscillating and circular path, and combinations thereof.



3,401,035
FREE-MACHINING STAINLESS STEELS

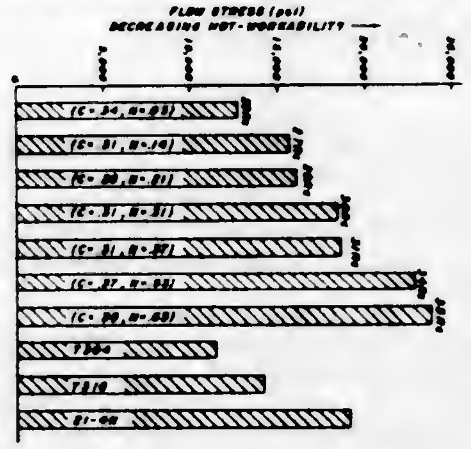
Arthur Moskowitz, Curtis Walter Kovach, and Ralph Gordon Wells, Pittsburgh, Pa., assignors to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey
Continuation-in-part of applications Ser. No. 472,756, July 6, 1965, and Ser. No. 556,056, June 8, 1966. This application Dec. 7, 1967, Ser. No. 693,044
7 Claims. (Cl. 75—126)

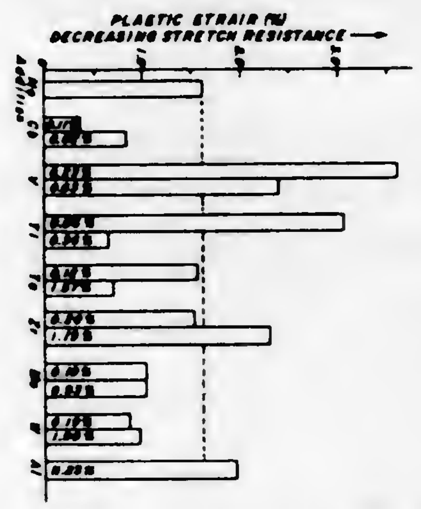
This invention concerns stainless steels having improved physical properties, most notably significantly improved machinability. Specifically, it has been found that stainless steels containing from 11 to 30 weight percent chromium, balance substantially all iron, except for impurities and minor amounts of alloying elements, are vastly improved in machinability if amounts of manganese ranging from 0.80 to 4.0 weight percent are added to the steel in conjunction with sulfur in amounts ranging from 0.18 to about 0.50 weight percent. The amounts of manganese and sulfur added within these stated ranges should be such that the manganese to sulfur ratio is between 3 to 1 and 10 to 1.

3,401,036
VALVE STEEL

Edward John Dulis, Pittsburgh, and August Kasak, Bridgeville, Pa., assignors to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey
Continuation-in-part of application Ser. No. 616,793, Feb. 17, 1967. This application Aug. 11, 1967, Ser. No. 660,007
4 Claims. (Cl. 75—128)

This patent relates to valve steels having an excellent combination of properties with respect to (1) lead oxide corrosion resistance, (2) high-temperature creep strength, (3) machinability, (4) ingot soundness and (5) hot-workability. More specifically, this patent discloses that the above-mentioned desirable results are obtained in certain chromium-containing austenitic stainless steels by using compositions that exhibit the following features: (1) the use of a carbon content within a restricted range of about 0.22% to 0.5%, (2) the use of silicon contents of 0.05 to 0.25%, (3) the use of a strong-carbide-forming strengthening element such as columbium, titanium, tantalum, molybdenum, or tungsten, singularly or in combination, columbium being preferred, within the range of 0.02 to 0.75%, (4) the optional use of boron up to 0.025% and preferably 0.00005 to 0.025%, (5) the use of nitrogen in amounts up to 0.25%, (6) the use of sulfur in substantial amounts up to 0.25%, (7) the use of copper in amounts up to about 3%, (8) chromium of 16 to 22%, (9) nickel 4 to 15%, (10) manganese of 2 to 8%, (11) with the sum of manganese plus nickel within the range of 8 to 20% and the sum of carbon plus nitrogen within the range of .025 to 0.6%.





3,401,037
ELECTROSTATIC PRINTING ON METAL SUBSTRATES

Jerome Roteman, Freehold, N.J., and Sebastian T. Brancato, Queens Village, N.Y., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio
No Drawing. Filed Nov. 25, 1964, Ser. No. 414,024
5 Claims. (Cl. 96—1)

An electrostatic printing process for developing a visible image on a metal substrate carrying a coating comprising a dispersion of photoconductive zinc oxide in a vehicle of an electrically insulated, air-dried, tack free, uncross-linked film of a thermosetting resin in a volatile organic solvent. The coated film is charged and the image formed in the conventional manner. The image is developed and the film simultaneously cured by exposure to heat.

3,401,038
DIAZOTYPE MATERIALS CONTAINING POLYCYCLIC LIGHT-SENSITIVE FLUORENE DIAZONIUM SALTS

Theodore Panasik, Vestal, N.Y., and Robert J. Cox, Los Gatos, Calif., assignors to GAF Corporation, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 350,071, Mar. 6, 1964. This application Feb. 19, 1965, Ser. No. 434,101
6 Claims. (Cl. 96—91)

Light-sensitive diazotype material sensitized with a diazotized -secondary- or 7-tertiary-amino-2-primary aminofluorene.

ERRATUM

For Class 96—99 see:
Patent No. 3,401,404

3,401,039

ANIMAL FEED

Richard S. Gordon, St. Louis, and Lawrence J. Machlin, Creve Coeur, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 162,192, Dec. 26, 1961. This application June 11, 1965, Ser. No. 463,351

14 Claims. (Cl. 99—2)

1. An animal feed comprising a cellulosic feed component and a linear aliphatic alcohol having 4 to 22 carbon atoms and having a maximum of one —OH group, said alcohol being present in the feed in the amount of 0.01 to 12 percent by weight.

3,401,040

CONTINUOUS SEPARATION OF JUICE FROM GRAPE SOLIDS

Massud S. Nury, P.O. Box 2896,
Fresno, Calif. 93745

Filed July 27, 1964, Ser. No. 385,125

6 Claims. (Cl. 99—105)

A process for separating grape pulp from grape juice wherein the grapes are crushed, and fed into a settling zone to allow natural enzymes to condition the grapes whereby the crushed grapes are separated by gravity into a lighter pulp solids layer and a heavier liquid and additional grapes are introduced into the settling zone at an intermediate point while solids are withdrawn from the top surface of the zone and liquid is drawn from the bottom of the zone.

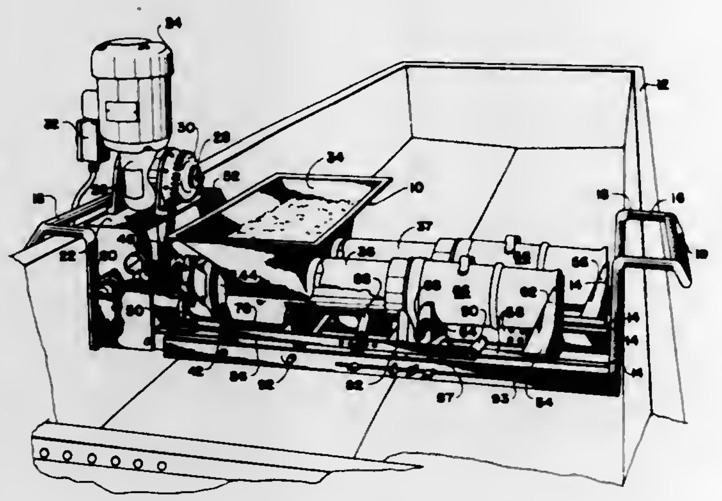
3,401,041

PACKAGING AND SHAPING APPARATUS AND METHOD FOR CHEESE PRODUCTS

Wilfrid L. Nelson, Tescott, Kans. 67484

Filed June 22, 1964, Ser. No. 376,915

6 Claims. (Cl. 99—115)



This invention is a packaging and shaping apparatus and method to receive, package, press, and shape of curd used in manufacturing cheese and the like. More specifically, this invention is an apparatus for packaging material having a hopper member connected to a housing and having an auger therein; a carriage mountable about the auger adapted to receive material therefrom; and fluid means operable to maintain a biasing force against movement of the carriage on receiving the material so as to form the same into a pre-determined shape under uniform pressure. Also, this invention is a method for processing cheese by forcing material from a housing into a container which is mounted in telescoping and movable relationship to the housing and simultaneously maintaining a pressure against the resultant merging material.

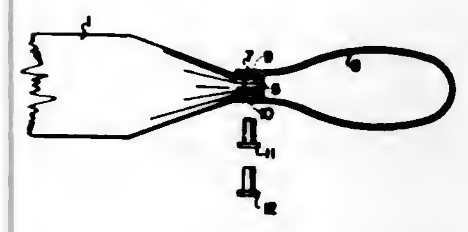
3,401,042

RIVETED OR EYELETED END CLOSURE FOR SAUSAGE CASINGS

Eugene G. Frederick, Beverly, and Leonard C. Meredith, Marblehead, Mass., assignors to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois

Filed Dec. 2, 1964, Ser. No. 415,302

2 Claims. (Cl. 99—176)



A clear cellulosic casing or fiber reinforced cellulosic casing is pleated at one end and the pleats compressed. The compressed and pleated portion has a hole formed therein which is free from cuts and tears. A casing hanger is positioned adjacent to the hole in the pleated and compressed end. A solid rivet or an eyelet is positioned through the hole and compressed to secure the compressed and pleated portion of the casing together and secure the hanger to the casing. The casing hanger may be a string or may be a strap, preferably of a material of high tear strength such as polypropylene.

3,401,043

ASEPTIC PACKAGING OF FLUID FOOD PRODUCTS

Roy D. Finley and James D. Flanigan, Greenville, Ill., and Eldred W. Bowen, Brentwood, Mo., assignors to Pet Incorporated, a corporation of Delaware

Filed Mar. 18, 1965, Ser. No. 440,829

14 Claims. (Cl. 99—182)

A process of packaging aseptically a fluid food product in a flexible container wherein a supply of the containers are stacked in a chamber and sterilized with oxide ethylene gas, the chamber is purged and filled with sterile air and the containers are filled alternately at filling stations with a sterile fluid food product and then passed through a water trap containing bactericidal material. The filled container then has a portion of the contents heat sealed from the rest of the package and this portion can be removed for testing without contaminating the remainder of the package.

3,401,044

CHEMICAL SENSITIZATION OF BACTERIAL SPORES TO RADIATION IN FOOD

Donald A. Corlett, Jr., Arthur W. Anderson, and Paul R. Elliker, Corvallis, Oreg., and Kenneth L. Krabbenhoft, Las Cruces, N. Mex., assignors, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware

No Drawing. Filed Aug. 26, 1965, Ser. No. 482,942

5 Claims. (Cl. 99—217)

Meat is sterilized and preserved using high energy ionizing radiation by introducing sodium chloride in combination with sodium nitrite or sodium nitrate into the meat prior to irradiation to render bacteria therein sensitive to a dose of ionizing radiation sufficient to sterilize the meat without destroying its natural characteristics.

3,401,045

METHOD OF PREPARING PORK RIND FOOD PRODUCTS

Parker P. Halpern, Wayland, Mass., assignor to Parker Products Inc., Holliston, Mass.

No Drawing. Filed July 15, 1965, Ser. No. 472,312

4 Claims. (Cl. 99—107)

The process of preparing green pork rinds to form an edible, wholesome food product is provided comprising rendering an aggregate of small pieces of green pork rinds in a fatty cooking liquid and curing the rind pieces in a liquid curing and flavoring medium. The flavored pieces are then dried to a hard and brittle state. The hard and brittle pieces formed can be popped in a heated liquid medium.

3,401,046

METHOD OF MAKING A COMPOSITION USEFUL IN MEAT CURING

John H. Mahon, Scott Township, Allegheny County, Pa., assignor to Calgon Corporation, a corporation of Pennsylvania

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,313

5 Claims. (Cl. 99—222)

A new meat curing composition is made by hydrating a hydratable phosphate with a solution of sodium nitrite or nitrate containing no more water than sufficient to fully hydrate the phosphate.

3,401,047

ANTI-STATIC NITROCELLULOSE LACQUERS

William David Garden, Saltcoats, Scotland, and John Smith, Canberra, Australian Capital Territory, Australia, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Nov. 12, 1964, Ser. No. 410,759

Claims priority, application Great Britain, Nov. 22, 1963, 46,199/63

4 Claims. (Cl. 106—186)

There is provided a lacquer for application to plastic films to render them heat-sealable, which lacquer contains an anti-static agent selected from ammonium or a primary or secondary alkanolamine salt of an inorganic oxo-acid wherein the alkyl group has at least 8 carbon atoms and an organic sulphonic acid having a long-chain alkyl substituent group having at least 8 carbon atoms. Particularly good anti-static agents are ethanolamine lauryl sulphate, ammonium lauryl sulphate, ammonium cetyl sulphate, ammonium stearyl sulphate, ethanolamine cetyl sulphate, ethanolamine dodecylbenzenesulphonate and ethanolamine stearyl sulphate.

3,401,048

2-STYRYLAZOLE OPTICAL BRIGHTENER

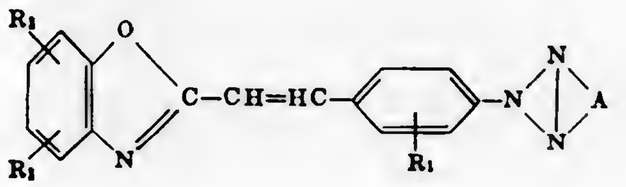
Ichiro Okubo, Hachioji-shi, and Michihiro Tsujimoto, Tachikawa-shi, Japan, assignors to Mitsui Kagaku Kogyo Kabushiki Kaisha (Mitsui Chemical Industry Co., Ltd.), Tokyo, Japan, a corporation of Japan

No Drawing. Filed June 18, 1965, Ser. No. 465,206

Claims priority, application Japan, June 22, 1964, 39/35,150, 39/35,242; Apr. 8, 1965, 40/20,292; May 13, 1965, 40/28,093

22 Claims. (Cl. 117—33.5)

1. A process for the optical brightening of organic fibrous material which comprises contacting the organic fibrous material, in an aqueous dispersion system, with at least one of the 2-styryloxazole compounds represented by the general formula



in which A is a member selected from the group consisting of di-lower alkyl-o-phenylene group, di-lower alkoxy-o-phenylene group, lower alkyl-lower alkoxy-o-phenylene group, 1,2 naphthylene group and 4,5-acenaphthenylene group,

R_1 is a member selected from the group consisting of hydrogen, chlorine and methyl group, and

R_2 and R_3 are each a member selected from the group consisting of hydrogen, chlorine, alkyl group of 1–8 carbon atoms, alkoxy group of 1–4 carbon atoms, phenyl group and cyclohexyl group, and R_2 and R_3 may together form cyclotetramethylene group bonded with the benzoxazole ring at the 4,5-position.

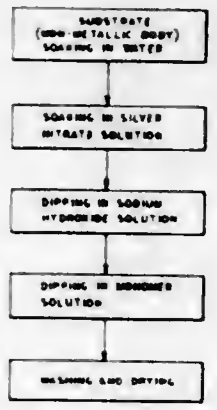
3,401,049

METHOD OF GRAFTING POLYMERIZABLE MONOMER ONTO SUBSTRATES AND RESULTANT ARTICLE

Carl Horowitz, Brooklyn, N.Y., assignor to Polymer Research Corp. of America, Brooklyn, N.Y., a corporation of New York

Filed May 25, 1964, Ser. No. 370,096

6 Claims. (Cl. 117—47)



SUBSTRATE (NON-METALLIC BODY) SOAKING IN WATER
SOAKING IN SILVER NITRATE SOLUTION
DIPPING IN SODIUM HYDROXIDE SOLUTION
DIPPING IN MONOMER SOLUTION
WASHING AND DRYING

This invention provides a method whereby a polymer is grafted to an underlying non-metallic substrate, such as cellophane, fabrics, etc. by distributing bodies of silver or silver oxide in situ onto the surface of the substrate in such manner that the bodies are bonded to the surface, and then polymerizing a material to the substrate, the material being polymerized being of a composition such that the polymerization thereof is activated to polymerization by the silver or silver oxide particles in the surface of the substrate.

3,401,050

METHOD OF FORMING A PROTECTIVE INNER LINER ON A METAL CONTAINER

Anthony S. Scheibelhoffer and Richard K. Lewis, Cuyahoga Falls, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Continuation of application Ser. No. 456,504, May 17, 1965. This application Nov. 13, 1967, Ser. No. 682,666

6 Claims. (Cl. 117—96)

A method of forming a protective seamless inner liner on the interior surface of a metal storage container which comprises applying at least one spray coat of a nonflammable liquid polyurethane reaction mixture to the interior surface of the said container and curing the spray coats of polyurethane mixture to form the inner liner.

3,401,051

OXIDIZABLE METALLIFEROUS POWDERS COATED WITH TERPENE ETHER

Carl Bordenca, Ponte Vedra Beach, Fla., assignor, by mesne assignments, to SCM Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 8, 1965, Ser. No. 470,616

13 Claims. (Cl. 117—100)

Free flowing oxidizable metalliferous powders resistant to oxidation and having a partial to continuous coating of a terpene ether of the formula:

$$T—O—(R—O)_nH$$

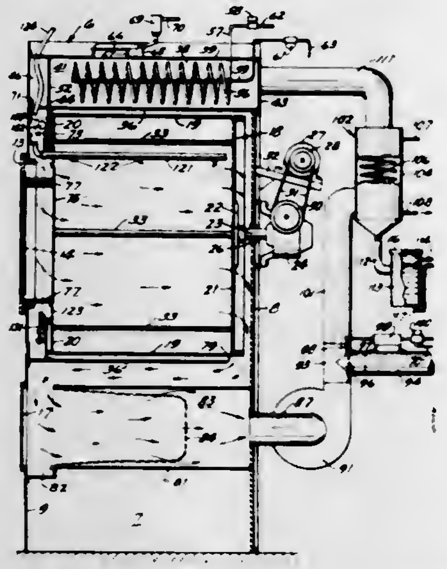
where T is a terpene hydrocarbon radical; R is a lower alkylene group, and *n* is an integer of from 1 to 5, are described. Oxidizable metalliferous particles are rendered resistant to oxidation by the terpene ether.

3,401,052
METHOD AND APPARATUS FOR WATERPROOFING TEXTILES

Thomas W. Berger, Woodbury Township, Washington County, Carl C. Simmons, St. Paul, and James E. Smith, Roseville, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Continuation-in-part of application Ser. No. 442,882, Mar. 26, 1965. This application Mar. 1, 1966, Ser. No. 530,812

13 Claims. (Cl. 117—105.4)



A method and an apparatus for treating fibrous articles to render the same water repellent. The method comprises the steps of moving articles in a drum in one direction, then in the reverse direction for predetermined time intervals, spraying a liquid treating medium, which contains an organic material having a hydrophobic terminal portion containing fluorine, on the article and changing the direction of the spray when the direction of drum rotation changes. The amount of treating medium should be controlled to wet the articles. The liquid carrier phase of the medium is removed by evaporation.

The apparatus comprises a drum rotatable about and having its axis generally horizontally positioned, drive means for rotating the drum in one direction and then in the reverse direction at predetermined intervals, fluid dispensing means adapted to spray a liquid into the drum at a predetermined rate, and means for changing the direction of the spray when the direction of rotation of the drum is changed to maintain the spray directed at the articles in the drum.

3,401,053
FURNACE CONSTRUCTION

George D. Cobaugh and Donald F. Stock, Pittsburgh, and Berhl E. Wishon, Bethel Park, Pa., assignors to Dresser Industries, Inc., a corporation of Delaware

Filed Oct. 12, 1965, Ser. No. 495,270

1 Claim. (Cl. 117—125)

Insulating structure comprised of refractory insulating brick of the soft type, containing a brush coating over one or more surfaces thereof, the coating consisting of a mixture of refractory material and orthophosphoric acid.

3,401,054
FORMATION OF COATINGS ON GERMANIUM BODIES

John George Wilkes, Hatch End, Middlesex, England, assignor to The General Electric Company Limited, London, England

No Drawing. Filed Sept. 3, 1965, Ser. No. 485,078

5 Claims. (Cl. 117—201)

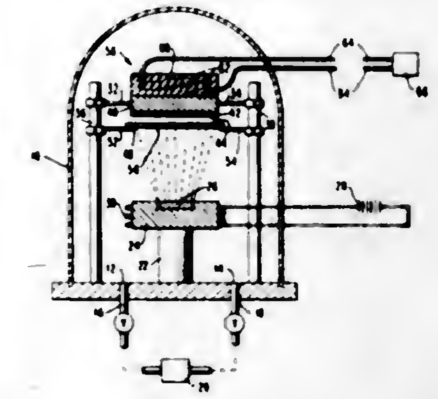
1. A method of manufacturing a germanium body having formed on its surface a coherent adherent coating of germanium dioxide having a tetragonal crystal structure, which includes the steps of exposing a germanium body, initially free from any surface coating, to an oxidizing atmosphere containing water vapor, the total pressure of said atmosphere being at least 30 kilograms per square centimeter, and heating the said body at a temperature above 400° C., while the body is exposed to said atmosphere.

3,401,055
VAPOR DEPOSITING SOLDER

Jack L. Langdon, Wappingers Falls, Clarence Karan, Poughkeepsie, Raymond P. Pecoraro, Wappingers Falls, and Paul A. Totta, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 31, 1964, Ser. No. 422,586

3 Claims. (Cl. 117—212)



A method of depositing solder onto a plurality of small areas simultaneously to produce planar, relatively thick (1½ to 2 mils) coatings. A mask is located between the substrate and the solder source. The atmosphere about the substrate is evacuated, and the solder is evaporated from the source to the substrate through the mask. Cooling of the substrate is provided during the evaporation, to prevent melting of the deposited film.

3,401,056
FORMATION OF COATINGS ON GERMANIUM BODIES

John George Wilkes, Hatch End, Middlesex, England, assignor to The General Electric Company Limited, London, England

No Drawing. Filed Sept. 3, 1965, Ser. No. 485,126

5 Claims. (Cl. 117—212)

1. A method of manufacturing a germanium body having formed on its surface a coherent adherent coating of germanium dioxide having a tetragonal crystal structure, in which coating there is at least one aperture, which method includes the steps of:

(a) masking part of the surface of the body,
  (i) said part corresponding in position and shape to the position and shape of the desired aperture in the germanium dioxide coating;
  (ii) by forming on said part of the surface a layer consisting essentially of at least one of the oxides of silicon,
(b) then forming on the remainder of the surface a coating of germanium dioxide having a tetragonal crystal structure, and

(c) subsequently removing the silicon oxide layer from the masked part of the surface by treatment with a reagent which is inert to the germanium dioxide coating.

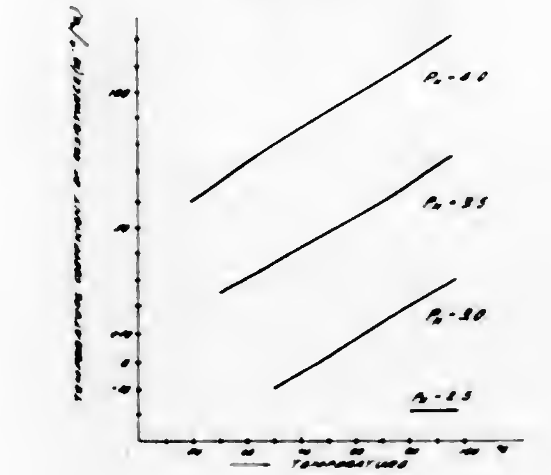
3,401,057
ELECTROLESS FORMATION OF ELECTRICAL RESISTANCE FILMS

Oskar Eckert and Klaus Stark, Pegnitz, Germany, assignors to Steatit-Magnesia Aktiengesellschaft, Lauf, Pegnitz, Germany

Filed Feb. 17, 1964, Ser. No. 345,410

Claims priority, application Germany, Feb. 22, 1963, St 20,332

4 Claims. (Cl. 117—227)



Resistance films having relatively small temperature coefficients of resistance are deposited upon a ceramic base by means of electroless deposition. The process disclosed is particularly advantageous not only in producing film of relatively small temperature coefficients of electrical resistance, but also in providing a means whereby such film may be reproducibly prepared.

The predictable and reproducible properties of the resistive films are obtained by maintaining uniformity of temperature and pH during the deposition process.

3,401,058
METHOD OF COATING ELECTRICAL CONDUCTORS

Arthur M. Lockie, Hickory Township, Sharpsville, and Herbert W. Book, Hickory Township, Sharon, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 16, 1964, Ser. No. 404,326

7 Claims. (Cl. 117—232)

A method of coating electrically conductive strip or foil with a uniform coating of electrical insulation. The beads of liquid insulation which form near the edges of the strip material after liquid insulation is applied thereto. due to surface tension, are squeezed to force the insulation back to the edges of the strip. The insulation about the edges of the strip is maintained in this position until it is cured to the point necessary to overcome the surface tension.

3,401,059
MANUFACTURE OF SUGAR

John A. Casey, Pepper Pike, Ohio
(2804 Brainard Road, Cleveland, Ohio 44124)

No Drawing. Filed Jan. 22, 1965, Ser. No. 427,513

10 Claims. (Cl. 127—61)

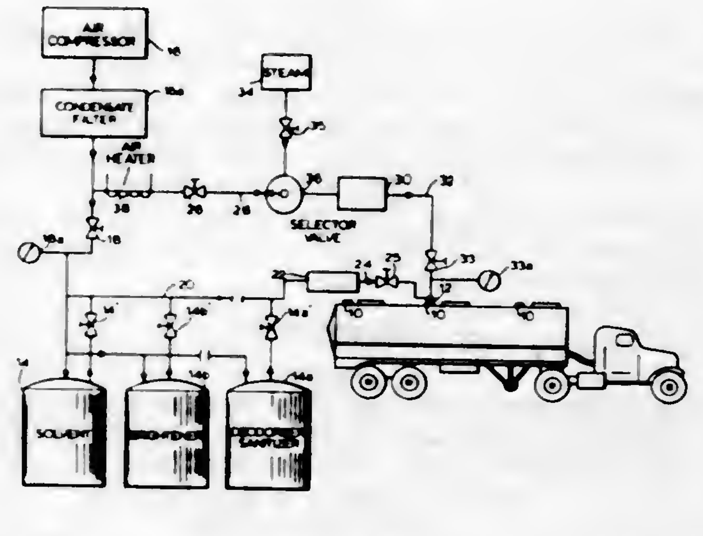
A solution of dioctyl sodium sulfo-succinate is added to the sugar juice, for example, to the vacuum pans during the boiling of the massecuite to reduce the boiling time and improve the crystallization of the sugar and the separation of the molasses from the sugar.

3,401,060
METHOD AND APPARATUS FOR CLEANING TANKS

Grady Watts, 54 Trumbull Road,
Manhasset, N.Y. 11030

Continuation-in-part of application Ser. No. 275,611, Apr. 25, 1963, now Patent No. 3,281,269, dated Oct. 25, 1966. This application Mar. 31, 1965, Ser. No. 444,205

10 Claims. (Cl. 134—1)



7. An apparatus for cleaning tanks, comprising in combination,
- a rotary frame coupled for rotation to a fixed frame defining a plenum chamber;
- drive means held by said fixed frame including a drive shaft and a pinion on said drive shaft;
- a first gear driven by said pinion, a hollow shaft turned by said first gear, said hollow shaft extending into said rotary frame and connecting means between said first gear and shaft and said rotary frame so that the turning of the shaft will also turn the rotary frame, said shaft being hollow so as to carry a first fluid therein;
- a coupling piece for coupling to a nozzle, said coupling piece including first and second passages therein, one end of said first passage being coupled to said hollow shaft for receiving said first fluid, first coupling means linking said hollow shaft to said first feed passage and second gas receiving means attached to said coupling piece for receiving gas from said plenum chamber into one end of said second feed passage, bearing means between said coupling piece and said rotary frame holding said coupling piece in said rotary frame permitting free rotation of said coupling piece at an angle to the axis of rotation of said rotary frame;
- a coupling piece gear mounted on said coupling piece, gearing supported from said fixed frame engaging said coupling piece gear so that the turning of said rotary frame carrying with it said coupling piece also causes said coupling piece to revolve about its own axis of rotation; and,
- a nozzle on the end of said coupling piece angularly disposed with respect to said rotary frame axis of rotation, said nozzle having first and second ducts coupled to the other ends of said first and second passages of said coupling means, so that first and second fluids can be confluently discharged from said nozzle in two axes of rotation so as to completely clean the inside of a tank.

8. The process of cleaning a tank contaminated with a coating of a solvent-attackable contaminant adhering to the walls of said tank, comprising the steps of;

feeding said slovent into said tank and generating therein a fog composed of particles of said solvent by sonic energy formed by a gas stream acting on said solvent to form said particles, said gas stream and solvent being confluently delivered into an acoustic energy field by adjacent lines and revolving said acoustic energy field into two separate axes of rotation within said tank so that said particles can attack said contaminant to render it nonadherent,

draining said solvent from said tank; and,

flushing said tank to remove said attached contaminant.

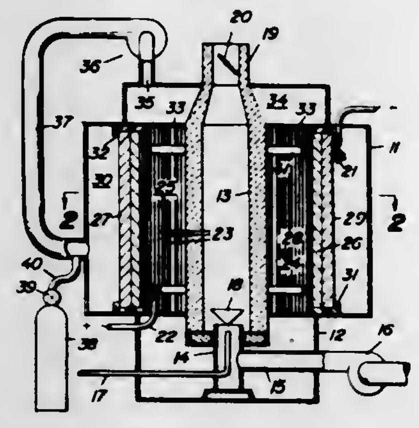
3,401,061
PROCESS FOR CLEANING THE INTERIOR OF HOLLOW, AIR-TIGHT VESSELS

Fusao Watanabe, Toyonaka, Japan, assignor to Katsuji Sanjo, Kitanagasadori, Ikutaku, Kobe, Japan
No Drawing. Filed Mar. 9, 1964, Ser. No. 350,518
3 Claims. (Cl. 134—22)

Gaseous hydrogen chloride produced inside a vessel dislodges rust from the internal surfaces thereof so that said rust can readily be removed.

3,401,062
PROCESS AND APPARATUS FOR ELECTROLYTIC PRODUCTION OF ELECTRIC CURRENT FROM PHOTOREDUCIBLE METAL OXIDES

Ernest H. Lyons, Jr., P.O. Box 37,
Elsah, Ill. 62028
Continuation-in-part of application Ser. No. 187,611, Apr. 16, 1962. This application May 14, 1962, Ser. No. 194,227
14 Claims. (Cl. 136—86)



1. Apparatus for producing electric current comprising:

an electric cell having an oxygen cathode, an electrolyte adapted to transfer oxide ions and a fenestrate anode which has thereon a material selected from the group consisting of lower forms of photoreducible metal oxides, photo-reducible metal oxides and mixtures of said oxides and lower forms thereof, said material contacting said electrolyte to provide an anode-electrolyte interface;

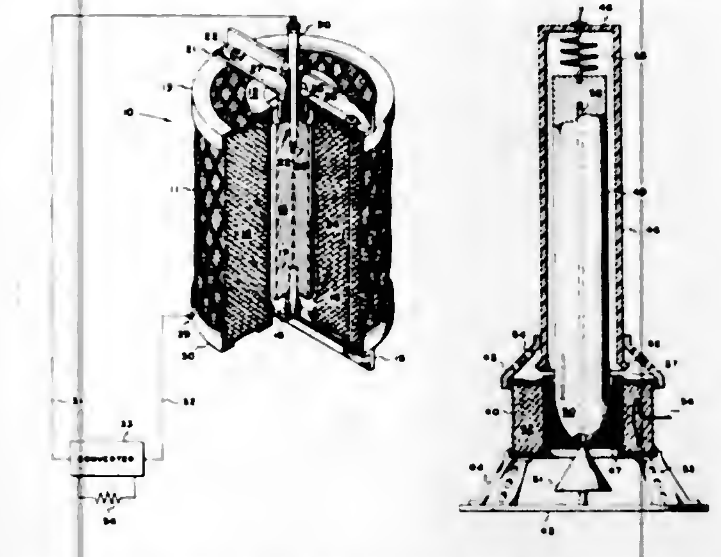
a gas tight housing for said cell, said housing including an anode chamber and a cathode chamber and having light transmitting means in one wall of said anode chamber for passing light energy to said interface from a source of light exterior of said anode chamber; and

means for introducing oxygen-containing gas to the cathode chamber.

3,401,063
SALT WATER GALVANIC CELL WITH STEEL WOOL CATHODE

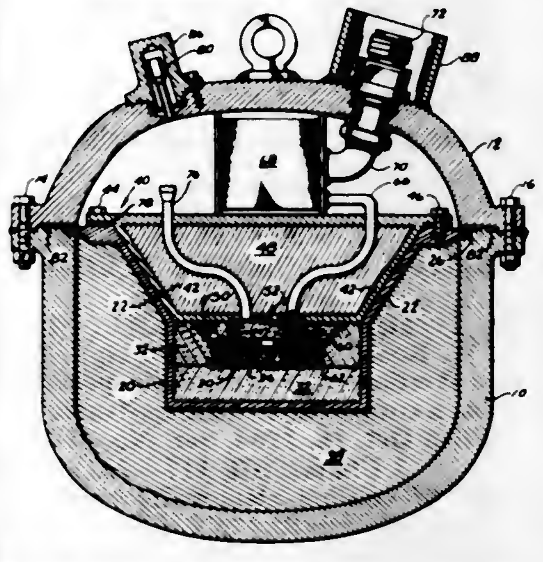
Charles L. Opitz, Westfield, N.J., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Aug. 3, 1966, Ser. No. 569,858
10 Claims. (Cl. 136—100)

1. A galvanic cell for generating electrical energy by immersion in a saline water electrolyte comprising, a porous annular basket, a porous metal wool cathode substantially filling said basket except for the center thereof which defines a central cavity, an elongated anode of metal dissimilar to that of the cathode supported so as to extend generally concentrically into the central cavity of said annular basket and spaced from said cathode to be electrically insulated from direct physical contact with the basket, and conductor means coupled to said cathode and said anode for obtaining electrical energy from the cell, the cell being so constructed that water contacts the anode through said basket and said porous cathode.



3,401,064
ELECTRICAL POWER GENERATOR SYSTEM

Milton A. Perlow, Woodland Hills, and James H. Van Osdol, Canoga Park, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware
Filed Feb. 6, 1967, Ser. No. 614,103
10 Claims. (Cl. 136—202)

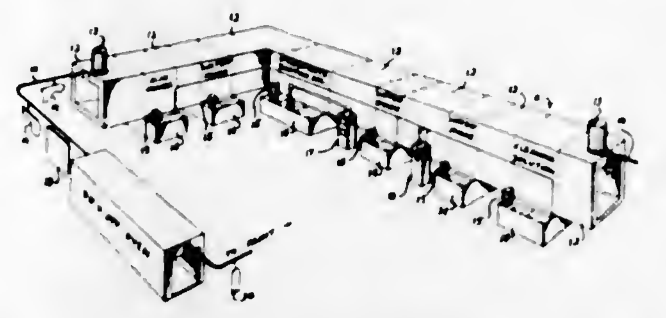


An electrical power generator system for the direct conversion of heat energy to electrical energy wherein substantially all the heat developed by a heat source passes through a direct energy converter because the converter is positioned in a well-defined heat flow path.

3,401,065
AUTOMATIC CONTROL OF NITRITE ADDITION IN ACID PHOSPHATE COATING SOLUTIONS

Lester Steinbrecher, Southampton, Dwight E. Buczkowski, Philadelphia, and James W. Harrison, Wyndmoor, Philadelphia, Pa., assignors to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware
Filed Aug. 18, 1964, Ser. No. 390,375
14 Claims. (Cl. 148—6.15)

The production of protective coatings on ferriferous metal surfaces by the use of zinc and/or calcium phosphate coating solutions results in the production of ferrous ion in the coating bath, with detrimental results. A pair of redox electrodes, one of which is inert and the other of which is a reference electrode, are placed in the coating solution, and the voltage developed across said electrodes is used to regulate addition of nitrite material for the purpose of removing ferrous ion from the bath. The voltage developed across the electrodes follows the work loading of the bath and provides a measure of the rate of nitrite demand. The inert electrode is preferably periodically cleaned by being first made anodic and then cathodic. In installations where work loading varies widely, nitrite is preferably added at two or more different rates in response to selected variations in the voltage. System stability in enhanced by limiting the frequency with which nitrite is added in response to voltage changes.



3,401,066
APPARATUS FOR SOFT-NITRIDING

Robert Grafmiller, Southfield, Mich., assignor to Motor City Metal Treating Co., Detroit, Mich., a corporation of Michigan
No Drawing. Filed Mar. 3, 1966, Ser. No. 531,369
4 Claims. (Cl. 148—15.5)

A process of nitriding a ferrous metal which includes immersing the metal in a salt bath containing both cyanate and cyanide, with the cyanate content of the bath being in excess of 40 percent. The bath is contained in a pot fabricated from a high chromium steel and the nitriding process is carried out at a temperature between 500° and 600° C.

3,401,067
AQUEOUS SLURRY TYPE EXPLOSIVE COMPOSITIONS SENSITIZED WITH AT LEAST ONE ALKANOLAMINE NITRATE

Harry R. Fee, Hopatcong, N.J., and Robert W. Lawrence, Wilmington, Del., assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 23, 1967, Ser. No. 648,203
20 Claims. (Cl. 149—38)

Inorganic oxidizer salt explosives of the aqueous slurry type, preferably nitrocarbonitrates, are provided which contain as a sensitizer component, at least one alkanolamine nitrate of the group of ethanolamine nitrates, and propanolamine nitrates, and, optionally, a supplemental sensitizer.

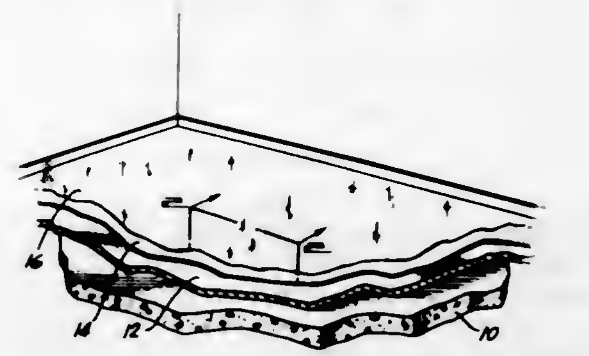
3,401,068
METHOD AND APPARATUS FOR UNIFORMLY ETCHING PRINTED CIRCUITS BY CONTROL OF THE CONVEYOR SPEED

Robert C. Benton, State College, Pa., assignor to Chemcut Corporation, a corporation of Pennsylvania
Filed Feb. 15, 1965, Ser. No. 432,476
19 Claims. (Cl. 156—3)

A continuous etching machine having variable speed means for conveying articles to be etched therethrough. A speed control is provided responsive to the metal removal rate by etchant of the machine in an etching zone, and is operatively connected to the conveying means to maintain the speed values generally proportional to the etchant strength.

3,401,069
METHOD FOR INSTALLING RESINOUS FLOOR COVERINGS

Harold G. Lorentzen, 1155 5th St.,
Oakland, Calif. 94607
Filed June 26, 1964, Ser. No. 378,432
3 Claims. (Cl. 156—71)



A method for installing resinous floor coverings in which a resilient layer is bonded to the floor surface with an adhesive, a resin coating applied directly over the resilient layer and the resin coating cured in place.

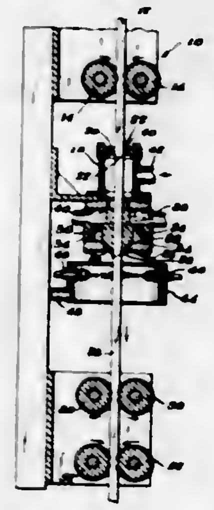
3,401,070
RESIN COATING

Gordon E. Brown, Seattle, Wash., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 390,183, Aug. 17, 1964. This application May 19, 1965, Ser. No. 457,199
8 Claims. (Cl. 156—230)

This application describes applying a thermosetting resin coating to a substrate by forming a layer of a composition comprising a thermosetting resin and a parting agent on a transfer surface having a volatile content of 2 to 20% by weight of the total weight of the layer and hot-pressing the thus formed resinous layer onto a substrate. The resinous layer provides a functional surface to the substrate.

3,401,071
METHOD FOR PLASTIC FILM ENCAPSULATION

Kenneth J. Cleereman and Donald J. Dirkse, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Nov. 5, 1962, Ser. No. 235,388
6 Claims. (Cl. 156—244)



1. A method for plastic film encapsulation of an object including a temperature frail plastic foam element wherein the temperature of said film is substantially greater than the melting temperature of said foam element, said method comprising the steps of:

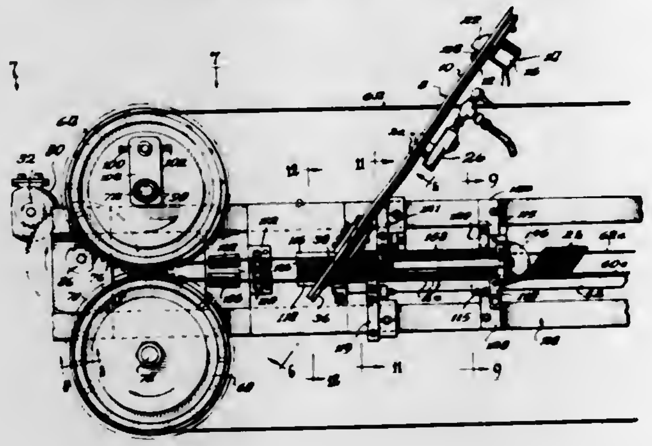
(a) feeding and passing said object into a partially vacuumed chamber and continuously drawing it therethrough,

(b) extruding a hot plastic film continuously and entirely about said object as it is being withdrawn from said chamber and while drawing a vacuum from between said film and said object, and

(c) quenching the plastic film encapsulated object immediately subsequent to said encapsulation after the surface of the foam becomes generally tacky and before the foam becomes substantially melted or blistered, whereby lamination of said film with said object occurs without significant degradation of said plastic foam.

3,401,072
MACHINE FOR ASSEMBLING STRIPS OF FASTENERS AND METHOD OF ASSEMBLING

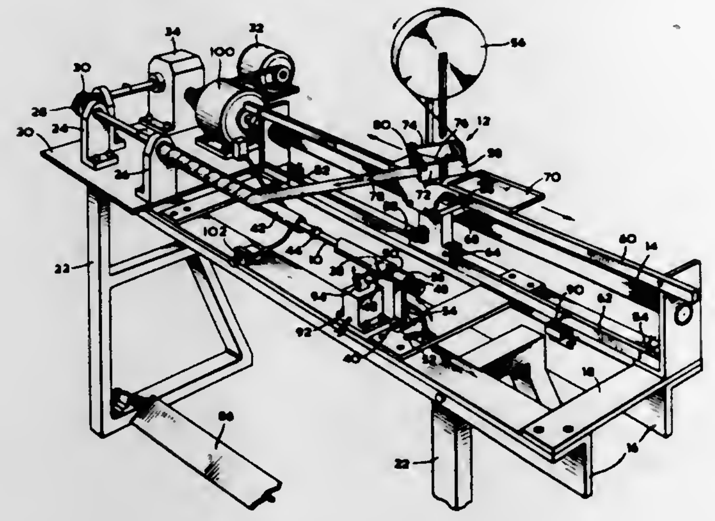
Kenneth C. Pearson, Glenview, Ill., assignor to Signode Corporation, a corporation of Delaware
Continuation of application Ser. No. 303,898, Aug. 22, 1963. This application June 21, 1967, Ser. No. 647,875
18 Claims. (Cl. 156—250)



15. A method of producing adhered strips of nails comprising aligning a plurality of nails in a row with the heads of the nails overlapped and their shanks juxtaposed on a continuously moving conveyor having notched nail supporting members, applying an adhesive and strips of tape to the shanks of the nails, and cutting the tape adhered row of nails into sections of a predetermined length.

3,401,073
PAINT ROLLER COVERING APPLYING MACHINE

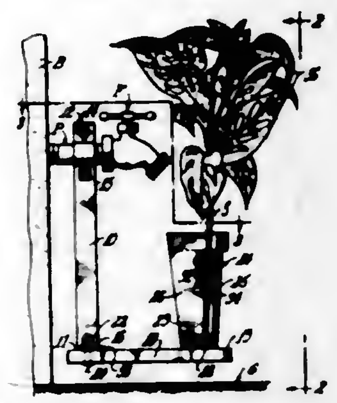
Frank R. Wood, Lancaster, New Brunswick, Canada, assignor to T. S. Simms & Co. Limited, St. John, New Brunswick, Canada
Filed Feb. 1, 1965, Ser. No. 429,327
2 Claims. (Cl. 156—353)



This invention provides an apparatus for wrapping strip fabric onto long lengths of core material to form roller coaters. The apparatus is characterized by a mandrel by which the long lengths of core material are rotated and a traversing feeding mechanism for the strip fabric. The traversing mechanism moves under the influence of a feed screw positioned parallel to the mandrel. Means is provided for varying the relative speeds of the mandrel and the feed screw which can be operated by an operator positioned at the mandrel so that the movement of the strip fabric feeding device can be speeded up or slowed down to accommodate variations in the width of the fabric being wound on the core. The apparatus also includes means for automatically cutting off the wound strip fabric at the end of each winding operation.

3,401,074
FAUCET CAMOUFLAGE

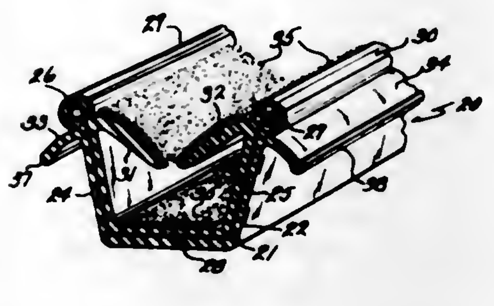
Morio Takenouchi, 2017 Baltic Ave., Long Beach, Calif. 90810
Filed Mar. 23, 1964, Ser. No. 353,811
5 Claims. (Cl. 161—7)



An attachment hanger is clamped to a water pipe adjacent its faucet end which projects from a building for occasional coupling to a hose, or alternately the hanger is yoked over the pipe and anchored by insertion of pointed ends into the ground. The hanger pivotally supports an outward-projecting arm or platform which holds (artificial or natural) replaceable foliage in alternate positions, (a) in front of the faucet so as esthetically to conceal same, (b) swung aside 90° so as to allow connection of a hose to the faucet. Limit means on the swinging platform locate positions (a) and (b) for automatic alignment.

3,401,075
CHANNEL SHAPED STRIP STRUCTURE

Norman C. Jackson, Sheffield Lake Village, Ohio, assignor to The Standard Products Company, Cleveland, Ohio, a corporation of Ohio
Filed July 14, 1965, Ser. No. 471,913
5 Claims. (Cl. 161—64)



A channel shaped strip structure having a core with a resilient cover thereover. The core is divided into a plurality of transverse elements connected to each other only along one edge so the strip can be bent or formed in two right angularly disposed planes. The strip cover is provided with resilient sealing lips projecting outwardly from the channel and resilient flocked fins projecting inwardly toward the center of the channel.

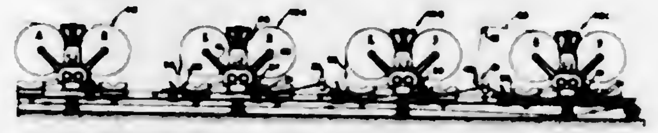
3,401,076
INCREASING KRAFT PULP YIELD WITH HYDROXYLAMINE

Richard M. L. Paterson, Camillus, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Aug. 12, 1965, Ser. No. 479,308
6 Claims. (Cl. 162—70)

1. An improved method for obtaining wood pulp from the kraft process wherein wood chips are cooked with an alkaline cooking liquor to produce a wood pulp, the improvement which comprises incorporating in the cooking liquor a compound selected from the group consisting of hydroxylamine, hydroxylamine sulfite, hydroxylamine sulfate and hydroxylamine bisulfite in an amount of 0.1 to 10% by weight based on the dry weight of the cellulosic material.

3,401,077
PAPERMAKING MACHINE FOR MAKING CORRUGATED PAPER

Walter Zink, Sanborn, N.Y., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed May 21, 1965, Ser. No. 457,638
3 Claims. (Cl. 162—117)



A multi-ply paper product in which the plies have corrugations in the form of spaced segments extending in substantially different directions in alternate plies to prevent nesting of the plies and an embossing apparatus for providing this paper product including a series of embossing roll pairs with each roll having a series of peripheral grooves and with the teeth of consecutive roll pairs in the series extending in different directions with respect to the roll axes.

3,401,078
PAPER AND PROCESS FOR MAKING SAME OF SYNTHETIC FIBERS BONDED AT THEIR INTERCROSSING POINTS BY A THERMOPLASTIC POLYAMIDE RESIN

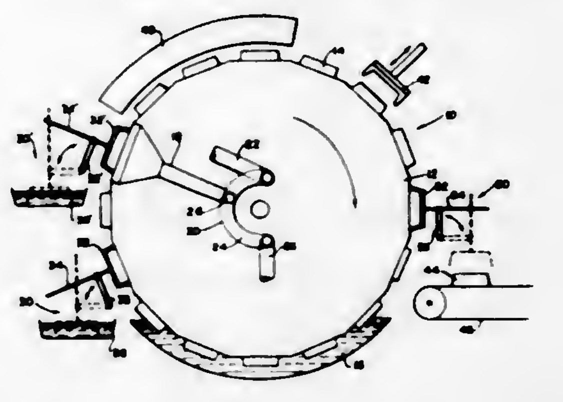
Rolf Grossteinbeck, Oberhochstadt, Taunus, and Gert Tepel and Walter Schulze, Frankfurt am Main, Germany, assignors to Battelle Institut e.V., Frankfurt am Main, Germany
No Drawing. Filed Oct. 11, 1963, Ser. No. 315,681
Claims priority, application Germany, Oct. 19, 1962, B 69,295
8 Claims. (Cl. 162—146)

In an unwoven web of synthetic fibers, the crossing points of the fibers, and only those points, are bonded by passing an aqueous slurry of said fibers and fibers of a thermoplastic adhesive together with a lubricant through a paper-making machine, thereby forming a temporary film of the lubricant on the fibers. The temporary film provides a gliding surface for the molten adhesive which collects at the crossing points.

3,401,079
PULP MOLDING

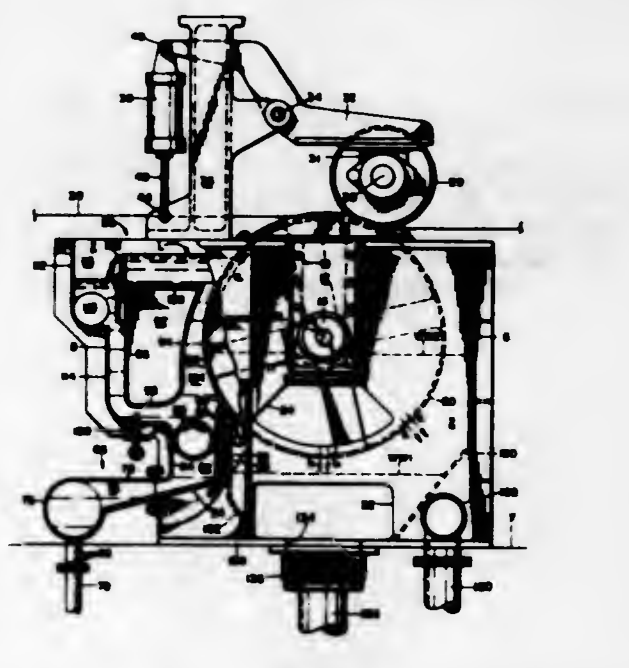
Roger Wells, Stamford, Conn., assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware
Filed July 15, 1965, Ser. No. 472,159
10 Claims. (Cl. 162—219)

The present disclosure relates to the molding of plural ply pulp articles in a simplified and inexpensive manner by providing a conventional molding drum and associating therewith a plurality of simple molding devices which are capable of only forming a deposit without draining the filtrate from behind. When a ply is molded by the simple device, it is immediately transferred to the complex conventional molding drum along with the filtrate which is then drawn back through the pulp layer in the opposite direction.



3,401,080
CYLINDER PRESSURE FORMING PAPER MACHINE WITH WHITE WATER RECOVERY

Martin B. Keller, Hudson Falls, N.Y., assignor to Sandy Hill Corporation, Hudson Falls, N.Y.
Filed Oct. 15, 1965, Ser. No. 496,302
6 Claims. (Cl. 162—264)

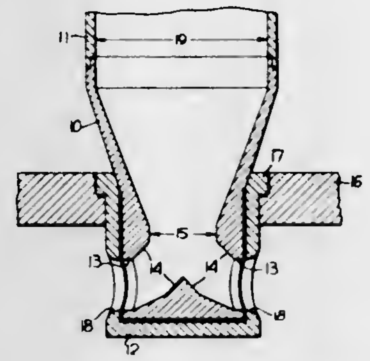


1. In a papermaking machine, the combination of a vat comprising side and end walls, a cylinder mold disposed between and rotatably supported by said side walls, curvate means radially spaced from the cylinder mold and defining cooperantly therewith a stock flow channel, means for adjusting the curvate means for essentially restricting the channel, means for discharging the stock flow through the channel whereby fibers thereof are deposited on the cylinder mold at one side thereof and liquid thereof flows into the mold and through the opposite side thereof and into the vat, means defining an enclosed side pocket formed on each of the side walls of the vat, the side walls of the vat having openings communicating with the side pockets to permit the liquid to flow from the vat into the side pockets and discharge means leading from the side pockets to drain the liquid therefrom.

3,401,081

HYDRAULIC HOLDDOWN FOR NUCLEAR REACTOR FUEL ASSEMBLY

Gerhart Menzel, Simsbury, Conn., and Charles E. Klotz, West Allis, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Apr. 28, 1966, Ser. No. 546,082
3 Claims. (Cl. 176—50)

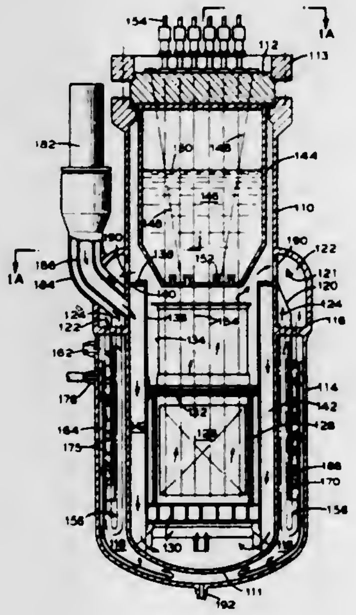


A nuclear reactor fuel assembly having a hydraulic holddown characteristic effected by an inlet nozzle at the lower end of said fuel assembly. The nozzle is provided with a plurality of inlet orifices perpendicular to the longitudinal axis of the fuel assembly to initially admit coolant perpendicular to the longitudinal axis of the fuel assembly. Coolant passageways then divert the incoming coolant upward parallel to the longitudinal axis of the fuel assembly. In the reactor, the fuel assembly is supported by a cup shaped support member which receives the nozzle. The cup shaped support member is provided with a plurality of openings which mate with the openings into the nozzle.

3,401,082

INTEGRAL STEAM GENERATOR AND NUCLEAR REACTOR COMBINATION

Johannes H. Ammon and John Schlichting, Akron, and Theodore S. Sprague, Hudson, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed May 24, 1966, Ser. No. 552,515
12 Claims. (Cl. 176—54)

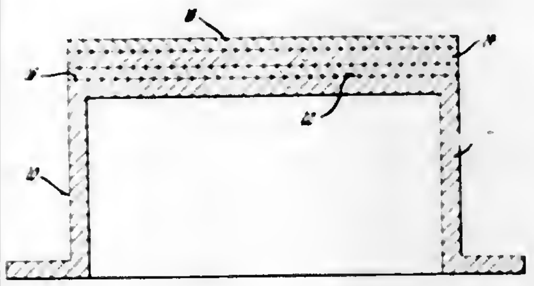


An integrally packaged steam generator and nuclear reactor combination in which the reactor core is contained within an inner pressure vessel and steam generation takes place in an annular chamber defined by the outside surface of the inner pressure vessel and the inside surface of an outer pressure vessel disposed in laterally surrounding spaced-apart relation to the inner pressure vessel. Primary coolant is circulated by a pump in a closed cycle path in which coolant delivered at the pump outlet is introduced into the inner pressure vessel, flows through the reactor core to extract heat therefrom and thereby cool same, leaves the inner pressure vessel and flows through tubes extending within the steam generation chamber to transfer the heat absorbed from the core to feedwater introduced into the chamber to generate steam, and after exiting the tubes, is returned to the pump inlet for continuous circulation.

3,401,083

NEUTRONIC DEVICE

Robert F. Hill, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Nov. 20, 1964, Ser. No. 412,685, now Patent No. 3,367,022. Divided and this application Feb. 2, 1967, Ser. No. 613,672
5 Claims. (Cl. 176—82)



A neutronic device which includes a tantalum element having bonded thereto a U 235 enriched alloy layer of uranium and nickel for use in supplying ionizing radiation in thermionic converters, nuclear reactors, and the like.

3,401,084

RUBELLA VACCINE AND ITS PREPARATION

Eugene B. Buynak, North Wales, and Maurice R. Hilleman, Lafayette Hill, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed July 29, 1965, Ser. No. 475,865
5 Claims. (Cl. 195—1.3)

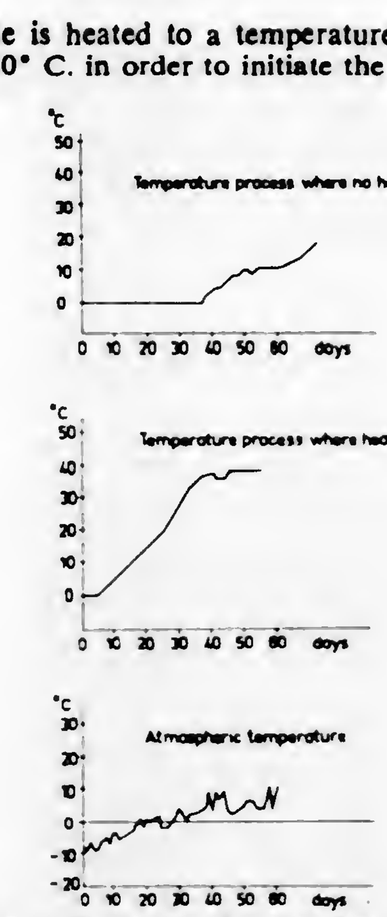
Rubella virus is grown in successive passages in tissue culture prepared with embryonated duck eggs until the live virus is so attenuated that it is avirulent but still immunogenic; it is used to make a vaccine.

3,401,085

METHOD OF TREATING STORED WOOD CHIPS

Ingemar Liss-Albin Croon, Alfredshem, and Lars Gunnar Kjellander, Ornskoldsvik, Sweden, assignors to Domsjo, Mo och, Aktiebolag, Ornskoldsvik, Sweden, a corporation of Sweden
Filed July 14, 1965, Ser. No. 471,985
Claims priority, application Sweden, July 16, 1964, 8,717/64
8 Claims. (Cl. 195—8)

A method is provided for treating resiniferous wood chips which are stored in a pile for pulping, in order to enhance the enzymatic hydrolysis of resins in the wood chips so that the resins will be more readily extracted in the pulping. In the method, a sufficient portion of the chip pile is heated to a temperature of from about 1 to about 30° C. in order to initiate the enzymatic hydrolysis of resins in the wood chips and a substantially uniform temperature rise in the entire chip pile is permitted to occur.



3,401,086

INDICATING DEVICE AND METHOD FOR THE DETERMINATION OF CHOLINESTERASE ACTIVITY IN THE SERUM

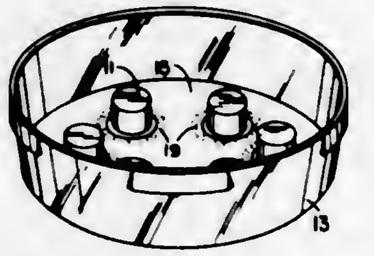
Arno Hoffmann, Darmstadt-Eberstadt, and Hermann Lang, Werner Neumann, Dieter Waldi, and Arnold Hartel, Darmstadt, Germany, assignors to E. Merck A.G., Darmstadt, Germany
No Drawing. Filed Jan. 26, 1966, Ser. No. 523,029
Claims priority, application Germany, Jan. 26, 1965, M 63,921
10 Claims. (Cl. 195—103.5)

1. A device for measuring cholinesterase activity in body fluids, consisting of an adsorbent vehicle containing a substrate selected from the group consisting of acetylcholine and salts thereof and a color indicator consisting essentially of a mixture of phenolsulfonphthalein and naphtholphthalein wherein the mol ratio of phenolsulfonphthalein to naphtholphthalein is from about 1:0.5 to 1:5.

3,401,087

METHOD FOR CONDUCTING MICROBIOLOGICAL DIFFUSION ASSAYS

Norbert R. Kuzel and Henry F. Coffey, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana
Filed Feb. 16, 1966, Ser. No. 527,939
6 Claims. (Cl. 195—103.5)



1. In a method of performing a microbiological assay, the steps comprising:

coating a flat member with a layer of an inoculated nutrient composition,
placing a test solution into an open-ended receptacle,
inverting the coated member onto the open end of the receptacle whereby the receptacle adheres thereto,
and uprighting the coated member with the receptacle containing the test solution lying thereon in inverted position with the test solution in contact with the inoculated nutrient surface.

3,401,088

PROCESS OF FERMENTATION OF CHLORTETRACYCLINE AND TETRACYCLINE ANTIBIOTICS

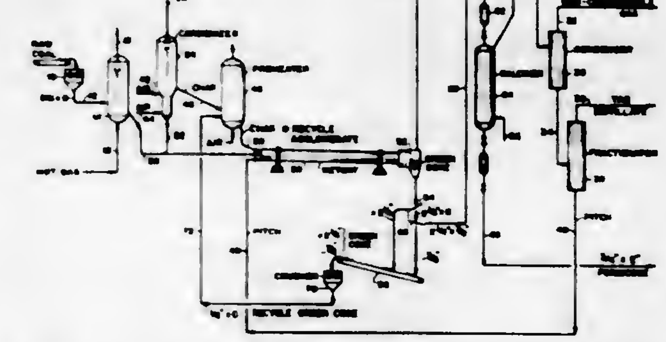
Ivan Villax, Lisbon, Portugal, assignor to International Rectifier Corporation, Los Angeles, Calif., a corporation of California
No Drawing. Continuation-in-part of application Ser. No. 141,461, July 24, 1961. This application July 22, 1966, Ser. No. 567,073
Claims priority, application Portugal, July 23, 1960, 37,424
7 Claims. (Cl. 195—114)

1. A process for the production of an antibiotic substance selected from the group consisting of chlortetracycline, tetracycline, N,N′-dibenzylethylenediamine and N,N′ - lower - dialkoxydibenzylethylenediamine alkaline earth metal complexes of chlortetracycline and tetracycline, which comprises the steps of growing, under submerged aerobic conditions, a culture of a species of Streptomyces which produces an antibiotic selected from the group consisting of chlortetracycline and tetracycline in an aqueous nutrient medium containing assimilable carbon, nitrogen and mineral salts, in the presence of a member selected from the group consisting of N,N-dibenzylethylenediamine, N,N′ - dialkoxydibenzylethylenediamine and the water soluble salts thereof in at least an effective amount, the total of which does not exceed half a mole per mole of the said antibiotic content formed to form the said complexes until a substantial antibiotic activity is imparted to the broth, and recovering said antibiotic substance from said culture medium.

3,401,089

PROCESS FOR AGGLOMERATING CARBONACEOUS MATERIALS

Robert J. Friedrich, Finleyville, and Everett Gorin, Pittsburgh, Pa., assignors to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 3, 1965, Ser. No. 436,864
9 Claims. (Cl. 201—6)

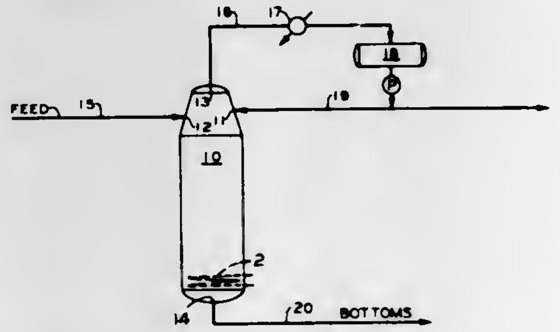


1. The method of agglomerating discrete carbonaceous particles in a tumbling zone of a rotating retort including carbonaceous particles previously subjected to agglomeration in said tumbling zone comprising,

introducing finely divided coal particles and finely divided carbonaceous particles previously subjected to agglomeration into said tumbling zone, said carbonaceous particles having substantially the same size spectrum as said coal particles,
maintaining said tumbling zone under agglomerative conditions,
tumbling said finely divided coal particles and said finely divided carbonaceous particles in the presence of a pitch binder under nonoxidative conditions until agglomerates are formed,

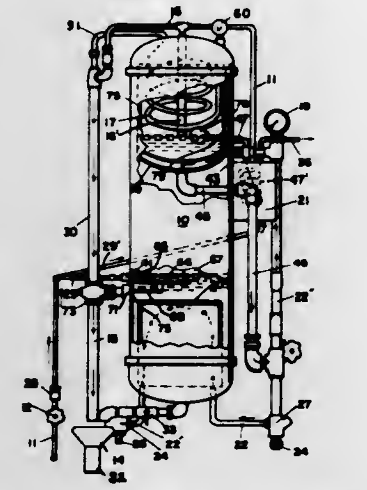
withdrawing said agglomerates from said tumbling zone,
separating said agglomerates into preselected sized fractions including a desirable size fraction and an offsize fraction,
comminuting said offsize fraction so that said comminuted product forms finely divided carbonaceous particles having a size spectrum substantially the same as said finely divided coal particles,
recycling said comminuted product of agglomerates having a size spectrum substantially the same as said finely divided coal particles to said tumbling zone for agglomeration with said finely divided coal particles,
separating and calcining in a calciner said desirable size fraction,
recovering formcoke from said calciner, and
recovering a vaporous product from said calciner, a portion of which is condensed to serve as a part of said pitch binder.

3,401,090
CONICAL FRACTIONATION APPARATUS
Bill E. Greenfield, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 28, 1966, Ser. No. 590,362
1 Claim. (Cl. 202—158)



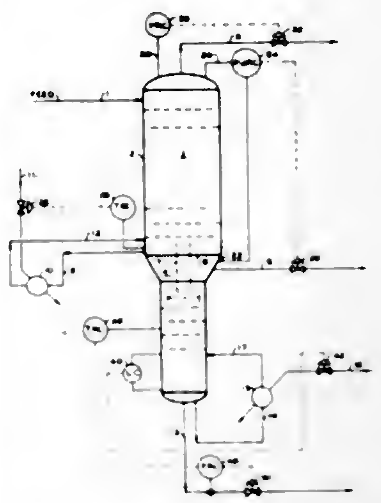
A fractionation column having a lower section which is cylindrical and an upper section in the shape of a truncated cone. Some of the downcomer conduits in said upper section route a portion of the downward-flowing fluid parallel to the inclined walls of the upper conical section. The diameter of the upper section and the trays therein progressively decrease in the upward direction.

3,401,091
WATER STILL
Robert R. Gidner, Fairview, Pa., assignor to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania
Filed Apr. 19, 1966, Ser. No. 543,741
4 Claims. (Cl. 202—176)



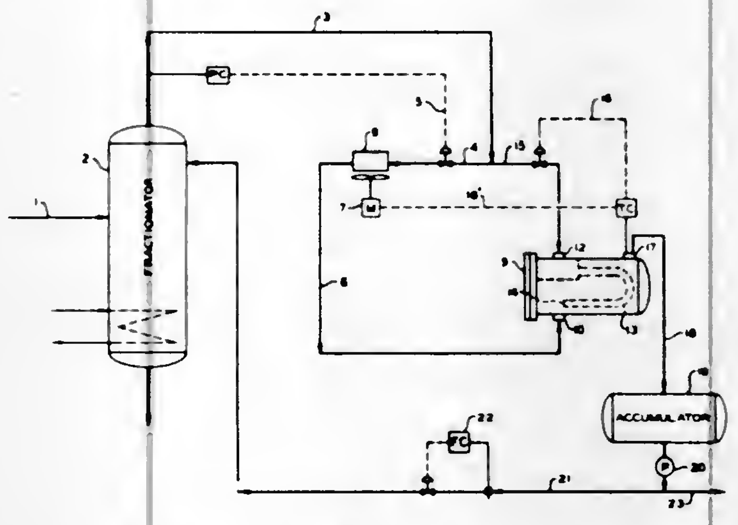
The invention relates to a still wherein the evaporator and condenser are contained in a pressure vessel which includes means for boiling the distillate in the vessel after it is collected to purge the same of undesirable gases.

3,401,092
TWO-ZONE DISTILLATION PROCESS AND SYSTEM HAVING VAPOR FLOWS CONTROLLED BY THE PRESSURE DIFFERENTIAL
Romeo Matta, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 22, 1966, Ser. No. 544,615
5 Claims. (Cl. 203—1)



A two-zone fractional distillation column adapted to separate at least two vaporous products and one liquid product is controlled by controlling the rate of withdrawal of a first vapor stream from the upper fractionation zone thereby maintaining pressure in the upper fractionation zone at a predetermined level, controlling the withdrawal of a second vaporous stream from the upper portion of the lower fractionation zone in response to the differential pressure between the first and second fractionation zone to thereby yield a predetermined difference in pressure between the first and second fractionation zone, maintaining the predetermined level of liquid in the lower fractionation zone by controlling the flow of a liquid product stream from the bottom thereof and maintaining the mixture in the lower fractionation zone at a predetermined level in response to heat supplied to the bottom fractionation zone and the temperature within the bottom fractionation zone.

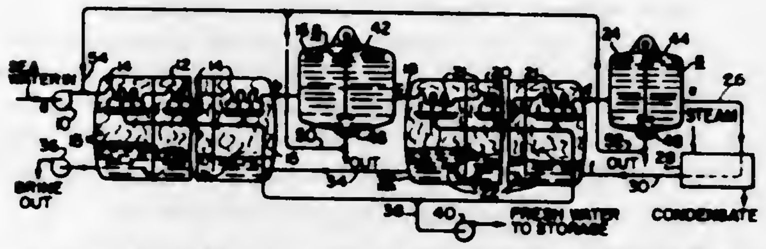
3,401,093
VAPOR LIQUID MIXING IN FRACTIONATION OVERHEAD SYSTEM
Clyde M. Cox, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,775
6 Claims. (Cl. 203—2)



1. A method of handling overhead vapors from a fractionation column which comprises:
dividing the overhead vapors from a fractionation column into first and second streams,
cooling said first stream to condense vapor therein,

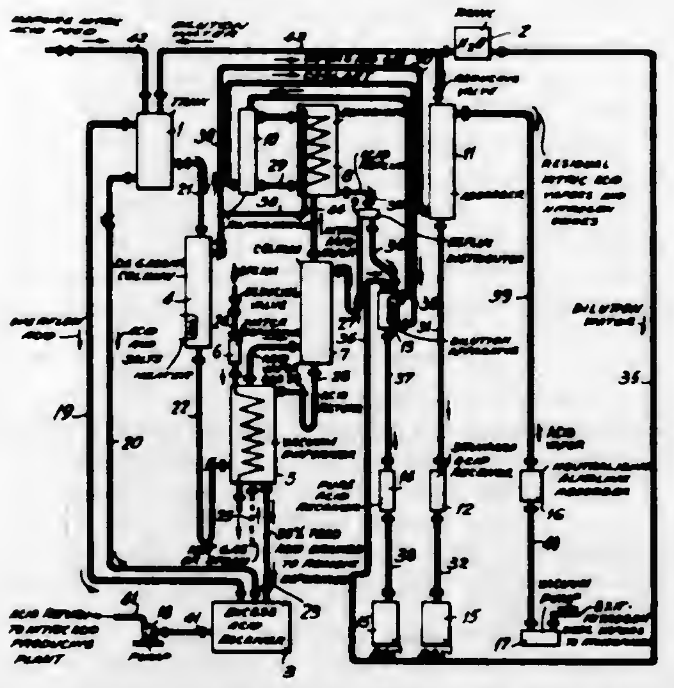
passing the vapors in said second stream in indirect heat exchange relationship with the mixture obtained by the following step,
mixing the condensed vapors in the first stream with the fluid in the second stream after the foregoing heat exchange step,
passing a portion of the resulting mixture to the upper region of the fractionation column as external reflux, and
removing the remainder of the resulting mixture as overhead product.

3,401,094
WATER CONVERSION PROCESS AND APPARATUS
William T. Lindsay, Jr., Hempfield Township, Irwin, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 21, 1966, Ser. No. 544,170
5 Claims. (Cl. 203—7)



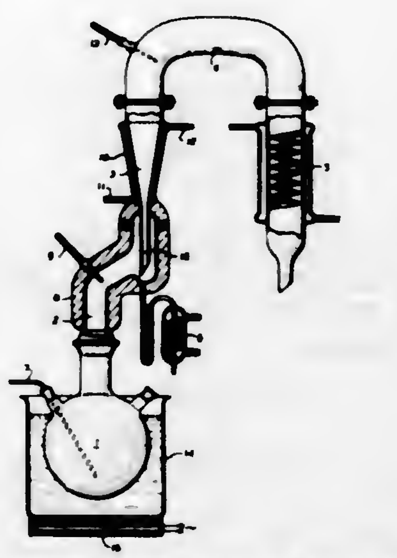
A procedure for removing scale-forming salt (calcium sulfate) in an evaporator system for recovering fresh water from mineral-containing water, whereby seed particles of the mineral to be removed are added to the mineral-containing water after which the water is heated to a predetermined temperature level and held in a passive condition for a sufficient time to enable the scale-forming salt in solution in the water to combine with the seed particles and precipitate out of the solution.

3,401,095
METHOD OF PURIFYING NITRIC ACID
Lev Vaagovich Saradzhev, Moscow, U.S.S.R., assignor to Gosudarstvenny Nauchno-Issledovatelsky i Proektny Institute azotnoi Promyshlennosti i Produktov Organicheskogo Sinteza
Filed July 21, 1964, Ser. No. 384,184
9 Claims. (Cl. 203—13)



A continuous method for rendering nitric acid free of gaseous impurities and solid (both metallic and nonmetallic) impurities dissolved therein. Nitric acid is heated under vacuum to degas it and thereafter rectified to yield the purified acid. In addition to evaporation and condensation, the rectification step involves scrubbing vaporized nitric acid with recycled liquid nitric acid from a subsequent step in the cycle.

3,401,096
METHOD FOR SEPARATION OF MATERIAL BY PARTIAL CONDENSATION
Gustav Wondrak, Vienna, Austria, assignor of one-half to Friedrich Kohler, Vienna, Austria
Filed July 28, 1964, Ser. No. 385,717
3 Claims. (Cl. 203—87)



A method of separation of material by partial condensation of a vapor mixture which comprises the step of passing a vapor mixture into a zone of gradually increasing cross-sectional dimensions in the direction of flow, simultaneously controlling the temperature in the zone to a preselected temperature to condense from the vapor mixture a portion thereof and to leave an uncondensed portion. The uncondensed portion of the vapor mixture is removed from the end of the zone having the largest cross-sectional area.

3,401,097
ELECTRODEPOSITION OF NICKEL
Reuven Merker, Hempstead, and Herman P. Soguero, North Wantagh, N.Y., and Salvatore Lucca, Secaucus, N.J., assignors to The Metalux Corporation, Little Ferry, N.J., a corporation of New Jersey
No Drawing. Filed Dec. 8, 1964, Ser. No. 416,911
8 Claims. (Cl. 204—49)

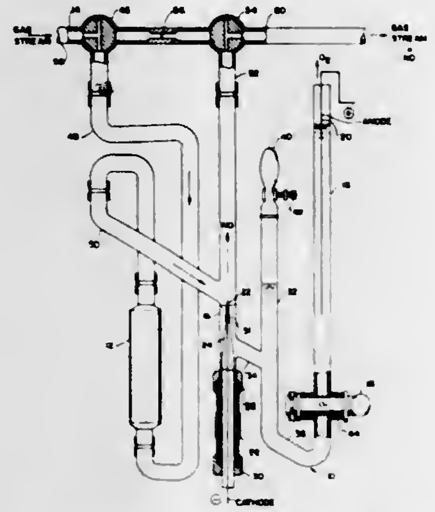
More brilliant and ductile nickel electrodeposits are obtained by incorporating into a conventional and known solution bath an additive having the formula

$$R_1R_2NSO_2NR_3R_4$$

in which the R radicals are selected from the group consisting of hydrogen, unsaturated alkyls with 2 to 6 carbon atoms, aryls, aralkyls, alkaryls, $R—SO_2$ radicals where R has 1 to 4 carbon atoms, ethoxy groups and halogenated aryls. The additive may be employed in very small quantities (as low as 0.05 gram/liter).

3,401,098
METHOD FOR PRODUCING OXIDES OF NITROGEN
Paul Hersch, Fullerton, and Rudolf Deuringer, Garden Grove, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Original application June 7, 1963, Ser. No. 286,235, now Patent No. 3,326,794, dated June 20, 1967. Divided and this application Apr. 28, 1967, Ser. No. 652,641
12 Claims. (Cl. 204—103)

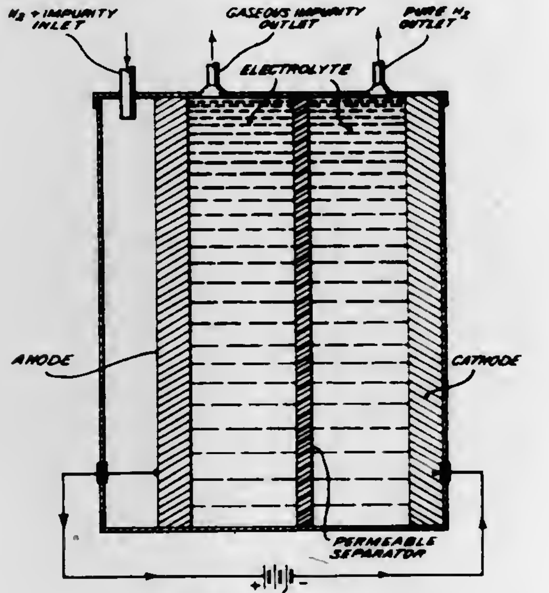
A method for producing oxides of nitrogen in which nitrogen oxide is formed by the electrolytic reduction of nitrosyl salts dissolved in a concentrated or water-free solution of a non-volatile, strong acid. The nitrogen oxide formed by electrolysis is prevented from reacting with



oxygen in the vicinity of the acid so that NO_2 which would otherwise be formed will not dissolve in the acid. The method provides means for easily calibrating analytical instruments.

3,401,099
ELECTROLYTIC METHOD OF GAS SEPARATION

James E. McEvoy, Morton, Pa., assignor to Air Products and Chemicals, Inc., Philadelphia, Pa., and Northern Natural Gas Company, Omaha, Nebr., both corporations of Delaware
Continuation-in-part of application Ser. No. 215,387, Aug. 7, 1962. This application Apr. 27, 1966, Ser. No. 549,769
7 Claims. (Cl. 204—129)



1. A method for the separation and recovery of a gas having electrolytic grade purity selected from the group consisting of hydrogen and oxygen from a gas stream which also contains less than about 90% by volume of gaseous contaminants and in which the gaseous contaminants therein are selected from the group consisting of carbon dioxide, nitrogen, helium, C_1 to C_4 alkanes and C_2 to C_4 alkenes, which method comprises:

(a) transmitting such a contaminant-containing gas stream into contact with a first electrode of an enclosed electrochemical cell, said cell containing at least two catalytic electrodes, including a second counter electrode of opposite sign from said first electrode, and a homogeneous electrolyte capable of transferring ions in contact with said electrodes, and wherein said electrodes of opposite sign are separated by a gas-impermeable, ion permeable membrane,

(b) supplying an electromotive force from a D.C. power source at a full cell potential of about 0.1 to about 0.7 volt across the electrodes of opposite sign, said voltage being less than the voltage required to electrolytically decompose water into its elements,

(c) effecting by said contact at said first electrode selective dissociation and ionization of substantially only the component of the gas stream to be recovered in electrolytic grade purity, said ionization being effected without substantial change in the homogeneity of the electrolyte.

(d) moving the obtained ions in said electrolyte through said gas-impermeable, ion permeable membrane by the aforesaid electromotive force of (b) and effecting thereby separation of ionized from non-ionized components of the gas stream;

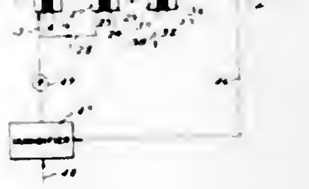
(e) deionizing said separated ions by contact with the second counter electrode in said electrolyte and re-forming gas product of electrolytic grade purity,

(f) removing said non-ionized gaseous contaminants from contact with said first electrode, and

(g) recovering the re-formed gas product, such ionization, separation, re-forming and recovering being thus effected without consumption or chemical alteration of said electrodes or of said electrolyte and with consumption of only the electrical energy supplied.

3,401,100
ELECTROLYTIC PROCESS FOR CONCENTRATING CARBON DIOXIDE

Martin R. Macklin, Cleveland, Ohio, assignor to TRW Inc., a corporation of Ohio
Filed May 26, 1964, Ser. No. 370,209
7 Claims. (Cl. 204—103)



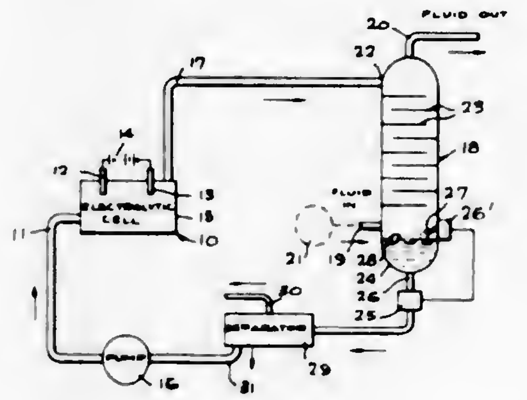
1. The method of concentrating carbon dioxide from admixture with nitrogen and oxygen which comprises passing the gaseous mixture to the cathode of a concentration cell having an ionizable carbonate compound-containing electrolyte therein permitting the passage of carbonate ions therethrough, collecting a carbon dioxide enriched mixture at the anode of said cell, passing said carbon dioxide enriched mixture to the cathode of a second concentration cell having an acid electrolyte permitting passage of the oxygen contained in said enriched mixture to the anode thereof, and collecting the carbon dioxide remaining at the cathode of said second concentration cell.

3,401,101
SEPARATION OF HYDROGEN SULFIDE AND MERCAPTANS FROM FLUID STREAMS

Howard F. Keller, Jr., 4101 Linden Ave., Long Beach, Calif. 90807
Continuation-in-part of application Ser. No. 420,072, Dec. 21, 1964. This application Aug. 5, 1966, Ser. No. 570,460
12 Claims. (Cl. 204—136)

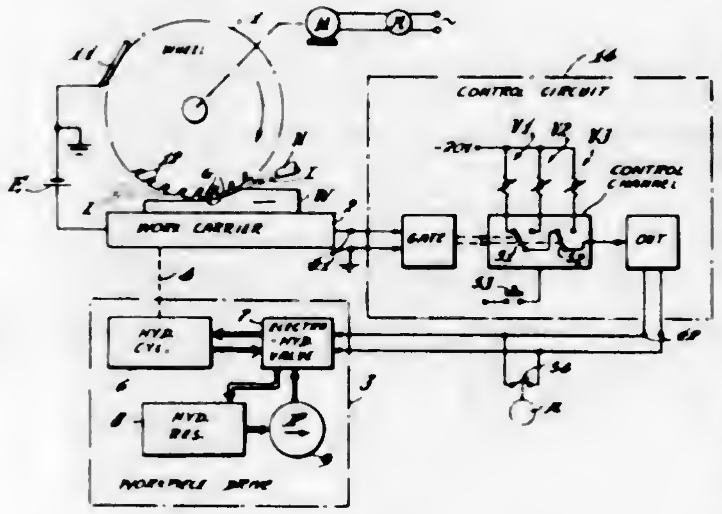
A process for removing the HS radical from a stream of hydrocarbon gas, hydrocarbon liquid, or other fluid being treated, by electrolyzing a solution preferably containing at least one halide selected from the group consisting of potassium iodide, potassium bromide, sodium iodide, sodium bromide, lithium iodide, and lithium bromide, to electrolytically convert at least some of the

halide to a tri-halide in the solution, then contacting the fluid to be treated with the solution, reacting the HS radical with the tri-halide in the solution in a manner forming elemental sulfur and the same halide originally electrolyzed, and repeating all of these steps through a series of cycles of operation to progressive eliminate the HS radical.



3,401,102
ELECTROLYTIC SHAPING APPARATUS AND FEED RATE CONTROL THEREFOR, BASED ON FIELD CHANGES ACROSS THE GAP CAUSED BY A MOVING ELECTRODE

Bernard G. E. Stiff, Lynnfield, Mass., assignor, by mesne assignments, to The Lapointe Machine Tool Company Limited, Otterspool, Watford, Hertfordshire, England, a company of Great Britain
Filed July 29, 1965, Ser. No. 475,704
18 Claims. (Cl. 204—143)



1. In an apparatus for electrolytically shaping a metallic workpiece, the apparatus including means for holding the workpiece, an electrically conductive working electrode having an endless surface, means for movably supporting said working electrode, means for causing converging relative movement between said working electrode and the workpiece into confronting relation to establish a gap between said workpiece and a point on said endless surface closest to said workpiece, thereby defining a working space, means for moving said working electrode so that said point on said endless surface closest to said workpiece is maintained at a constant distance and direction from any predetermined point on said means for movably supporting said working electrode, means externally of said working electrode for cotinuously supplying electrolyte to said working space at the side of said working electrode where said endless surface approaches said working space, a source of electric current connected across said workpiece and said working electrode to make said workpiece predominantly anodic and cause an electric field to be produced across said gap, and means uniformly spaced along the endless surface of said working electrode and movable through said field for causing intermittent uniform changes in said field which in turn produce a continuous chain of electrical signals having an amplitude determined by the width of said gap; the improvement wherein said means for causing converging relative movement between said working electrode and said said workpiece includes means responsive to said signals for controlling the rate of said relative converging movement in inverse proportion to the amplitude of said signals.

10. Apparatus according to claim 1, wherein said means responsive to said signal comprises a circuit having input means receiving said recurrent variations, output means connected to said feed rate adjusting means, and a control channel connected between said input means and output means including switching means having at least two stable states in each of which it produces control signals of different amplitudes, said switching means being differently sensitive to recurrent variations of different amplitudes to change said switching means between said states.

14. The method of electrolytically shaping a metallic workpiece comprising supporting said workpiece and an electrically conductive working electrode having an endless surface, effecting movement of said working electrode and converging relative movement of the working electrode and workpiece to establish and maintain a gap between them having a predetermined width thereby to define a working space and so that said endless surface continually moves through the points on said electrode most proximate to said workpiece, supplying electrolyte to said working space at the side of the electrode where said endless surface approaches said working space, connecting said working electrode and workpiece in an electrical circuit including the electrolyte such that the workpiece is predominantly anodic and cause an electric field to be produced across said gap, imposing on the field, by means uniformly spaced along the endless surface of the working electrode which moves through the field, intermittent uniform changes in said field which constitute electric signals having an amplitude which varies inversely with the width of the gap and employing said signals to control the rate of said relative converging movement in inverse proportion to the amplitude of said signals.

3,401,103
ELECTROCHEMICAL MACHINING PROCESS AND ELECTROLYTE COMPOSITION OF CHLORIDE AND SULFATES

Alexander H. Joyce, Detroit, and Lawrence V. Puls, Madison Heights, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
No Drawing. Filed Oct. 23, 1965, Ser. No. 504,109
12 Claims. (Cl. 204—143)

1. A process for electrochemically machining a metal consisting essentially of the steps of establishing said metal as the anode in an electrochemical cell, orienting a cathodic electrode adjacent to but closely spaced from said metal so as to form a gap therebetween, flowing through said gap an aqueous electrolyte consisting essentially of a balanced mixture of ionizing salts of chlorides, sulfates and nitrates which erode the grains and grain boundaries of said metal at a uniform rate, and passing current through said metal, electrolyte and electrode, whereby the surface of said metal is uniformly electrolytically eroded, wherein the concentration of said sulfate is from 0.20 to 3.0 equivalents of sulfate per equivalent of chloride and the concentration of said nitrate is from 0.1 to 0.40 equivalent of nitrate per equivalent of chloride.

3,401,104

ELECTROCHEMICAL MACHINING PROCESS AND ELECTROLYTE COMPOSITION OF CHLORIDES AND PHOSPHATES

Mitchell A. La Boda, East Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,133

5 Claims. (Cl. 204—143)

2. A process for electrochemically machining a metal comprising the steps of establishing said metal as the anode in an electrochemical cell, orienting an electrode adjacent to but closely spaced from said metal to form a gap therebetween, flowing through said gap an aqueous electrolyte consisting essentially of a mixture of alkali metal chlorides and phosphates, wherein the concentration of said phosphate ion is from 0.002 to 0.10 equivalent of phosphate ion per equivalent of chloride ion which form an electrochemical erosion inhibiting film on the surface of the metal which film decomposes at high current densities, and passing current through said metal, electrolyte and electrode to decompose said film in selected areas whereby electrochemical machining can continue in said areas.

3,401,105

PHOTOCHEMICAL PROCESS FOR PREPARING α,β-DICHLOROPROPIONITRILE

Tom Anyos and Wendell W. Moyer, Jr., Parkersburg, W. Va., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Aug. 27, 1965, Ser. No. 483,328

6 Claims. (Cl. 204—158)

3. A method of making α,β-dichloropropionitrile which comprises reacting an equimolar amount of chlorine with acrylonitrile in the presence of an acid acceptor and light, said acid acceptor characterized by having a pH range of 6 to 9 in aqueous solution and said light characterized by falling within a wave length range of from about 250 to about 750 millimicrons.

3,401,106

PROCESS FOR THE PHOTOCHEMICAL ALKYLATION OF LACTONES AND LACTAMS

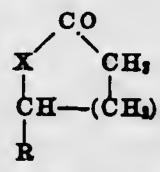
Dov Elad, Rehovoth, Israel, Raymond D. Youssefyeh, Pasadena, Calif., and Joel Sinnreich, Tel-Aviv, Israel, assignors to Yeda Research and Development Co. Ltd., Rehovoth, Israel, a corporation of Israel

No Drawing. Filed Aug. 24, 1965, Ser. No. 482,270

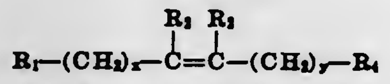
Claims priority, application Israel, Dec. 10, 1964, 22,600

14 Claims. (Cl. 204—162)

1. A process for the alkylation of lactones or lactams, which comprises reacting a lactone or lactam having the formula:



wherein X is O or NH, *n* is 1, 2, or 3, and R is hydrogen or alkyl having from 1 to 6 carbon atoms, with an olefinic compound:



$$R_1-(CH_2)_x-\overset{\overset{R_2}{|}}{C}=\overset{\overset{R_3}{|}}{C}-(CH_2)_y-R_4$$

wherein *x* and *y* are integers of from 0 to 12; R_2 and R_3 are each hydrogen or alkyl having from 1 to 12 carbon atoms; and R_1 and R_4 are each hydrogen, alkyl having from 1 to 12 carbon atoms, —OH, —COOH, —COOR$_5$, or —CONR$_6$R$_7$, in which R_5 is alkyl having from 1 to 5 carbon atoms, and R_6 and R_7 are each hydrogen or alkyl having from 1 to 6 carbon atoms, by exposing a mixture of said compounds to ultraviolet irradiation.

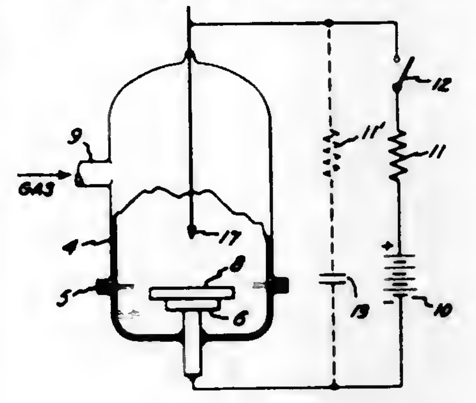
3,401,107

METHOD OF MANUFACTURING SEMICONDUCTOR CAMERA TUBE TARGETS

Rowland W. Redington, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Aug. 5, 1965, Ser. No. 477,613

7 Claims. (Cl. 204—164)



7

Camera tube targets are made and depolarized by adding to a donor-doped target blank a quantity of double-acceptor level impurities sufficient to compensate for the original donor concentration and render the target p-type and photoconductive. Non-imaging surface states due to the interaction of the double-acceptor impurities with the scanned surface of the target are removed by bombarding that surface with ions of a Group III metal.

3,401,108

PROCESS FOR THE GLOW DISCHARGE MANUFACTURE OF HYDRAZINE FROM PRE-HEATED AMMONIA

Jean P. Manion, Milwaukee, and Edward T. Losin, Mequon, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

No Drawing. Filed Dec. 20, 1965, Ser. No. 515,224

5 Claims. (Cl. 204—177)

1. A process for preparing hydrazine which comprises passing ammonia under reduced pressure, heated to a temperature of at least 405° C. between the electrodes of an electrical glow discharge vessel at a current of at least 40 milliamperes.

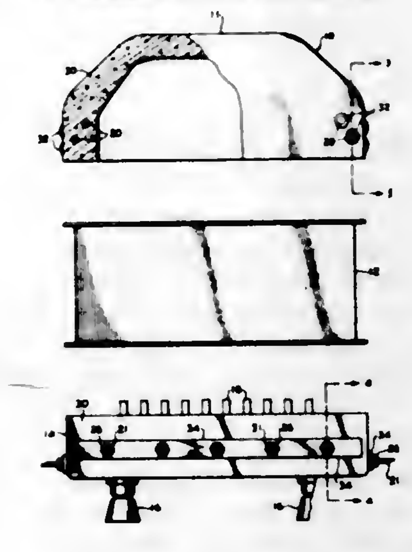
3,401,109

REINFORCED CONCRETE PARTS FOR ELECTROLYTIC CELLS

Arthur R. Anderson, Tacoma, Wash., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed Sept. 28, 1964, Ser. No. 399,594

9 Claims. (Cl. 204—242)



Reinforced shaped concrete parts for electrolytic cells are provided by pre-tensioning or post-tensioning reinforcing members. Optionally, the reinforcing members may be inserted through tubular members encased in the concrete. The tubular members are preferably inert to the electrolyte housed within the cell.

3,401,110

RECOVERY OF OIL FROM BITUMINOUS SANDS

Paul H. Floyd, Mountain View, and Robert C. Schenk, San Francisco, Calif., and Harold L. Erskine, Jr., Devon, and James Van Dyck Fear, Media, Pa., assignors to Great Canadian Oil Sands Limited, Toronto, Ontario, Canada, a corporation of Canada

Filed Nov. 24, 1965, Ser. No. 509,589

15 Claims. (Cl. 208—11)

This application discloses an improvement to the hot water process for treating bituminous tar sands. The hot water process comprises forming a pulp of the bituminous sands with a minor amount of water in a pulping zone; removing the pulp and mixing it with additional hot water and a recycle stream of middlings in a dilution zone; flushing the mixture from the dilution zone into a separation zone at a temperature in the range of 130° to 210° F. to form an upper oil froth layer, a middlings layer comprising water, clay and oil, and a sand tailings layer; separately removing the oil froth layer and the sand tailings layer; removing a stream of middlings from the separation zone and passing it to the dilution zone as the recycle stream mentioned above; passing a second stream of middlings layer to a separate recovery zone and therein subjecting it to air flotation to recover an additional amount of oil; and removing from the separate recovery zone, middlings material of depleted oil content comprising clay dispersed in water. The application discloses an improvement to this process comprising regulating the amount of water incorporated with the bituminous sands and the rate of passage of the second stream to the separate recovery zone so as to regulate and maintain the density of the middlings layer within the range of 1.03 to 1.50.

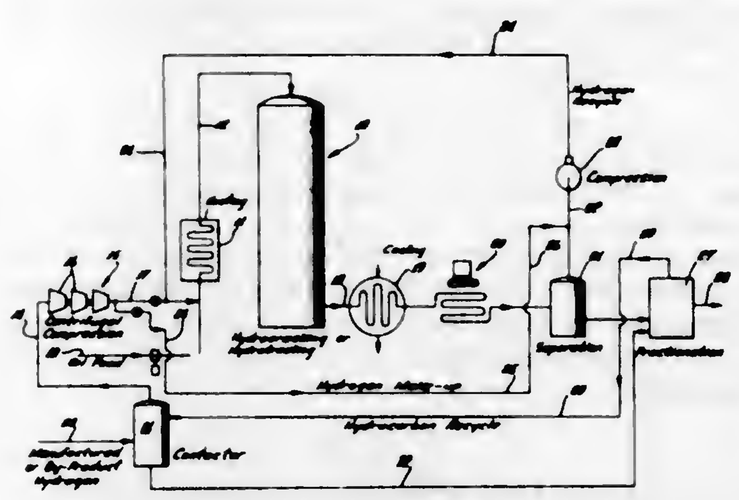
3,401,111

HYDROGEN COMPRESSION BY CENTRIFUGAL COMPRESSORS

Steven B. Jackson, Fullerton, Calif., assignor to The Fluor Corporation, Ltd., Los Angeles, Calif., a corporation of California

Filed July 5, 1966, Ser. No. 562,619

10 Claims. (Cl. 208—108)



The invention is predicated upon utilization of multistage centrifugal compressors for elevating an essentially hydrogen stream to high pressures required for such known oil refining or conversion processes as hydrocracking or hydrotreating, and the employment of a method for reducing the number of required compressor stages by introduction to the hydrogen stream in advance of compression, butane or its molecular equivalent in the 30 to 80 molecular weight range, so that the hydrocarbon content of the stream will be in the 1% to 12% range and sufficiently high to materially increase the effective pressure to which the hydrogen is elevated by the compression, the added hydrocarbon being derivable from an essentially C_4 fraction of the hydrogen-hydrocarbon reactor output.

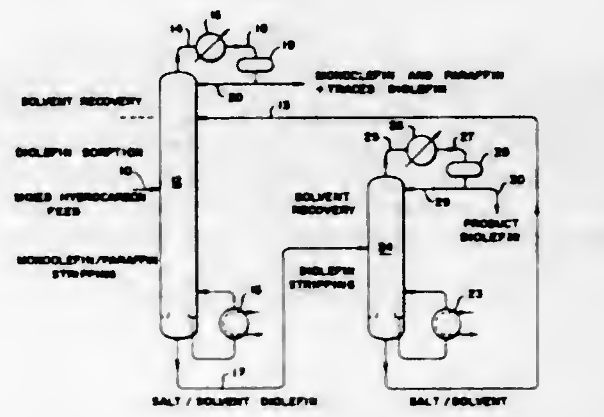
3,401,112

SEPARATION OF HYDROCARBONS BY CUPROUS SALTS

Arthur K. Dunlop and George C. Blytas, Berkeley, and Edward R. Bell, Walnut Creek, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Feb. 28, 1966, Ser. No. 530,476

6 Claims. (Cl. 208—308)



Non-aromatic unsaturated hydrocarbons are separated from more saturated hydrocarbons by selective complex formation with a cuprous salt of the formula CuXA wherein X is oxygen and XA represents the anion of an oxy-acid.

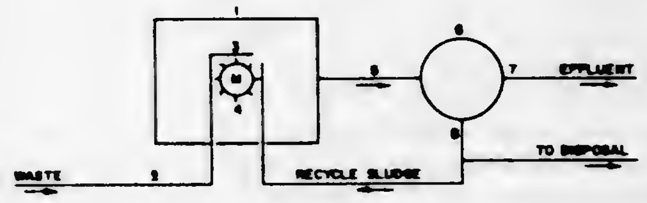
3,401,113

WASTE TREATMENT PROCESS

Robert D. Pruessner and Rudolph C. Woerner, Houston, Tex., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

Filed July 11, 1966, Ser. No. 570,681

9 Claims. (Cl. 210—7)



Process for aerobic waste decomposition wherein waste and activated sludge are supplied to a zone of aeration and agitation in a ratio of 0.15 to 0.41 lb. BOD per lb. MLVSS.

3,401,114

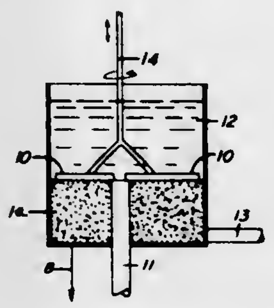
PROCESS USING COAL IN SEWAGE TREATMENT

Stuart S. Carlton, Parma, and Bertram C. Raynes, Pepper Pike Village, Ohio, assignors, by direct and mesne assignments, of one-half to Rand Development Corporation, Cleveland Ohio, and one-half to the United States of America as represented by the Secretary of the Interior, jointly

Filed Oct. 15, 1965, Ser. No. 496,730

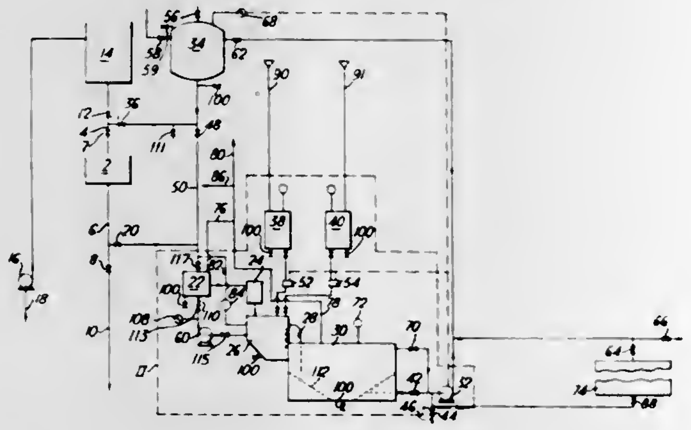
14 Claims. (Cl. 210—30)

Raw sewage is passed through a bed of coal to filter out solids and adsorb soluble contaminants. As filtered-out solids collect at the surface of the bed to coat the coal and thereby inhibit flow of additional sewage through the bed, the top layer of the bed is removed.



3,401,115
SEWAGE TREATMENT SYSTEM

Frederick William Albert Meyer, London, Charles Alexander Long, Upminster, Essex, and Victor Masters Lake, London, England, assignors to The Sanitas Company Limited, London, England, a British company
Filed Mar. 1, 1965, Ser. No. 435,903
Claims priority, application Great Britain, Mar. 2, 1964, 8,773/64
26 Claims. (Cl. 210—60)

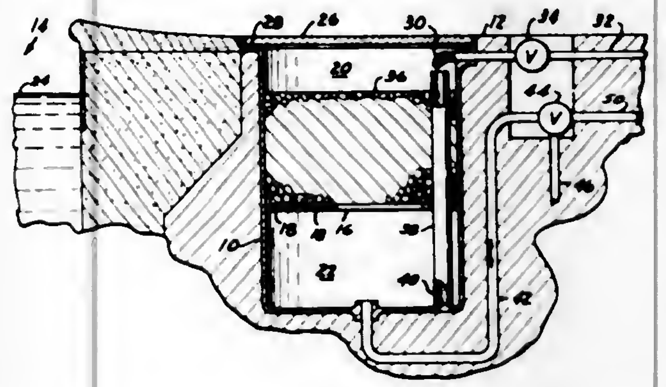


1. A method of treating sewage, comprising establishing a solution of a caustic alkali in water in a treatment system which is connected to outlets of one or more receivers for sewage and to flushing inlets of the receivers, the concentration of caustic alkali being sufficient to make the solution germicidal; delivering the solution from the system to the inlets as required, and thereupon receiving the resultant solution plus sewage into the system, whereupon the caustic alkali reacts with, breaks down, and sterilizes the sewage; maintaining the concentration of the solution approximately constant by supplying additional caustic alkali into the system to replace that which reacts with the sewage; maintaining the total quantity of liquid in the system approximately constant; and accelerating the breaking down of cellulose matter included in the sewage by passing the solution plus sewage through a comminutor.

3,401,116
METHOD OF CHLORINATING WATER IN A RESERVOIR AND APPARATUS THEREFOR

David A. Stanwood, El Monte, Calif., assignor to Swimquip, Inc., El Monte, Calif., a corporation of California
Filed Sept. 29, 1966, Ser. No. 583,028
20 Claims. (Cl. 210—62)

18. The method of chlorinating water in a water reservoir which comprises placing the water of the reservoir in communication with an enclosed tank which contains a compound capable of releasing chlorine gas upon contact with water, applying sufficient pressure to the reservoir water entering the tank to cause it to rise sufficiently to wet the compound to generate chlorine gas, dissolving some of the chlorine gas in the water in the tank and developing sufficient pressure of the undissolved chlorine gas in the tank to drive chlorine-containing water out of the tank and into the reservoir, and introducing water into the tank to absorb undissolved gas in the tank and to cause water to rise again in the tank to wet the chlorine compound again to generate more chlorine gas, and repeating the cycle.



3,401,117
REACTION PRODUCTS OF METAL PETROLEUM SULFONATE, MALEIC ANHYDRIDE AND AN AMINE AS LUBRICANT ADDITIVES

Sidney Schiff, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Nov. 3, 1966, Ser. No. 591,685
12 Claims. (Cl. 252—33)

Superior additives for lubricants are provided by a process comprising interreacting a metal petroleum sulfonate, a maleic anhydride, and an amine. Lubricating oil compositions containing said additives are also provided.

3,401,118
PREPARATION OF MIXED ALKENYL SUCCINIMIDES

George J. Benoit, Jr., San Anselmo, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 536,306, Mar. 22, 1966. This application Sept. 15, 1967, Ser. No. 668,220
5 Claims. (Cl. 252—51.5)

Mixed alkenyl succinimides are prepared by reacting relatively high molecular weight polyisobutenyl succinic anhydride with about an equal molar quantity of tetraethylenepentamine and reacting products so obtained with relatively low molecular weight polyisobutenyl succinic anhydride. The relatively high molecular weight polyisobutenyl succinic anhydride constitutes from about 50 to about 98 mol percent of the total polyisobutenyl succinic anhydride.

3,401,119
QUATERNARY AMMONIUM COMPOUNDS AND PROCESS OF MAKING

Phillip A. Froehlich, Cincinnati, Ohio, assignor to Emery Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Feb. 16, 1965, Ser. No. 433,156
3 Claims. (Cl. 252—117)

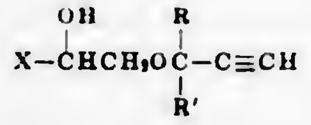
A process for preparing quaternary ammonium compounds which comprises reacting an acylated tertiary amine such as N,N-dimethylamino propylamine, or N-methyl, N-ethyl oleylamine with a quaternizing agent such as diethyl sulphate in the presence of a molten fatty acid.

3,401,120
CORROSION INHIBITORS

Max Eugene Chiddix and Robert W. Wynn, Easton, Pa., and Edward O. Leonard, Bound Brook, N.J., assignors to GAF Corporation, a corporation of Delaware
No Drawing. Filed Oct. 23, 1965, Ser. No. 504,056
11 Claims. (Cl. 252—146)

1. A composition consisting essentially of a normally corrosive aqueous solution containing about 1–50% of a non-oxidizing acid having dissolved therein a corrosion inhibiting amount of a compound selected from the group consisting of:

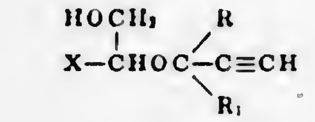
I.



$$X-\overset{OH}{\overset{|}{C}}HCH_2O\overset{R}{\underset{R'}{C}}-C\equiv CH$$

and

II



$$X-\overset{HOCH_2}{\overset{|}{C}}HOC\overset{R}{\underset{R_1}{}}-C\equiv CH$$

where R and R′ are hydrogen or alkyl of 1–6 carbon atoms, and X is phenyl, phenyl-substituted R, R-substituted phenyl or OR-substituted phenyl.

3,401,121
PROCESS FOR PREPARING MOLECULAR SIEVES

Curtis H. Elliott, Jr., Baltimore, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Oct. 21, 1965, Ser. No. 500,295
4 Claims. (Cl. 252—184)

A method for preparing molecular sieves wherein excess alkaline reactants are removed by washing a molecular sieve reaction slurry with an aqueous solution of an alkali metal bicarbonate. This washing procedure efficiently reduces the pH of the molecular sieve slurry and enhances the filtration characteristics thereof.

3,401,122
PROCESS FOR PRODUCING DENSE PARTICLES OF OXIDES OF ACTINIDES USABLE AS FUELS FOR NUCLEAR REACTORS

Guido Cogliati, Ruggero De Leone, Enzo Mezi, Giancarlo Scibona, and Renato Lanz, Rome, Italy, assignors to Comitato Nazionale per l'Energia Nucleare, Rome, Italy
No Drawing. Filed June 15, 1965, Ser. No. 464,218
Claims priority, application Italy, June 24, 1964, 13,510
8 Claims. (Cl. 252—301.1)

Ceramic nuclear fuels are produced from a starting product consisting of a colloidal solution having a ratio nitrate to metals ranging from 0.5 to 1.8. The transformation of the colloidal solution into a gel is obtained by extracting the nitrates through anionic exchange with a liquid anionic exchanger contained in a water-immiscible solvent into which the colloidal solution is sprayed or dispersed which contains the actinides. The process is applicable both to thorium and to uranium and plutonium.

3,401,123
PROCESS FOR MAKING CASE-HARDENED CAPSULES AND ITS CAPSULE PRODUCT

Carl Brynko, West Webster, N.Y., and Joseph A. Bakan, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
No Drawing. Continuation-in-part of application Ser. No. 95,785, Mar. 15, 1961. This application Apr. 27, 1967, Ser. No. 634,107
9 Claims. (Cl. 252—316)

A method is provided for pyrolyzing proteinaceous material (such as gelatin) in capsule walls in order to retard swelling of the capsule walls and loss of contents when the walls are exposed to aqueous environments. Capsules which contain partially-water-soluble nuclei within walls which have been pyrolyzed resist swelling and yield their contents, by leaching action in an aqueous environment, only after a delayed time, during which delayed time the treated capsule walls become swollen. Pyrolysis is characterized and indicated by a scorched, browned, or toasted coloration in capsule walls treated by the subject invention.

3,401,124
RECOVERING ENERGY FROM FLUE GAS

John E. Goulden, Edison Township, Middlesex County, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Oct. 26, 1964, Ser. No. 406,494

13 Claims. (Cl. 252—417)

1. A method for recovering energy from hot flue gas under superatmospheric pressure leaving a catalyst regeneration zone and utilizing the recovered energy to supply at least part of the combustion supporting regenerating gas to be supplied to the regeneration zone, which comprises recovering flue gas from a catalyst regeneration zone, passing said flue gas to an expansion turbine, expanding said flue gas to a lower pressure in said turbine to provide power which is used to drive a gas compressor connected to said turbine to supply only a portion of said combustion supporting regenerating gas under a high pressure sufficient to be supplied to said regeneration zone, recovering expanded flue gas from said turbine at an elevated temperature, generating steam with said expanded flue gas, employing steam generated from said expanded flue gas to provide another portion of regenerating gas under an intermediate pressure, utilizing a motor driven by electricity from an external source to drive a gas compressor to compress an additional portion of regenerating gas to said intermediate pressure, combining the compressed regenerating gas obtained from using said generated steam with the compressed regenerating gas obtained from said electrically driven motor, subjecting said combined regenerating gas to compression to said high pressure sufficient to be supplied to said regeneration zone by utilizing a motor driven by electricity generated from energy supplied by said turbine, combining said combined compressed regenerating gas with said first mentioned compressed portion of regenerating gas at said high pressure and utilizing the last mentioned combination of gas as the combustion supporting regenerating gas under high pressure supplied to said regeneration zone.

3,401,125
COPRECIPITATION METHOD FOR MAKING MULTI-COMPONENT CATALYSTS

Joseph Jaffe, Berkeley, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 369,583, May 22, 1964. This application July 29, 1966, Ser. No. 568,760

The portion of the term of the patent subsequent to Oct. 18, 1983, has been disclaimed

4 Claims. (Cl. 252—439)

Method for producing a coprecipitated solid, comprising coprecipitating a mixture of at least three different metal compounds at a pH of about 5.5 to 8, said compounds including a metal compound having hydrogenating activity, a metal chloride, and a titanium compound.

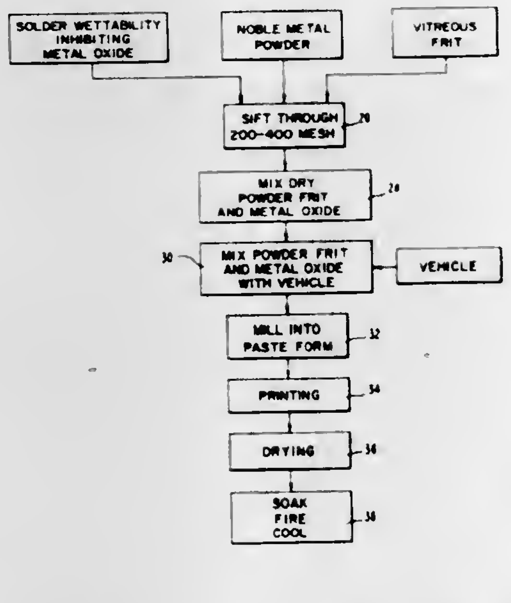
3,401,126

METHOD OF RENDERING NOBLE METAL CONDUCTIVE COMPOSITION NON-WETTABLE BY SOLDER

Lewis F. Miller, Wappingers Falls, and Richard K. Spielberger, Hopewell Junction, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 18, 1965, Ser. No. 465,035

12 Claims. (Cl. 252—514)


SOLDER WETTABILITY INHIBITING METAL OXIDE
NOBLE METAL POWDER
VITREOUS FRIT
SIFT THROUGH 200-400 MESH
20
MIX DRY POWDER FRIT AND METAL OXIDE
28
30
MIX POWDER FRIT AND METAL OXIDE WITH VEHICLE
VEHICLE
MILL INTO PASTE FORM
32
PRINTING
34
DRYING
36
SOAK FIRE COOL
38

A conductive metallizing composition which is adapted to be mixed with a non-reactive bonding frit and an inert liquid vehicle, deposited on an insulating substrate and fired to form a conductive element thereon is rendered not wettable by lead-tin solder by the addition of a metal oxide having a melting point greater than about 1000° C. and a powder oil absorption greater than about 10 lbs./100 lbs. or a material which converts during firing to form such metal oxide.

3,401,127

FLAME-RETARDANT SYNTHETIC RESIN COMPOSITION

Robert James Stephenson, Cwmbran, England, assignor to Monsanto Chemicals Limited, London, England, a British company

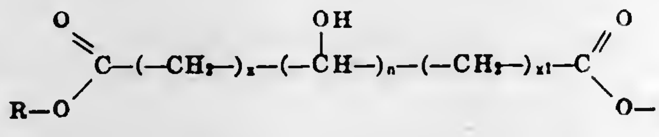
No Drawing. Filed Oct. 31, 1963, Ser. No. 320,500

Claims priority, application Great Britain, Dec. 13, 1962, 47,039/62

6 Claims. (Cl. 260—2.5)

1. A flame-retardant synthetic resin composition comprising a synthetic resin which is the polymerization product of at least one ethylenically unsaturated hydrocarbon monomer and a flame retarding agent selected from the class consisting of:

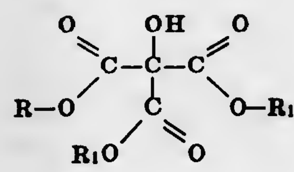
(a)



$$\mathrm{R{-}O{-}C({=}O){-}({-}CH_2{-})_x{-}({-}CH(OH){-})_n{-}({-}CH_2{-})_{x_1}{-}C({=}O){-}O{-}R_1}$$

and

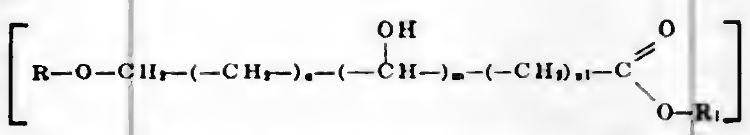
(b)



$$\mathrm{R{-}O{-}C({=}O){-}C(OH)(C({=}O){-}OR_1){-}C({=}O){-}O{-}R_1}$$

[and]

(c)



$$\left[\mathrm{R{-}O{-}CH_2{-}({-}CH_2{-})_x{-}({-}CH(OH){-})_n{-}({-}CH_2)_{x_1}{-}C({=}O){-}O{-}R_1}\right]$$

wherein, in each of the above formulae, R is a haloalkyl of from 1 to 4 carbon atoms and at least one halogen wherein in each case the halogen is selected from the class consisting of bromine and chlorine, R_1 is selected from the class consisting of hydrogen and R, n is an integer of from 1 to 4, and x and x_1 are, independently, from 0 to 2.

3,401,128

POLYURETHANE FOAM PRODUCT AND METHOD OF MAKING SAME

Samuel M. Terry, Ann Arbor, Mich., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan

Filed Feb. 8, 1965, Ser. No. 430,890

7 Claims. (Cl. 260—2.5)

A polyurethane foam product and method for making the product wherein comminuted polyurethane foam particles are coated with a solid, nonfoam polyurethane material producing bonding between the foam particles, the foam particles being in compression in a common direction.

3,401,129

FLOOR TILE COMPRISING POLYVINYL CHLORIDE, CHLORINATED POLYETHYLENE AND FILLER

John V. McGinley, Hackensack, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Apr. 3, 1964, Ser. No. 357,099

8 Claims. (Cl. 260—23)

The invention more specifically relates to the provision of new and improved vinyl flooring compositions of high filler loading by incorporating in the vinyl chloride polymer binder a minor portion between about 5% to 30% of a semicrystalline chlorinated high molecular weight linear polyethylene having chlorine content between about 35–55% by weight, the incorporation of said chlorinated polyethylene also beneficially improving the manufacture of vinyl flooring while providing products of excellent overall properties and reduced cost based on the high filler loading content thereof.

3,401,130

PROCESS OF PREPARING OIL-CONTAINING WATER SOLUBLE BINDERS SUITABLE FOR THE PREPARATION OF BINDER COMPOSITIONS

Christiaan Korf, Caan van Necklaan, Rijswijk, Netherlands, assignor to Archer Daniels Midland Company

No Drawing. Continuation of abandoned application Ser. No. 482,612, Aug. 25, 1965, which is a continuation-in-part of application Ser. No. 124,012, July 14, 1961. This application July 7, 1967, Ser. No. 651,948

Claims priority, application Netherlands, July 16, 1960, 253,889

8 Claims. (Cl. 260—23)

Novel water-dispersible binders for coating compositions prepared from mixtures of drying or semi-drying oils with vinyl substituted aromatic compounds. The oil containing the vinyl compound is heated with an unsaturated dicarboxylic acid or anhydride mixed with a lyotropically acting organic solvent and substantially or totally neutralized with a nitrogen containing base.

3,401,131

HOT MELT ADHESIVES CONTAINING POLYDIMETHYL ALPHA-METHYL STYRENE RESIN

Gerald D. Mase, Homewood, Ill., and Paul O. Powers, North Plainfield, N.J., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Sept. 19, 1966, Ser. No. 580,197

4 Claims. (Cl. 260—28.5)

Hot melt adhesives and hot melt coatings are made from a combination of paraffin wax, an ethylene-vinyl acetate copolymer and a polydimethyl alpha-methyl styrene resin.

3,401,132

MODIFIED ETHYLENE-VINYL ACETATE COPOLYMER-PETROLEUM WAX COMPOSITION

Terry R. Eihl and Robert G. Weisz, Park Forest, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Sept. 19, 1966, Ser. No. 580,214

10 Claims. (Cl. 260—28.5)

Modified ethylene-vinyl acetate copolymer-petroleum wax compositions are made by inclusion of dimethyl alpha-methyl styrene/alpha-methyl styrene copolymers.

3,401,133

FILM-FORMING POLYURETHANE LATICES

Oscar M. Grace, Madison Heights, and James M. McClellan, Jr., Detroit, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Aug. 24, 1965, Ser. No. 482,260

14 Claims. (Cl. 260—29.2)

1. Film-forming polyurethane latices obtained by the chain extension of an NCO-terminated prepolymer prepared by the reaction of an organic diisocyanate with a polyalkylene ether polyol having a functionality greater than two and an equivalent weight between 500 and 2500 said polyol prepared from an alkylene oxide having at least 3 carbon atoms or a mixture of alkylene oxides containing at least 50% by weight of an alkylene oxide having at least 3 carbon atoms with a mixture of an organic compound having one active hydrogen atom and an organic compound having at least two active hydrogen atoms, said mixture comprising from 0.05 to 0.5 equivalent per equivalent of isocyanate of an organic compound having one active hydrogen atom.

3,401,134

POLYMER LATICES OF HIGH VISCOSITY

Joel Fantl, Frank J. Hahn, and John F. Heaps, Springfield, and Charles R. Williams, Longmeadow, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 161,301, Dec. 21, 1961. This application Sept. 24, 1964, Ser. No. 399,062

The portion of the term of the patent subsequent to Jan. 3, 1984, has been disclaimed

3 Claims. (Cl. 260—29.6)

1. An aqueous latex prepared by the aqueous emulsion polymerization of a monomer mixture of (A) from about 5.5 to 20 percent by weight of an alpha,beta-ethylenically unsaturated carboxylic acid and (B) at least one vinylidene monomer which is interpolymerizable therewith, in which polymerization the addition of at least a portion of the acid monomer to the emulsion is delayed until at least 70 percent by weight of the total weight of monomers have polymerized; said acid monomer constituting from 18 to 75 percent by weight of the remaining monomers so added to the emulsion; said polymer particles having an average particle size of from 0.01 to 1.0 micron.

3,401,135

ADHESIVE COMPOSITION OF AN INTERPOLYMER CONTAINING ETHYLENE GLYCOL MONOMETHACRYLATE ADMIXED WITH A BLOCKED POLYISOCYANATE

Yukio Sato, Osaka, Japan, assignor to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed July 20, 1965, Ser. No. 473,476

Claims priority, application Japan, July 21, 1964, 39/41,695

11 Claims. (Cl. 260—29.6)

An adhesive composition consisting substantially of (A) about 70 to 95 weight parts of latex containing about 20 to 60 weight parts of copolymer obtained by the copolymerization of (a) about 70 to about 99.5% weight percent of a polymerizable compound having an olefinic double bond, (b) about 0.25 to about 15 weight percent of acrylic or methacrylic acid, and (c) about 0.25 to about 15 weight parts of ethylene glycol monomethacrylate, and (B) about 5 to about 30 weight parts of blocked polyisocyanate, has been found to be an excellent adhesive, particularly because of its long pot life, superior adhesive strength, and ability to withstand dry-cleaning liquids.

3,401,136

DIPENTENE POLYMER COMPOSITIONS

Henry G. Sellers, Jr., Pensacola, Fla., assignor to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Jan. 8, 1964, Ser. No. 336,352

7 Claims. (Cl. 260—29.8)

Dipentene polymer compositions that have softening points in the range of 0° C. to 85° C. and that are useful as components of hot melt coating compositions, adhesives, and the like contain as modifier at least 5%, and preferably 20% to 80%, of oligomers of cyclic monoterpene hydrocarbons, such as dipentene dimer and/or trimer

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3,401,137

POLYESTERURETHANE COMPOSITION AND METHOD OF PREPARATION

Anthony F. Finelli, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Continuation of application Ser. No. 274,322, Apr. 19, 1963. This application Sept. 28, 1966, Ser. No. 582,521

13 Claims. (Cl. 260—30.6)

This invention relates to a method of producing a rubbery polyurethane composition which has exceptionally good low temperature properties by reacting about 1.5 to 2.5 mols of an organic polyisocyanate containing essentially two isocyanate groups with one mol of a dihydroxy polyester mixture comprising about 20 to 70 mole percent of polytetramethylene adipate of about 750 to 2500 molecular weight and about 80 to 30 mol percent of an alkylene adipate of about 1000 to 3000 molecular weight, where the alkylene radical contains from 2 to 3 carbon atoms, inclusive, and curing with about .5 to .9 mol of an aromatic diamine for each mol of isocyanate in excess of that equivalent to the dihydroxy terminated polyester.

3,401,138

PREPARATION OF POLYVINYL CHLORIDE PLASTISOLS AND PRODUCTS

David Ralph Brady, Grosse Pointe Farms, Mich., assignor, by mesne assignments, to Sheller-Globe Corporation, a corporation of Ohio

No Drawing. Filed June 15, 1966, Ser. No. 557,613

1 Claim. (Cl. 260—31.8)

1. A process of preparing a cross-linking and irreversible thermosetting polyvinyl chloride resin dispersion plastisol which process comprises mixing together at a tem-

perature below about 50° F. a composition comprised of polyvinyl chloride resin, plasticizer, 1,3-butylene dimethacrylate monomeric ester, stabilizer, activator, ultraviolet protector, and optical brightener; wherein said composition is comprised of the following based on 500 parts by weight of polyvinyl chloride resin: between about 125 and about 225 parts plasticizer, between about 225 and about 125 parts 1,3-butylene dimethacrylate, about 10 parts stabilizer, about 5 parts activator, about ½ part ultraviolet absorber, and about ½ part optical brightener; said process being characterized in that said plasticizer is a mixture of butyl benzyl phthalate and a permanent plasticizer having the following properties:

Acidity	0.60 meg./100 g. max.
Appearance	Clear, oily liquid.
Color, APHA	150 max.
Moisture (KF in methanol) percent	0.15 max.
Odor	Slight characteristic.
Refractive index, (at 25° C.)	1.4943.
Specific gravity (25/25° C.)	1.046–1.052.
Density (lbs./gal. at 25° C.)	8.72.
Pour point (° C.)	—1.
Viscosity cks:	
@25° C.	556.
@37.8° C.	243.
@98.9° C.	21.2.
Flash point, ° F.	4.75.
Fire point, ° F.	535.
Solubility in water (25° C.)	Practically insoluble.

and said activator is a benzyl peroxide-tricresyl phosphate paste, said ultraviolet arsorber is 2(2'-hydroxy 5'-methylphenyl)benzotriazole, and said optical brightener is a 2-(stilbyl-4'')-(4,5-arylo)-1,2,3-triazole compound.

3,401,139
FLEXIBLE PHENOLIC BAKING RESINS PREPARED BY REACTING A POLYHYDRIC PHENOL ETHER, PHENOL AND AN ORGANIC SOLUTION OF FORMALDEHYDE

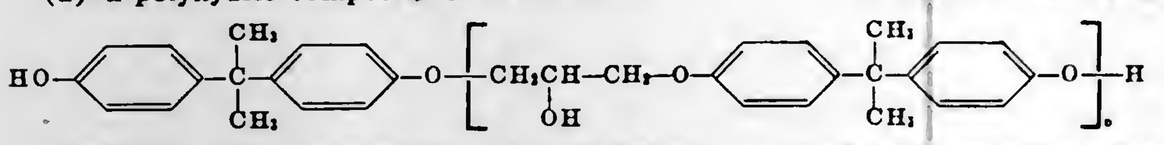
William I. Wertz, East Brunswick, and Stanley H. Richardson, Millington, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation of application Ser. No. 246,665, Dec. 24, 1962. This application Aug. 17, 1967, Ser. No. 661,463

14 Claims. (Cl. 260—33.4)

1. A curable phenolic composition consisting essentially of the reaction product of

(a) a polyhydric compound of the formula



wherein *n* is an integer from 1 to 2 inclusive,

(b) phenol wherein the amount of phenol ranges from 10 to 40 percent by weight of the polyhydric compound and

(c) a solution of formaldehyde in an organic solvent, said solvent being volatile at the curing temperatures of the composition, having a formaldehyde content of at least one mole per mole of phenolic hydroxyl of components (a) and (b) and said reaction being carried out at temperatures ranging from about 176° F. to about 320° F. in the presence of an alkaline catalyst.

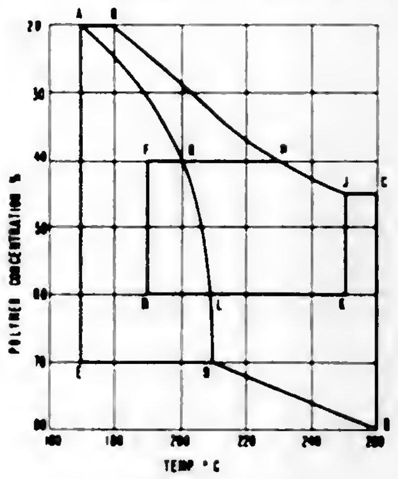
3. The composition according to claim 1 wherein the amount of phenol ranges from about 20 to about 30 percent by weight of the polyhydric compound and the solvent is an alkyl alcohol having from 1 to 6 carbon atoms inclusive.

3,401,140
METHYLENE CHLORIDE SOLUTION OF POLYETHYLENE TEREPHTHALATE

Herbert Blades, Wilmington, Del., and James R. White, Chapel Hill, N.C., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Continuation of application Ser. No. 501,610, Oct. 22, 1965. This application Mar. 8, 1967, Ser. No. 633,324

10 Claims. (Cl. 260—33.8)



Polyethylene terephthalate solutions in methylene chloride can be prepared that are useful for the preparation of fibers and other shaped articles.

3,401,141
POLYURETHANE WITH ACETYLENE BLACK AS THIXOTROPIC AGENT

Richard H. Toth, Port Clinton, Ohio, assignor to The Standard Products Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed June 14, 1965, Ser. No. 463,928

6 Claims. (Cl. 260—37)

A moisture curable polyurethane sealant composition having improved properties due to the inclusion of from about 2.5% to about 15% by weight of composition, of acetylene black as a thixotropic agent.

3,401,142
MASS COLORATION OF POLYESTER RESINS

Francis Bowman, Albert Charles Cooper, and Francis Irving, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Mar. 23, 1966, Ser. No. 536,659

3 Claims. (Cl. 260—40)

Process for mass-coloring polyesters by mixing the polyester with an anthraquinone, anthrapyridone, isothiazoloanthrone or phthaloylacridone dyestuff containing from 1–4 anilino or phenylthio groups, each of which is substituted by one or two hydroxyalkylcarbonyl or hydroxyalkoxyalkylcarbonyl groups.

3,401,143
METHOD OF MAKING PIGMENTED POLYESTERURETHANES AND SAID PRODUCT

Anthony F. Finelli and James C. West, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Continuation of application Ser. No. 536,973, Mar. 24, 1966. This application May 10, 1967, Ser. No. 637,610

7 Claims. (Cl. 260—40)

This invention relates to a method of forming non-

discoloring polyesterurethanes which are pigmented to give the desired color match characteristics relative to pigmented lacquers where the pigmented lacquers are the normal commercial acrylic resin, vinyl acrylic resin and nitrocellulose lacquers and the nondiscoloring polyesterurethane is the reaction product of an organic polyisocyanate having all the isocyanate groups attached to nonbenzoid carbon atoms and the excess isocyanate is at least partially reacted with a nonaromatic primary diamine.

3,401,144
STABILIZED POLYESTERURETHANES

J. W. Britain, New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Dec. 19, 1966, Ser. No. 602,577

10 Claims. (Cl. 260—45.8)

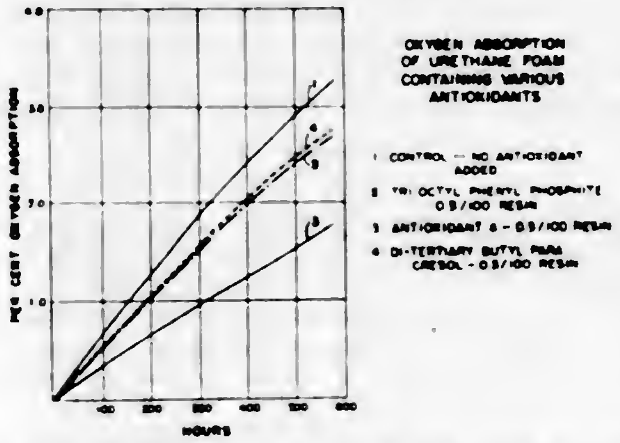
Polyesterurethanes stabilized against hydrolysis and aging by use of alkylene carbonate additives.

3,401,145
STABILIZED POLYURETHANE COMPOSITIONS

Thomas H. Rogers, Jr., Akron, and Newell R. Bender, Cuyahoga Falls, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Sept. 25, 1961, Ser. No. 140,590

1 Claim. (Cl. 260—45.95)



1. A method of preparing a heat and weather resistant polyurethane elastomer comprising the steps of mixing and reacting (1) about 0.5 mol to 12 mols of an organic diisocyanate, (2) about one mol of a polyalkylene ether polyol having a molecular weight of at least 500, and (3) about 0.3 to 5% by weight based on the weight of said polyol of an antioxidant being a mixture obtained by reacting phenol with styrene where the concentration of styrene is about 1 to 2 mols for each mol of phenol.

3,401,146
HARDENABLE AND CURED EPOXY RESIN COMPOSITIONS

Marwan R. Kamal, John R. Nazy, and Harold A. Wittcoff, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Oct. 24, 1966, Ser. No. 588,738

17 Claims. (Cl. 260—47)

1. A hardenable composition comprising a mixture of of (1) an epoxy resin having a plurality of 1,2-epoxide groups and (2) a derivative of (a) an amine having at least one free secondary amine group and at least two primary amine groups, the said primary amine groups being blocked by ketimine groups, and (b) a carboxylic acid compound selected from the group consisting of carboxylic acids and anhydrides, esters and acid halides of carboxylic acids, said derivatives having been prepared by reacting the polyamine with the carboxylic acid compound under amide forming conditions to form an amide linkage from the secondary amine group and the carboxylic acid compound.

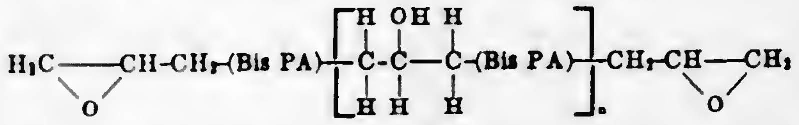
3,401,147
EPOXY RESINS FROM BISPHENOLS OF 3,9-DIVINYL SPIROBI (m-DIOXANES)

Samuel G. Smith, Jr., Hillsborough Township, Ralph F. Sellers, Somerset, and Allison S. Burhans, Millington, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 269,790, Apr. 1, 1963. This application Oct. 17, 1966, Ser. No. 586,931

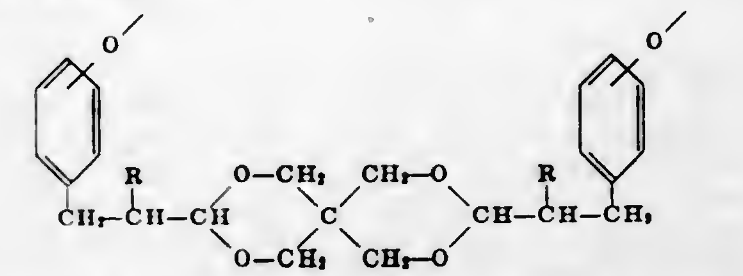
9 Claims. (Cl. 260—47)

1. The epoxy resin having the general formula



$$\underbrace{H_2C-CH}_{O}-CH_2-(\text{Bis PA})-\left[\underset{H}{\overset{H}{C}}-\underset{H}{\overset{OH}{C}}-\underset{H}{\overset{H}{C}}-(\text{Bis PA})\right]_n-CH_2-\underbrace{CH-CH_2}_{O}$$

wherein *n* has a value of 0 to 10 and "Bis PA" represents the structure



wherein R is selected from the group consisting of hydrogen, alkyl having from 1 to 6 carbon atoms and halogen.

3,401,148
METHOD OF PREPARING SULFUR-CONTAINING POLYESTERS

Richard J. Schlott and Frank Scardiglia, Arlington Heights, and Eugene P. Goldberg, Highland Park, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Dec. 31, 1964, Ser. No. 422,505

5 Claims. (Cl. 260—49)

A method of making superpolyesters containing sufonate or thiocarbonate units from bisphenols and diacid chlorides via a solution process utilizing aliphatic tertiary amines as the acid acceptor.

3,401,149
PROCESS FOR THE PREPARATION OF ACROLEIN COPOLYMERS

Robert Buning, Oberlar, and Gerhard Bier, Troisdorf, Germany, assignors to Dynamit Nobel A.G., Troisdorf, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 424,138, Jan. 7, 1965. This application July 3, 1967, Ser. No. 650,623

Claims priority, application Germany, Jan. 11, 1964, D 43,330

3 Claims. (Cl. 260—73)

This specification describes a novel process for producing polymers of acrolein and a vinyl alkyl ether which may have one or more additional comonomers. The polymerization is carried out in the presence of cyclohexane sulfonyl acetyl peroxide catalyst.

3,401,150
METHOD OF PREPARING CONDENSATION POLYESTER RESINS

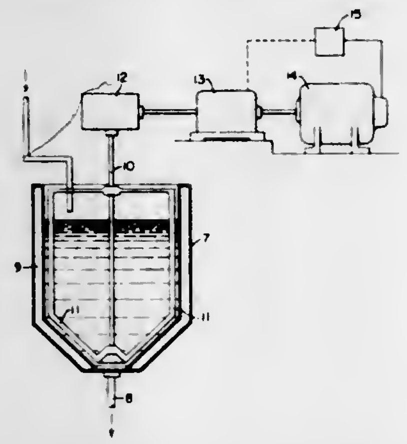
William J. Carney, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Continuation of application Ser. No. 23,451, Apr. 20, 1960. This application July 2, 1965, Ser. No. 477,063

7 Claims. (Cl. 260—75)

1. The process of preparing high molecular weight condensation polyester resins which comprises subjecting a polyester-forming reaction mixture to condensation at

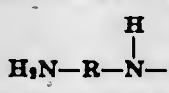
elevated temperature and reduced pressure in liquid state, said mixture increasing in viscosity as it condenses while mixing said mixture with a rotating agitator and supplying power to the agitator at an increasing energy level until the power required to turn said agitator at the rate of rotation being used attains a desired level and thereafter turning said agitator by supplying energy to said agitator at a constant rate to turn said agitator while slowly reducing the rate of rotation of the agitator to maintain the energy input constant as the reaction mixture continues to increase in viscosity until a high molecular weight polymeric polyester is formed.



3,401,151
POLYURETHANES HAVING IMPROVED DYEABILITY

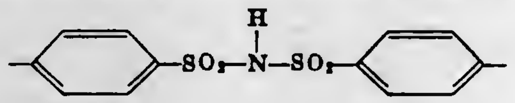
Horst Wieden, Dormagen, Wilhelm Thoma, Cologne-Flittard, Harald Oertel, Leverkusen, Wolfgang Rellensmann, Dormagen, and Günther Nischk, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Oct. 15, 1965, Ser. No. 496,711
Claims priority, application Germany, Oct. 19, 1964, F 44,261
12 Claims. (Cl. 260—75)

Polyurethane elastic filaments are prepared by (1) reacting at a temperature below about 150° C (i) a substantially linear polyhydroxy compound having a molecular weight between about 800 and about 3,200 and a melting point below 60° C. with (ii) an excess of an organic diisocyanate to prepare an —NCO terminated prepolymer; (2) dissolving the prepolymer of step (1) in a solvent which will dissolve polyacrylonitrile and reacting said prepolymer at a temperature between about −10° C. and about 100° C. with from 80% to 130% based on the free —NCO groups in said prepolymer, with an extended system comprising (a) 50 to 98 mol percent of a difunctional chain extender having a molecular weight below about 500 and (b) 2 to 50 mol percent of a difunctional co-chain extender having the formula:

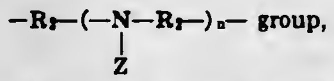


$$H_2N-R-\overset{\substack{H\\|}}{N}-R_1$$

or an alkali metal salt thereof, wherein R is selected from the groups consisting of (i) a diphenylene-disulfonic acid group, (ii) a piperazine-di-N-alkylene group, (iii) an alkylene group having 2 to 8 carbon atoms, (iv) a



group, and, (v) an



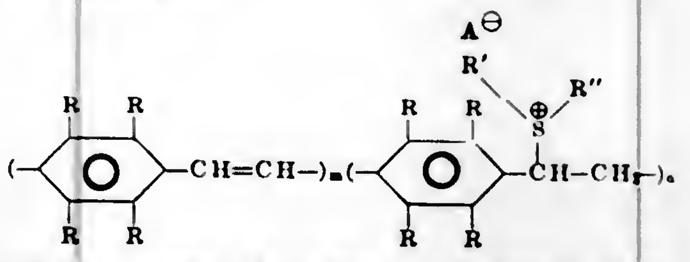
$$-R_2-(-\underset{\substack{|\\Z}}{N}-R_2-)_n-\text{ group,}$$

wherein R_2 is an alkylene group having 2 to 8 carbon atoms; wherein Z is selected from the group consisting of an alkyl group and an alkyl sulfonic acid group; wherein n is an integer of 1 or 2; and wherein R_1 is selected from the group consisting of hydrogen, an alkyl-sulfonic acid group, and an alkyl group having 2 to 8 carbon atoms; to form a polyurethane, said (b) being present in such quantities such that the polyurethane contains between about 2 to 300 milliequivalents/kg. of polyurethane of $—SO_3^{\ominus}$ groups or $—SO_2—N^{\ominus}—SO_2$ groups; and (3) thereafter spinning said filament.

3,401,152
POLYELECTROLYTES FROM BIS SULFONIUM SALTS

Ritchie A. Wessling, Midland, and Ray G. Zimmerman, Shepherd, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Nov. 3, 1966, Ser. No. 591,706
8 Claims. (Cl. 260—78.4)

1. A water-soluble polyelectrolyte having recurring units of the structure



wherein R represents hydrogen or the methyl group, R′ and R″ each represents an alkyl group containing from 1 to 4 carbon atoms, A represents a counterion and m and n are integers which show the ratio of the respective units in the recurring structure, the ratio of m to n ranging from about 1 to 10 to about 3 to 1 or to the ratio corresponding to the point of incipient water insolubility

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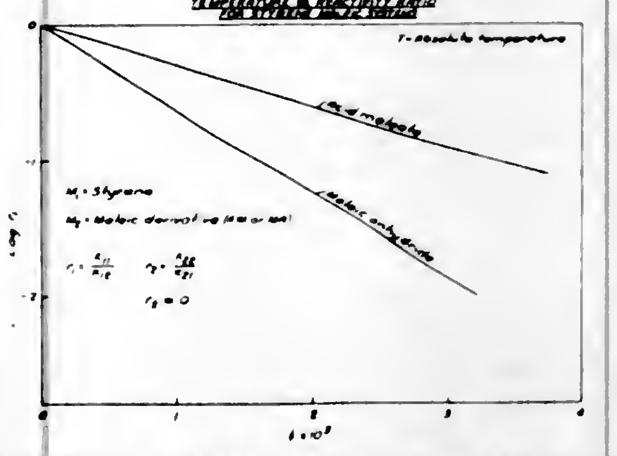
3,401,153
POLYMERIZATION PROCESS FOR PREPARING HOMOGENEOUS VINYLIDENE AROMATIC-MALEIC COMPOUND COPOLYMERS

Robert L. Zimmerman, Midland, and Dale M. Pickelman, Auburn, Mich., assignors to The Dow Chemical Company. Midland, Mich., a corporation of Delaware
Filed Aug. 7, 1964, Ser. No. 388,101
5 Claims. (Cl. 260—78.5)



This invention relates to a three step batch procedure for preparing homogeneous vinylidene aromatic-maleic anhydride copolymers containing more than 80% vinylidene aromatic compound.

3,401,154
COPOLYMERS OF ROSIN CONTAINING MONOMERS AND VINYL MONOMERS

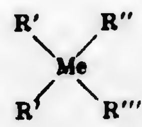
Norman C. MacArthur, Avondale, Pa., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed May 6, 1964, Ser. No. 365,511
16 Claims. (Cl. 260—78.5)

High molecular weight and stable rosin rich copolymers and terpolymers are provided by the polymerization of the reaction product of rosin acid partial esters of a polyol and an α,β-unsaturated dicarboxylic acid or anhydride with at least one polymerizable monomer containing a vinyl group.

3,401,155
PROCESS FOR THE PRODUCTION OF FLUORINATED POLYMERIC MATERIALS

Giancarlo Borsini and Mario Modena, Milan, and Carlo Nicora, Varese, and Mario Ragazzini, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy
No Drawing. Filed Oct. 4, 1966, Ser. No. 584,094
Claims priority, application Italy, Oct. 4, 1965, 22,092/65
10 Claims. (Cl. 260—87.7)

A process for the production of highly linear fluorinated polymers of improved mechanical characteristics, comprising polymerizing, at low temperature, fluorine-substituted ethylene monomers in the presence of a redox catalyst comprised of (A) at least one organometallic compound of the formula:



wherein Me is a metal selected from the group consisting of germanium, tin and lead, R′ is a member selected from the group consisting of lower alkyl of up to 8 carbon atoms, aryl of up to 10 carbon atoms, cyclo-lower alkyl of up to 8 carbon atoms and lower alkaryl of up to 18 carbon atoms, and R″ and R‴ which may be the same or different are members selected from the group consisting of R′, halo, nitrate, lower alkoxy or up to 8 carbon atoms, carboxy and divalent cations of a strong inorganic acid and (B) at least one tetravalent cerium salt of a strong inorganic acid, and in the further presence of an inert solvent for the active catalyst.

3,401,156
ALKYLENEAMINE POLYMERS CONTAINING NITROFORMATE GROUPS

John R. Lovett, Edison, and Anthony J. Passannante, Metuchen, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Feb. 17, 1961, Ser. No. 90,144
9 Claims. (Cl. 260—89.7)

1. Polyalkyleneamine nitroformate.

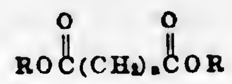
3,401,157
THREE-COMPONENT ALUMINUM-TITANIUM TETRAHALIDE CATALYSTS FOR OLEFIN POLYMERIZATION

Harry W. Coover, Jr., Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Continuation of application Ser. No. 431,700, Feb. 10, 1965. This application Feb. 21, 1967, Ser. No. 617,721
8 Claims. (Cl. 260—93.7)

A novel catalytic mixture for the polymerization of olefinic hydrocarbons of at least 3 carbon atoms to form solid crystalline polymer which catalytic mixture consists essentially of aluminum, titanium tetrahalide and an ester selected from the group consisting of

$$R-\overset{\substack{O\\\|}}{C}O(CH_2)_nO\overset{\substack{O\\\|}}{C}R$$

and



$$RO\overset{\substack{O\\\|}}{C}(CH_2)_n\overset{\substack{O\\\|}}{C}OR$$

3,401,158
CATIONIC HETEROCYCLIC DISAZO DYES FOR TEXTILE FIBERS

John G. Fisher and Clarence A. Coates, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,428
7 Claims. (Cl. 260—158)

Cationic azo compounds containing two azolyl-azo-indolyl moieties in which the nitrogen atoms of the indolyl groups are joined together by certain bisurea or bisurethane groups are useful as dyes for acrylonitrile polymer textile material.

3,401,159
BENZODIAZEPINE DERIVATIVES

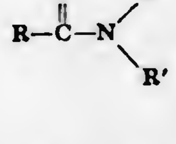
Stanley C. Bell, Philadelphia, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 134,569, Aug. 29, 1961. This application Feb. 14, 1966, Ser. No. 527,039
The portion of the term of the patent subsequent to Jan. 3, 1984, has been disclaimed
4 Claims. (Cl. 260—239.3)

The preparation of 3-acyloxy-3-alkyl-1,3-dihydro-2H-1,4-benzodiazepines, which exert anticonvulsant and ataractic effects in mammals, from 3-alkyl-1,3-dihydro 2H-1,4-benzodiazepine 4-oxides by rearrangement with a carboxylic acid anhydride is described.

3,401,160
REACTION OF STARCH WITH A SULFUR-TRIOXIDE-AMIDE COMPLEX RESULTING IN AN UNDEGRADED STARCH SULFATE

Richard G. Schweiger, San Diego, Calif., assignor to Kelco Company, San Diego, Calif., a corporation of Delaware
No Drawing. Filed May 10, 1966, Ser. No. 548,856
8 Claims. (Cl. 260—233.5)

Process for producing sulfate esters of essentially undegraded polymeric carbohydrate starches, by reacting a gelatinized starch with a sulfur trioxide-amide complex having the formula



in which R′ is a lower alkyl radical and R is selected from the group consisting of the lower alkyl radicals and hydrogen with the reaction being carried out under essentially anhydrous conditions. Sulfate esters of essentially undegraded polymeric carbohydrate starches as prepared by the above process.

3,401,161
PREPARATION OF ε-CAPROLACTAM

Jan van Westerveld and Guillaume A. T. Sligchers, Geleen, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands
No Drawing. Filed Nov. 1, 1965, Ser. No. 505,971
Claims priority, application Netherlands, Nov. 5, 1964, 6412868
6 Claims. (Cl. 260—239.3)

A process for conversion of ε-caprolactone to caprolactam by reaction with ammonia is described, using elevated temperatures and pressures in the liquid phase in an inert organic solvent, and without catalyst.

3,401,162
S-VINYLTHIAMINE DERIVATIVES

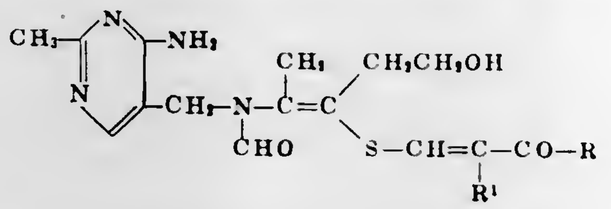
Raffaello Fusco, Milan, and Franco Tenconi, Monza, Milan, Italy, assignors, by mesne assignments, to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed June 22, 1964, Ser. No. 377,120

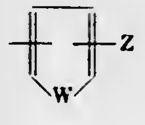
Claims priority, application Italy, June 25, 1963, 13,355/63; Nov. 20, 1963, 23,676/63

10 Claims. (Cl. 260—240)

There have been discovered new S-vinylthiamine derivatives represented by the following general formula:



wherein R^1 represents hydrogen, lower alkyl of from 1 to 3 carbon atoms or aryl and R represents alkyl, cycloalkyl or a grouping having the formula:



wherein W represents oxygen, sulphur, vinylene or azomethine and Z represents hydrogen, a halogen atom, e.g. fluorine, bromine or particularly chlorine, lower alkyl, hydroxy, lower alkoxy, mercapto-lower alkyl, amino, N-lower alkyl-amino, N,N-di-lower alkylamino, nitro, carboxy, lower carbalkoxy or cyano. The substituents attached to the ring may be in any of the available positions.

These compounds and their non-toxic acid addition salts possess remarkable vitamin B_1 activity. They are readily absorbed by oral administration and the absorption is proportional to the dosage. Thus, the compounds of the invention may provide vitamin B_1 levels in blood and organs higher than obtained with thiamine and its known derivatives. Besides, they are odorless and, therefore, particularly useful as nutritional supplements for foods and animal feedstuffs.

The compounds of the invention are also therapeutically useful for the treatment of conditions resulting from vitamin B_1 deficiency. For this purpose they can be formulated for administration by oral, parenteral or intraduodenal route together with a non-toxic pharmaceutical carrier. The compositions are in dosage unit form containing the active ingredient in an amount from 5 to 250 mg. The administration is advantageously in equal doses one or more times daily to give a daily dosage of from 15 to 1000 mg. and preferably from 30 to 500 mg.

3,401,163
PREPARATION OF METHYLENE STEROIDS

Gerald W. Krakower, Elizabeth, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 370,090, May 25, 1964. This application Oct. 21, 1965, Ser. No. 500,281

4 Claims. (Cl. 260—239.55)

This disclosure relates to a process for preparing methylene-containing compounds which may be utilized as progestational agents. The process disclosed relates to treating an unsaturated steroid with dimethylsulfoxonium methylide.

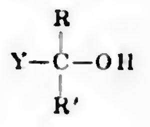
3,401,164
ADDUCTS OF HEXAFLUOROACETONE WITH N-(2-AMINOALKYL)AZIRIDINE

Stanley J. Brois, Matawan, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Jan. 3, 1966, Ser. No. 517,972

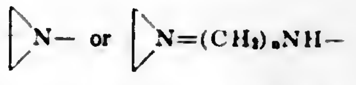
2 Claims. (Cl. 260—239)

Compounds of the general formula:



$$Y-\overset{\displaystyle R}{\underset{\displaystyle R'}{C}}-OH$$

where Y represents



groups; *n* is an integral number from 2 to 4 inclusive; residue R is haloalkyl; and R′ is an organo radical, are pesticidally active compounds, particularly as herbicides and nematocides.

3,401,165
HYDRAZONES OF 1-AMINO-4-(6,11-DIHYDRODIBENZ[b,e]OXEPIN-11-YL)PIPERAZINES

Peter Yonan, Chicago, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Aug. 13, 1965, Ser. No. 479,650

7 Claims. (Cl. 260—240)

Hydrazones obtained by the reaction of aromatic and heterocyclic aldehydes with 1-amino-4-(6,11-dihydrodibenz[b,e]oxepin-11-yl)piperazine and related compounds are described herein. These compounds are useful as anti-convulsants.

3,401,166
THERAPEUTICALLY ACTIVE BENZOTHIAZINES

John Krapcho, Somerset, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 1, 1966, Ser. No. 569,020

4 Claims. (Cl. 260—243)

This disclosure relates to compounds having a formula in accordance with Formula I below. These new compounds possess therapeutic activity and may be utilized as tranquilizers.

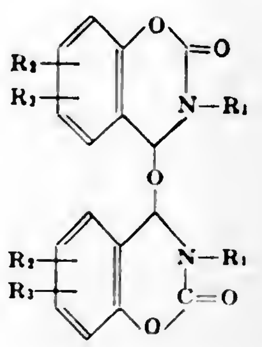
3,401,167
OXOBISBENZOXAZIN-2-ONES AND PROCESS FOR THEIR PRODUCTION

John Shavel, Jr., Mendham, and George Bobowski, Morristown, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Jan. 7, 1966, Ser. No. 519,197

7 Claims. (Cl. 260—246)

The present invention describes certain oxobisbenzoxazin-2-ones of the formula:



I

wherein R_1 is lower alkyl, lower alkenyl or cycloalkyl, R_2 and R_3 may be hydrogen, halogen, lower alkoxy or carbamoyloxy. These compounds are useful as anti-inflammatory agents.

3,401,168
3,3-DIMETHYL-8-(TERTIARYAMINOMETHYL)-2,7-DIOXASPIRO(4.4)NONANES

Burton Kendall Wasson, Valois, Quebec, and John Mulvin Parker, London, Ontario, Canada, assignors to Charles E. Frosst & Co., Montreal, Quebec, Canada, a corporation of Canada

No Drawing. Continuation-in-part of application Ser. No. 283,536, May 27, 1963. This application Dec. 2, 1965, Ser. No. 511,239

7 Claims. (Cl. 260—247.7)

Novel 3,3-dimethyl-8-(substituted-methyl)-2,7-dioxaspiro(4.4)nonanes are described which exhibit sedative properties. They are prepared by treatment of 2-methallyl-2-allyl-1,3-propanediol with bromine followed by treatment with quinoline to give 3,3-dimethyl-8-bromomethyl-2,7-dioxaspiro(4.4)nonane. Treatment of this 8-bromomethyl intermediate with amines provides 8-aminomethyl compounds.

3,401,169
METHOD OF PREPARING WAX-POLYETHYLENE BLENDS

Ivor W. Mills, Glenolden, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Mar. 19, 1965, Ser. No. 441,299

21 Claims. (Cl. 260—285)

Wax-polyethylene blends are improved with regard to the settling of the polyethylene by the addition of certain surface active agents.

3,401,170
d,l-2,7-DIHYDROYOHIMBANES AND PROCESS FOR THEIR PRODUCTION

John Shavel, Jr., Mendham, and Glenn Curtis Morrison, Dover, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Mar. 3, 1966, Ser. No. 531,349

3 Claims. (Cl. 260—288)

This invention concerns a new class of d,l-2,7-dihydroyohimbanes prepared by contacting a tryptamine with 2-formyl-cyclohexane acetic acid at subambient temperature, reducing the product with a borohydride, acidifying and heating to obtain a tetracyclic lactam, dehydrating said lactam and contacting the resulting dehydroyohimbane salt with zinc in perchloric acid which are useful in cardiac arrhythmias.

3,401,171
2-AMIDOBENZIMIDAZOLES

Paul N. Craig, Ambler, and John R. E. Hoover, Glenside, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Original application Mar. 11, 1966, Ser. No. 533,457, now Patent No. 3,336,191, dated Aug. 15, 1967. Divided and this application May 18, 1967, Ser. No. 639,297

8 Claims. (Cl. 260—309.2)

Novel 2-amidobenzimidazoles, which may be optionally substituted on the benzene nucleus, having activity against helminthiasis in animals are disclosed. A process for their preparation involves reacting 2-aminobenzimidazole with the appropriate acyl halide to give the corresponding 2-amidobenzimidazole. An alternative process involves starting with cyanamide, reacting it with an acyl halide, followed by reaction with an appropriate substituted o-phenylenediamine.

3,401,172
4-METHYL-5-(β-CHLOROETHYL)OXAZOLE

Peter Elias Saeter, Fredrikstad, Norway, and Ulf Henrik Anders Lindberg, Sodertalje, Sweden, assignors to Aktiebolaget Astra, Sodertalje, Sweden, a company of Sweden

No Drawing. Continuation of application Ser. No. 324,209, Nov. 18, 1963. This application July 25, 1967, Ser. No. 655,964

2 Claims. (Cl. 260—307)

The compound 4-methyl-5-(β-chloroethyl)oxazole, and its addition salts with pharmaceutically acceptable acids, is disclosed. The compound has value as a hypnotic, sedative and anti-convulsive agent, and provides significant reduction in the incidence of hemolytic effects.

3,401,173
HETEROCYCLIC ACYLAMINOBENZIMIDAZOLES

Alfred W. Chow, Radnor, John R. E. Hoover, Glenside, and Robert John Stedman, Paoli, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 5, 1966, Ser. No. 540,218

9 Claims. (Cl. 260—309.2)

2-heterocyclic carboxamidobenzimidazoles, in which the heterocyclic group is 5-membered and monocyclic, are prepared by reaction of a 2-aminobenzimidazole with a heterocyclic carboxylic acid chloride. The products are anthelmintic agents.

3,401,174
2-ALKYLAMINOBENZIMIDAZOLES

William G. Woods, Fullerton, Harry Goldsmith, Brea, and Robert F. Crawford, La Mirada, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Original application Aug. 2, 1965, Ser. No. 476,689. Divided and this application Aug. 22, 1967, Ser. No. 662,316

7 Claims. (Cl. 260—309.2)

2-dialkylaminobenzimidazoles having halogen, lower alkyl or halo-lower alkyl substituents on the aromatic ring. The compounds are herbicidal and can be formulated to give herbicidal compositions.

3,401,175
PHOSPHINYLOXY- AND PHOSPHINOTHIOYLOXY-N-ARYLPHTHALIMIDES

Graham O. Osborne, Christchurch, South Island, New Zealand, and Royston H. Davis, Kent, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 16, 1966, Ser. No. 527,768

Claims priority, application Great Britain, Feb. 23, 1965, 7,768/65

3 Claims. (Cl. 260—326)

Insecticidal alkoxy and haloalkoxy phenyl-phosphinyloxy- and phosphinothioyloxy-1,3-isoindolediones substituted at the 2-position of the indole ring by unsubstituted or substituted phenyl or phenylalkyl moieties.

3,401,176
4-ALKOXY OR AMINOALKOXY-5-PHENYL-3-PYRROLIN-2-ONES AND THEIR PREPARATION

Corris Mabelle Hofmann, Ho-Ho-Kus, and Sidney Robert Safir, River Edge, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed July, 27, 1965, Ser. No. 475,250

11 Claims. (Cl. 260—326.5)

The preparation of 4-lower alkoxy or di(lower)-alkylamino(lower)alkoxy-5-phenyl-3-pyrrolin-2-ones wherein the phenyl group may be substituted, is described. These compounds are prepared from 2-amino-2-phenyl or substituted phenyl alkanamides by reaction with acetyl chloride or α-alkylacetoacetic ester and subsequent cyclization to produce the substituted pyrrolin-2-ones of the invention. These compounds are central nervous system depressants useful as hypnotics or tranquilizers.

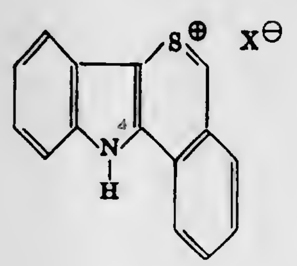
3,401,177
BENZ[d]INDOLO[3,2-b]THIOPYRYLIUM COMPOUNDS

Thomas E. Young, Bethlehem, Pa., and Peter H. Scott, Guilford, Conn., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 459,114, May 26, 1965. This application May 23, 1966, Ser. No. 551,964

2 Claims. (Cl. 260—326.9)

This invention relates to compounds of the formula



wherein X⊖ is perchlorate or halide, said compounds being useful as antibacterial and antifungal agents.

3,401,178
METHOD OF RACEMIZING D-α-ACETYLAMIDE-α-(SUBSTITUTED-BENZYL)-PROPIONITRILES

Raymond A. Firestone, Fanwood, and Donald F. Reinhold and Meyer Sletzinger, North Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 309,378, Sept. 19, 1963. This application Dec. 29, 1966, Ser. No. 605,587

13 Claims. (Cl. 260—340.5)

A process is described for racemizing an optically active nitrile in which the nitrile group and an α - carboxylic acylamino group are both substituents on a quaternary substituted carbon which comprises treating said nitrile with a base capable of replacing the hydrogen on an amide nitrogen.

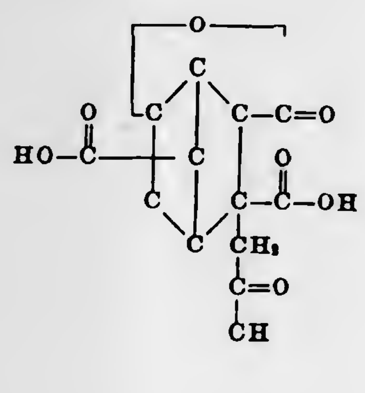
3,401,179
CARBOXYLATED BICYCLOHEPTENE COMPOUNDS

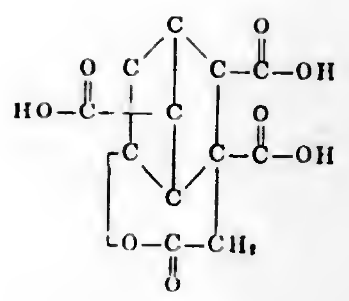
Herbert K. Wiese, Cranford, and Fred W. Banes, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

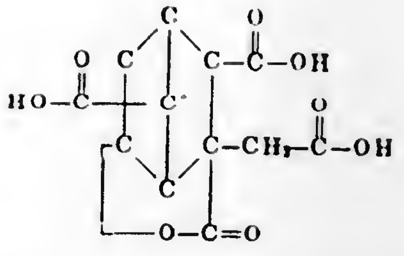
No Drawing. Application Dec. 30, 1957, Ser. No. 705,734, now Patent No. 3,094,556, dated June 18, 1963, which is a continuation-in-part of application Ser. No. 498,750, Apr. 1, 1955. Divided and this application Aug. 27, 1962, Ser. No. 219,722

12 Claims. (Cl. 260—343.2)

12. A bicyclo heptane lactone acid which is represented by the isomers having the formulae







wherein the unsatisfied valences of the carbon atoms are satisfied by members of the group consisting of hydrogen and C_1–C_4 alkyl radicals.

3,401,180
7β-HYDROXY-ESTRANES AND INTERMEDIATES IN THEIR MICROBIOLOGICAL PRODUCTION

Samuel Cheng Pan, Metuchen, Barbara Junta, Somerset, and Pacifico A. Principe, South River, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 15, 1966, Ser. No. 527,501

1 Claim. (Cl. 260—397.4)

7β-hydroxy-19-nor-Δ^4-androstene is prepared by subjecting 19-nor-Δ^4-androstene-3,17-dione to the action of a 7β-hydroxylating microorganism, such as *Diplodia natalensis*. 7β-hydroxy-19-nor-Δ^4-androstene is useful as an intermediate in the preparation of 7β-hydroxy-estrone to which it is converted by the action of enzymes of a 1-dehydrogenating microorganism, such as *Corynebacterium simplex*.

3,401,181
17α - ARALIPHATYLESTRA - 1,3,5(10) - TRIENE-3,11β,17β-TRIOLS AND ESTERS THEREOF

Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed June 21, 1967, Ser. No. 647,629

9 Claims. (Cl. 260—397.5)

17α-araliphatylestra-1,3,5(10)-triene-3,11β, 17β-triols and esters thereof useful as pharmacological agents, as evidenced by their estrogenic, anti-fertility and hypocholesterolemic properties. These novel compounds are prepared by addition of the appropriate organometallic reagent to the corresponding 17-keto starting materials or, alternatively, in the case of the 17α-phenylvinyl or 17α-phenylethyl derivatives, by partial or complete reduction of the acetylenic linkage of the instant 17-phenylethynyl substances. Acylation with a suitable alkanoic acid anhydride or halide provides the corresponding esters.

3,401,182
PROCESS FOR OXIDIZING SOLUBLE ALKYLENE BISDITHIOCARBAMATES TO PRODUCE AN OXYGEN CONTAINING PRODUCT, AND THE PRODUCT OF SAID PROCESS

Allan M. Harvey, Norwalk, and Lester A. Brooks, East Norwalk, Conn., assignors to R. T. Vanderbilt Company, Inc., New York, N.Y., a corporation of New York

Filed May 15, 1964, Ser. No. 367,620

20 Claims. (Cl. 260—429)

The disclosure of the application is directed to a process for oxidizing certain soluble alkylene bisdithiocarbamates using hydrogen peroxide as the oxidizing agent without adding acid in an amount to convert all of the bisdithiocarbamate to the corresponding bisdithiocarbamic acid, under conditions to produce a soluble oxygen containing product. Such soluble oxygen containing product is thereafter treated with a solution of soluble salt of a divalent metal of zinc, manganese, copper or cadmium, thereby to precipitate a product containing oxygen and such divalent metal. The infrared absorption spectra of such products, and the method for combating fungus on growing agricultural crops, such as potato plants, are also described.

3,401,183
METHOD FOR PREPARING ORGANO GERMANIUM, TIN AND SILICON HYDRIDES

Abe Berger, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 23, 1965, Ser. No. 516,119

9 Claims. (Cl. 260—429)

1. A method for making organometallic hydrides which comprises (1) effecting reaction in an ether solvent between an organometallic halide of the formula,

$$(R)_aZ(H)_b(X)_{4-a-b}$$

and an alkali metal hydride in the presence of an effective amount of a triarylborane of the formula,

$$R'_3B$$

(2) and recovering from (1), an organometallic hydride of the formula,

$$(R)_aZ(H)_{4-a}$$

where R is a member selected from monovalent hydrocarbon radicals and halogenated monovalent hydrocarbon radicals, R′ is an aryl radical, X is a halogen radical, Z is a metal selected from the class consisting of silicon, tin and germanium, *a* is an integer equal to 1 to 3, inclusive, *b* is a whole number equal to 0 to 2, inclusive, and the sum of *a* and *b* is equal to 1 to 3, inclusive.

3,401,184
METAL ORGANO PHOSPHATE PREPARATION PROCESS

Anthony J. Revukas, Cranford, N.J., assignor to Cities Service Oil Company, a corporation of Delaware

No Drawing. Filed Mar. 6, 1964, Ser. No. 350,113

15 Claims. (Cl. 260—429.3)

A process for preparing metal organo orthophosphates by contacting at a temperature from about 10° C. to about 120° C., a mixture of phosphorus pentoxide and a polyvalent metal halide in an inert organic solvent with an organic hydroxyl having from 1 to about 30 carbon atoms. Preferably the phosphorus pentoxide and titanium tetrachloride are dispersed in the organic solvent and reacted at a temperature between 10° C. and 60° C. with added ethylhexanol. Subsequent raising of the temperature to between 80° C., and 110° C. results in evolution of the HCl formed yielding as residue titanium (IV) bis [di 2-ethylhexyl) orthophosphate] bis [monoacid mono (2-ethylhexyl) orthophosphate].

3,401,185
METAL SALTS OF PHOSPHORUS ACIDS AND PROCESS

Norman A. Meinhardt, Lyndhurst, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 468,965, July 1, 1965. This application June 16, 1967, Ser. No. 646,482

18 Claims. (Cl. 260—429.9)

An improved process for preparing metal salts of organic phosphinic and phosphonic acids and their thio analogs is described. The improvement consists of contacting the acid and the metal base in the presence of a catalytic amount of a carboxylic acid or salt thereof. The metal salts produced in this manner exhibit greater heat and oxidation stability. These salts are useful as additives for lubricants and fuels, as insecticides, pesticides, ore-flotation agents, plasticizers, and the like.

3,401,186
PROCESS FOR ALKYLATING, ALKENYLATING, ARYLATING AND REDUCING METAL SALTS

Richard Müller and Christian Dathe, Radebeul, Germany, assignors to Institut für Silikon- und Fluorkarbon-Chemie, Radebeul, near Dresden, Germany

No Drawing. Filed Mar. 26, 1965, Ser. No. 443,094

8 Claims. (Cl. 260—430)

A process for the alkylation, alkenylation or arylation of salts of a metal selected from the group consisting of silver, gold, copper and mercury, which comprises reacting said metal salt with a trifunctional organosilane or a salt of an organopentafluorosilicic acid in the presence of a fluoride. In the case that the metals are silver, copper or gold, which form unstable alkylation, alkenylation or arylation products, the latter are subsequently decomposed with formation of metallic silver, gold or copper, respectively.

3,401,187
PROCESS FOR MAKING TETRAMETHYL LEAD

Rudolph L. Pedrotti, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 15, 1965, Ser. No. 464,193

9 Claims. (Cl. 260—437)

Production of tetramethyl lead by the reaction of monosodium lead alloy with methyl chloride in the presence of a catalyst system consisting essentially of ammonia, an alkanenitrile and water.

3,401,188
PROCESS FOR MAKING TETRAMETHYL LEAD

Charles Anthony Sandy, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 5, 1965, Ser. No. 477,612

9 Claims. (Cl. 260—437)

The production of tetramethyl lead by reacting monosodium lead alloy with liquid methyl chloride in the presence of a polyether catalyst. Water is an optional ingredient in the reaction system.

3,401,189
TETRAMETHYL LEAD MANUFACTURE

Charles Anthony Sandy and Victor Tullio, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 7, 1966, Ser. No. 525,355

5 Claims. (Cl. 260—437)

1. A process for making tetramethyl lead which comprises reacting monosodium-lead alloy with methyl chloride in the liquid phase, at least 1 mole of methyl chloride being present per mole of alloy, in the presence of 0.05 to 1 mole, per mole of alloy, of a hydroxylamine of the formula $RONH_2$ where R is hydrogen or lower alkyl, at a temperature of 20° to 120° C.

3,401,190

3-(ISOCYANATOMETHYL)-3,5,5-TRI-LOWER-ALKYL CYCLOHEXYL ISOCYANATES

Karl Schmitt, Herne, Fritz Gude, Wanne-Eickel, Klaus Rindtorff, Jr., Recklinghausen, and Josef Disteldorf, Wanne-Eickel, Germany, assignors to Scholven-Chemie Aktiengesellschaft Gelsenkirchen-Buer, Germany, a corporation of Germany

No Drawing. Filed July 15, 1965, Ser. No. 472,336
Claims priority, application Germany, July 21, 1964, Sch 35,500
2 Claims. (Cl. 260—453)

3 - (isocyanatomethyl)-3,5,5-tri-lower-alkyl cyclohexyl isocyanates and a method of preparing the same, comprising reacting 3 - (aminomethyl)-3,5,5-tri-lower-alkyl cyclohexylamine and phosgene.

3,401,191

TETRAFLUORONITROBENZONITRILES

Leon Jerzy Belf, Avonmouth, Bristol, England, assignor to Imperial Smelting Corporation (N.S.C.) Limited, London, England, a British company

No Drawing. Filed Sept. 13, 1966, Ser. No. 578,973
Claims priority, application Great Britain, Sept. 15, 1965, 39,484/65
3 Claims. (Cl. 260—465)

1. 3,4,5,6-tetrafluoronitrobenzonitrile.

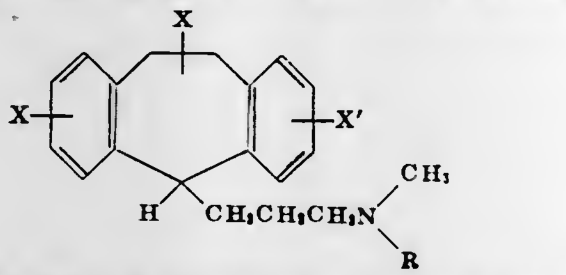
3,401,192

ESTERS OF 5H-DIBENZO[a,d]CYCLOHEPTENE

Janos Kollonitsch, Westfield, and Roger J. Tull, Metuchen, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 210,589, July 17, 1962. This application July 20, 1964, Ser. No. 383,920
2 Claims. (Cl. 260—471)

1. A compound of the following structural formula:



wherein Y is halo, R is lower-alkoxycarbonyl, phenoxycarbonyl, benzyloxycarbonyl, lower-alkanoyl, benzoyl or phenacetyl, and X and X′ are selected from the group consisting of lower alkyl, perfluoroloweralkyl amino, loweralkylamino, diloweralkylamino, loweralkylsulfonylamino, halogen, hydroxy, loweralkoxy, perfluoroloweralkoxy, cyano, carboxy, mercapto, loweralkylmercapto, perfluoroloweralkylmercapto, loweralkylsulfonyl, perfluoroloweralkylsulfonyl, sulfamoyl, loweralkylsulfamoyl and diloweralkylsulfamoyl.

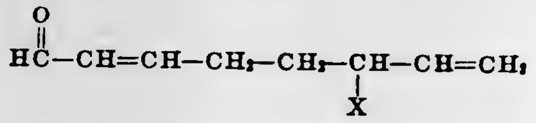
3,401,193

6-SUBSTITUTED-UNSATURATED ALDEHYDES BY DECOMPOSITION OF 3-HYDROPEROXY-1,5-CYCLOOCTADIENE WITH FERROUS IONS AND A CUPRIC SALT

William J. Farrissey, Jr., Northford, Conn., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

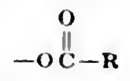
No Drawing. Filed Mar. 18, 1964, Ser. No. 352,933
6 Claims. (Cl. 260—488)

1. A composition of matter having the following formula:



$$\mathrm{H\overset{\overset{O}{\|}}{C}-CH=CH-CH_2-CH_2-\underset{\underset{X}{|}}{C}H-CH=CH_2}$$

where X is selected from the group consisting of a halogen, azide, —OR and



$$\mathrm{-O\overset{\overset{O}{\|}}{C}-R}$$

and R is a lower alkyl.

3,401,194

PROCESS FOR THE RESOLUTION OF STEREOISOMERS FROM RACEMIC 1-HYDROXY-2-AMINO BUTANE

Giorgio Zoja, Milan, Italy, assignor to Laboratorio Chimico Farmaceutico Giorgio Zoja S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed Aug. 4, 1964, Ser. No. 387,504
Claims priority, application Italy, Aug. 10, 1963, 16,917/63
12 Claims. (Cl. 260—501.1)

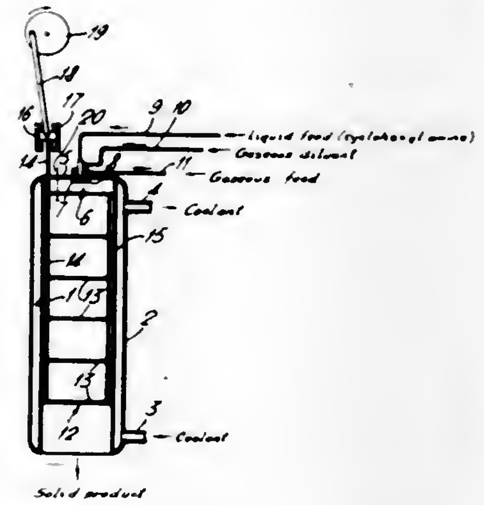
Recovering (+) 1-hydroxy-2-amino butane (+) hydrogen tartrate from mixtures thereof with (−) 1-hydroxy-2-amino butane (+) hydrogen tartrate substantially in the pure state in yields of at least about 80% by first removing at least 70% by weight of the (−) 1-hydroxy-2-amino butane (+) hydrogen tartrate by fractional crystallization and then crystallizing the (+) 1-hydroxy-2-amino butane (+) hydrogen tartrate and purifying it by treatment with methanol.

3,401,195

PROCESS OF PRODUCING SULPHAMIC ACID DERIVATIVES

Clifford A. Crampton, 15 Wood End Road, Harpenden, Hertfordshire, England; David G. Bowen, 378 Wanstead Park Road, Cranbrook, Ilford, Essex, England; Charles F. Cardy, 14 Mount Grace Road, Stopsley, Luton, Bedfordshire, England; and Arthur Poole, 9 Thurlow Drive, Thorpe Bay Essex, England

Continuation-in-part of application Ser. No. 450,319, Apr. 23, 1965. This application June 15, 1966, Ser. No. 557,766
Claims priority, application Great Britain, Apr. 24, 1964, 17,139/64; Apr. 28, 1964, 17,607/64; July 14, 1964, 28,990/64; Aug. 26, 1964, 35,009/64; Apr. 5, 1966, 15,141/66
10 Claims. (Cl. 260—501.12)



A process for the production of cycloalkylammonium N-cycloalkyl sulphamates or isoalkylammonium N-isoalkyl sulphamates by introducing into a reaction zone sulphur trioxide vapour and the corresponding cycloalkylamine or isoalkylamine in the form of finely divided liquid or in the form of vapour under such conditions that a reaction takes place and the temperature in the reaction zone attains a temperature of at least 130° C. The compounds are intermediates useful in the production of the corresponding sodium N-cycloalkyl or sodium N-alkyl sulphamates.

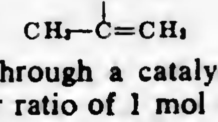
3,401,196

CATALYTIC PROCESS OF PREPARING UNSATURATED ACIDS AND ALDEHYDES

Jamal S. Eden, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,801
8 Claims. (Cl. 260—533)

1. A method of preparing a mixture of unsubstituted monoolefinic aldehydes and monoolefinic monocarboxylic acids by oxidation of a methyl group of a hydrocarbon having the structure



$$\begin{array}{c}\mathrm{H}\\ \mathrm{(CH_2)_{n-1}}\\ |\\ \mathrm{CH_3-C=CH_2}\end{array}$$

comprising passing through a catalyst bed a mixture of gases having a molar ratio of 1 mol of said monoolefinic hydrocarbon, an oxygen containing gas containing about 1.5 to 4 mols of oxygen and up to 7 mols of water vapor per mol of said monoolefinic hydrocarbon, at a temperature of from about 325° C. to about 500° C., the said catalyst consisting essentially, on a molar basis, of

$$\mathrm{Mo_{10}Te_{1-10}U_{2-20}P_{2-20}O_{39-120}}$$

in which each P is combined with 3 to 4 atoms of oxygen, and the UO to P ratio ranges from 3UO to 2P to 5UO to 6P.

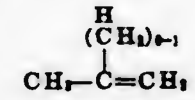
3,401,197

CATALYTIC METHOD OF PREPARING UNSATURATED ACIDS AND ALDEHYDES

Jamal S. Eden, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,830
12 Claims. (Cl. 260—533)

1. A method of preparing a mixture of unsubstituted monoolefinic aldehydes and monoolefinic monocarboxylic acids by oxidation of a methyl group of a hydrocarbon having the structure



$$\begin{array}{c}\mathrm{H}\\ \mathrm{(CH_2)_{n-1}}\\ |\\ \mathrm{CH_3-C=CH_2}\end{array}$$

comprising passing through a catalyst bed a mixture of gases having a molar ratio of 1 mol of said monoolefinic hydrocarbon, an oxygen containing gas containing about 1.5 to 4 mols of oxygen and up to 7 mols of water vapor per mol of said monoolefinic hydrocarbon, at a temperature of from about 325° C. to about 500° C., the said catalyst consisting essentially, on a molar basis, of

$$\mathrm{Mo_{10}Te_{1-10}M_{2-20}P_{2-20}O_{39-120}}$$

wherein M is a Group VIII metal of the fourth period of the periodic table, and in which each P is combined with 3 to 4 atoms of oxygen and the M to P ratio ranges from 1M to 1P to 4M to 6P.

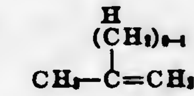
3,401,198

CATALYTIC PROCESS OF PREPARING UNSATURATED ALDEHYDES AND ACIDS

Jamal S. Eden, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,862
11 Claims. (Cl. 260—533)

1. A method of preparing a mixture of unsubstituted monoolefinic aldehydes and monoolefinic monocarboxylic acids by oxidation of a methyl group of a hydrocarbon having the structure



$$\begin{array}{c}\mathrm{H}\\ \mathrm{(CH_2)_{n-1}}\\ |\\ \mathrm{CH_3-C=CH_2}\end{array}$$

comprising passing over a catalyst bed a mixture of gases having a molar ratio of 1 mol of said monoolefinic hydrocarbon, an oxygen containing gas containing about 1.5 to 4 mols of oxygen and up to 7 mols of water vapor per mol of said monoolefinic hydrocarbon, at a temperature of from about 300° C. to about 500° C., the said catalyst consisting essentially, on a molar basis, of

$$\mathrm{Mo_{10}Te_{1-10}M_{2-20}P_{2-20}O_{39-120}}$$

wherein M is a group II–A metal and in which each P is combined with 3 to 4 atoms of oxygen and the M to P ratio ranges from 5M to 6P to 3M to 2P.

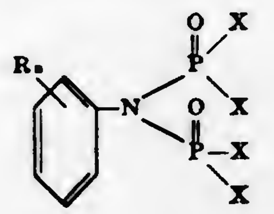
3,401,199

ANILINO-N,N-BIS-PHOSPHORYL HALIDES

Arthur P. Ingram, Jr., Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 7, 1965, Ser. No. 454,191
8 Claims. (Cl. 260—543)

1. A compound of the formula



in which each unsubstituted carbon atom is bonded to hydrogen, each X is a halogen, *n* is an integer of from 0 to 5 representing the number of R substituents, and R is selected from the group consisting of an alkyl, alkenyl, aryl, and an alkoxy group (each group having no more than 10 carbon atoms) and a halogen atom.

3,401,200

INTERMEDIATES FOR THE PREPARATION OF 1,3-DIHYDRO - 5 - ARYL - 2H - 1,4 - BENZODIAZEPIN-2-ONES 4-OXIDES

Stanley C. Bell, Penn Valley, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 301,873, Aug. 13, 1963, which is a continuation-in-part of applications Ser. No. 283,966 and Ser. No. 283,967, May 29, 1963. This application June 9, 1967, Ser. No. 644,900
6 Claims. (Cl. 260—562)

2-(2-hydroxyaminoacetamido)carboxylic acyl ketones, valuable intermediates for the preparation of 1,3-dihydro-2H-1,4-benzodiazepin-2-ones having a psycholeptic effect in mammals, are prepared from 2-(2-haloacetamido)-carboxylic acyl ketones by treatment with hydroxylamine.

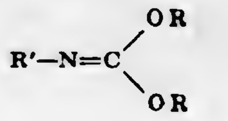
3,401,201

IMIDOCARBONATES

Eric Walton, London, England, assignor to Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y., a corporation of New York

No Drawing. Filed Aug. 2, 1965, Ser. No. 476,654
Claims priority, application Great Britain, Aug. 5, 1964, 31,828/64
2 Claims. (Cl. 260—566)

Compound of the formula



wherein each R is alkyl of 1 to 3 carbon atoms, and wherein R′ is selected from the class consisting of aralkyl of 7 to 8 carbon atoms, phenoxy propyl, lower alkoxyalkyl of 3 to 4 carbon atoms, cyclohexyl, alkyl and aralkyl of 7 to 8 carbon atoms substituted with a member selected from the class consisting of methyl, bromo and chloro. The compounds are useful in the preparation of substituted guanidines which are themselves useful in the treatment of hypertension and as anthelmintics.

3,401,202
NOVEL PROPIONANILIDES

William Blythe Wright, Jr., Woodcliff Lake, Herbert Joseph Brabander, Pearl River, and Robert Allis Hardy, Jr., Ridgewood, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Apr. 12, 1966, Ser. No. 541,981
8 Claims. (Cl. 260—562)

Substituted phenylalkylene aminoisopropylpropionanilides prepared by the acylation of the corresponding substituted phenylalkyleneaminoisopropylanilide with propionic anhydride and by other methods, are described. These compounds are useful as analgesics and analgesic antagonists.

3,401,203
PREPARATION OF AMINES

Eugene Kraiman, Cedar Grove, N.J., and John Austin, New York, N.Y., assignors to Sun Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 21, 1964, Ser. No. 339,105
11 Claims. (Cl. 260—583)

A process for producing a primary functional derivative by contacting a terminal olefin with hydrogen bromide in presence of a catalyst, reacting the terminal bromide so produced with an active hydrogen compound in presence of a base, separating the hydrogen bromide salt from the primary functional derivative produced thereby, halogenating the hydrogen bromide salt to release bromide, treating the bromide with hydrogen to form hydrogen bromide and recycling the hydrogen bromide to contact additional terminal olefin.

3,401,204
HYDROCARBYLENE - BIS(MONOPHOSPHOBICYCLONONANES) AND THE PREPARATION THEREOF

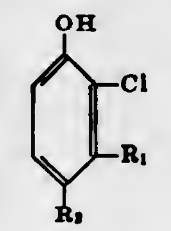
Ronald F. Mason, Mill Valley, and John L. Van Winkle, San Lorenzo, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 26, 1965, Ser. No. 510,068
7 Claims. (Cl. 260—606.5)

1. Hydrocarbylene - bis(monophosphabicyclononanes) in which each phosphorus atom is joined to hydrocarbylene and is a member of a bridge linkage without being a bridgehead atom and which hydrocarbylene-bis(monophosphabicyclononane) has 18 to 50 carbon atoms, 8 carbon atoms thereof together with a phosphorus atom being members of each of the two bicyclic skeletal structures.

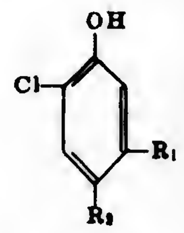
3,401,205
PROCESS FOR PRODUCING CERTAIN 6-CHLORO-3,4 - DIALKYLPHENOLS SUBSTANTIALLY FREE OF ISOMERIC 2-CHLORO-3,4-DIALKYLPHENOLS

Chong Y. Yoon, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Oct. 20, 1965, Ser. No. 499,031
20 Claims. (Cl. 260—623)

1. A process for removing a phenol of the formula:

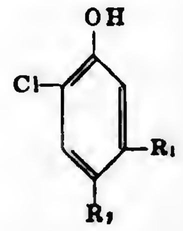


wherein R_1 and R_2 are alkyl of 1 to 4 carbon atoms, inclusive, from a mixture comprising said phenol and an isomeric phenol of the formula:

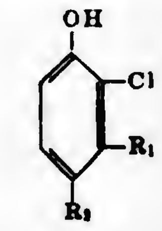


wherein R_1 and R_2 are as defined above, which comprises the steps, (1) contacting said mixture with at least one molecular equivalent of a sulfonating agent per molecular equivalent of the phenol to be removed to produce a mixture of sulfonated and unsulfonated phenols, and (2) separating the sulfonated phenols from said mixture of sulfonated and unsulfonated phenols.

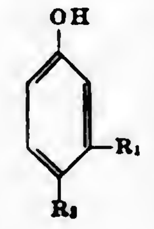
11. A process for producing a first phenol of the formula:



wherein R_1 and R_2 are alkyl of 1 to 4 carbon atoms, inclusive, substantially free of a second phenol of the formula:



wherein R_1 and R_2 are as defined above, which comprises the steps, (1) monochlorinating a phenol of the formula:



wherein R_1 and R_2 are as defined above, to produce a mixture comprising said first phenol and said second phenol, (2) contacting said mixture with at least one molecular equivalent of a sulfonating agent per molecular equivalent of said second phenol in said mixture to produce a mixture of sulfonated and unsulfonated phenols, and (3) separating the sulfonated phenols from said mixture of sulfonated and unsulfonated phenols.

3,401,206
PROCESS FOR PRODUCING HIGHER OLEFINS

Horst-Dieter Wulf and Karl Gelfert, Marl, Germany, assignors to Chemische Werke Hüls Aktiengesellschaft, Marl, Germany
No Drawing. Filed June 25, 1964, Ser. No. 378,067
Claims priority, application Germany, Aug. 6, 1963, C 30,631
4 Claims. (Cl. 260—666)

In a process for the production of higher primary alcohols by oxo-synthesis of olefins obtained by dehydrochlorinating chlorinated higher paraffin hydrocarbons which contain not substantially in excess of 50 molar

percent of monochlorinated hydrocarbon, the steps which comprise subjecting chlorinated higher paraffin hydrocarbons to reflux fractional distillation in a column in the presence of metal catalysts selected from iron and alloys thereof at temperatures between 150 and 500° C., condensing the head product in such a manner that the temperature does not fall appreciably below the boiling point of the olefin produced, thereby drawing off the reaction product from the reaction zone at the boiling temperature, reacting the olefins thus obtained with a mixture of carbon monoxide and hydrogen in the presence of cobalt compound, hydrogenating the addition products thereby obtained in the presence of hydrogenation catalysts to obtain higher primary alcohols.

3,401,207
PROCESS FOR MAKING POLYNUCLEAR AROMATIC COMPOUNDS

Charles M. Selwitz, Pitcairn, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Dec. 19, 1966, Ser. No. 602,470
19 Claims. (Cl. 260—670)

1. A process for the production of a polynuclear aromatic compound from an aromatic compound having a labile hydrogen atom attached to the nucleus thereof which comprises contacting said latter aromatic compound with a noble metal salt of an organic acid in the presence of a strong acid in a reaction system free of halide ions and nitrate ions.

3,401,208
CONVERSION OF DIPHENYLALKANE TO HIGHER VALUE PRODUCTS

Oliver C. Kerfoot and Delmar D. Krehbiel, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
No Drawing. Filed June 30, 1966, Ser. No. 561,718
10 Claims. (Cl. 260—671)

Diphenylalkares commonly produced in the alkylation of aromatics can be converted to more valuable products such as monophenylalkanes, dialkylbenzene and/or alkylated tetralins by further alkylating the diphenylalkanes with olefins or chloroparaffins in the presence of a Friedel-Crafts catalyst.

3,401,209
RECOVERY OF BIPHENYL FROM HDA POLYMER

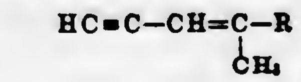
Theodore Eugene Majewski, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Feb. 4, 1966, Ser. No. 525,116
2 Claims. (Cl. 260—672)

About 30–50% of the biphenyl present in still-bottoms from demethylation of toluene is recovered in 98% purity by cooling to 0°–15° C., washing the separated crude solid with ethanol, and fractionally distilling.

3,401,210
PROCESS FOR THE MANUFACTURE OF MULTIPLE UNSATURATED ALIPHATIC COMPOUNDS

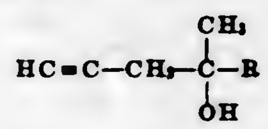
Hendrik Paul de Jongh and Filippus Johannes Zeelen, Oss, Netherlands, assignors to Organon Inc., West Orange, N.J., a corporation of New Jersey
No Drawing. Filed Oct. 3, 1966, Ser. No. 583,983
Claims priority, application Netherlands Oct. 18, 1965, 6513473
4 Claims. (Cl. 260—678)

Multiple unsaturated compounds of the formula



$$HC{\equiv}C{-}CH{=}\underset{\displaystyle CH_3}{\underset{|}{C}}{-}R$$

in which R is an alkyl group of 1 to 6 carbon atoms, are prepared by etherifying the hydroxyl group of a compound of the formula



$$HC{\equiv}C{-}CH_2{-}\overset{\displaystyle CH_3}{\overset{|}{\underset{\displaystyle OH}{\underset{|}{C}}}}{-}R$$

in which R is an alkyl group of 1 to 6 carbon atoms, and treating the ether with an alkyl amide in liquid ammonia or a lower aliphatic amine. The products are intermediates for the synthesis of compounds of the vitamin A series.

3,401,211
1-OLEFIN PRODUCTION

Thomas Hutson, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 25, 1966, Ser. No. 545,092
4 Claims. (Cl. 260—683.2)

Saturated alicyclic hydrocarbons are converted to terminal olefins to the substantial exclusion of by-products by photochlorinating said hydrocarbons, dehydrochlorinating the resultant monochlorinated hydrocarbons to produce monoolefins, separating and recovering the terminal olefins thus produced and selectively isomerizing internal olefins to terminal olefins by hydroboration displacement.

3,401,212
TWO-STAGE BLOCK COPOLYMERIZATION OF PROPYLENE AND ETHYLENE EMPLOYING HYDROGEN

John R. Griffin, Alva M. Jones, and Raymond A. Speed, Baytown, Tex., assignors by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Filed Dec. 2, 1964, Ser. No. 415,541
14 Claims. (Cl. 260—878)

In the production of film-grade copolymer of propylene and ethylene, the haze and gloss properties are improved by the addition of hydrogen into the second of a two-stage reaction zone wherein ethylene is reacted onto polypropylene chains. A similar process is used to improve the characteristics of injection-grade copolymer.

In producing an ethylene-propylene copolymer containing from 4 to 16 mol percent ethylene, from 500 to 3500 p.p.m. of hydrogen (based upon ethylene charged) are introduced into the second-stage reactor along with the ethylene feed, and the propylene-to-ethylene ratio in the second-stage reactor is preferably maintained within the range of 1:5 to 3:1.

3,401,213
GRAFT COPOLYMERS OF DIENE RUBBER SUBSTRATE AND HYDROXYLIC POLYMER SUPERSTRATE

Quirino A. Trementozzi, Springfield, and Alfred A. Tedeschi, Longmeadow, Mass., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed Oct. 17, 1963, Ser. No. 317,053
3 Claims. (Cl. 260—880)

Graft copolymers are prepared comprising a diene rubber substrate and a hydroxylic polymer superstrate. For example, monomeric mixtures containing 5–25 wt. percent vinyl benzyl alcohol or phenyl allyl alcohol, 0 to 60 wt. percent acrylonitrile and 40–90% of an ethylenically unsaturated compound such as styrene are polymerized with a diene rubbery polymer to yield the desired products. The graft copolymers exhibit improved adhesion to substrates and may be employed in laminating adhesives.

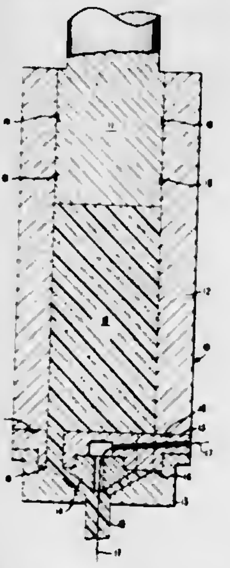
3,401,214
N,N'-SULFONYL-BIS-(CARBAMOYLPHOSPHONIC ACID ESTERS)

John J. Kohler, Branford, Conn., assignor to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia
No Drawing. Filed Oct. 7, 1965, Ser. No. 493,882
8 Claims. (Cl. 260—932)

A series of N,N'-sulfonyl - bis - (carbamoylphosphonic acid esters) are provided by the reaction of sulfuryldiisocyanate with various disubstituted hydrogen phosphites. The esters are valuable fungicides, nematocides and herbicides.

3,401,215
MAKING FLEXIBLE DETONATING FUSE

William L. Evans, Blackwood, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Original application Aug. 19, 1965, Ser. No. 481,150, now Patent No. 3,338,764, dated Aug. 29, 1967. Divided and this application May 2, 1967, Ser. No. 651,062
7 Claims. (Cl. 264—3)



A detonating fuse made by intimately mixing a cap-sensitive particulate high explosive; a copolymer of a butadiene, an acrylonitrile and a sufficient amount of an acrylic acid to provide from about 0.001 to 0.3 carboxyl equivalent per 100 parts said copolymer, a source of polyvalent metal ion and plasticizer, heating the mixture to form a metallocarboxylate elastomer, forming the composition into a predetermined shape, e.g. extruding around reinforcing element, and curing the detonating fuse at room temperature or above.

3,401,216
METHODS FOR PREPARING PHARMACEUTICAL COMPOSITIONS

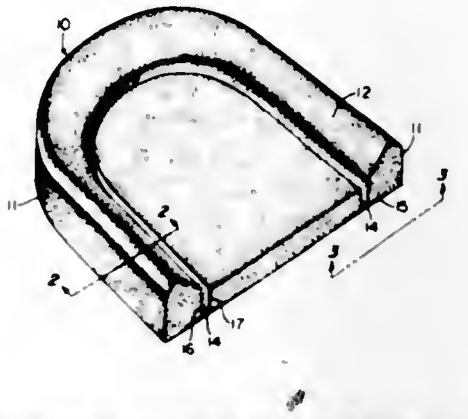
Vincent Coletta, Westfield, N.J., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware
Filed Jan. 9, 1964, Ser. No. 336,728
12 Claims. (Cl. 264—117)

Prepares a composite granule (e.g., an effervescent granule) by suspending two materials like an acid and a bicarbonate in a gas stream and contacting these materials with a spray of fluid to cause a momentary reaction and form a composite particle containing acid and bicarbonate.

3,401,217
METHOD OF MOLDING A FOAM CUSHION HAVING SEAM GROOVES

Jerome E. Burwell, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed July 2, 1963, Ser. No. 292,303
2 Claims. (Cl. 264—45)

This invention relates to a method of molding in one operation a polyurethane foamed cushion having seam grooves by providing reinforcing fabric strips juxtapositioned over a mold gate so that when the mold is closed the fabric strip will rest over the mold gate charging the mold cavity with a polyurethane foamable mixture and allowing the mixture to adhere to fabric strips to the foamed seat cushion over the grooves.



3,401,218
METHOD OF PRODUCING GASTROINTESTINAL SPASMOLYTIC ACTIVITY WITH POLYOXYPROPYLENE-POLYOXYETHYLENE POLYMERS

Allen Misher, Philadelphia, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Continuation-in-part of application Ser. No. 516,104, Dec. 23, 1965. This application June 9, 1967, Ser. No. 644,786
5 Claims. (Cl. 424—78)

Pharmaceutical compositions having gastrointestinal spasmoyltic activity containing a polyoxypropylene-polyoxyethylene polymer in which the average molecular weight of the polyoxypropylene units is from about 950 to about 2750 and the polyoxyethylene groups are present from about 5% to about 70% of the molecule and a method of producing gastrointestinal spasmolytic activity.

3,401,219
MORAXELLA BOVIS INFECTIOUS BOVINE KERATOCONJUNCTIVITIS STEAM-KILLED BACTERIN

Alexander Zeissig, Mountainside, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Aug. 25, 1965, Ser. No. 482,592
5 Claims. (Cl. 424—92)

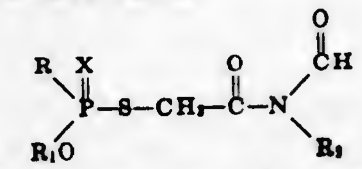
1. A process of making a vaccine to immunize cattle against infectious keratoconjunctivitis by inoculating a culture medium with a smooth colony of *Moraxella bovis* which has been freshly obtained from an afflicted eye or has not undergone more than two serial passages of cultivation, incubating the culture medium until a growth is obtained, harvesting the growth, killing the growth and denaturing the protein by contact with live steam thereby rendering the thermostable specific antigen immunologically active and suspending the killed organisms in a liquid medium to form a vaccine.

3,401,220
METHODS OF KILLING PESTS SELECTED FROM THE GROUP CONSISTING OF MITES AND INSECTS WITH PHOSPHONOTHIOATES

Karoly Szabo, Orinda, and David J. Broadbent, San Jose, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Original application Aug. 7, 1964, Ser. No. 388,303, now Patent No. 3,351,679, dated Nov. 7, 1967. Divided and this application Aug. 15, 1967, Ser. No. 668,736
6 Claims. (Cl. 424—211)

1. The method of killing pests selected from the group consisting of mites and insects comprising applying to a

pest habitat a pesticidally effective amount of a compound corresponding to the formula



$$\begin{array}{c}R\diagdown \overset{X}{\underset{}{\|}} \\ P{-}S{-}CH_2{-}\overset{O}{\overset{\|}{C}}{-}N \\ R_1O\diagup \end{array}\begin{array}{l}\diagup \overset{O}{\overset{\|}{C}}H \\ \\ \diagdown R_2\end{array}$$

wherein R is a member selected from the group consisting of lower alkyl, lower haloalkyl and phenyl, R_1 and R_2 are lower alkyl radicals, X is a member selected from the group consisting of oxygen and sulfur.

3,401,221
TREATMENT OF URINARY TRACT INFECTION

August Russell Borgmann, Kenyon J. Hayes, Henry E. Paul, and Mary F. Paul, Norwich, N.Y., assignors to The Norwich Pharmacal Company, Norwich, N.Y., a corporation of New York
No Drawing. Filed Aug. 25, 1964, Ser. No. 392,023
2 Claims. (Cl. 424—273)

Crystalline nitrofurantoin of a surface area from 120 cm.^{2}/gm. to 1000 cm.^{2}/gm. will maintain efficacy in treating urinary tract infections while substantially reducing the nausea and emesis associated with that drug.

3,401,222
NEMATOCIDAL 2,4 - DIHALOPHENYL ESTERS OF ETHANESULFONIC ACID ETHERS AND ALCOHOLS

George R. Haynes, Modesto, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 29, 1965, Ser. No. 475,842
9 Claims. (Cl. 424—278)

2,4-dihalophenyl esters of the ethanesulfonic acid ethers and alcohols useful as nematocides.

3,401,223
METHOD OF RELIEVING GASTRIC ACIDITY

Hideo Tanabe, Nishinomiya, Japan, assignor to Takeda Chemical Industries, Ltd., Osaka, Japan
Filed Oct. 7, 1963, Ser. No. 314,339
Claims priority, application Japan, Oct. 9, 1962, 37/45,091
2 Claims. (Cl. 424—317)

Gastric acidity is relieved by the oral administration of an effective amount of aluminum compound wherein aluminum hydroxide is chemically combined with dibasic lower aliphatic carboxylic acid or with hydroxy carboxylic acid (malic acid, salicylic acid, lactic acid, tartaric acid, gluconic acid, keto-gluconic acid) in a ratio (from 1/10 to 1/60 mole of the acid per atom of aluminum) sufficient to prevent the aging of the aluminum hydroxide without prejudicing control of the acidity of the gastric juice.

3,401,224
TREATMENT OF DEPRESSION WITH N-BENZYLPIPERAZINE

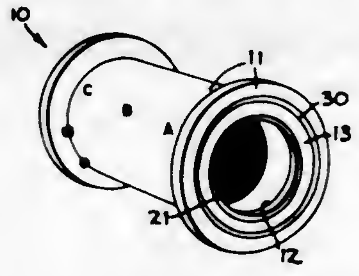
Paul Anthony Barrett, Albert Gordon Caldwell, and Leslie Percy Walls, all of 183–193 Euston Road, London NW. 1, England
No Drawing. Continuation-in-part of application Ser. No. 463,878, June 14, 1965. This application Dec. 29, 1966, Ser. No. 605,543
4 Claims. (Cl. 424—250)

A method for the treatment of a mammal or warm blooded animal suffering from a depressed state, comprising administering to the mammal or warm blooded animal an effective amount of N-benzylpiperazine or pharmaceutically acceptable salt thereof.

ELECTRICAL

3,401,225
HEATING ASSEMBLY FOR AN ELECTRIC FURNACE WITH NON-LINEAR RESISTANCE HEATING ELEMENTS

Earl L. Kirkman, 933 Old Zayante Road, Felton, Calif. 95018
Filed Oct. 20, 1965, Ser. No. 498,210
10 Claims. (Cl. 13—24)

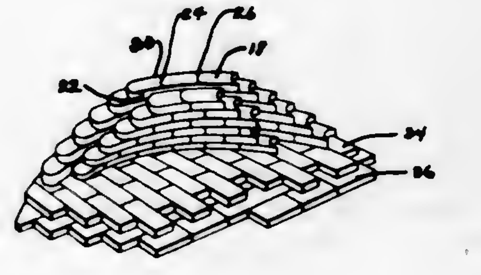


An electric furnace in which resistive heating elements have a non-uniform or non-linear resistance to compensate for gradual and exponential thermal and radiant heating losses, which are greater at the extremities of the furnace and which gradually decrease as the central portion of the furnace is approached.

3,401,226
INDUCTION FURNACE HAVING A COMPOSITE LINING COMPOSED OF REFRACTORY BRICK

Albert L. Renkey, Bethel Park, Pa., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,887
The portion of the term of the patent subsequent to Oct. 17, 1984, has been disclaimed
5 Claims. (Cl. 13—35)

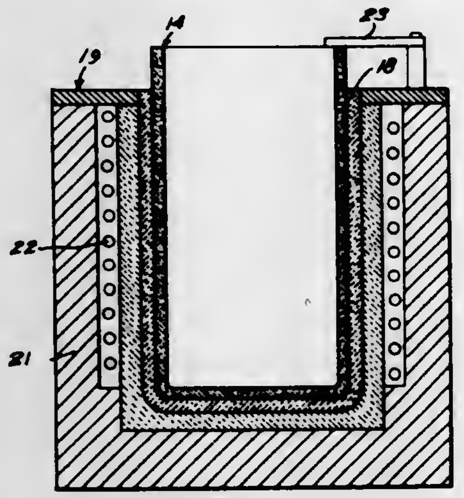
An induction furnace construction consisting of an outer metal shell, a primary coil disposed adjacent the interior surfaces of the shell and a composite lining of refractory material, said lining being composed of a plurality of circular brick which are laid up in the form of rings.



3,401,227
LINER FOR CRUCIBLES

Barry O. Dunlevy, Minerva, and Leslie E. Harper, Jr., North Canton, Ohio, assignors to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed Feb. 9, 1966, Ser. No. 526,290
7 Claims. (Cl. 13—35)

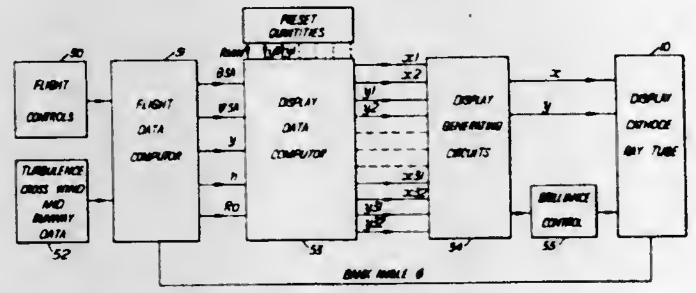
A readily insertable and removable liner for an induction-type melting furnace comprising a laminar, self-sustaining ceramic shell composed of layers of finely divided refractory particles bonded together with a binder, the inner surface of the shell being substantially smooth and



non-wettable by molten metal, the shell being produced by the well known techniques of shell mold making.

3,401,228
FLIGHT SIMULATOR DISPLAY APPARATUS

Arthur George Barnes, Lytham, England, assignor, by mesne assignments, to British Aircraft Corporation (Operating) Limited, a British company
Filed Aug. 26, 1963, Ser. No. 304,549
Claims priority, application Great Britain, Aug. 30, 1962, 33,364/62
10 Claims. (Cl. 35—10.2)

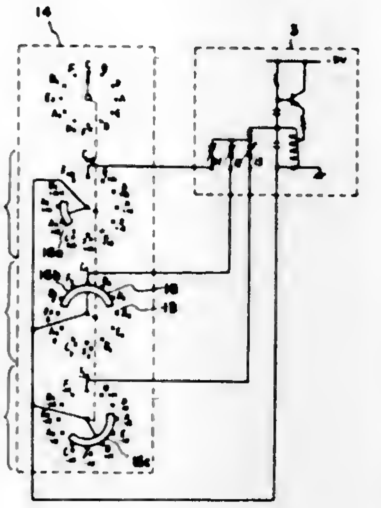


1. Apparatus for providing on the screen of a visual display means in a craft or simulated craft a representation of the appearance from the craft of an object external to the craft, comprising means for deflecting a light spot over said display screen, a number of deflection control circuits each of which is responsive to input data in co-ordinate form and controls said visual display means to provide on the latter a line defined by the characteristics of said deflection control circuits and the input data, the combination of lines representing on said visual display screen the outline of at least one object external to the craft, and means responsive to the movement of the craft relative to the objects which vary according to said movement the input data applied to said deflection-control circuits so as to modify the lines on the display in a manner representing the modification of the appearance of objects external to the craft which would be observed by a pilot undergoing real movement in relation to the objects.

3,401,229
ELECTRONIC MUSICAL INSTRUMENT OF JUST INTONATION

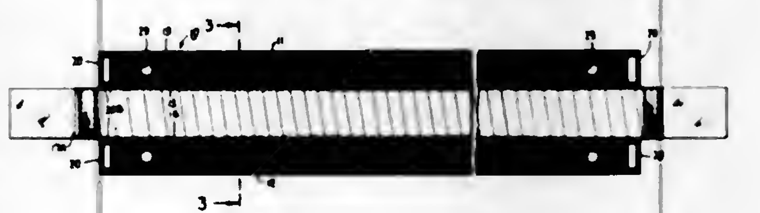
Yoshikazu Kawabata and Maki Yamashita, Hamamatsu, Japan, assignors to Nihon Gakki Seizo Kabushiki Kaisha, Hamamatsu, Japan
Filed May 28, 1965, Ser. No. 459,765
Claims priority, application Japan, May 30, 1964, 39/30,391; Oct. 10, 1964, 39/57,908
13 Claims. (Cl. 84—1.04)

1. An electronic musical instrument of just intonation comprising a plurality of tone generators, means connected to each of said generators for producing tones which are sixteen cents higher with respect to their corresponding tones of equal temperament, means connected to each of said generators for producing tones which are fourteen cents lower with respect to their corresponding tones of equal temperament, musical key selector means, said tone generators being electrically connected to said key selector means, said key selector means being arranged to select a series of twelve notes in a single octave for each key selected including a prime note, a second note, a perfect fourth note, a perfect fifth note, a minor seventh note, a minor third note, a minor sixth note, an augmented prime note, a major third note, an augmented fourth note, a major sixth note and a major seventh note.



3,401,230
BUSWAY WITH FOAMED-IN-PLACE PLASTIC SEALING MATERIAL

Walter Giger, Jr., West Hartford, Conn., assignor to General Electric Company, a corporation of New York
Filed Aug. 5, 1966, Ser. No. 570,600
7 Claims. (Cl. 174—98)

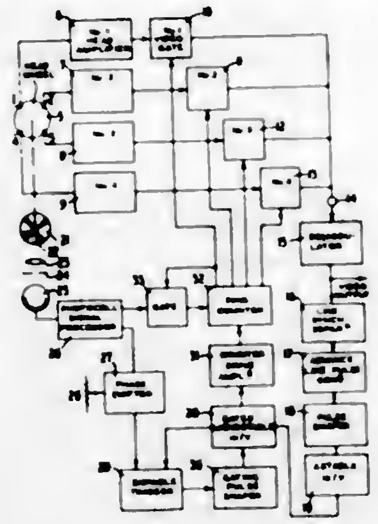


An electric power busway of the type including a rectangular duct with generally strap-like busbars supported therein having the portions of duct not occupied by the busbars filled with a foamed-in-place plastic material, such as polyurethane, polystyrene, or epoxy foam, thereby sealing the duct against the entry of moisture as well as preventing condensation of moisture therein.

3,401,231
MAGNETIC PLAYBACK HEAD SWITCHING APPARATUS

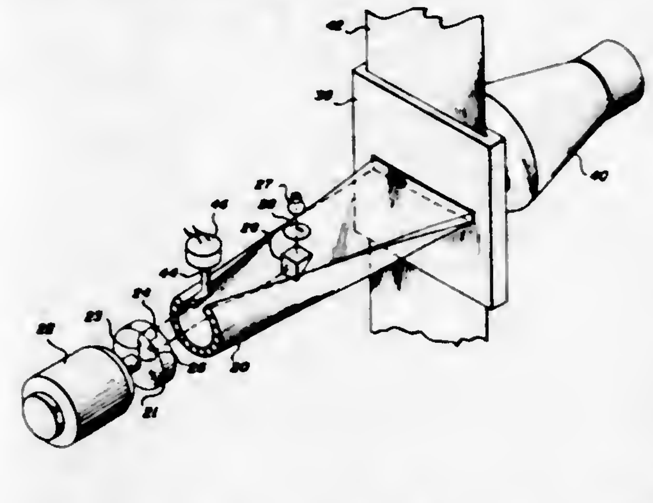
John Lewis Edwin Baldwin, Croydon, England, assignor to Rank-Bush Murphy Limited
Filed July 29, 1965, Ser. No. 475,686
Claims priority, application Great Britain, Aug. 4, 1964, 30,440/64
9 Claims. (Cl. 178—6.6)

1. Magnetic record playback apparatus comprising in combination: a magnetic tape having a signal recorded thereon in a succession of individual record tracks; a rotatable member; a plurality of signal transducer heads spaced about the periphery of said member; drive means operable to drive said member at a predetermined speed of rotation; guide means presenting said tape for engagement with said member whereby said heads engage said record tracks in a cyclic sequence having a predetermined frequency; an output terminal; switching means operable to connect said heads to said output terminal in a cyclic sequence; signal generator means operating to develop a succession of switch drive signals repetitive at said head sequence frequency; means applying said switch drive signals to control said switching means whereby said cyclic switching sequence frequency is equal to said head sequence frequency; sequence control means responsive to the relative phasing of said head sequence and said switching sequence to develop a sequence control signal dependent upon the phase relation between said sequences; sequence control means operable to vary the relative phasing of said sequences; and means applying said sequence control signal to said sequence control means thereby to produce a predetermined phase relation between said sequences.



3,401,232
FIBER OPTIC SCANNING APPARATUS

Jerome S. Goldhammer, Barrington, William L. Mohan, Jr., Prospect Heights, and Harry A. Wayne, Skokie, Ill., assignors to Chicago Aerial Industries, Inc., Barrington Village, Ill., a corporation of Delaware
Original application Feb. 7, 1963, Ser. No. 256,866, now Patent No. 3,325,594, dated June 13, 1967. Divided and this application Apr. 17, 1967, Ser. No. 658,967
12 Claims. (Cl. 178—7.1)



3. Apparatus for transducing variations in a radiation characteristic of a record medium to varying electrical signals, comprising, in combination,

a fiber optic circle-to-line shape transducer,

means for transporting the record medium past the line end of the shape transducer and in close proximity thereto,

scanning disc means adapted for rotation about the axis of the circular end of the shape transducer,

radiation distributing fiber optic means secured to the scanning disc means and traversing a path thereon extending radially from the axis of rotation to a point alined with the optical fibers at the circle end of the shape transducer,

motor means for rotating the scanning disc means,

a radiation source positioned to direct radiation upon the axial end of the rotating radiation distributing fiber optic means to thereby effect a cyclical line scan of the record medium with radiation from the radiation source,

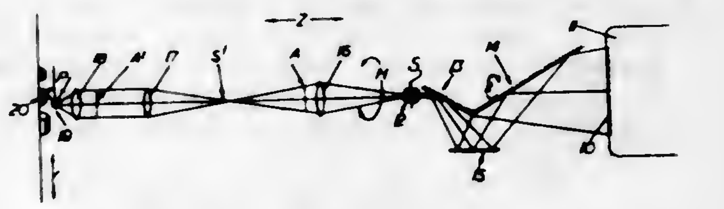
reflector means positioned parallel and adjacent to the record medium on the side opposite the shape transducer to reflect modulated radiation passed through the record medium back through said record medium,

radiation beam splitting means interposed between the radiation source and the radiation distributing fiber optic means, and

radiation detector means positioned to receive modulated radiation reflected thereon by the beam splitter means and adapted to generate electrical signals varying in accordance with variations in the radiation characteristics of the record medium.

3,401,233
FOCUSING IN OPTICAL SYSTEMS

Geoffrey M. Hellings, Aylesbury, England, assignor to Redifon Air Trainers Limited
Filed Nov. 27, 1964, Ser. No. 414,312
Claims priority, application Great Britain, Dec. 13, 1963, 49,396/63
1 Claim. (Cl. 178—7.85)



An optical system for viewing a terrain model with a television camera with improved focusing including a tiltable mirror adapted to reflect light from the model to a collimating lens system having first and second positive field lenses and an image rotator for rotating the image applied to the television camera, with a pair of movable wedges situated between the field lenses for focusing the system.

3,401,234
COMBINED AUDIO PROGRAM AND ALARM SIGNALING SYSTEM WITH LINE SUPERVISION

Ross M. Heald, Winnipeg, Manitoba, Canada, assignor to Rimac, Ltd.
Continuation-in-part of application Ser. No. 246,808, Dec. 24, 1962. This application Apr. 16, 1965, Ser. No. 448,695
17 Claims. (Cl. 179—2)

9. A line fault supervision arrangement in a signaling system comprising:

a two-wire telephone line;

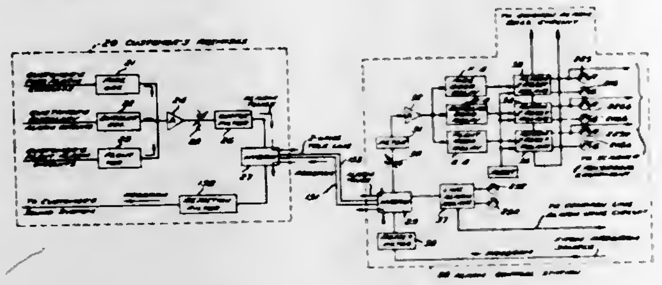
a first direct current source at one end of the line for applying a first D.C. supervisory current to one wire of the line;

first resistance means at the opposite end of said line terminating said one wire to ground for D.C.;

a second direct current source at said one end of the line for applying a second D.C. supervisory current to the other wire of said line;

second resistance means at the opposite end of said line terminating said other wire to ground for D.C.;
and means at said one end of the line operable in response to an abnormal supervisory current in either wire to indicate a fault on the line.

16. An alarm signaling system for signaling an alarm from a remote station to a central station, said system comprising:

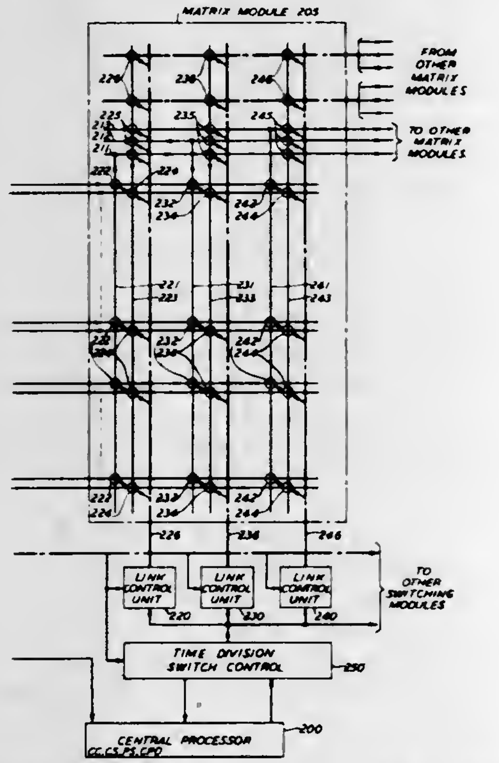


a two-wire telephone line extending between the remote station and the central station;
an alarm tone generator at the remote station operable to apply an alarm tone to the line in the absence of an alarm condition at the remote station, means responsive to an alarm condition at the remote station for stopping said alarm tone on the line;
a receiver at the central station coupled to the line to receive the said alarm tone thereon;
line-fault monitoring means at the central station for detecting and indicating a fault on either wire of said two-wire telephone line;
and said receiver and said line fault monitoring means having separate signaling means operable together to indicate a fault on both wires of the telephone line.

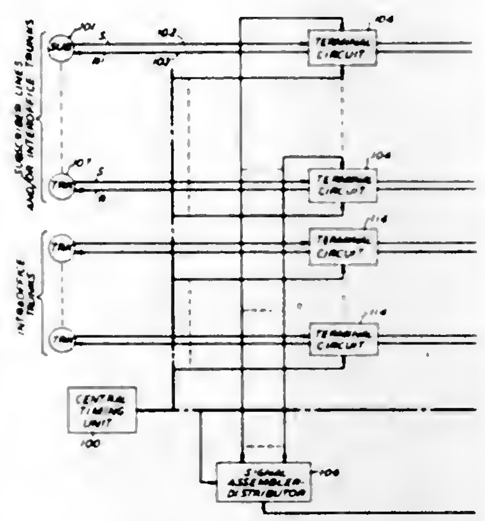
3,401,235
TIME DIVISION COMMUNICATION SYSTEM

Joseph E. Corbin and John H. Helfrich, Middletown, Kenneth A. Heller, Holmdel, Keith L. Nicodemus and George W. Smith, Jr., Middletown, Albert E. Spencer, Jr., Holmdel, and Ray C. Townley, Middletown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 29, 1964, Ser. No. 421,762
142 Claims. (Cl. 179—18)



This disclosure relates to a time division communication system having a plurality of subscriber lines for carrying respective digital message bit streams each of which includes supervisory signal and control bits at uniformly spaced positions in each frame of the stream, the respective digital message bit streams being at a number of different yet multiple related rates, and one or more interoffice trunks each capable of carrying in multiplexed channels a predetermined number of digital message bit streams as well as supervisory signal and control bits at uniformly spaced positions in each frame of the same. The frame format is the same in each case irrespective of the nature of the digital bit stream (i.e., simplex or multiplex) or the rate thereof. Terminal circuitry respectively associated with each line and trunk separates the supervisory signal and control bits from the incoming message bits and then stretches the message bits into a uniformly spaced stream of message bits preparatory to switching the latter through the time division switching matrix. The switching matrix has a plurality of line circuit positions to which the message bits of the lines and trunks are respectively coupled. The matrix is controlled to switch message bit streams between selected subscriber line circuit positions by interconnecting the latter in distinct time slots of a repetitive office cycle, the number of time slots utilized per office cycle for a given interconnection being determined by the rate of the bit streams to be interchanged. The switching matrix is further controlled to multiplex and demultiplex other selected subscriber lines with a selected interoffice trunk by interconnecting the line circuit positions thereof in other distinct time slots of the office cycle.



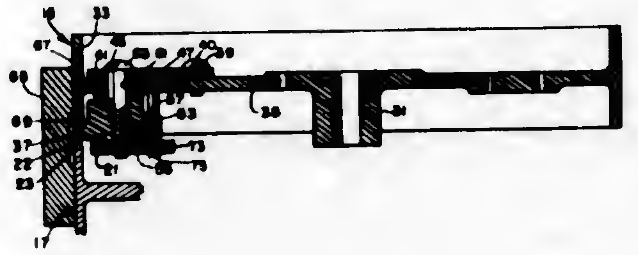
3,401,236
MAGNETIC TAPE APPARATUS WITH HEAD POSITIONING MEANS

Rein Narma, Deerfield, and Delmar R. Johnson, Des Plaines, Ill., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed June 23, 1965, Ser. No. 466,197
10 Claims. (Cl. 179—100.2)

1. A magnetic transducing head and rotatable drum assembly for use in magnetic tape recording and reproducing apparatus, including in combination, a rotatable drum having a hub portion and a cylindrical wall portion and a connecting portion, locating means on said drum providing first and second mutually transverse reference surfaces, a magnetic transducing head having a tape engaging tip protruding externally of said wall portion of said drum, said head further having third and fourth mutually transverse reference surfaces adapted to mate respectively with said first and second reference surfaces on said locating means and position said head with respect to said drum, said first and second reference surfaces being disposed to permit movement of said head radially with respect to said drum, resilient means engaging said head

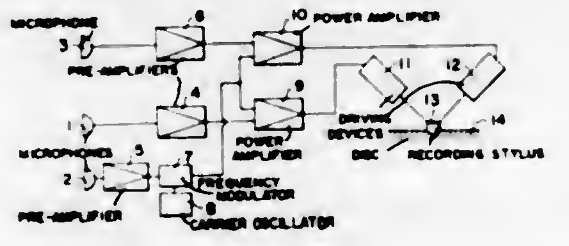
and biasing said third reference surface against said first reference surface and urging said tip outwardly of said wall portion of said drum, and locking means operable to secure said head with respect to said drum by locking said fourth reference surface against said second reference surface with said tip projecting outwardly of said wall portion a predetermined distance.



3,401,237
SIMULTANEOUS RECORDING OF TWO SIGNALS PER CHANNEL

Kenjiro Takayanagi, Kanagawa-ku, Yokohama, Japan, assignor to Victor Company of Japan, Limited, Yokohoma, Japan, a corporation of Japan

Continuation of application Ser. No. 246,607, Dec. 21, 1962. This application June 23, 1967, Ser. No. 651,938
Claims priority, application Japan, Aug. 27, 1962, 37/36,686
3 Claims. (Cl. 179—100.4)



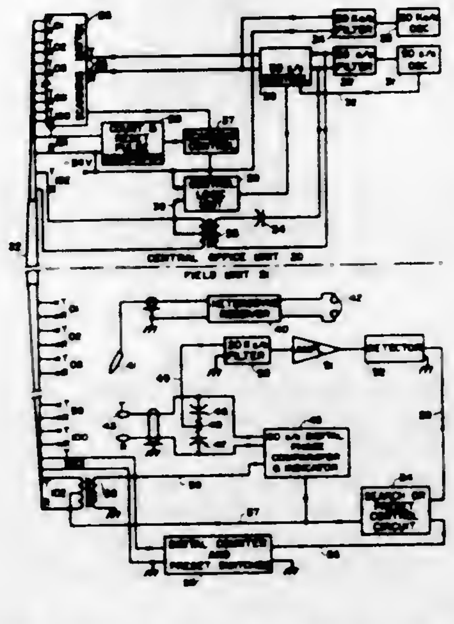
A system for multiple recording and reproducing comprises two stereophonic sound signals, a control signal and means responsive to said control signal for modulating one of said signals to create a first frequency modulated signal. The sidebands of this modulated signal have lower frequencies than the frequency band range of said stereophonic sound signals. The system includes an oscillator means producing a signal of constant frequency, which frequency differs by predetermined cycles from the carrier frequency of said first frequency modulated signal. The system further includes a first channel transmitting the sum of said first frequency modulated signal and one of said stereophonic sound signals, a second channel transmitting the sum of said constant frequency signal and the other of said stereophonic sound signals, means for recording the signals from both said channels in a single recording medium, means for reproducing the recorded signals from said recording medium, first low pass filter means for separating said first frequency modulated signal from one of the reproduced signals, second low pass filter means for separating said constant frequency signal from the other of said reproduced signals, means for producing a second frequency modulated signal, the carrier frequency thereof being said predetermined cycles, and discriminator means for reproducing said control signal from said second frequency modulated signal.

3,401,238
CABLE PAIR IDENTIFIER

Dewi Lloyd Williams, Chateauguay Centre, Quebec, Graeme Scott, Lachine, Quebec, and Kazimierz Leopold Jakimczuk, La Salle, Quebec, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed June 21, 1965, Ser. No. 465,435
4 Claims. (Cl. 179—175.25)

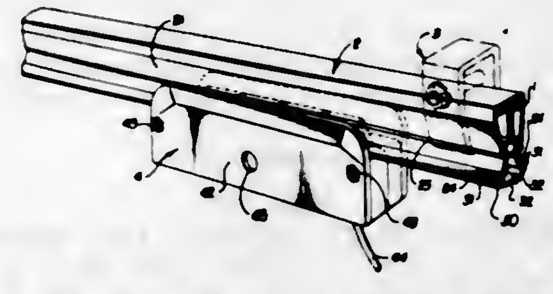
A cable pair identifier having a central office unit for applying a signal to a preselected pair and a reference pair of wires in a multipair cable; and a field unit having a receiver for detecting the signal on the preselected pair of wires. The improvement in the receiver comprising a phase comparator for comparing the phase of the signal on the preselected pair against that of the reference pair so as to identify the polarity of the selected pair of wires.



3,401,239
REPAIRABLE TROLLEY CONSTRUCTION

Roy V. Holden, Long Beach, Calif., assignor to Duct-O-Wire Company, Long Beach., Calif., a corporation of California

Filed July 27, 1966, Ser. No. 568,213
4 Claims. (Cl. 191—31)



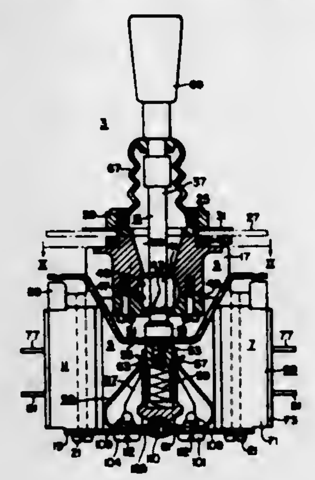
An overhead trolley system including a longitudinally extending inverted, generally U-shaped housing for enclosing a conductor bar and including depending arms for receiving a moveable collector shoe, each of the housing arms supporting a longitudinally extending removeable flexible and resilient sealing strip, the free edge portions of which are in sealing contact so as to cover the opening of the housing.

3,401,240
SWITCH WITH POSITION MAINTAINER MEANS

John N. Groves, Beaver, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 14, 1966, Ser. No. 579,419
12 Claims. (Cl. 200—6)

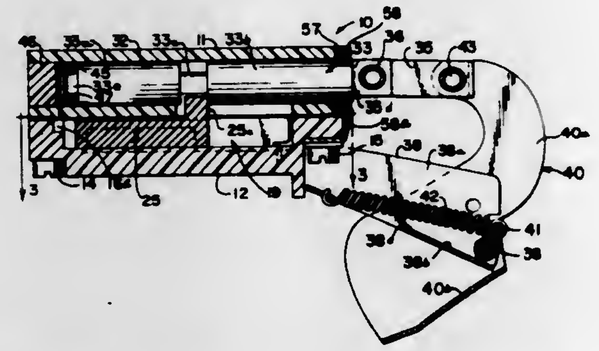
An improved switch is constructed with means for converting the switch for either maintained-position or momentary-position operation. The switch comprises four separate contact devices supported between a front support and a back support plate, and a switch operator that



is supported on the front support for movement as a unit between an initial position and four separate operating positions to operate the contact devices.

3,401,241
SWITCHING DEVICE HAVING A PAIR OF SWITCHES AND TIME DELAY ACTUATING MEANS THEREFOR

Carl J. Frenzel, Chicago, Ill., assignor to Skil Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 7, 1966, Ser. No. 532,270
11 Claims. (Cl. 200—34)

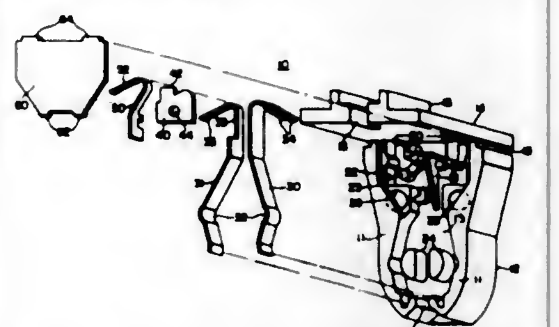


The trigger actuated switch device includes a pair of switches which are closed in sequence when the trigger is depressed. Release of the trigger causes opening of the switches in reverse sequence. A fluid-operated damper associated with the trigger retards return movement thereof to provide a time delay between opening of the switches.

3,401,242
FLUORESCENT TUBE LAMPHOLDER WITH COMPACT SWITCHING MEANS OPERABLE WITH THE INSERTION AND REMOVAL OF A FLUORESCENT LAMP

Emmett J. McLaughlin, Fairfield, Conn., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 546,244, Apr. 29, 1966. This application Oct. 11, 1967, Ser. No. 674,679
3 Claims. (Cl. 200—51.07)

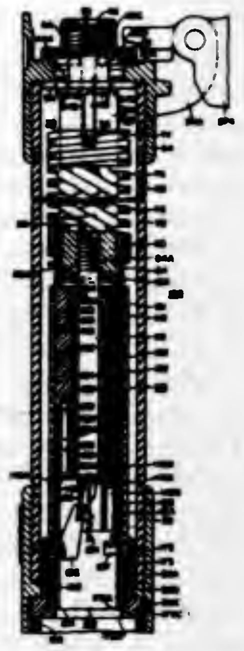
1. A lampholder comprising:
a housing made of insulating material having a base at one end,
one face wall and side walls extending from the base along the outer edges of the face wall in converging relation to form a tapered, thin housing structure, the face opposite said face wall being open,
spaced opposed terminal strips of resilient electrical conducting material in said housing extending generally from end to end thereof adjacent said side walls respectively,
said terminal strips being shaped to have supported portions which are close together adjacent said base but having their adjacent ends extending outwardly in opposite directions to form short flexible wire engaging portions,
the other ends of said terminal strips having flexible lamp terminal pin engaging portions adjacent their outer ends,
means in said housing engaging opposite sides of said terminal strips at their supported portions to support these portions against flexing but permitting flexure of said flexible portions,
one of said terminal strips having one of its wire engaging portions cut away,



a contact strip of conducting material having one end received within the cut away portion of said one terminal strip in coplanar relation to form a pair of narrow flexible wire engaging portions,
the other end of said contact strip diverging from said one terminal strip to a point close to but normally spaced from the outer side of the uncut portion of said one terminal strip, and
means in said housing for substantially rigidly supporting said other end of said contact strip so that the uncut portion of said one terminal strip will engage said other end of said contact strip when the pins of a lamp are inserted against the lamp pin engaging portions of said terminal strips.

3,401,243
CIRCUIT INTERRUPTER HAVING DUAL-BORE ARC EXTINGUISHING MEANS

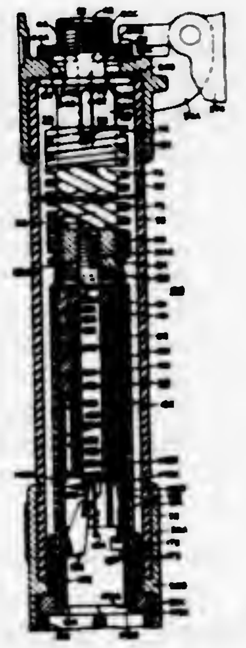
Chester W. Upton, Jr., Trafford, and John A. Sensue, Wilkinsburg, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 24, 1967, Ser. No. 663,018
6 Claims. (Cl. 337—221)



A high voltage circuit interrupter containing gas evolving, arc-extinguishing material inside a casing and includes a main bore and an auxiliary bore which extend axially through a plurality of blocks to form the respective bores. Conductors are disposed in the bores to draw an arc which is interrupted in the auxiliary bore for smaller currents and in the main bore for larger currents. To prevent the escape of ionized gases from the auxiliary bore to the main bore, the meeting ends of the adjacent blocks each have a U-shaped recess which extends around the auxiliary bore to permit the filling of the recesses when the blocks are assembled with bonding material from one another and joins the successive blocks to one another.

3,401,244
SPRING AND SHUNT ASSEMBLY FOR CIRCUIT INTERRUPTERS

Calvin C. Patterson, Bethel Park, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 24, 1967, Ser. No. 663,021
8 Claims. (Cl. 337—178)

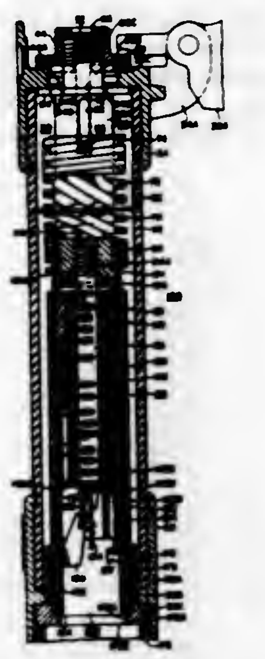


The invention relates to a high voltage circuit interrupter construction in which a fusible means is disposed inside a tubular insulating casing or holder and electrically connected in series with an elongated conducting member which is axially movable through a body of arc-extinguishing material, and is biased upwardly by a helically coiled tension spring, each turn of which may be rectangular in cross-section to prevent overlapping of the turns which might damage the spring and prevent its repetitive use.

3,401,245
CIRCUIT BREAKER HAVING IMPROVED FLASHOVER CHARACTERISTICS

Frank L. Cameron, Irwin, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 24, 1967, Ser. No. 663,029
11 Claims. (Cl. 337—199)

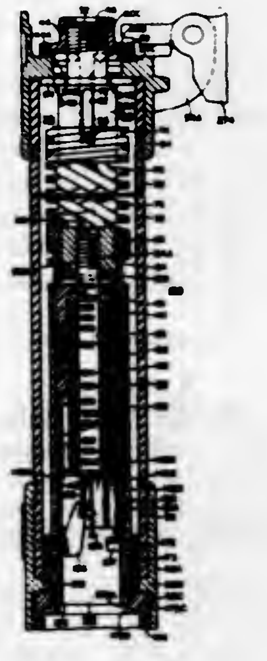
A high voltage circuit interrupter with a fusible means inside a tubular casing and connected at one end with an elongated conducting member movable through a central passageway of arc-extinguishing material. A tubular terminal means extends axially over the end of the casing a predetermined distance along the outside of the casing. A tubular member is connected between the external terminal means and the fusible means and extends axially inside the casing a minimum distance beyond the external terminal means to prevent a flashover externally of the casing. The internal conducting member terminates axially



short of substantially the entire fusible means to minimize the overall size of the circuit interrupter.

3,401,246
HIGH VOLTAGE CIRCUIT INTERRUPTER

Calvin C. Patterson, Bethel Park, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 24, 1967, Ser. No. 663,126
8 Claims. (Cl. 337—221)



A high voltage circuit interrupter construction in which a body of gas evolving, arc-extinguishing material is disposed inside a tubular insulating casing and includes a main bore and an auxiliary bore which extend axially through a plurality of blocks each having a large opening and a small opening which are substantially aligned with the corresponding openings in the adjacent blocks to form the respective bores. Separable conducting means are disposed in the main and auxiliary bores which are connected electrically in series with a fusible means disposed adjacent to one end of the associated casing and which are axially movable through the respective bores during an interrupting operation and means is provided for limiting the gas pressure.

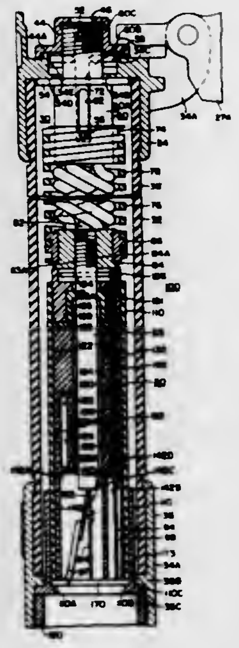
3,401,247

CIRCUIT INTERRUPTER OF THE DUAL BORE TYPE

Chester W. Upton, Jr., Trafford, Calvin C. Patterson, Bethel Park, and Frank L. Cameron, Irwin, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 24, 1967, Ser. No. 663,127

8 Claims. (Cl. 337—221)



A high voltage circuit interrupter construction in which a body of arc extinguishing material is disposed inside a tubular insulating casing and includes a main bore and a smaller auxiliary bore. A larger conducting rod is disposed to extend through the main bore and a smaller auxiliary conductor is disposed to extend through the auxiliary bore and is connected at one end to the larger conducting rod for axial movement therewith. A main fusible means is connected in series with the larger conducting rod between the rod and a terminal means at one end of the casing. In order to insure initiation of arcing during any interrupting operation in the auxiliary bore, a helically coiled conductor is electrically connected between the other end of the auxiliary conductor and the terminal means with an insulated arcing terminal being connected to the terminal means to project axially away from the terminal means and to overlap the end of the auxiliary conductor to which the helically coiled conductor is connected.

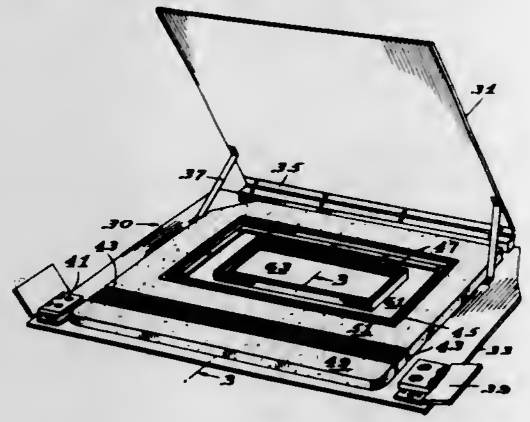
3,401,248

DIELECTRIC DIE

John C. Kim, Pontiac, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Oct. 20, 1965, Ser. No. 498,713

7 Claims. (Cl. 219—10.53)



A method and a device for bonding dielectric materials are disclosed. Each is characterized by the utilization of electrodes of varying size and inversely varying electrical resistivity to provide controlled heating.

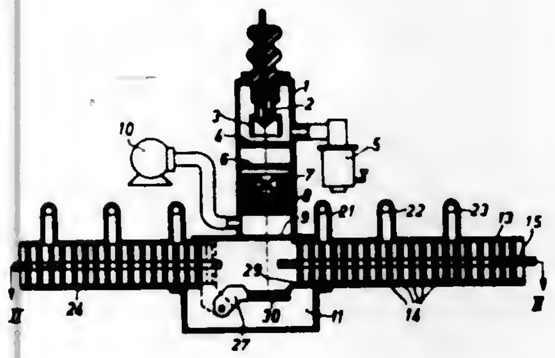
3,401,249

APPARATUS FOR THE MACHINING OF MATERIAL BY MEANS OF A BEAM OF CHARGE CARRIERS

Fritz Schleich, Unterkochen, Wurttemberg, and Wilhelm Scheffels, Aalen, Wurttemberg, Germany, assignors, by mesne assignments, to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed July 9, 1963, Ser. No. 293,776

7 Claims. (Cl. 219—69)



Apparatus having a vacuum chamber in which workpieces are machined by a beam of charge carriers. The workpieces are supplied to the chamber through a passage that communicates with the atmosphere and there are conveyor means for advancing successive workpieces, in spaced relation to one another, along the passage and into the machining chamber. The combined transverse cross-section of the conveyor means and each workpiece is substantially the same as that of the passage so that the conveyor means and workpieces seal the passage against entrance of air from the end of the passage which communicates with the atmosphere. A vacuum pump withdraws air from between successive workpieces in the passage. For large workpieces the machining chamber can be formed by providing a seal between contiguous workpiece and apparatus faces. The sealing means can be a resilient gasket, a liquid having a low vapor-pressure, or a very narrow air gap.

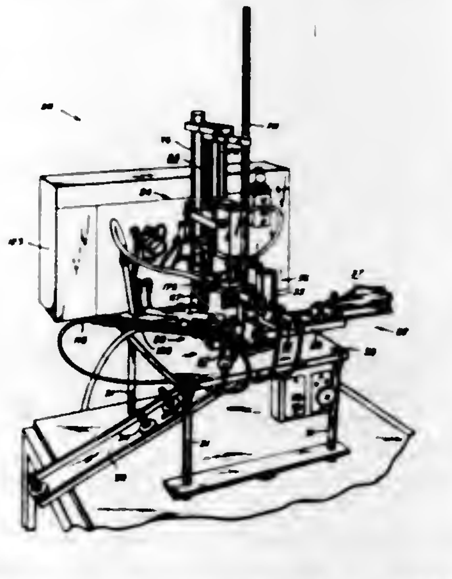
3,401,250

WELDING APPARATUS

Lewis J. Logan, 11820 Edgewater Drive, Lakewood, Ohio 44107

Filed July 28, 1965, Ser. No. 475,474

9 Claims. (Cl. 219—98)



Welding apparatus which includes a magazine for plates and a means to move the same to a welding station as well as a magazine for ferrules and means to move the ferrules to the station. Welding head means are positioned above the station and include clamping jaws and a magnet and means are provided for moving the same between a loading station and the welding stations. A stud magazine is provided and another means takes a stud from the magazine and carries the same to a position close to the magnet at the loading station and the magnet holds the stud. The jaws are open at the loading station and closed at the welding station and means are provided to perform the welding operation.

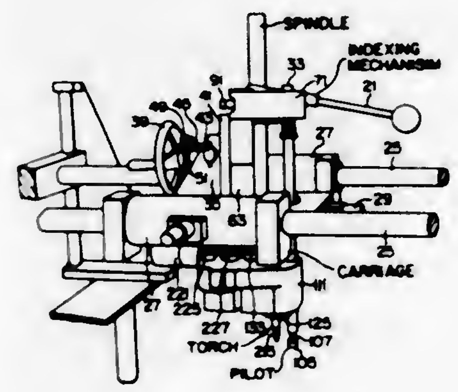
3,401,251

APPARATUS AND METHOD FOR JOINING TUBES TO PLATE

Richard P. Ache, Broomall, and Raymond H. Glatthorn, Nether Providence Township, Media, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 21, 1965, Ser. No. 499,349

9 Claims. (Cl. 219—125)



1. Apparatus for welding a tube into a plate, said tube extending into said plate and said tube and plate defining a joint to be welded about the axis of said tube, the said apparatus comprising a pilot having an axis, said pilot being dimensioned to enter said tube in pilot-centering relationship with respect to said tube so that the axis of said pilot is substantially coincident with the axis of said tube, means mounting said pilot to be set in centering relationship with said tube, locking means connected to said mounting means for locking said mounting means in a position in which said pilot is centered in said tube, an arc-welding electrode connected to said pilot, said arc-welding electrode being rotatable about an axis at a radius substantially equal to the radius of said joint in welding relationship with said joint, and means, movable while said mounting means is locked as aforesaid, connected to said electrode and pilot for removing said pilot from said tube and setting said electrode so that the axis about which said electrode is rotatable as aforesaid is substantially coincident with the axis of said tube.

3,401,252

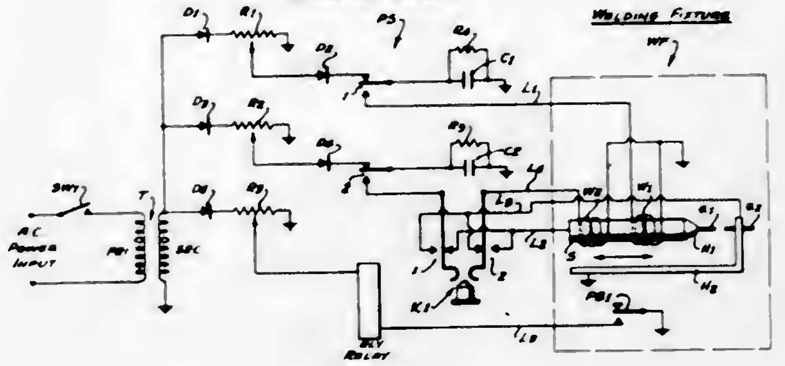
DUAL-ENERGY PERCUSSIVE ARC WELDING SYSTEM AND DUAL WINDING FIXTURE THEREFOR

Alfred R. Erbe, Santa Ana, Calif., assignor, by mesne assignments, to The Sippican Corporation, Marion, Mass., a corporation of Massachusetts

Filed Mar. 18, 1965, Ser. No. 440,759

5 Claims. (Cl. 219—95)

A percussive welding device is provided with a movable holder carried by a movable solenoid. The motion of the solenoid is controlled by two windings arranged thereon. The first winding is energized by a source of energy, to move the movable holder towards a fixed holder. The second winding is energized by the welding current to augment the flux produced by the first winding and thereby increase the impact force of the welding elements.



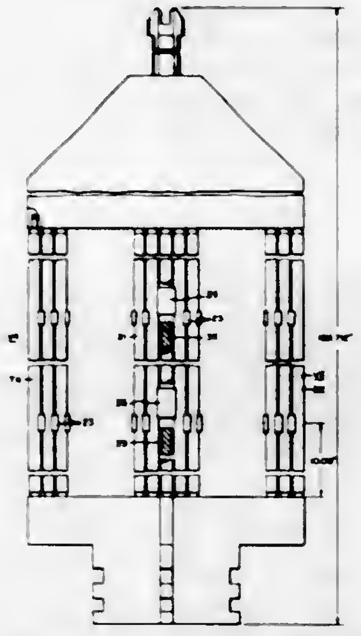
3,401,253

METHOD OF AND APPARATUS FOR METALLURGICALLY JOINING MATERIALS

Edwin S. Foster, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 11, 1964, Ser. No. 395,800

5 Claims. (Cl. 219—121)



Method and apparatus for welding thin walled tubing, of the order of .01 inch, to spacers, in the practice of which the tubes and spacers are mounted in a fixture which is in a chamber of an electron beam generator while defining joints to be welded. The electron beam is aligned with the joint on a run-on-run-off tab and then the joint is moved relative to the beam by a motor, with the beam in welding relationship with the joint, from this run-on-run-off tab to another at the other end of the joint.

3,401,254

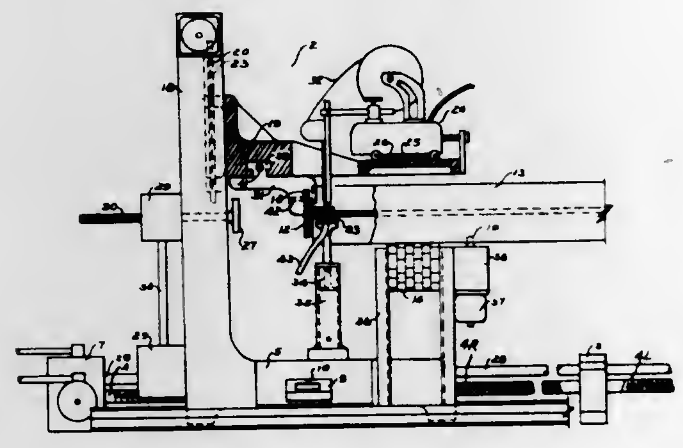
AUTOMATIC FUSION WELDER FOR STRUCTURAL STEEL MEMBERS

John R. McConnell, 148 Woodside Ave., Ridgewood, N.J. 07450

Filed Apr. 6, 1964, Ser. No. 357,580

5 Claims. (Cl. 219—125)

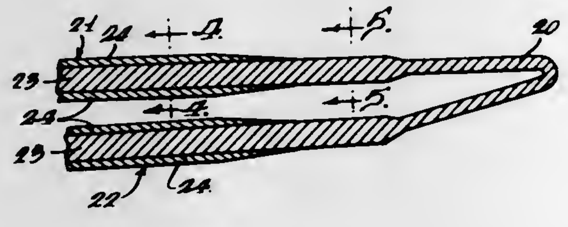
A fusion welding apparatus for the assembly fabrication of rolled structural steel members having a longitudinal track which supports a pair of dual mobile inwardly facing arc welding units symmetrically located on opposite sides of transverse mid-length shaft anchorage. A dial mechanism is connected to a respacing shaft for registering the distance the welders are positioned from the mid-length anchorage. An automatically guided self-powered fusion welding carriage places and fusion welds a connection T to the web portion of the structural shapes whereby the shapes are conveyed on a conveyor belt into the apparatus, are length centered, measured, laid out, connection details are applied and the connection T welded thereto. A power hoist and device arrangement on an over-head track for rotation of the shapes for the welding operation.



3,401,255

ELECTRIC SOLDER GUN TIP

Dhu Aine J. Davis, Wheaton, Ill., assignor to D. J. Davis Company, Inc., a corporation of Connecticut
Filed Oct. 21, 1965, Ser. No. 499,808
1 Claim. (Cl. 219—233)



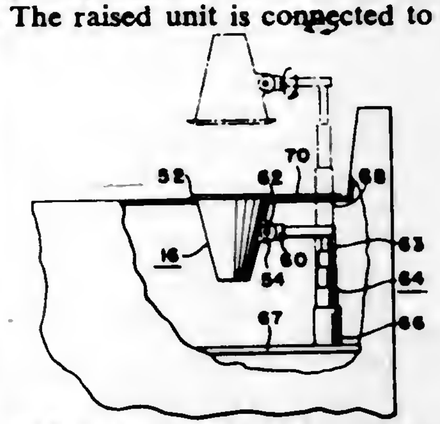
A soldering gun tip in which an elongated copper clad steel conductor of V-shaped conformation has legs of circular cross section and a looped intermediate section which converges at a generally uniform angle to a point which forms the apex of the V. The looped section is flattened transversely to the plane of the V to a width greater than diameter of the legs to enhance the solder holding ability of the tip and to provide a larger heat transfer surface. The copper cladding layer is removed from the looped section to concentrate the generation of heat to the looped section.

3,401,256

INVERTIBLE INFRARED SURFACE HEATING UNIT

Donald C. Siegla, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 22, 1965, Ser. No. 489,176
7 Claims. (Cl. 219—454)

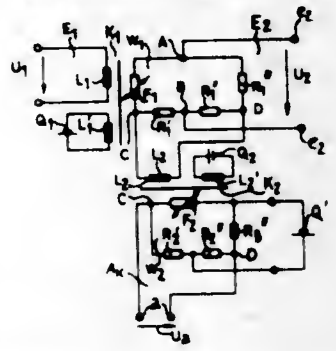
In the preferred form, an infrared energy emitting surface heating unit supported in the top of a domestic range to locate a glass surface on the unit in utensil supporting position. The unit is connected to a telescopic arm in the range that extends to move the unit above the range top. The raised unit is connected to the arm to be inverted to warm articles located on the range top therebelow.



3,401,257

CIRCUIT ARRANGEMENT FOR ISOLATING VOLTAGE MULTIPLIER D.C. SIGNAL CIRCUITS

Bernhard Lang, Karlsruhe, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed Aug. 6, 1965, Ser. No. 477,843
6 Claims. (Cl. 235—194)

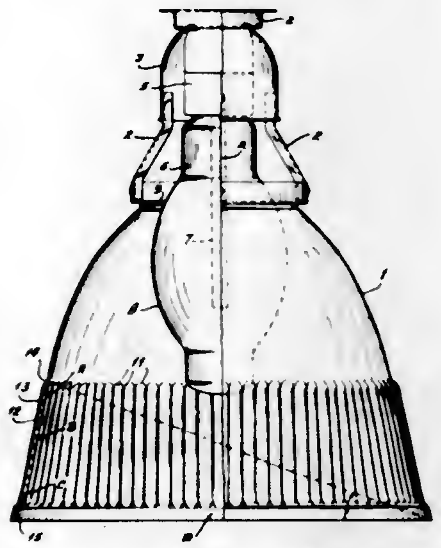


For the separation of direct current signal circuits in voltage multipliers there are provided mangetic field-dependent semiconductor resistors which lie in a bridge circuit and whose resistance can be varied by means of the field of a coil whose one winding lies in a single circuit. A second feedback winding is energized by the output current of the bridge circuit. The bridge can be fed from an additional signal input circuit which has no connnection with the first input circuit and the output circuit.

3,401,258

LUMINAIRE REFLECTOR

Frederick E. Guth, Clayton, Mo., assignor to The Edwin F. Guth Company, St. Louis, Mo., a corporation of Missouri
Filed Oct. 17, 1966, Ser. No. 587,090
8 Claims. (Cl. 240—103)

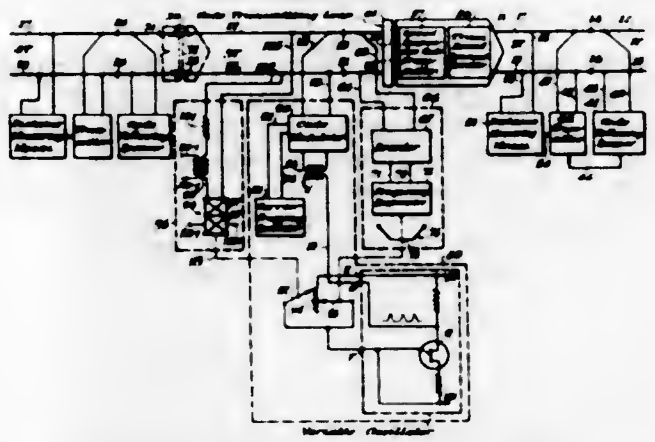


Downlight luminaire and process for controlling objectionable glare therefrom which involves providing a succession of rounded ridges on the inside of a coniform reflector at regions thereon which otherwise would be objectionably glaring when viewed from angles of twenty or more degrees below horizontal with the aperture of the reflector.

3,401,259

MOVABLE BLOCK VEHICLE SPEED CONTROL SYSTEM

George W. Baughman, Swissvale, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania
Filed Jan. 27, 1966, Ser. No. 523,293
14 Claims. (Cl. 246—187)



This invention relates to a movable block automatic speed control system drawn to the idea of controlling the speed of a following vehicle as a function of the actual speed of a lead vehicle and has in addition the provision of speed control of the following vehicle as a function of the distance a following vehicle is from a lead vehicle occupying a controlled section of the way.

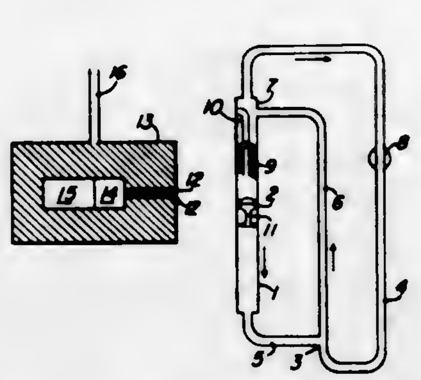
ERRATUM

For Class 250—41.9 see:
Patent No. 3,401,405

3,401,260

CORROSIVE LIQUID FLOW METER

Dale M. Holm and John E. Deverall, Los Alamos, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 31, 1966, Ser. No. 591,012
3 Claims. (Cl. 250—43.5)

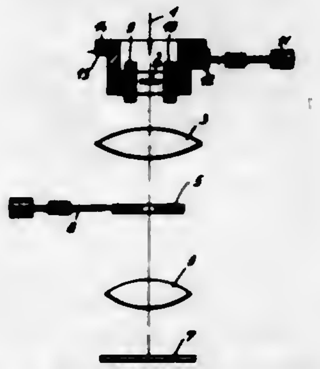


A liquid flow meter having a remote radioactive detector and a source of radioactivity in the liquid, the fall of the liquid through a chamber occurring only while fast acting valve means prevent the influx of more liquid to the chamber so that the rate of fall of the liquid is proportional to the flow rate.

3,401,261

APPARATUS FOR INVESTIGATING MAGNETIC REGIONS IN THIN MATERIAL LAYERS

Ekkehard Fuchs, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Jan. 9, 1963, Ser. No. 250,420
Claims priority, application Germany, Jan. 23, 1962, S 78,041
8 Claims. (Cl. 250—49.5)

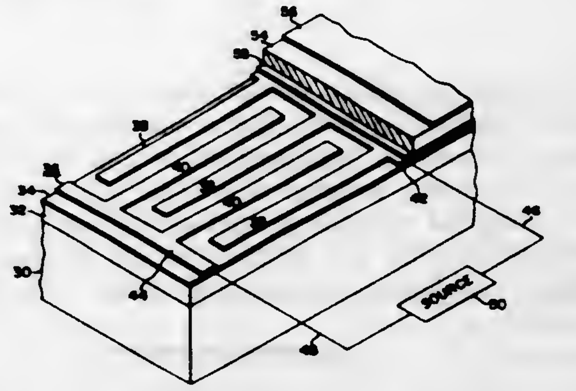


1. A device for investigating, with the aid of a corpuscular beam microscope, magnetic regions in thin material specimen by transirradiation, with such microscope having disposed in the beam path thereof, a specimen holder, objective lens means, projective lens means and image viewing means, with beams of rays passing through such a specimen being focused in a common focal plane following passage through said objective lens means, the beams which have passed through differently magnetized regions of the specimen having different focal points as a result thereof, comprising a diaphragm disposed at said focal plane and movable in directions parallel thereto operable to selectively block further passage of rays at focal points representing undesired regions of the specimen, and a coil arrangement disposed to produce a magnetic field at said specimen holder, to which such a specimen therein would be subjected.

3,401,262

RADIATION SENSITIVE DISPLAY SYSTEM UTILIZING A CHOLESTERIC LIQUID CRYSTALLINE PHASE MATERIAL

James L. Fergason, Penn Hills Township, Verona, and Arthur E. Anderson, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 29, 1965, Ser. No. 467,864
8 Claims. (Cl. 250—83)

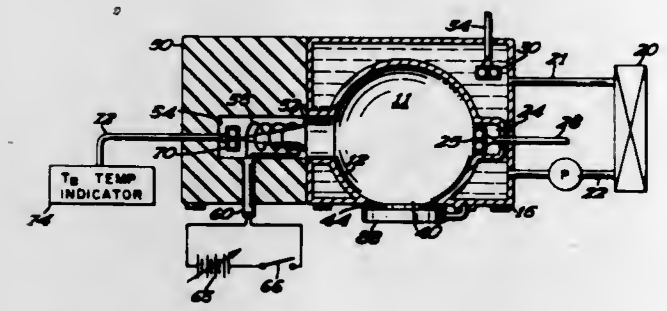


The present invention relates to a radiation sensitive display device which includes a heat sensitive display screen of a liquid crystalline material of the cholesteric phase with a radiation sensitive screen incorporating heating elements in thermal contact with the heat sensitive display screen which the heating is due to current flow. The radiation sensitive screen responds to input radiations to cause a current flow which in turn provides heat for impressing a thermal image on the heat sensitive display screen.

3,401,263

APPARATUS AND METHOD OF MEASURING EMISSIVITY OF AN OBJECT

Richard C. Birkebak, 3144–D Briarcliff Road NE.,
Atlanta, Ga. 30329
Filed Apr. 15, 1965, Ser. No. 448,388
7 Claims. (Cl. 250—83.3)

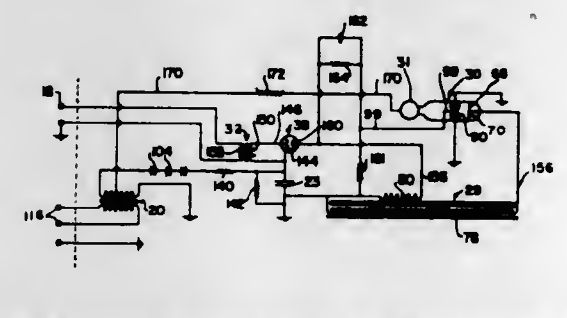


The disclosure is directed to using an integrating sphere radiometer surrounded by thermal insulation means having a diffuse reflector surface with a constant and high reflectance value in the infrared with openings formed therein of equal area to admit radiations of a black body and a test sample emitting infrared energy having another opening formed therein to transmit radiations to a radiation sensitive detector. Means is also provided for adjusting the temperature level of the integrating sphere radiometer. Also a shutter may be used to form alternately a black body surface in place of the test sample.

3,401,264

PULSED NEUTRON GENERATOR WITH VARIABLE POTENTIAL CONTROL GRID

Barney J. Carr, Colorado Springs, Colo.; Elisabeth H. Carr, special administratrix of said Barney J. Carr, deceased, assignor to Kaman Corporation, a corporation of Connecticut
Continuation of application Ser. No. 285,305, June 4, 1963. This application Mar. 25, 1966, Ser. No. 537,574
The portion of the term of the patent subsequent to July 21, 1981, has been disclaimed
9 Claims. (Cl. 250—84.5)



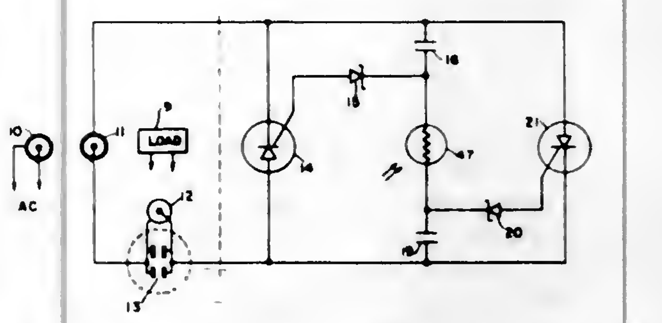
Neutron generator comprising an ion source, a target spaced therefrom including a substance adapted to produce neutrons on impingement of ions thereon, a control grid electrically isolated from and selectively maintained at a potential other than that of the ion source disposed intermediate the ion source and the target, all disposed within a container maintained under a high degree of vacuum.

3,401,265

CURRENT CONTROL CIRCUIT WITH SILICON CONTROLLED RECTIFIERS AND A PHASE SHIFTING CIRCUIT

Gianni A. Dotto, Dayton, Ohio, assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed July 6, 1964, Ser. No. 380,405
10 Claims. (Cl. 250—206)

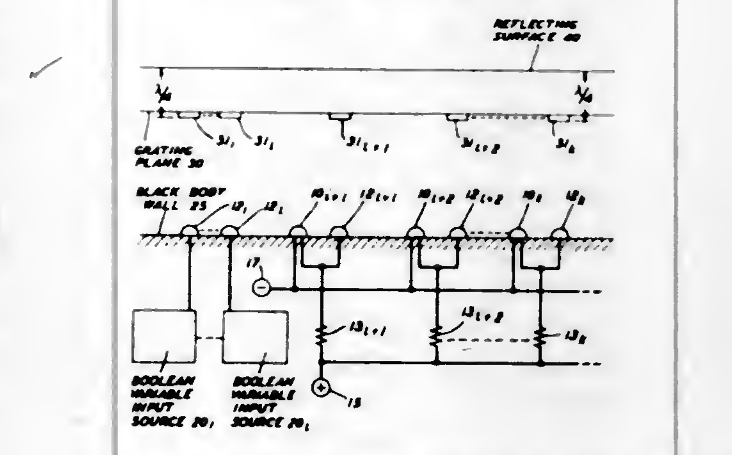
The gates of oppositely poled SCR's are connected through Zener diodes to a phasing circuit having two capacitors and a variable resistance in series across the SCR's. The resistance may be varied manually, or it may be a thermistor or photoconductive resistor. This circuit may be packaged in conventional lamp sockets and socket extenders.



3,401,266

LOGIC ARRANGEMENT EMPLOYING LIGHT GENERATING DIODES, PHOTOSENSITIVE DIODES AND REFLECTING GRATING MEANS

Edmund H. Cooke-Yarborough, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 20, 1965, Ser. No. 488,630
21 Claims. (Cl. 250—209)

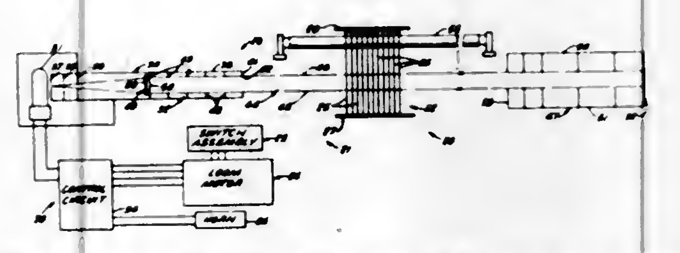

REFLECTING SURFACE 40
GRATING PLANE 30
BLACK BODY WALL 35
BOOLEAN VARIABLE INPUT SOURCE 20
BOOLEAN VARIABLE INPUT SOURCE 20

1. A logic arrangement comprising a first logic stage including at least one optical reflecting grating means, a photo-detecting diode, electro-luminescent diode means for selectively illuminating said grating means and current source means connected to said detecting diode and to said electro-luminescent diode means.

3,401,267

YARN BREAKAGE DETECTOR

Milton A. Engle, 4907 Alcove Ave., North Hollywood, Calif. 91607, and Jack W. Raquet, 8416 Madison, South Gate, Calif. 90280
Filed June 26, 1964, Ser. No. 378,164
6 Claims. (Cl. 250—219)

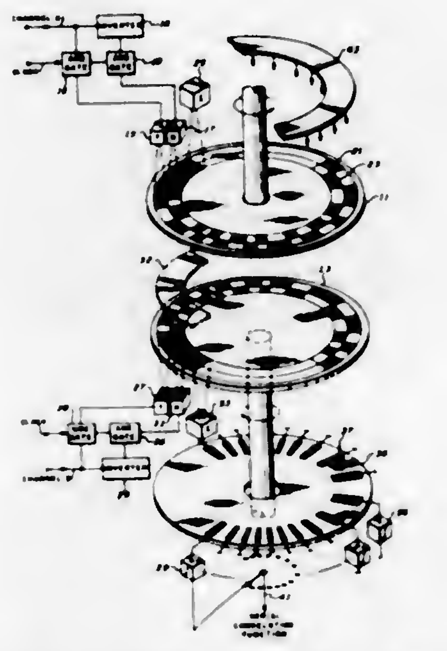


The invention involves the use of photoelectric apparatus to detect yarn breakage in an automatic loom along a path, wherein a light trap is located at each end of the path. One light trap is empty and the other contains a telescope and photocell. It is critical to the invention that the light trap around the telescope extend beyond the end of the telescopic lens a distance to minimize the amount of ambient light not reflected from yarn which can reach the photocell. This keeps the noise of the system to a level which can be tolerated.

3,401,268

OPTICAL CORRELATOR UTILIZING A PLURALITY OF AXIALLY ALIGNED PHOTOCHROMIC DISKS

John D. Lea, Huntington Station, N.Y., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Sept. 10, 1965, Ser. No. 486,426
10 Claims. (Cl. 250—219)

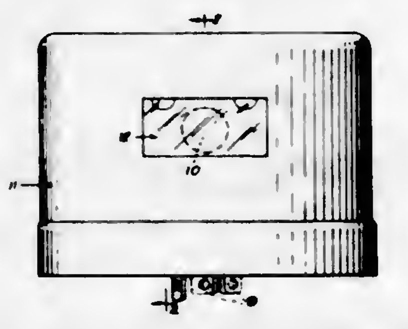


1. A signal correlator comprising first and second photochromic record means; a pair of tracks of photochromic material on each of said record means; means to move said record means so that each elemental area in a track on one record means scans each elemental area in the corresponding track on the other record means; first and second modulating means to provide complementary coded digital WRITE light beams in response to first and second input signal trains to be correlated, said first and second modulating means being arranged to focus WRITE light beams on the tracks of photochromic material on said first and second record means respectively; means to transmit a READ light serially through areas of both record means; collecting means positioned to receive the READ light passing through said record means; and means to compare the individual total quantities of READ light reaching individual sectors of the collecting means during a correlation cycle.

3,401,269

COMPOSITE COVER FOR PHOTOELECTRIC CONTROL UNIT AND METHOD FOR MAKING SAME

Michael A. Tabet, 1336 Ballentine Blvd.,
Norfolk, Va. 23512
Filed June 9, 1964, Ser. No. 373,764
2 Claims. (Cl. 250—239)

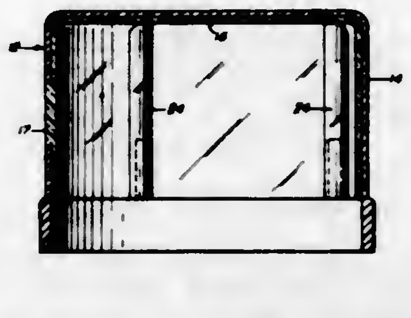


A protective cover formed of opaque material for a photoelectric control unit. A relatively small light-transmissive pane spans an opening in the wall of the inverted cup-shaped cover through which light may pass to activate the photoelectric element. The pane is secured in place during molding of the cover.

3,401,270

COMPOSITE COVER FOR A LIGHT CONTROL UNIT

Michael A. Tabet, 1336 Ballentine Blvd.,
Norfolk, Va. 23512
Filed Aug. 25, 1964, Ser. No. 391,953
3 Claims. (Cl. 250—239)

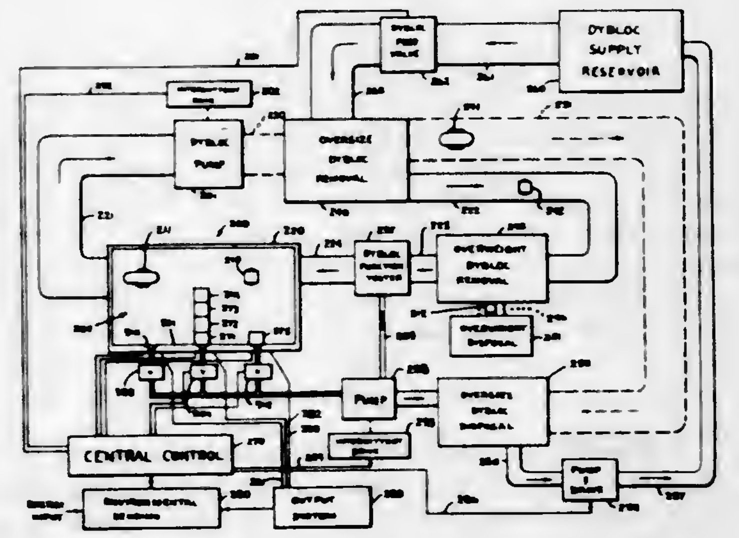


A composite inverted cup-shaped cover of weatherproof construction for an electrical control unit which is activated by a photoelectric element. An outer layer of opaque material encases an inner liner of light transmissive material except for a pane portion through which natural light may pass to actuate the photoelectric element. The pane portion locks the outer layer in place.

3,401,271

SYSTEM FOR AUTOMATIC CHANGE OF FUNCTION OR CAPACITY

Richard R. Landers, Beachwood, Ohio, assignor to TRW Inc., a corporation of Ohio
Filed July 5, 1963, Ser. No. 293,029
10 Claims. (Cl. 307—92)



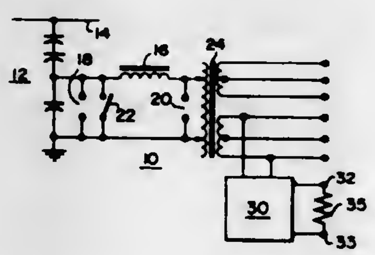
1. Automatic equipment comprising
(a) an envelope,
(b) a plurality of elements in said envelope capable of being interconnected directly with each other,
(c) means for maintaining a plurality of said elements in a generally randomly movable condition in said envelope relative to a further one of said elements,
(d) selectively operable means for automatically producing a force field in said envelope tending to move said elements toward a predetermined position relative to said further one of said elements, and
(e) means automatically responsive to one of said plurality of elements reaching said predetermined position relative to said further one of said elements to interconnect directly said one and said further one of said elements.

3,401,272
FERRORESONANT TRANSIENT SUPPRESSION SYSTEM

John Rosa and Michael Bryant, Pittsburgh, Pa., and Andrew S. Sweetana, Jr., Bloomington, Ind., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 30, 1965, Ser. No. 483,605

11 Claims. (Cl. 307—93)



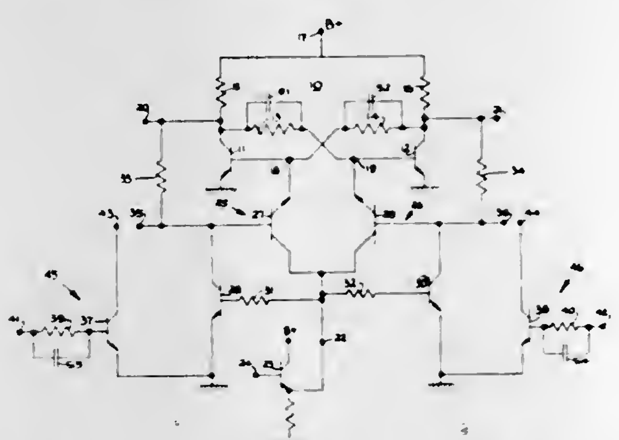
A circuit arrangement for anticipating a ferroresonant condition by sensing a predetermined increase of magnetic flux in the core of a potential transformer, and developing a signal in response thereto to place an energy dissipating load across at least a portion of the transformer. The increase of flux in the transformer core is detected by a sensing reactor inductively coupled to the core, the sensing reactor being designed to saturate when the magnitude of flux in the transformer core reaches a predetermined, alarm level which level is substantially below the core's saturation level.

3,401,273
BINARY FLIP-FLOP

George A. May, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed Oct. 11, 1965, Ser. No. 494,544

7 Claims. (Cl. 307—247)



A flip-flop in which the bistable circuit controls the operation of two steering gates, normally operating the flip-flop in complementing sequence. A pair of control gates are provided connectable in one circuit configuration to SET and RESET the flip-flop operating as an R.S.T. flip-flop and connectable in another circuit configuration to inhibit the operation of the steering gates so that the flip-flop operates as a J–K flip-flop.

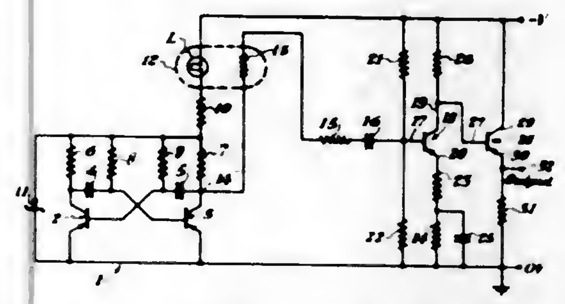
3,401,274
FAIL-SAFE STANDARD AMPLITUDE SIGNAL SOURCES

Donald B. Marsh, Wilkinsburg, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania

Filed Sept. 10, 1965, Ser. No. 486,270

15 Claims. (Cl. 307—297)

12. A fail-safe standard amplitude signal source comprising: a source of supply potential having a pair of terminals, a multivibrator having a first and a second transistor each having an emitter, a collector and a base electrode, capacitor means cross-coupling the collector electrode of each of said transistors to the base electrode of the other of said transistors, a voltage regulator including a Zener type diode and a current limiting resistor adapted to be connected to said source of supply potential, collector load resistors coupling the collector electrodes of each of said transistors to said voltage regulator, base biasing resistors coupling the base electrodes of each of said transistors to said voltage regulator, the emitter electrodes of each of said transistors directly connected to one of said pair of terminals of said supply source, a monitoring means including a light source connected between said current limiting resistor and the other of said pair of terminals of said supply source, said monitoring means including a photo-sensitive resistive element electrically connected to the collector electrode of one of said first and second transistors, a third transistor having an emitter, a collector and a base electrode, a voltage divider including a pair of resistors connected across said source of supply potential with the junction point of said voltage divider connected to the base electrode of said third transistor, a series resistor-capacitor network coupling said photosensitive resistive element to the junction point of said voltage divider, a collector load resistor coupling the collector electrode of said third transistor to the other of said pair of terminals of said supply source, a pair of series connected resistors coupling the emitter electrode of said third transistor to the one of said pair of terminals of said supply source, a capacitor connected across one of said pair of series connected resistors, a fourth transistor having an emitter, a collector and a base electrode, the base electrode of said fourth transistor directly connected to the collector electrode of said third transistor, the collector electrode of said fourth transistor directly connected to the other of said pair of terminals of said supply source, a resistor connecting said emitter electrode of said fourth transistor to the one of said pair of terminals of said supply source, and an output terminal connected to the emitter electrode of said fourth transistor.

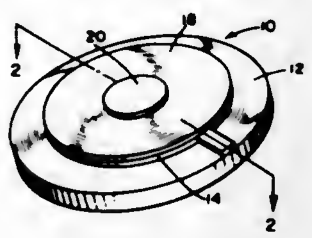


3,401,275
COMPOSITE RESONATOR

Daniel R. Curran, Cleveland Heights, and Don A. Berlincourt, Chagrin Falls, Ohio, assignors to Clevite Corporation, a corporation of Ohio

Filed Apr. 14, 1966, Ser. No. 542,627

18 Claims. (Cl. 310—8.2)



A composite resonator structure comprises a substrate having a piezoelectric driving element formed on one surface thereof. The piezoelectric driving element mechanically drives the composite structure in a vibrational mode

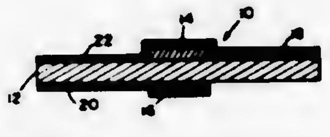
determined by the polorization or orientation of the driving element material. By sizing the relative thickness of the piezoelectric element and substrate, improved coupling characteristics are achieved when the composite resonator is operated at a harmonic of its fundamental frequency. Reference is made to the claims for a legal definition of the invention.

3,401,276
PIEZOELECTRIC RESONATORS

Daniel R. Curran, Cleveland Heights, and Donald J. Koneval, Warrensville Heights, Ohio, assignors to Clevite Corporation, a corporation of Ohio

Filed Apr. 19, 1965, Ser. No. 449,063

11 Claims. (Cl. 310—9)



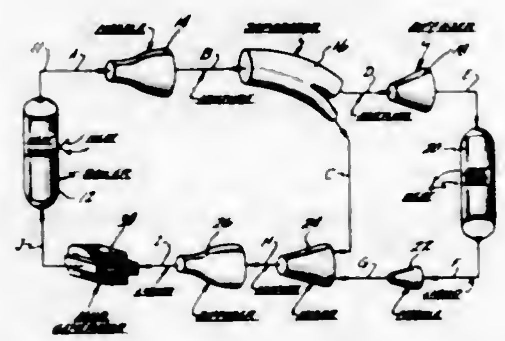
A wafer of piezoelectric material is provided with electrodes on opposite surfaces thereof. Tuning is accomplished by the application of a high Q dielectric non-conducting film over the surface of at least one electrode and the surrounding non-electroded wafer material. The film thickness is increased until the desired resonant frequency of the electroded region is obtained. Reference is made to the claims for a legal definition of the invention.

3,401,277
TWO-PHASE FLUID POWER GENERATOR WITH NO MOVING PARTS

John W. Larson, Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Dec. 31, 1962, Ser. No. 248,532

37 Claims. (Cl. 310—11)



A two-phase fluid, closed loop, self-pumping power generator which converts thermodynamic energy to electric energy by vaporizing the fluid to a liquid-vapor mixture, accelerating the vaporized mixture to a high velocity, rejecting heat by use of either a vapor separator or a condensing apparatus called a jet pump to thereby produce high velocity liquid and then passing the high velocity liquid through an MHD generator.

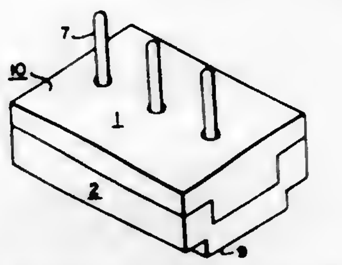
3,401,278
ELECTRODES FOR MAGNETOHYDRODYNAMIC DEVICES

Shih-Ming Ho, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 6, 1965, Ser. No. 469,668

12 Claims. (Cl. 310—11)

1. An electrode for an energy conversion apparatus operative with a flow of thermally ionized working fluid comprising a refractory oxide block of material divided into two sections with the inside face of one section having a coat of metal bonding material, a metal foil placed on said bonding material, electrical conductors secured to said foil and extending through the second section of the divided block, the metal of the bonding material, foil and conductors selected from the group consisting of iridium, rhodium, palladium and platinum.

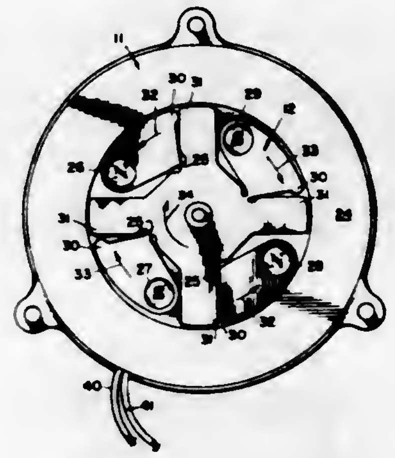


3,401,279
LOW SPEED-HIGH TORQUE MOTOR

Gianni A. Dotto, Dayton, Ohio, assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Filed Mar. 7, 1966, Ser. No. 532,150

8 Claims. (Cl. 310—22)



8. A motor comprising: a substantially cylindrically shaped casing having substantially flat ends; a shaft journalled in said ends of said casing; a rotor fixably mounted on said shaft so as to impart rotation thereto; a plurality of weights radially spaced and pivotally mounted on said rotor, each of said weights having a permanent magnet slug attached thereto so as to have a north-south axis parallel to said shaft and a portion for striking a radial arm of said rotor when said weights are vibrated; a stator annularly disposed in said casing so as to circumscribe said rotor, said stator having a spool wound coil with a plurality of magnetic metal rings laminated on each side thereof; means for connecting said coil to an alternating current power source so as to vibrate said weights against said radial arms of said rotor; and a one-way means for preventing backward rotation of said rotor, said means being mounted on one end of said casing so as to engage said shaft when said rotor is rotated in the wrong direction.

3,401,280
FABRICATED SQUIRREL CAGE ROTOR CONSTRUCTION FOR ELECTRIC MOTOR AND METHOD OF ASSEMBLING THE SAME

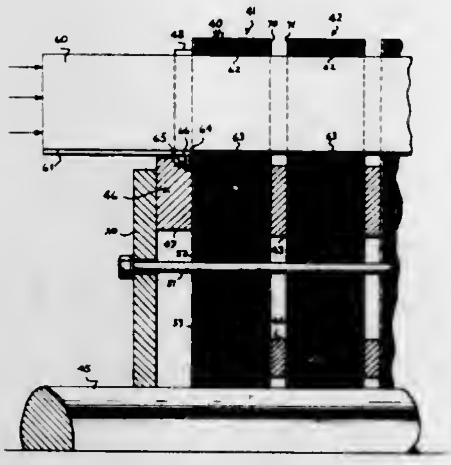
Dale F. Lackey, Saratoga, and Gilbert D. Spooner, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed Mar. 1, 1966, Ser. No. 530,908

8 Claims. (Cl. 310—42)

8. A rotor for an electric induction motor comprising: a laminated stack of annular ferromagnetic punchings providing a core having axially extending slots circum-

ferentially spaced in the periphery thereof and respective conductors in said slots each having a wedge-shaped top portion with angled surfaces abutting corresponding surfaces of the core at the top of the slot and an integral projection at the bottom of each conductor abutting the core at the bottom of the slot.



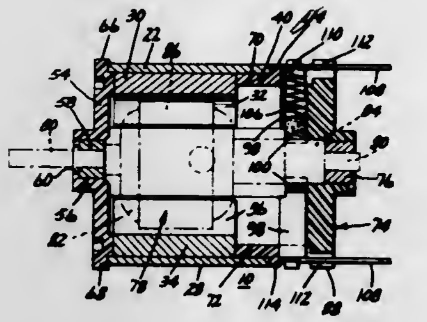
3,401,281

ELECTRIC MOTOR WITH PERMANENT MAGNET STATOR POLES AND METHOD OF MAKING

Elmer E. Martin, Robert F. Brandon, Ernest R. Summers, and Wladyslaw S. Zagorski, Morrison, Ill., assignors to General Electric Company, a corporation of New York

Filed Mar. 18, 1966, Ser. No. 535,438

19 Claims. (Cl. 310—42)



15. An electric motor comprising a pair of bracket sections of magnetic material; said bracket sections being inwardly concave and defining a chamber therebetween; means securing said bracket sections together in confronting relationship, with portions of each bracket section overlapping portions of the other bracket section; permanent magnet means disposed in said chamber with at least one pole portion in each said bracket section, said pole portions defining an armature-receiving bore; said securing means also securing said permanent magnet means in said bracket sections in substantial surface-to-surface contact therewith; and said overlapped portions of said bracket sections defining at least a portion of the magnet flux path between said pole portions.

3,401,282

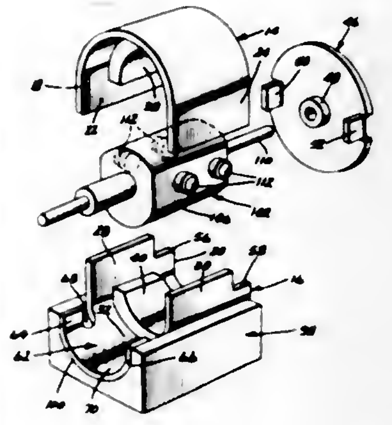
ELECTRIC MOTOR WITH PERMANENT MAGNET STATOR POLES AND METHOD OF MAKING

Wladyslaw S. Zagorski, Morrison, Ill., assignor to General Electric Company, a corporation of New York

Filed Mar. 18, 1966, Ser. No. 535,572

17 Claims. (Cl. 310—42)

14. A stator-frame assembly for electric motors comprising: a hollow casing including a pair of cooperating frame sections, each said frame section having spaced apart legs connected by a bight and defining magnetizable segment receiving stations, at least two magnetizable segments mounted in said receiving stations and forming at least part of an armature-receiving bore of predetermined diameter, the legs of one of said frame sections projecting towards and being in overlapped relationship with associated legs of the other frame section, means for fastening together said associated legs at the overlapped portions thereof, portions of said frame sections providing at least a portion of the flux path between said magnetizable segments and an end shield section disposed at one end of means in axial alignment with the central axis of said bore.



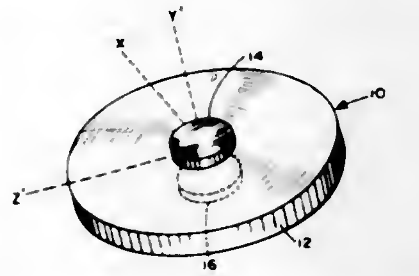
3,401,283

PIEZOELECTRIC RESONATOR

Daniel R. Curran, Cleveland Heights, and Donald J. Koneval, Warrensville Heights, Ohio, assignors to Clevite Corporation, a corporation of Ohio

Filed Apr. 19, 1965, Ser. No. 448,922

8 Claims. (Cl. 310—9.5)



A piezoelectric resonator is provided with dimensions and parameters in accordance with the following equation:

$$\frac{d}{t_w} \leq \frac{M}{n}\left(\frac{f_a}{f_b - f_a}\right)^{1/2}$$

where d is the electrode diameter, t_w is the wafer thickness, M is a constant, n is the order of the harmonic overtone, f_a is the resonant frequency of the electroded region of the wafer, f_b is the resonant frequency of the surrounding non-electroded region of the wafer and the ratio f_a/f_b is in the range of 0.8 to 0.99999. Reference is made to the claims for a legal definition of the invention.

3,401,284

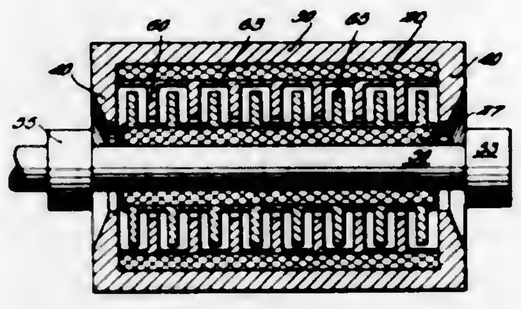
VARIABLE RELUCTANCE DYNAMOELECTRIC MACHINES

Park French, Aurora, Ohio, assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio

Filed Apr. 25, 1966, Ser. No. 544,782

5 Claims. (Cl. 310—168)

1. A dynamoelectric reluctance machine comprising:
- a frame;
- a shaft rotatably mounted on the frame;
- a plurality of rotor elements secured in closely spaced relation along said shaft;
- a plurality of stator elements extending from said frame in interleaved relation with said rotor elements, said elements consisting of disks each having a plurality of magnetic sectors alternating with a plurality of non-magnetic sectors,
  - said magnetic sectors providing a plurality of magnetic paths extending in an axial direction with respect to said shaft;



- first winding means for providing a dynamic magnetic field extending in an axial direction with respect to said shaft; and
- second winding means for providing a static magnetic field extending in an axial direction with respect to said shaft to excite said machine for control thereof.

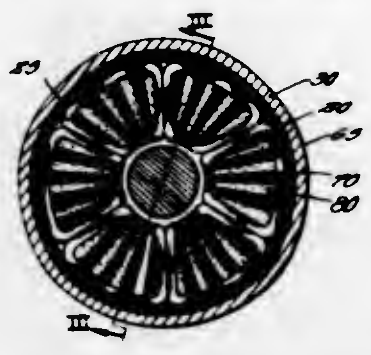
3,401,285

VARIABLE RELUCTANCE DYNAMOELECTRIC MACHINES

Park French, Aurora, and John T. Venaleck, Mentor, Ohio, assignors to TRW Inc., Cleveland, Ohio, a corporation of Ohio

Filed Apr. 25, 1966, Ser. No. 544,781

5 Claims. (Cl. 310—168)



1. A dynamoelectric reluctance machine comprising:
- a frame;
- a shaft rotatably mounted on the frame;
- at least one rotor element secured in closely spaced relation along said shaft;
- a plurality of stator elements extending from said frame in interleaved relation with said rotor elements,
- a plurality of coil means disposed in each of said stator elements, each of said coil means having a plurality of magnetic and non-magnetic sectors contained therein, and
- field means for providing a static magnetic field extending in a parallel direction with respect to said shaft to excite said machine for control thereof.

3,401,286

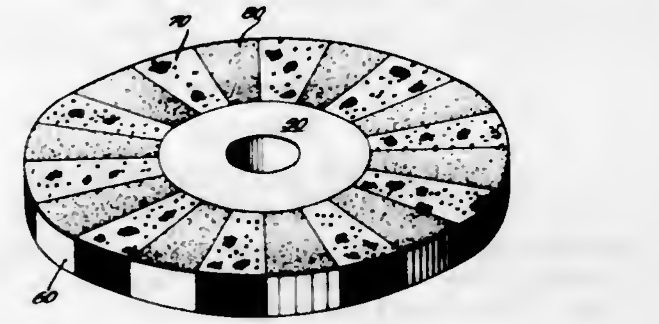
DYNAMOELECTRIC RELUCTANCE MACHINES

Park French, Aurora, Ohio, assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio

Filed Apr. 27, 1966, Ser. No. 545,648

8 Claims. (Cl. 310—168)

1. A dynamoelectric reluctance machine comprising:
- a frame,
- a shaft mounted on the frame;
- a plurality of rotor elements secured in closely spaced relation along said shaft;
- a plurality of stator elements extending from said frame in interleaved relation with said stator elements, certain of said elements having a plurality of magnetic sectors and a plurality of non-magnetic sectors, said magnetic sectors each containing a plurality of insulated magnetic flux carriers extending in a parallel direction with respect to said shaft; and



- means for generating a dynamic magnetic field extending in a parallel direction with respect to said shaft so that said plurality of magnetic flux carriers transmit said field.

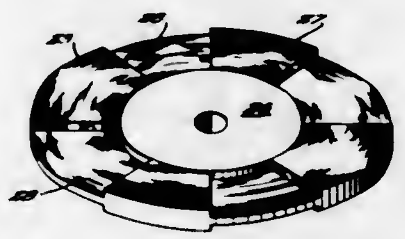
3,401,287

VARIABLE RELUCTANCE DYNAMOELECTRIC MACHINES

Park French, Aurora, and John T. Venaleck, Mentor, Ohio, assignors to TRW Inc., Cleveland, Ohio, a corporation of Ohio

Filed May 2, 1966, Ser. No. 546,747

6 Claims. (Cl. 310—168)



1. In a variable reluctance dynamoelectric machine, a disk element structure comprising a non-magnetic core, an insulated magnetic strip spirally wound on said core, and an electrically inert resin bonding the windings of said strip into a coherent laminated structure.

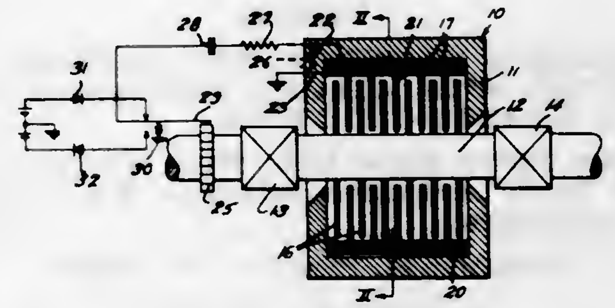
3,401,288

VARIABLE RELUCTANCE DYNAMOELECTRIC MACHINES

Park French, Aurora, Ohio, assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio

Continuation-in-part of application Ser. No. 384,733, July 23, 1964. This application July 7, 1967, Ser. No. 651,780

7 Claims. (Cl. 310—168)



Dynamoelectric machines comprising one or more rotor disks secured to a shaft and a plurality of stator disks secured to the housing, both the rotor disks and the stator disks including a similar spatial arrangement of magnetic and nonmagnetic sectors which cyclically provide relatively high and relatively low reluctance paths axially of the machine as the rotor disks are rotated relative to the stator disks, and energizing means including a coil energized by a periodically varying current, the current reaching its peak value when the axial reluctance is increasing, thereby providing generator action, or when the axial reluctance is decreasing, thereby providing motor action.

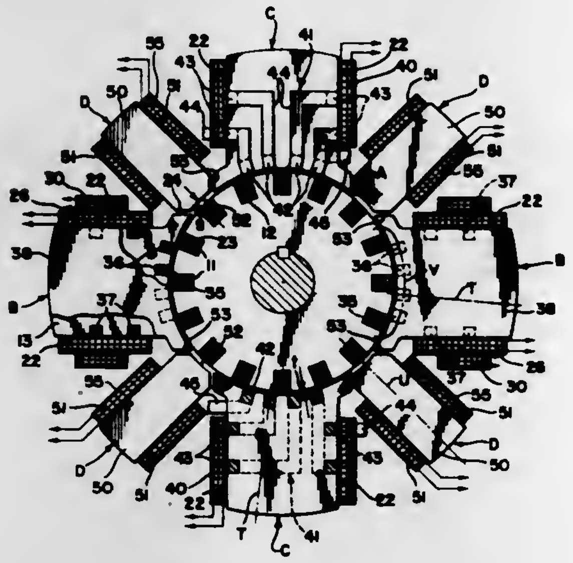
3,401,289

MULTIPLE OUTPUT DIRECT CURRENT GENERATOR

John E. Carroll, Lyndhurst, and George G. Landis, South Euclid, Ohio, assignors to The Lincoln Electric Company, Cleveland, Ohio

Filed May 17, 1965, Ser. No. 456,341

23 Claims. (Cl. 310—183)



This application describes a direct current welding generator which may optionally be used either for welding requiring a generator having a drooping volt ampere curve or welding requiring a generator having constant potential low internal impedance characteristics. Each field pole is provided with an auxiliary winding or loop having an axially extending side in the rotor facing surface and axially extending sides radially spaced from the rotor facing surface with the windings or loops being so arranged as to oppose circumferential changes in the flux in the field pole core caused by changes in the output current. These axially extending sides may be formed either by welds extending in the rotor and circumferentially facing surfaces of the field pole core or by electrical conductors embedded in these surfaces which are appropriately electrically interconnected.

3,401,290

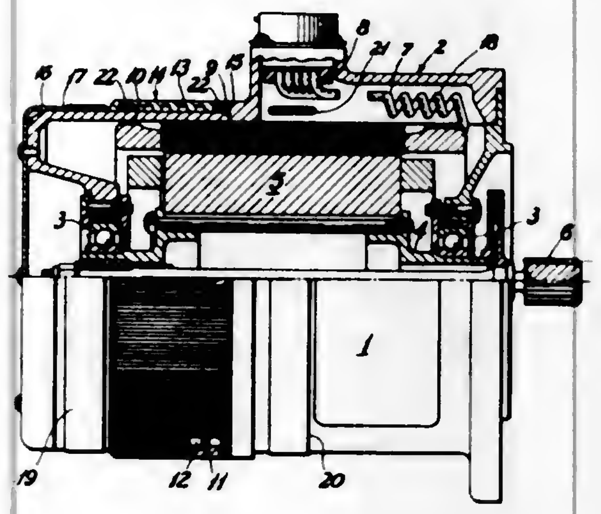
PERMANENT MAGNET ROTOR ELECTRIC GENERATOR WITH AXIALLY MOVABLE STATOR FOR ADJUSTING VOLTAGE

Frederick Milton Potter, Little Silver, N.J., assignor to The Bendix Corporation, Eatontown, N.J., a corporation of Delaware

Filed May 12, 1966, Ser. No. 549,579

6 Claims. (Cl. 310—191)

1. A permanent magnet generator comprising a housing, a stator, a rotor, means mounting said rotor for rotation in said housing, said stator mounted in said housing and having a slip fit therewith, and means including a nut surrounding said housing for moving said stator axially relative to said rotor.



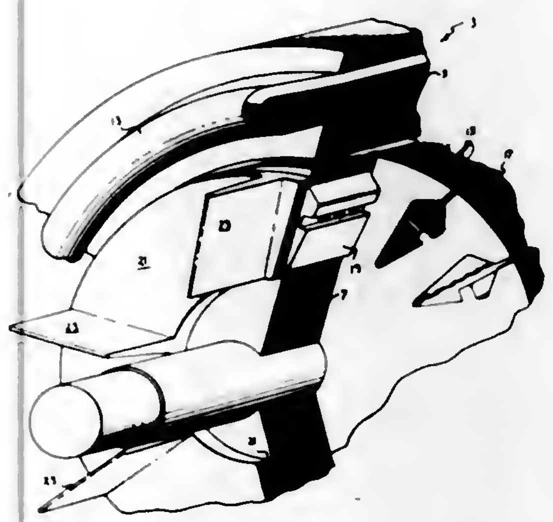
3,401,291

BAR DESIGN FOR HIGH TORQUE, LOW SLIP SQUIRREL CAGE ROTORS

Dale F. Lackey, Ballston Lake, N.Y., assignor to General Electric Company, a corporation of New York

Filed Jan. 26, 1966, Ser. No. 523,115

4 Claims. (Cl. 310—212)



1. In a squirrel cage induction motor, a rotor having a plurality of slots therein, a conductor disposed in each of said slots, each of said conductors having a plurality of apertures therein, said apertures being disposed longitudinally along each of said conductors, and means at each end of said rotor for electrically interconnecting said conductors.

3,401,292

FLUID COOLED HOLLOW CATHODE DISCHARGE TUBE

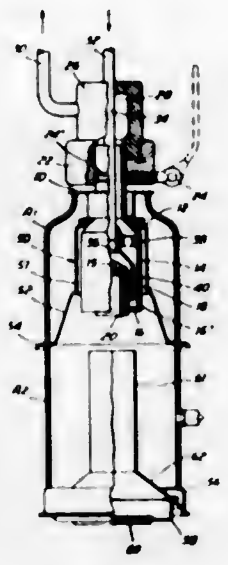
Gianfranco Cirri, Florence, Italy, assignor to Fabbrica Italiana Valvole Radio Elettriche F.I.V.R.E. S.p.A., a corporation of Italy

Filed June 17, 1966, Ser. No. 558,381

7 Claims. (Cl. 313—32)

A cooling means for a hollow cathode tube used in spectrophotometry characterized in that the cathode holder is surrounded by a coaxial body which is spaced therefrom forming a cooling circuit substantially over the entire length of the cathode. An annular baffle is mounted

between the cathode holder and the coaxial body to form two separate pathways for the cooling fluid, the pathways being respectively connected to a cooling fluid inlet and outlet.



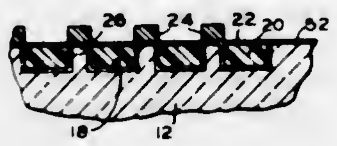
3,401,293

MESA TYPE COMBINED DIRECT VIEWING STORAGE TARGET AND FLUORESCENT SCREEN FOR CATHODE RAY TUBE

Robert W. Morris, Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed Nov. 28, 1966, Ser. No. 597,465

8 Claims. (Cl. 313—68)



An electron image storage tube capable of displaying both stored and nonstored charge images simultaneously in the same general area, is described, employing a combined display structure including a direct viewing storage target and a separate fluorescent screen provided on a common support member. The combined display structure includes a storage dielectric phosphor and a fluorescent screen phosphor provided on different portions of the support member and intermixed but physically separated and longitudinally displaced from each other to provide a mesa-like display structure. A light reflecting metal layer is provided over the fluorescent screen phosphor which prevents contamination of the fluorescent screen and increases the brightness of the light image emitted by such screen as well as acting as a collector electrode from the secondary electrons emitted by the storage dielectric phospor.

3,401,294

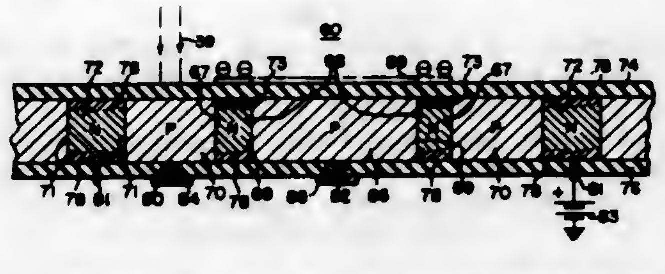
STORAGE TUBE

James R. Cricchi and Walter G. Reininger, Catonsville, Md., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 8, 1965, Ser. No. 431,027

17 Claims. (Cl. 313—68)

11. A storage target comprising a body of semiconductor material having first and second surfaces; a plurality of memory units formed within said body in a regular array; said memory units including a rectifying junction formed by a first region of P-type conductivity and a second region of N-type conductivity within said body, a first layer of storage material disposed on said second surface, and a second layer being disposed on said first layer in proximity to said first region and having the property of emitting sceondary electrons in response to a flow of primary electrons; and contacts disposed on said second surface in electrical association with said first and second regions to provide a current flow to said junction.



3,401,295

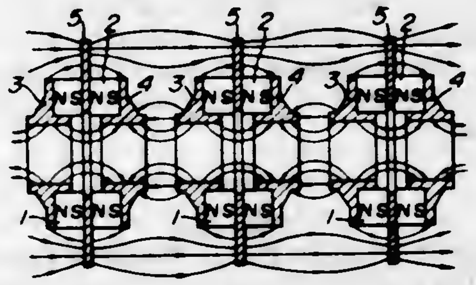
PERIODIC PERMANENT MAGNET FOCUSING SYSTEM FOR ELECTRON DISCHARGE DEVICES

Yoshihisa Suzuki, Yokohama, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed May 18, 1966, Ser. No. 551,076

Claims priority, application Japan, May 21, 1965, 40/29,624

4 Claims. (Cl. 313—84)



Periodic permanent magnet focusing system for an electron discharge device formed of a plurality of unit permanent magnets of annular shape coaxially disposed in spaced relation with the direction of magnetization aligned in one direction, the unit permanent magnet being formed of pairs of adjacent half-sections with an annular magnetic pole piece interposed therebetween to reduce the length of the magnetic path in the space outside the assembly, and a method for manufacture thereof.

3,401,296

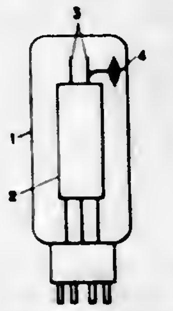
MERCURY VAPOR GENERATING MEANS FOR DISCHARGE TUBES

Roger Rigot, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, Paris, France

Filed Apr. 19, 1965, Ser. No. 449,004

Claims priority, application France, Apr. 29, 1964, 972,773

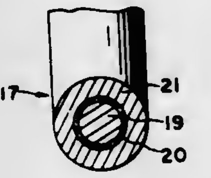
14 Claims. (Cl. 313—174)



In a mercury-vapor filled discharge tube, a method for producing a mercury vapor environment within the discharge tube after removal of gas and sealing of the enclosure thereof, consisting of decomposing, by thermal action, a substance composed at least in part of mercury pyrophosphate, having the property of progressively releasing mercury in dependence upon the applied temperature, and thereby enabling controlled releasing and, where needed, regenerating of the mercury vapor environment.

3,401,297
THERMIONIC CATHODES FOR ELECTRON DISCHARGE DEVICES WITH IMPROVED REFRACTORY METAL HEATER WIRES

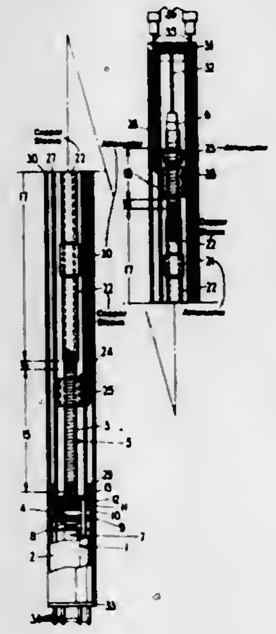
Morris Feinleib, Los Altos, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Aug. 23, 1965, Ser. No. 481,818
8 Claims. (Cl. 313—340)



The present invention provides tube and cathode designers with improved refractory metal heater wires and improved thermionic cathodes by the utilization of a plurality of minute refractory metal particles on the heater wire itself either in a bare or non-insulated case or in a coated or refractory insulated type of heater wire. The improved heater wire operates at a reduction in heater wire operating temperature for a given input power and hence increased longevity and emissivity for the heaters. In addition, the roughened surface of the heater wire enhances the adherence of the refractory insulation coating on the heater wire.

3,401,298
NOISE REDUCTION IN A TRAVELLING WAVE TUBE EMPLOYING A HELIX INPUT COUPLER

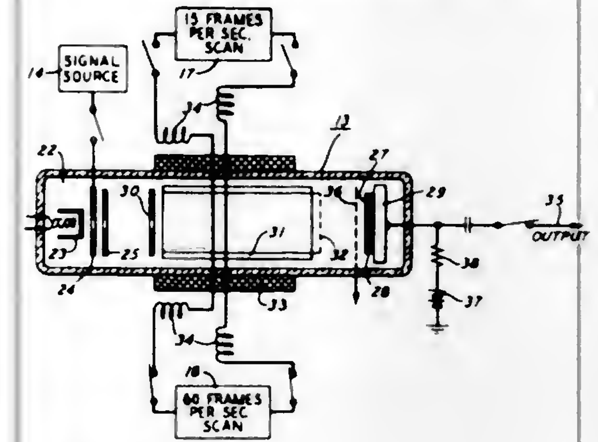
Cyril Henry Dix, Kenton, Middlesex, England, assignor to The General Electric Company Limited, London, England
Filed July 28, 1965, Ser. No. 475,366
Claims priority, application Great Britain, July 30, 1964, 30,220/64
9 Claims. (Cl. 315—3.6)



A helix type travelling wave tube wherein an input signal is launched onto a slow wave structure helix by means of an input coupler comprising a wire helix coaxially surrounding a further wire helix connected in series with the slow wave structure helix between an electron gun and the nearer end of the slow wave structure helix, the dimensions of the further helix differing from those of the slow wave structure helix so that noise on the electron beam at frequencies within the range of frequencies over which the tube is required to operate is not amplified over the length of the further helix.

3,401,299
VIDEO STORAGE TUBE

Merton H. Crowell, Morristown, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed July 14, 1966, Ser. No. 565,285
11 Claims. (Cl. 315—12)



1. In combination:

a storage film in contact over a first surface with a conductive backplate;

means for forming and projecting a beam of electrons toward a target surface of the film;

means for deflecting the beam and causing it to scan periodically the target surface in a line and frame sequence;

the film being sufficiently insulative to permit the formation of a voltage pattern of potential differences along the target surface thereof, but being sufficiently conductive to permit leakage currents to flow from the conductive backplate to the target surface;

means for establishing a voltage pattern on the target surface defined by different first voltages on different incremental areas of the target surface, said voltage pattern being indicative of an input signal;

means for detecting differences of secondary emission from the target surface as the beam scans it, thereby recovering a signal representative of the stored voltage pattern and of the input signal;

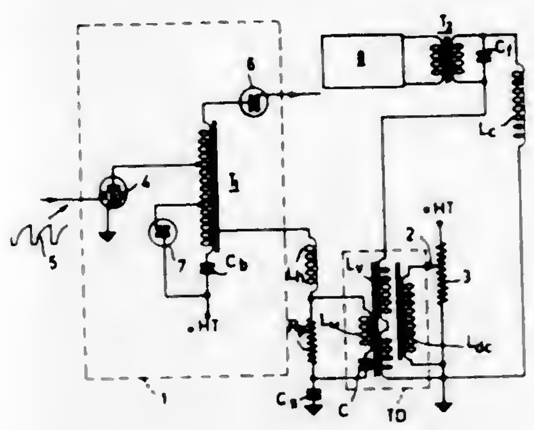
the time constants of the storage film and the electron beam being so related to the line and frame rate of the electron beam scan that in the interim between successive impingements of the beam on each incremental target surface area sufficient leakage current flows from the first surface of the film to the target surface to recharge and reinforce the voltage of the incremental area substantially to its first voltage;

the minimum spatial wavelength of the target voltage pattern being larger than the thickness of the film, whereby the resistance between voltage differences on the target surface is larger than the resistance between the first surface and the target surface of the storage film.

3,401,300
PIN CUSHION CORRECTION CIRCUIT

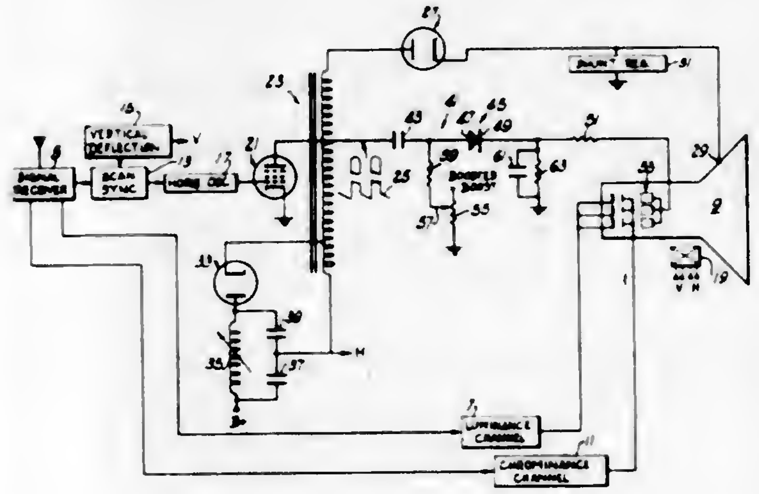
Nikolaus Pichler, also known as Nicolaus R. Pichler, Munich, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 1, 1965, Ser. No. 468,757
Claims priority, application Netherlands, July 4, 1964, 6407634
5 Claims. (Cl. 315—24)

A pin cushion correction circuit for the vertical deflection circuit of cathode ray tubes. The horizontal deflecting sawtooth current is integrated by a series tuned combination of a capacitor and primary winding of a saturable reactor in parallel with a resistor. The secondary winding is included in the vertical deflection circuit. The series tuned combination is tuned somewhat below the frequency of the horizontal deflection circuit.



3,401,301
ADJUSTABLE FOCUS VOLTAGE CONTROL CIRCUIT

Derik Swaine and Robert Charles Wheeler, Batavia, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 14, 1966, Ser. No. 557,478
7 Claims. (Cl. 315—31)



5. In a color television receiver having a color cathode ray tube with an anode electrode and a focus electrode, a source of high voltage, a horizontal output transformer wherein pulse voltages are developed providing a potential which is applied to the anode electrode, and voltage regulating means responsive to variations in said pulse voltages, an adjustable focus voltage control circuit comprising in combination:

a rectifier;

means for coupling pulse voltages from said horizontal output transformer to said rectifier;

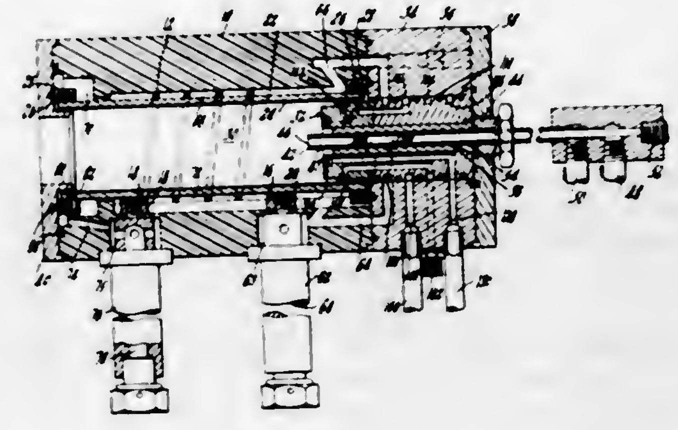
means for coupling a selected portion of DC potential to said rectifier;

means coupled to said means for coupling a selected portion of DC potential to said rectifier for dynamically altering the magnitude of said selected portion of potential in response to alterations in the magnitude of said pulse voltages; and

means for applying the DC potential available from said rectifier to said focus electrode, said DC potential including the rectified pulse voltages and the dynamically altered selected portion of potential applied to said rectifier whereby the potential applied to said focus electrode varies in proportion to the potential applied to said anode electrode of said cathode ray tube.

3,401,302
INDUCTION PLASMA GENERATOR INCLUDING COOLING MEANS, GAS FLOW MEANS, AND OPERATING MEANS THEREFOR

Merle L. Thorpe and Kent W. Harrington, Suncook, N.H., assignors to Humphreys Corporation, Concord, N.H., a corporation of New Hampshire
Filed Nov. 1, 1965, Ser. No. 505,924
25 Claims. (Cl. 315—111)



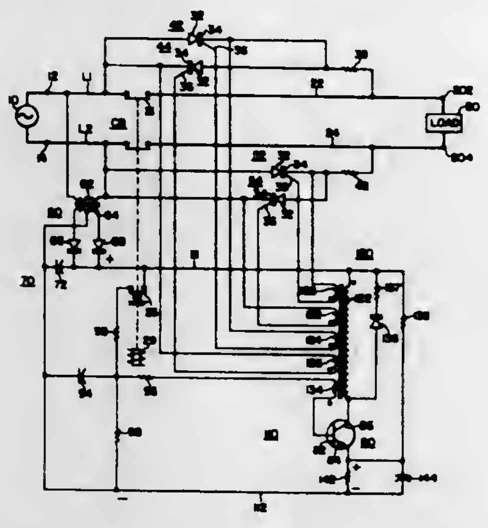
An RF plasma generator includes a 1½-inch diameter quartz tube which defines a plasma chamber. A solid copper electrical coil is wound around the tube and a Teflon housing is disposed over the tube and coil and sealed so that cooling water may be flowed over the coil in direct contact with the plasma chamber tube, simultaneously cooling both. A metal injector structure has three inlet passages, one of which communicates with six axially directed 0.028 inch diameter outlet ports; a second communicating with six radially directed 0.028 inch diameter outlet ports and the third communicating with three tangentially directed 0.033 inch diameter swirl ports. The second and third groups of ports discharge into an annular chamber from which the plasma forming gas is transferred into the plasma chamber with axial, laminar flow characteristics, a tangential component being introduced to the axial flow when necessary to make the axial velocity of the annular sheath uniform. At each end of the plasma chamber is a metal plate, the metal plate at the inlet end supporting the injector structure and the metal plate at the outlet end receiving a nozzle.

3,401,303
CIRCUIT CLOSING AND INTERRUPTING APPARATUS

Alec H. B. Walker, Trafford, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 23, 1965, Ser. No. 509,340
7 Claims. (Cl. 317—11)

This invention relates to electrical control apparatus and more particularly to circuit closing and interrupting apparatus for initiating and interrupting the flow of current from a source of electric power to a load or load circuit.

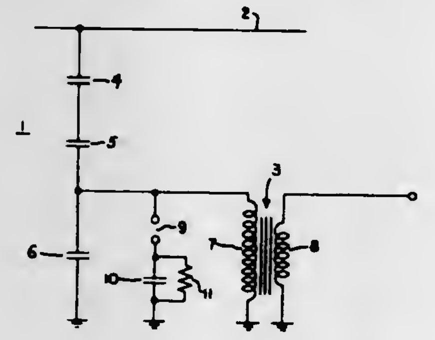
More specifically, controlled rectifiers are connected across the separable main contacts of a circuit interrupter which includes an auxiliary contact means actuable with the main contacts to close prior to the main contacts and to open after the main contacts. A pulse generating means is connected to the controlled rectifiers to apply firing pulses to the controlled rectifiers when-



ever the auxiliary contact means is closed and to stop applying firing pulses when the auxiliary contact means is opened at a repetition rate which is relatively large compared with the frequency of the alternating current being controlled.

3,401,304
POTENTIAL DEVICE PROTECTIVE NETWORK

John L. Woodworth, Lynchburg, Va., assignor to General Electric Company, a corporation of New York
Filed Dec. 1, 1965, Ser. No. 510,860
5 Claims. (Cl. 317—12)

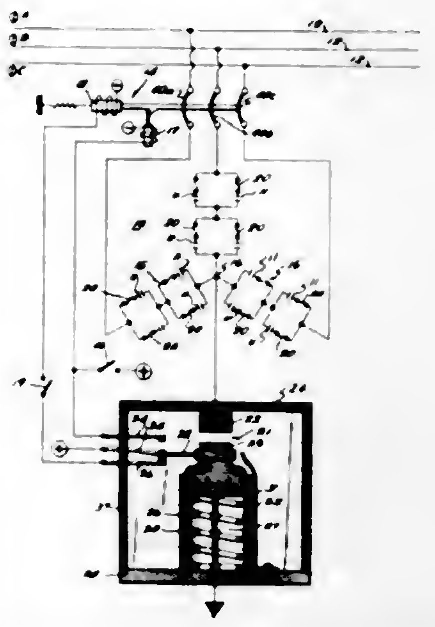


A protective network for a high-voltage, capacitive potential device which includes a protective gap connected across one of the capacitors of the voltage divider. A storage capacitor is connected in series with the protective gap so that arc-over of the gap during overvoltage conditions transfers sufficient charge to the storage capacitor to reduce the voltage across the capacitor in the divider to a safe level and to extinguish the arc. The capacitor being protected thus is not discharged completely, thereby maintaining an output voltage from the potential device even though the protective gap has operated. Simultaneously, provision is made to discharge the storage capacitor rapidly to prevent inadvertent restriking of the arc due to the trapped charge in storage capacitor which may raise the potential across the gap sufficiently to cause it to restrike even though the over-voltage condition may have terminated.

3,401,305
Y-CONNECTED SHUNT CAPACITOR BANK

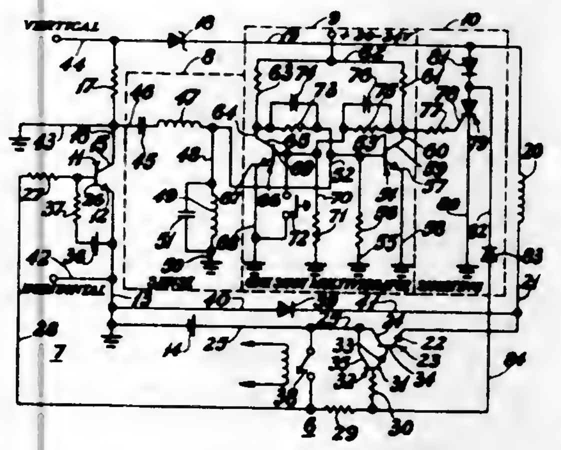
Donald J. Lemens, Fort Atkinson, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Jan. 5, 1966, Ser. No. 518,806
5 Claims. (Cl. 317—12)

A three phase Y-connected capacitor bank for electrical power lines and a capacitor bank switching system therefor including a gap connected between the neutral of the Y-connected capacitors and ground having a breakdown potential which is a minor fraction of the line-to-neutral voltage of the three phase power lines. The system includes switching means for connecting and disconnecting the capacitor bank from the power lines and further includes means for sensing unbalance in the voltage across the phase of the Y-connected capacitors and for connecting the neutral point directly to ground and disconnecting the capacitor bank from the power lines. The low breakdown potential of the gap serves to limit the maximum recovery voltage across the switching means during switching of the capacitor bank.



3,401,306
REVERSE BIAS SECOND BREAKDOWN PROTECTOR

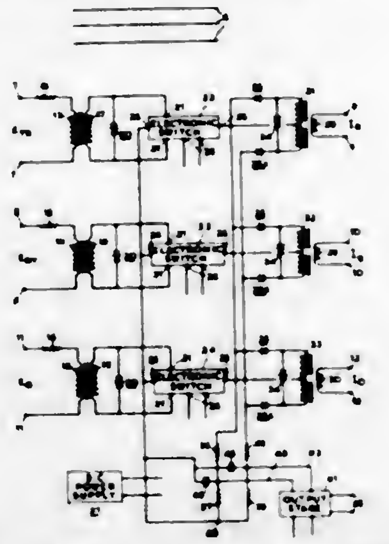
Robert W. Bolvin, Wall, and Wayne N. Bolan, Matawan, N.J., assignors to The Bendix Corporation, a corporation of Delaware
Filed June 3, 1966, Ser. No. 555,150
5 Claims. (Cl. 317—16)



1. A reverse bias second breakdown protection circuit for a transistor, comprising an inductive sweep circuit, means connecting a transistor in said circuit, a source of current connected to said transistor, a sensing circuit responsive to a predetermined rate of voltage drop across the collector emitter of said transistor, a multivibrator circuit, circuit means connecting said multivibrator circuit for energization from said sensing circuit, a shorting circuit, other circuit means connecting said shorting circuit to the output of said multivibrator, said shorting circuit being responsive to the output of said multivibrator being above a predetermined value to form a short circuit path around said transistor.

3,401,307
ELECTRICAL PROTECTIVE RELAY ARRANGEMENT

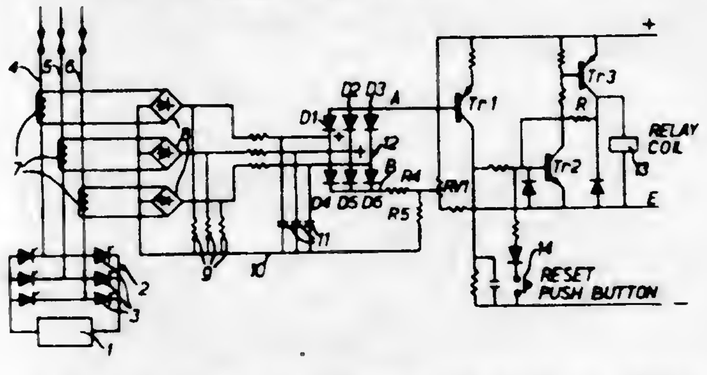
Hans Hoel, Oslo, Norway, assignor to The English Electric Company Limited, London, England, a British company
Filed Mar. 21, 1966, Ser. No. 535,918
Claims priority, application Great Britain, Mar. 22, 1965, 12,075/65
9 Claims. (Cl. 317—27)



This invention relates to a polyphase relay including transformer means for monitoring the voltage and current in a power transmission system and a gating device responsive to the voltage signal for permitting the current signal to be applied to a detector circuit only during a predetermined period of the voltage cycle, the detector being operable to determine from the magnitude and polarity of the current signal applied during said period an indication of any deviation from a predetermined value of phase angle between the voltage and current in the system. In this manner, fault conditions existing in the system can be detected; earth faults affecting the system may also be detected by additional comparison between the zero sequence components of voltage and current.

3,401,308
CIRCUIT ARRANGEMENTS FOR DETECTING PHASE UNBALANCE

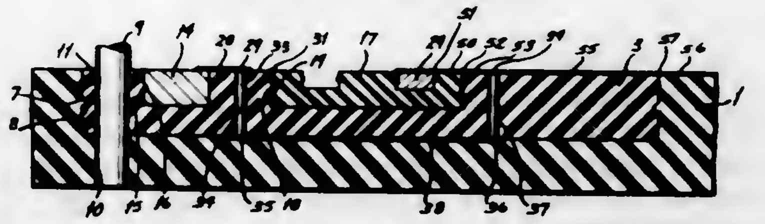
James Anthony Darke, Rugby, Warwickshire, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Aug. 29, 1966, Ser. No. 575,780
9 Claims. (Cl. 317—47)



1. An electric circuit arrangement suitable for detecting unbalance between the respective phase currents carried by conductors connected between a polyphase A.C. supply and a load, said arrangement including for each resistor is smoothed to provide a D.C. signal propormary winding of which is energisable by the phase current, a full wave rectifier connected to the secondary winding of the transformer and a resistor connected across the output of the rectifier to serve as a burden to the transformer and a logic circuit having a plurality of input paths one for each phase of the supply, and an output path, and wherein in use the voltage developed across each resistor is smoothed to provide a D.C. signal proportional to the mean value of the phase current, said signals are applied to respective input paths of said logic circuit, and a further D.C. signal is developed at the output path of the logic circuit when there is a difference between any two of the D.C. signals, said further signal being proportional to the difference between the two D.C. signals having the highest and lowest values respectively and means utilising said further signal or a signal derived therefrom to indicate the presence of unbalance between the phase currents.

3,401,309
ARRANGEMENT OF ELECTRICAL CIRCUITS AND MULTIPLE ELECTRICAL COMPONENTS

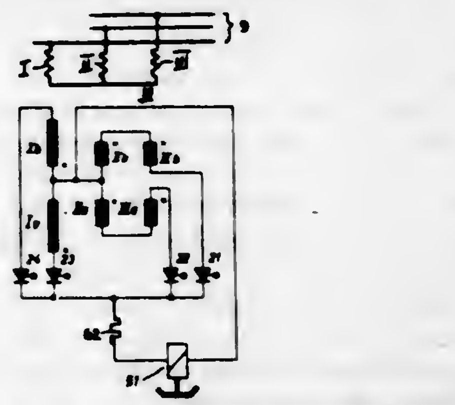
Solomon Shatz, 601B Kalen Drive, Overland, Mo. 63114
Filed Sept. 1, 1965, Ser. No. 484,359
7 Claims. (Cl. 317—101)



An arrangement of electrical components or electronic microcircuits that seat within a circuit board. Electrical connection is formed between the components and microcircuits by use of printed circuit or thin film deposits upon the upward and lower surfaces of the circuit board, and larger circuitry may be prepared by mounting one or more circuit boards within a master board or other circuit boards. The various components, microcircuits, and circuit boards securely mount within recesses provided within the master or circuit boards.

3,401,310
METHOD AND CIRCUIT FOR RAPID EXCITATION OF A MAGNETIC-FIELD DEVICE

Heinz Schäffersmann, Brake, near Bielefeld, and Ernst Tuchen, Jerxen-Orbke, Germany, assignors to Binder Magnete KG, Villingen, Black Forest, Germany, a corporation of Germany
Filed Dec. 21, 1965, Ser. No. 515,372
Claims priority, application Germany, Dec. 21, 1964, Sch 36,288; Apr. 5, 1965, Sch 36,835
10 Claims. (Cl. 317—123)

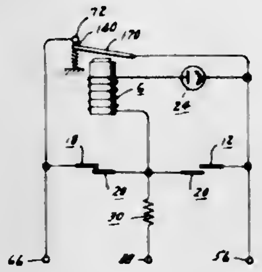


1. The method of rapidly exciting the magnetic field of an electromagnetic device, which comprises deriving several mutually superimposed rectified single-phase voltages of respectively different maximal magnitudes from a multiphase alternating voltage supply, impressing said latter voltages upon the device when commencing the excitation, discontinuing said superimposed voltages when the current in the device has reached an intensity above the rated excitation value, and then continuing the

excitation by applying normal excitation direct voltage to the device.

3,401,311
COMPOSITE PHOTOELECTRIC RELAY INCLUDING AN ELECTROMAGNETIC RELAY

James R. Burch, Normal, Ill., assignor to General Electric Company, a corporation of New York
Filed Apr. 14, 1966, Ser. No. 542,612
13 Claims. (Cl. 317—124)

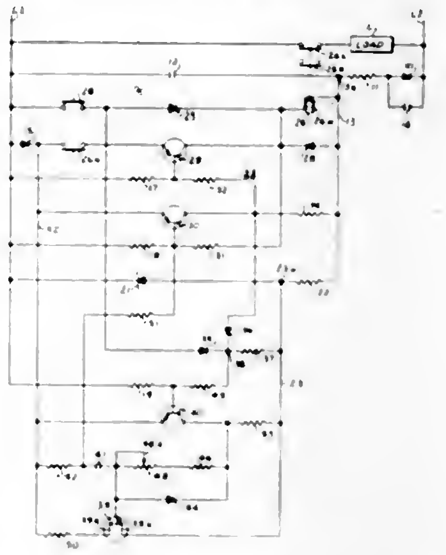


1. An electromagnetic relay comprising:
(a) an insulating base,
(b) a first formed metal member mounted on said base,
(c) a fixed contact supported by said first member,
(d) a metallic support means mounted on said base,
(e) a magnetic core supported by said support means,
(f) an actuating coil surrounding at least a portion of said core,
(g) an armature pivotally supported by said support means for actuation toward said core by energization of said actuating coil,
(h) resilient conductive means having a free end and a fixed end, said resilient means secured intermediate its ends to said armature, so that said free end of said resilient means is actuated by actuation of said armature,
(i) securing means mounting said fixed end of said resilient means to said support means for adjustment with respect to at least a part of the support means so that said resilient means exerts a predetermined adjustable force on said armature to normally bias said armature away from said core, and
(j) a movable contact secured to said free end of said resilient means and biased thereby into normal engagement with said fixed contact, said movable contact being mounted for movement out of engagement with said fixed contact when the voltage applied to said actuating coil exceeds a predetermined pick-up voltage, and for movement into engagement with said fixed contact due to the predetermined force exerted by said resilient means when the voltage applied to said actuating coil drops below a predetermined drop-out voltage which is less than the predetermined pick-up voltage, whereby securing said fixed end of said resilient means to said support means by said securing means in a first predetermined position causes said relay to have a first predetermined pick-up voltage, and a first predetermined drop-out voltage, and securing said fixed end of said resilient means to said support means by said securing means in a second predetermined position causes said relay to have a second predetermined pick-up voltage different from the first and a second predetermined drop-out voltage different from the first.

3,401,312
SOLID STATE TIME DELAY AFTER DE-ENERGIZATION FUNCTION CIRCUIT

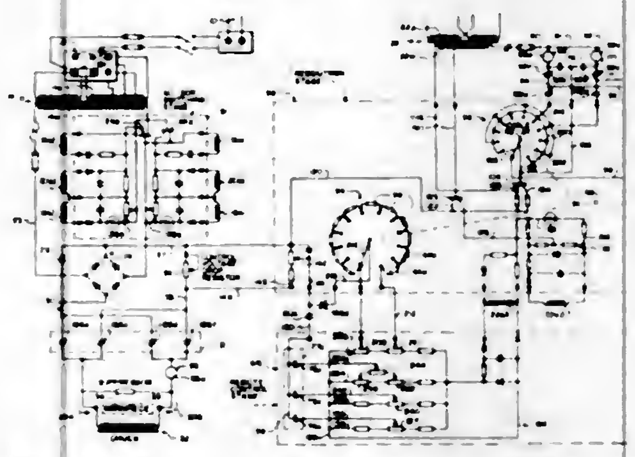
James J. Eckl, Milwaukee, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed June 29, 1965, Ser. No. 468,044
12 Claims. (Cl. 317—142)

A time delay control circuit having solid state components connected to provide a memory and AND logic functions for controlling the energization of a relay and the operation of a timing circuit upon the closure and the opening of a manually operated switch.



3,401,313
APPARATUS AND METHOD FOR CONTROLLING MAGNETISM

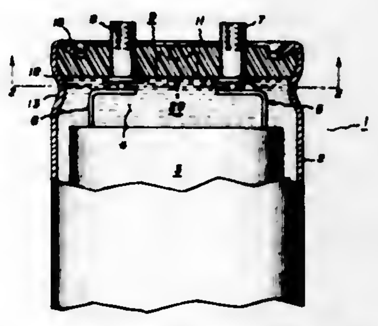
Arthur K. Littwin, Lincolnwood, Ill., assignor to Arthur K. Littwin, Robert L. Littwin, Donald F. Littwin and Horace A. Young, Chicago, Ill., as trustees, known as Littwin Family Trust No. 1
Filed Dec. 20, 1965, Ser. No. 515,037
29 Claims. (Cl. 317—157.5)



26. A method of controlling magnetism of an article comprising passing DC through the article in a series of steps, in which the DC is of alternately opposite polarity in successive steps, and maintaining the DC of steady value throughout each step.

3,401,314
ELECTROLYTIC CAPACITOR HAVING A COVER WITH SEALING AND VENTING MEANS THEREIN

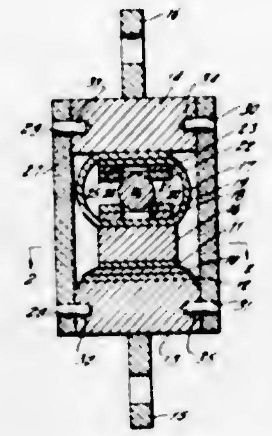
Jack E. Steele, Jr., Columbia, S.C., assignor to General Electric Company, a corporation of New York
Filed Mar. 7, 1966, Ser. No. 532,324
6 Claims. (Cl. 317—230)



An electrolytic capacitor having an insulating cover with an improved sharp edge sealing means and pressure relief rupturing means therein.

3,401,315
COMPRESSION ASSEMBLED SEMICONDUCTOR DEVICE USING SPHERICAL FORCE TRANSMITTING MEMBER

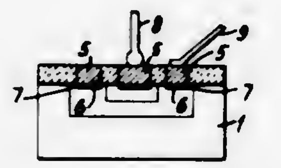
Angus A. Scott and Richard A. Hartman, Palos Verdes Estates, Calif., assignors to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Oct. 31, 1966, Ser. No. 590,758
7 Claims. (Cl. 317—234)



A semiconductor device assembly is provided in which the semiconductor wafer means is held in firm electrical and mechanical contact with at least one terminal by means of a novel force applying structure. This force applying structure includes a spring which could be formed of spring washers which are mechanically connected in series by an interposed rigid member having at least partially spherical surfaces. This will permit the wafer structure to automatically align itself with respect to the surface against which it seats without applying bending stresses to the wafer. As an additional feature in the disclosure the partially spherical member is of conductive material and is provided with a by-pass shunt to permit flow of current around the high resistance spherical member and springs.

3,401,316
SEMICONDUCTOR DEVICE UTILIZING AN $AuAl_2$ LAYER AS A DIFFUSION BARRIER THAT PREVENTS "PURPLE PLAGUE"

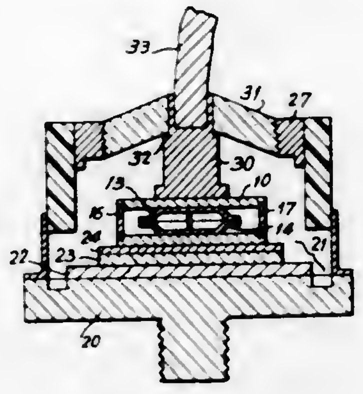
Shigezo Tanaka and Kozo Chiba, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed Oct. 12, 1965, Ser. No. 495,083
Claims priority, application Japan, Oct. 12, 1964, 39/58,101
3 Claims. (Cl. 317—235)



1. A semiconductor device comprising a semiconductor substrate selected from the group consisting of germanium and silicon, a layer of $AuAl_2$ bonded to the surface of said substrate and a fine gold electrode wire bonded to said layer of $AuAl_2$, said $AuAl_2$ layer serving as a diffusion barrier between the substrate, aluminum and said bonded gold wire.

3,401,317
FUSED SEMICONDUCTOR DEVICE

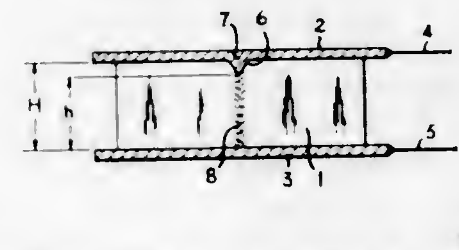
John M. Gault, Manhattan Beach, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed July 11, 1966, Ser. No. 564,293
4 Claims. (Cl. 317—234)



1. A fuzed semiconductor device comprising; a spring member having a normal position and a deflected position: a first and second spaced insulated conductive disks on respective opposite sides of said spring member; a first and second terminal member insulated from one another, and a semiconductor wafer mounted between first and second expansion plates, said first expansion plate electrically and mechanically connected to said first terminal member; a first portion of said spring member mechanically and electrically connected to said first conductive disk; a low melting temperature solder; a second portion of said spring deflected from its said normal position and toward said deflected position and soldered to said second conductive disk; said second conductive disk electrically and mechanically connected to said second expansion plate; said first expansion plate mechanically and electrically connected to said second terminal member; said low melting temperature solder melting at a temperature related to a maximum permissible temperature for said wafer.

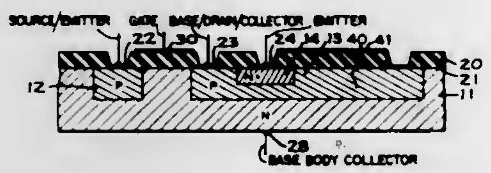
3,401,318
SWITCHING ELEMENT HAVING ACCURATELY SET THRESHOLD POTENTIAL

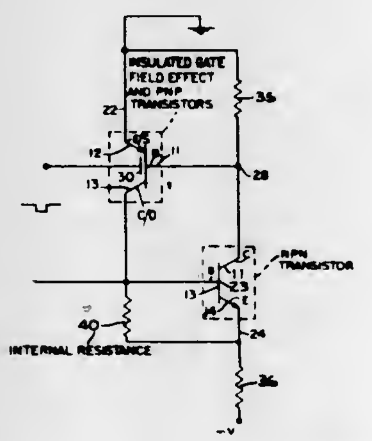
Arne Jensen, Havnbjerg, Als, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed Dec. 20, 1965, Ser. No. 514,956
Claims priority, application Germany, Dec. 22, 1964, D 46,118
2 Claims. (Cl. 317—235)



A switching element having parallel electrodes between which is disposed a body of semiconductor material having a negative temperature coefficient of resistance. When a potential is applied across the semiconductor body a very small current will flow therethrough. If the potential exceeds a certain threshold value the resistance between the electrodes drops sharply to a very low value. The threshold potential is accurately determined by a projection, preferably conical, formed by a punched mark on one of the electrodes and extending toward the other electrode. The projection determines the position of a current path between the electrodes and makes it possible to make similar switching elements with similar threshold potentials.

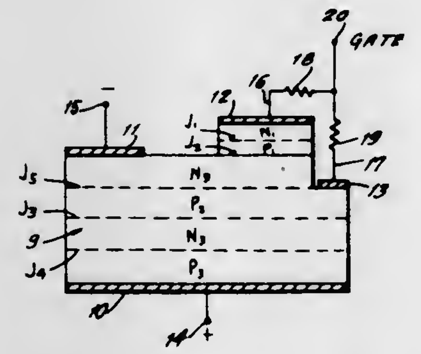
3,401,319
INTEGRATED LATCH CIRCUIT
Boyd G. Watkins, San Francisco, Calif., assignor to General Micro-Electronics Inc., Santa Clara, Calif., a corporation of Delaware
Filed Mar. 8, 1966, Ser. No. 532,601
4 Claims. (Cl. 317—235)





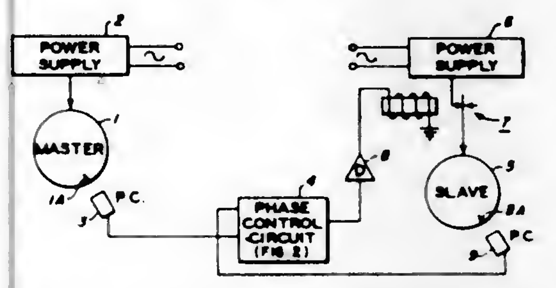
Bistable integrated circuit comprising insulated gate field effect, PNP, and NPN transistors. FET provides high input impedance and drives bipolar transistors, which are cross-coupled in bistable configuration. Several regions of IC wafers serve a plurality of functions.

3,401,320
POSITIVE PULSE TURN-OFF CONTROLLED RECTIFIER
Harold Weinstein, Van Nuys, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed May 12, 1966, Ser. No. 549,695
3 Claims. (Cl. 317—235)



A six layer semiconductor device wherein the first two layers have a smaller area than the layers beneath them. Cathode and anode electrodes are connected to exposed portion of the fourth layer and bottom layer, respectively, while gate electrodes are connected to the third and sixth layers, respectively, and to a common gate electrode. A control voltage having a first magnitude applied to the gate electrode will turn the device on between the anode and cathode electrodes, while a voltage of a second magnitude applied to the gate electrode will turn the device off.

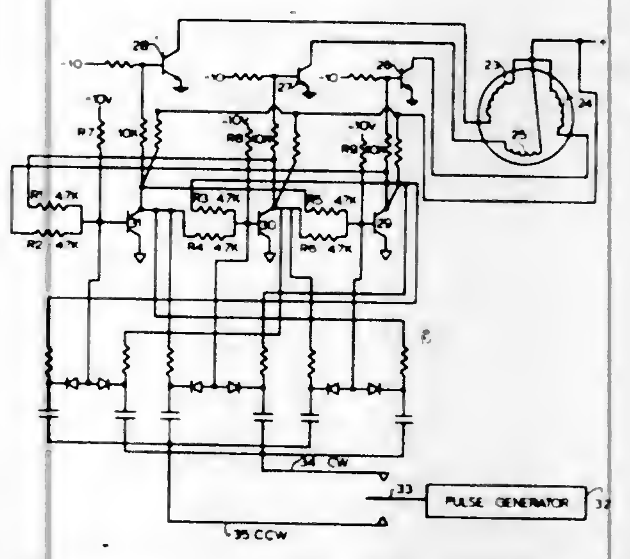
3,401,321
PHASE CONTROL SYSTEM UTILIZING SINGLE OR MULTIPLE POLE SLIP
Eiji Miki, Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Mar. 14, 1966, Ser. No. 534,151
8 Claims. (Cl. 318—85)



1. A control circuit for selectively energizing a relay to interrupt power to an alternating current synchronous reluctance motor to permit selective slippage of the rotor of said motor by an amount indicative of the phase difference between said motor and a desired phase, said control circuit comprising:

(a) first means for generating a first pulse indicative of a desired phase;
(b) second means having an output terminal for generating a second pulse indicative of the phase of the motor to be controlled;
(c) third means coupled to said output terminal and response to said second pulse for generating a third pulse of a predetermined duration;
(d) logic means coupled to said first, second, and third generating means to detect a phase difference between said first and second pulses and to compare said difference with said third pulse,
(e) means coupled to said logic means for generating at least a first or second control signal corresponding to a first or second out of phase relationship between said first and second pulses.

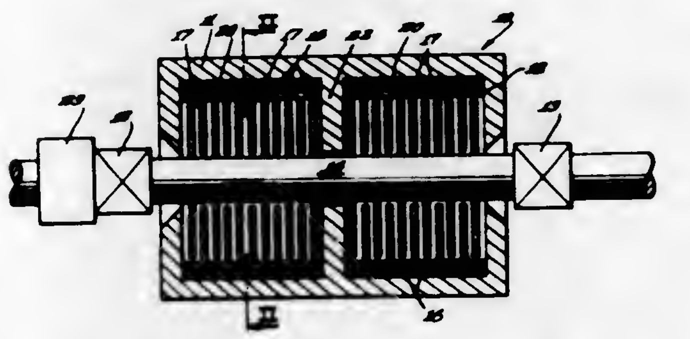
3,401,322
SLOW SPEED MOTOR
Charles P. O'Regan, Bronx, N.Y., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed May 17, 1965, Ser. No. 456,170
1 Claim. (Cl. 318—138)



Slow speed motor having at least three sets of teeth on the stator member, the teeth in each set being of the same pitch and also of the same pitch as the rotor teeth, the teeth in each of set being offset from the teeth in the other two sets by one-third of a tooth pitch, and means

to magnetically energize each set of teeth sequentially causing the rotor teeth to sequentially align themselves with each set of the stator teeth.

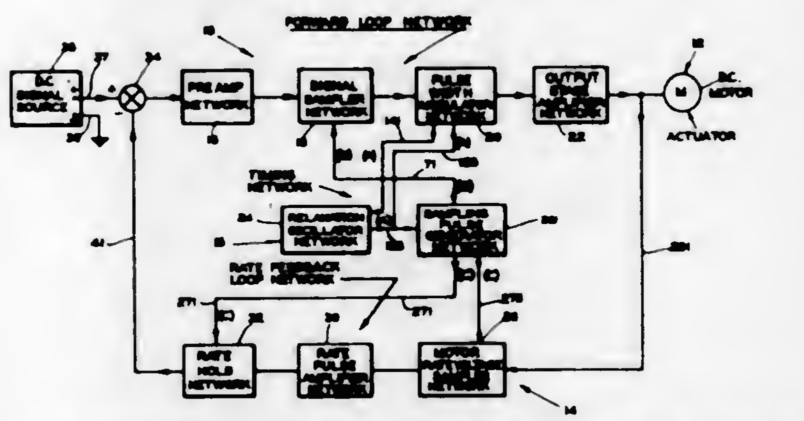
3,401,323
RELUCTANCE MOTOR SWITCHING CIRCUITS
Park French, Aurora, Ohio, assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed Apr. 25, 1966, Ser. No. 545,083
12 Claims. (Cl. 318—138)



1. A variable reluctance dynamoelectric motor assembly comprising:

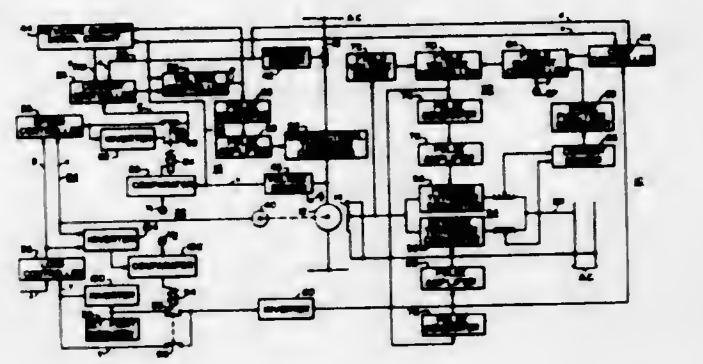
a frame,
a shaft supported for rotation within said frame,
at least one rotor element secured to said shaft,
a plurality of stator elements in interleaved relation with the rotor elements,
 said rotor and stator elements each consisting of disks having alternating sectors of magnetic and non-magnetic materials,
an energizing coil about said rotor and stator elements arranged to apply an axial magnetic field along the array of rotor and stator elements,
rotation of said shaft providing varying reluctance paths axially of said motor,
a capacitor in circuit relation with the inductance of said coil,
and electronic switch means for passing the current developed through the combination of said inductance and capacitor while said current is at a maximum into said motor at a time when said axial reluctance is diminishing.

3,401,324
TIMING NETWORK FOR A MODULATED SERVO DRIVE CONTROL SYSTEM
Robert L. James, Bloomfield, N.J., assignor to The Bendix Corporation, a corporation of Delaware
Filed Oct. 15, 1965, Ser. No. 496,428
2 Claims. (Cl. 318—341)



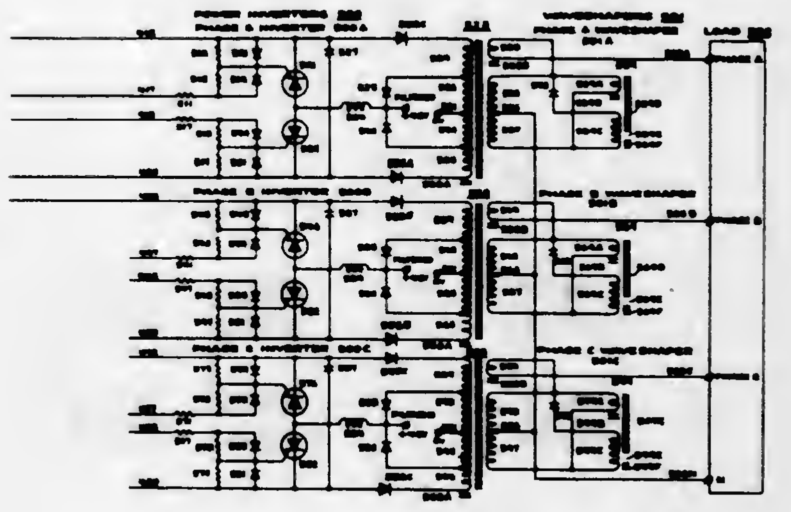
A timing network for a modulated servo drive control system including an oscillator network and a sampling pulse generator for applying electrical pulses to control a forward loop network to drive a motor and a rate feedback loop network to apply an electrical rate feedback signal to the forward loop network to provide a desired damping action on the control of the motor.

3,401,325
SPEED REGULATING SYSTEM PROVIDING SLOW-DOWN CONTROL FOR A MOTOR HAVING A UNIDIRECTIONAL CONVERTER ARMATURE SUPPLY
Loren F. Stringer, Williamsville, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 25, 1966, Ser. No. 544,795
8 Claims. (Cl. 318—302)



1. A control system for a direct current motor comprising a unidirectional converter for supplying the motor armature current, an armature control responsive to a speed error signal to control said unidirectional converter and provide speed regulation by armature voltage and current control, a field control normally establishing forward field excitation, and means for applying reverse field excitation and for operating said armature control to produce braking armature current flow during at least a part of any time period when the actual motor speed exceeds the set point speed.

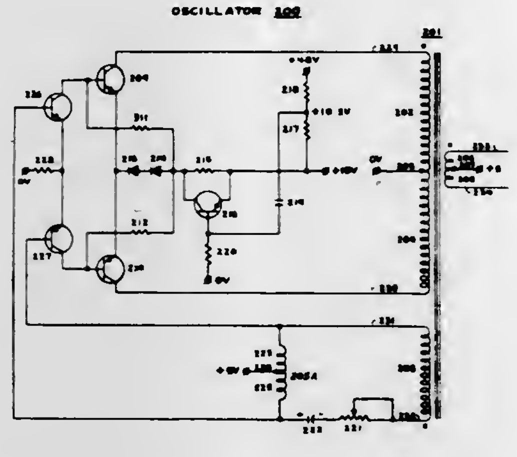
3,401,326
THREE PHASE INVERTER CIRCUIT HAVING THREE STAGE RING COUNTER AND POWER INVERTERS WITH FERRO-RESONANT WAVE SHAPING CIRCUITS
Patrick L. Hunter, Worthington, Ohio, assignor to North Electric Company, Galion, Ohio, a corporation of Ohio
Filed Mar. 11, 1966, Ser. No. 533,541
1 Claim. (Cl. 321—5)



Three phase inverter circuit including a three-stage ring counter driven by an oscillator which provides a square wave drive via direct current coupling to the ring counter, a power inverter for each stage of said counter circuit, a ferroresonant wave shaper circuit for each power inverter connected to provide a three phase sine wave output, each wave shaper circuit comprising a first and a second core, a primary and a secondary winding being located on the first core, a first winding on the second core being connected across the secondary winding on the first core, and a series circuit including a capacitor and a second winding on the second core being connected across the secondary winding on the first core.

3,401,327
INVERTER CIRCUIT HAVING INCREASED FREQUENCY STARTING

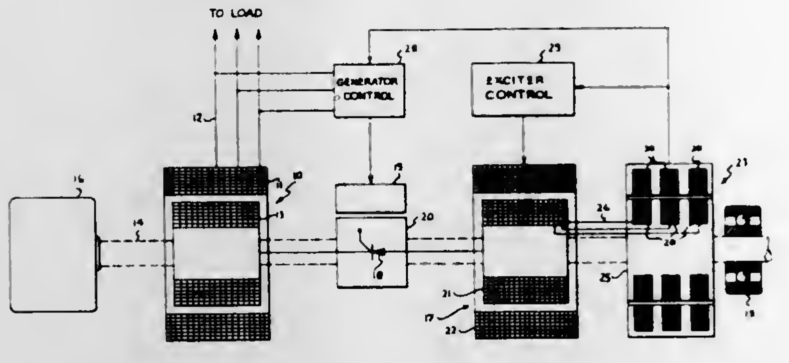
Dale V. Leppert, Worthington, Ohio, assignor to North Electric Company, Galion, Ohio, a corporation of Ohio
Filed Mar. 11, 1966, Ser. No. 533,671
6 Claims. (Cl. 321—11)



Inverter circuit having an oscillator circuit including switching transistors and a feedback circuit, and frequency adjustment elements which vary the effective value of resistance in the feedback circuit for an initial period after start of the inverter to change the frequency of the oscillator from a higher starting frequency to a lower steady state operating frequency. A filter capacitor increases the potential applied to the power inverter for a given period after start which is at least partially coincident with the frequency adjustment provided by said frequency adjustment elements.

3,401,328
BRUSHLESS SYNCHRONOUS MACHINE SYSTEM

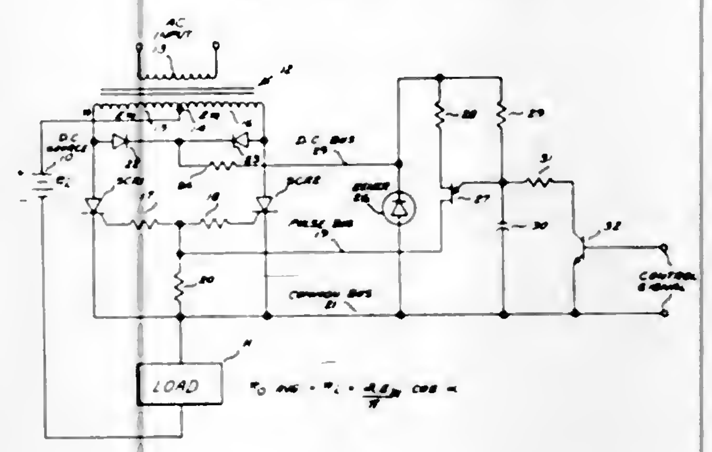
Edward C. Hartung, Elnora, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 20, 1966, Ser. No. 551,614
12 Claims. (Cl. 322—28)



12. The combination of:
(a) a dynamoelectric machine having a stationary armature winding and a field winding mounted for rotation on a rotatable shaft;
(b) an exciter generator having a stationary field winding and an armature winding mounted for rotation on said shaft;
(c) rectifying means rotatable with said shaft connecting the armature winding of said exciter generator to the field winding of said dynamoelectric machine; and
(d) means including controllable switching devices coupling the armature winding of said exciter generator to the field winding of said exciter generator to provide the sole source of excitation power therefor.

3,401,329
BUCK AND BOOST VOLTAGE REGULATOR

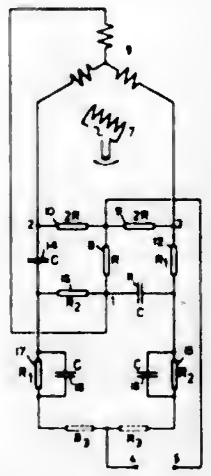
Philip D. Corey, Crozet, and Dennis A. Porter, Crimora, Va., assignors to General Electric Company, a corporation of New York
Filed Feb. 12, 1965, Ser. No. 432,163
7 Claims. (Cl. 323—18)



A buck and boost voltage regulator is provided in which a pair of SCR's couple AC and DC voltage to a load. The SCR's are controlled to conduct alternately at a selected phase angle in each half cycle of the AC voltage. The phase angle is selected so that the average AC voltage is either positive, negative or zero to add to, subtract from or not affect the DC voltage.

3,401,330
SYNCHRO TRANSFORMER NETWORK FOR DERIVING AN AC VOLTAGE THAT LINEARLY VARIES IN PHASE AS A FUNCTION OF ROTOR POSITION

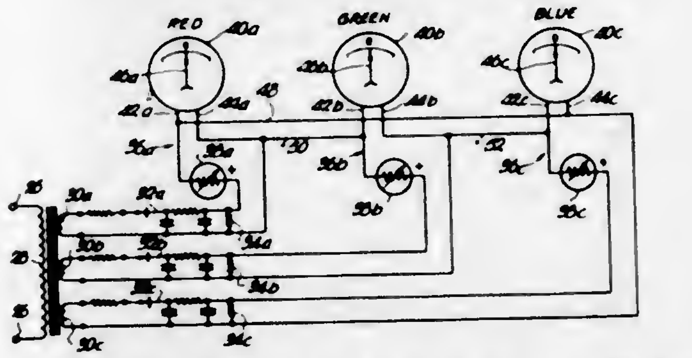
Rienk Pieter Offereins, Hengelo, Overijssel, Netherlands, assignor to N.V. Hollandse Signaalapparaten, Hengelo, Overijssel, Netherlands, a firm of the Netherlands
Filed Mar. 11, 1966, Ser. No. 533,578
Claims priority, application Netherlands, Mar. 16, 1965, 6503288
5 Claims. (Cl. 323—109)



A synchro transformer network for deriving at first and second output terminals an AC voltage that linearly varies in phase as a function of the rotor position. The network includes three Y-connected resistors across the synchro terminals and first and second series connected R-C circuits connected between the first and third and first and second synchro terminals, respectively. One output terminal is connected to the junction of the Y-connected resistors and the other output terminal is connected to junction points of said first and second series R-C circuits via first and second parallel-connected R-C circuits. The various network components are chosen in a particular manner as that the AC output voltage is substantially independent of the frequency of the energizing source.

3,401,331
GRAY SCALE AND TRACKING ALIGNMENT INSTRUMENT FOR A COLOR CATHODE RAY TUBE

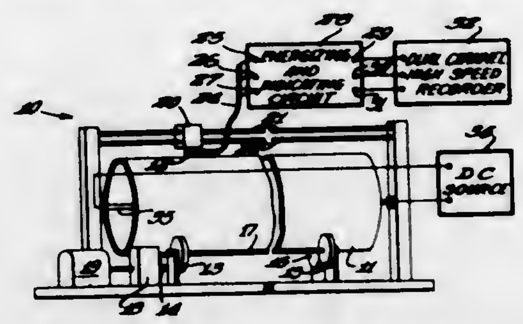
Charles E. Mussulman, 1309 W. 5th, Chanute, Kans. 66720
Filed Mar. 21, 1966, Ser. No. 535,923
8 Claims. (Cl. 324—20)



An instrument is provided for aligning color television sets for monochrome operation. The instrument indicates when the gray scale or monochrome image is obtained and enables the set to be adjusted for proper tracking of the electron guns during monochrome operation. A test head is positioned on the screen of the television tube and contains three photosensitive resistance elements responsive to the emissions of the red, green and blue phosphors respectively. Three measuring circuits are employed and each includes a zero-centered microammeter responsive to a corresponding photosensitive element. The circuits are interconnected in a manner such that an increase in the intensity of one color is indicated by the respective meter and, simultaneously, is also registered in the two other meters by an inverse indication.

3,401,332
MAGNETIC LEAKAGE FIELD AND EDDY CURRENT FLAW DETECTION SYSTEM

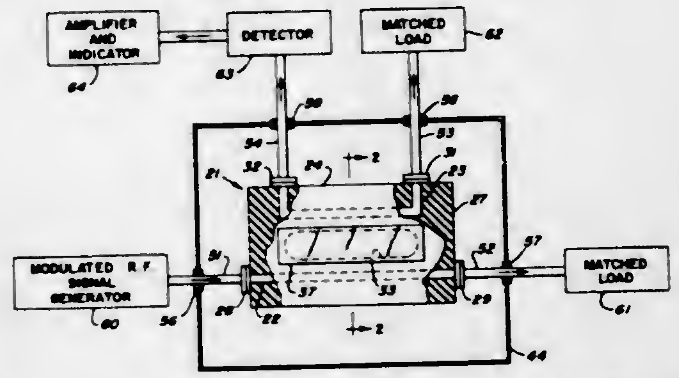
Glenn O. McClurg, Evanston, Henry N. Nerwin, Mount Prospect, and Heino Puldak, Chicago, Ill., assignors to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 12, 1963, Ser. No. 322,614
6 Claims. (Cl. 324—37)


ENERGIZING AND INDICATING CIRCUIT
FOUR CHANNEL HIGH SPEED RECORDER
DC SOURCE

1. In a system for detecting flaws in a workpiece having a unidirectional magnetic field therein, eddy current testing means arranged to induce an AC field in the workpiece and including a first sensing probe adjacent a portion of the workpiece to detect the effects of eddy currents in said portion of the workpiece, said eddy current testing means being arranged to produce a first electrical signal in response to flaws in said portion of the workpiece, leakage field testing means including a second sensing probe disposed closely adjacent said portion of the workpiece to simultaneously detect changes in said unidirectional magnetic field adjacent said portion of the workpiece and to produce a second electrical signal in response to flaw induced leakage field changes, and means for simultaneously indicating and comparing said first and second electrical signals to determine the location and characteristics of flaws in said portion of the workpiece, said first and second sensing probes comprising first and second coils respectively on a common axis generally transverse to the adjacent surface portion of the workpiece.

3,401,333
COUPLED-LINE APPARATUS FOR MEASURING THE THICKNESS OF THIN FILMS

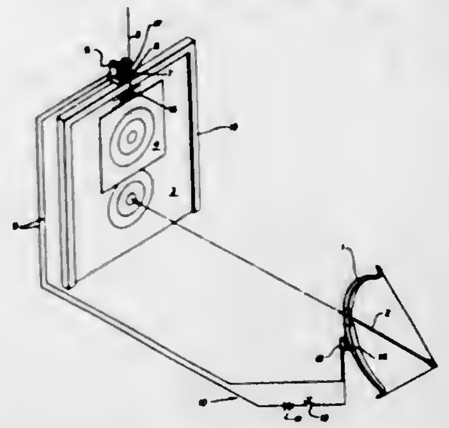
Fred Elmo Thompson, Gahanna, Ohio, assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 25, 1965, Ser. No. 482,402
9 Claims. (Cl. 324—58.5)



The thickness of a sputtered conductive thin film on a substrate may be monitored during its deposition by employing, as the substrate support, a transmission line-type directional coupler coupled to the sputtering anode. The substrate is fixedly mounted in overlying relation to a coupling aperture in the common outer conductor of the coupler. As the thickness of the thin film builds up on the substrate during bombardment of the sputtering cathode, the coupling between the inner conductors of the coupler varies in proportion to the thickness of the thin film. The sputtering operation is terminated when a predetermined value of coupling is obtained.

3,401,334
VELOCITY INDICATOR FOR BOWS AND ARROWS

Charles T. Bell, 649 Moraga Way, Orinda, Calif. 94563
Filed June 16, 1966, Ser. No. 558,115
4 Claims. (Cl. 324—70)

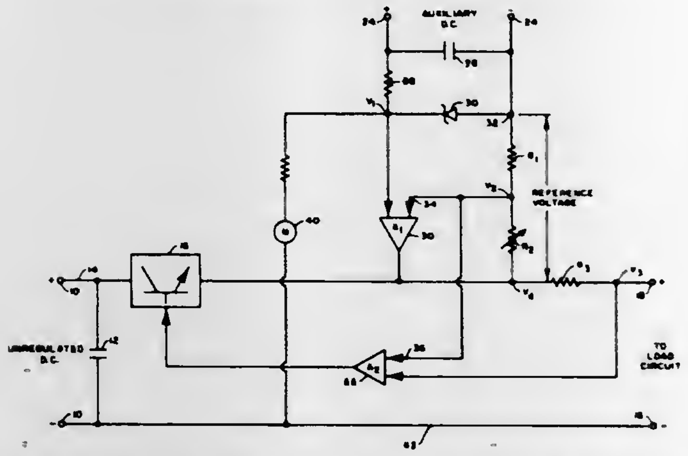


1. A device for measuring the velocity of flight of an arrow shot from a bow comprising:
a fixed vertical target positioned a predetermined distance from said bow;

a movable target slidably mounted for vertical movement into overlying relationship to said fixed target;
means for suspending said movable target above the center of said stationary target;
means for releasing said movable target at the instant of firing said bow at said stationary target thereby permitting said movable target to fall by gravity into said overlying relationship until said movable target is fastened to said fixed target by said arrow;
means for measuring the amount of vertical fall of said movable target from its initial position to its fastened position after impact by said arrow;
whereby the velocity of said arrow may be computed.

3,401,335
METER CIRCUIT FOR POWER SUPPLY

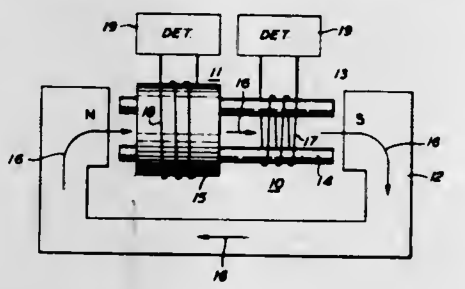
Joseph C. Perkinson, Stirling, N.J., assignor to Hewlett-Packard Company, a corporation of California
Filed Mar. 18, 1966, Ser. No. 535,583
5 Claims. (Cl. 324—76)



An output voltage measuring circuit for a constant current power supply is disclosed wherein a series regulator is controlled by the output of a difference amplifier which senses and compares the voltage across an output current monitoring resistor and the voltage across a programming resistor connected between a fixed resistor and the current monitoring resistor. A second difference amplifier is provided for varying the current through the programming resistor in accordance with the difference between a reference voltage and the voltage across the fixed resistor. The voltmeter is connected between the reference source and a point between the load and the unregulated input.

3,401,336
APPARATUS FOR DETERMINING CURRENT DIRECTION IN RESPONSE TO TWO SEPARATE FLUX INTERACTIONS

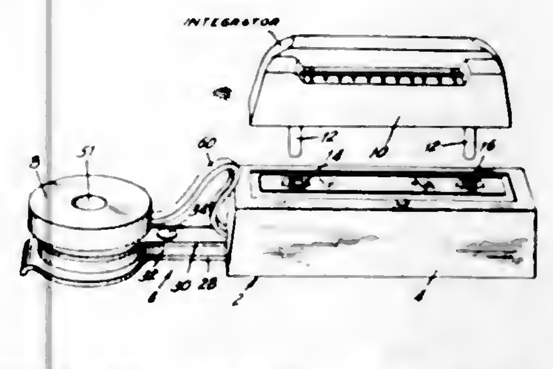
Harold N. Wagar, Madison, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 22, 1964, Ser. No. 384,468
8 Claims. (Cl. 324—133)



Apparatus for detecting the direction of an unknown current is disclosed which includes two electrically and magnetically conducting members, a solid magnetic sleeve surrounding one portion of the two members, a coil surrounding another portion of the two members, a coil surrounding the sleeve means for inducing a common magnetic field in said members and said sleeve and means for indicating operation of the two coils. The currents passing through the members create an annular magnetic field within each member and a resultant annular magnetic field within the sleeve. The coils surrounding the sleeve and the two members indicate the reaction of the common field with the annular fields and monitoring these reactions will indicate the direction of the unknown current.

3,401,337
CONNECTOR DEVICE FOR CONNECTING A BATTERY TERMINAL WITH A BATTERY-LIFE INDICATOR METER

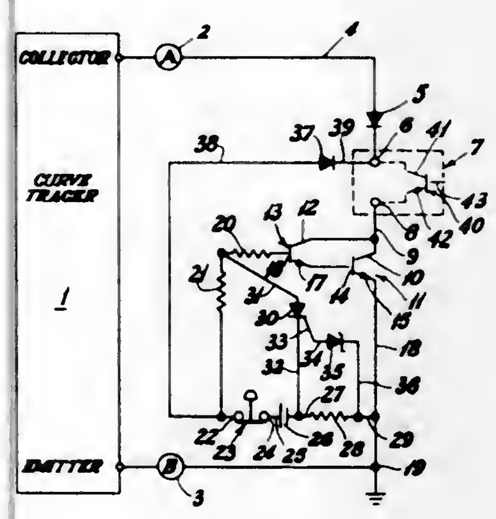
Curtis C. Beusman and Jack E. Le May, Mount Kisco, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed Apr. 9, 1964, Ser. No. 358,528
1 Claim. (Cl. 324—149)



Connector device for connecting a battery terminal to a battery-life indicator meter involving an arrangement of conducting elements and insulating elements which surroundingly engage the battery terminal.

3,401,338
TESTER FOR SEMICONDUCTOR DEVICES HAVING A ZENER DIODE CONTROLLED BIAS REMOVAL PROTECTION CIRCUIT

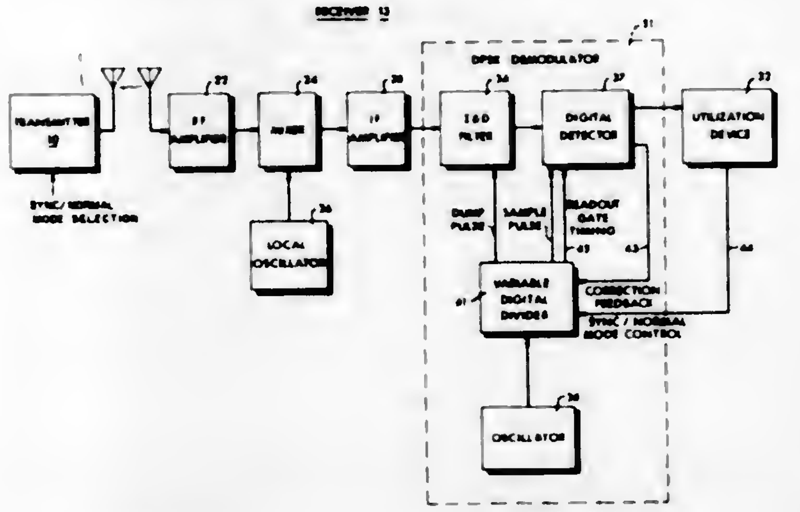
Robert W. Bolvin, Wall, N.J., assignor to The Bendix Corporation, Eatontown, N.J., a corporation of Delaware
Filed Apr. 11, 1966, Ser. No. 541,616
6 Claims. (Cl. 324—158)



A test circuit for determining breakdown voltage of a semiconductor device, utilizing a protection circuit including a silicon controlled rectifier responsive to the breakdown of a Zener diode. Upon the start of breakdown in the semiconductor device, the Zener diode breaks down and conduction is initiated in the silicon controlled rectifier to thereby shunt the biasing means and remove it from the semiconductor device before damage results by excess current burnout.

3,401,339
BIT SYNCHRONIZATION OF DPSK DATA TRANSMISSION SYSTEM

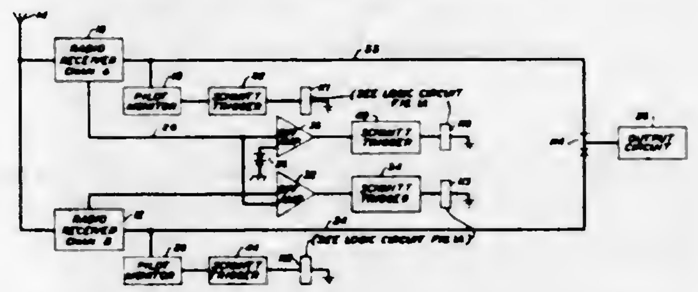
Harold C. Kluever, Williamsville, and Kenneth R. MacDavid, Clarence Center, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Aug. 18, 1965, Ser. No. 480,603
8 Claims. (Cl. 325—30)



A DPSK communication system in which the demodulation timing rates are bit synchronized by transmitting for a given period of time an all "mark" phase reversing message offset by one-half an information bit from normal mode timing. The DPSK demodulator comprises an integrate and dump filter, a digital detector, and a timing source of sample and dump pulses which includes a variable digital divider controlled by feedback signals from the digital detector and a mode selection signal. In the synchronizing mode, the phase of the integrate and dump filter is sampled twice each integration interval, and the time rates from the divider are advanced or retarded in response to the presence or absence of a phase change in that interval.

3,401,340
DIVERSITY RECEIVER WITH REVERTIVE ACTION TO A PREFERRED SELECTION

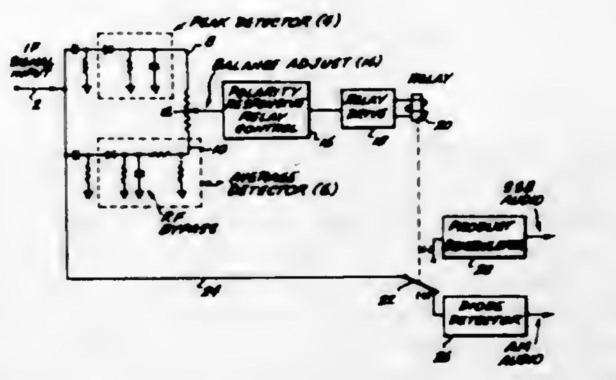
Claude I. L. Cronburg, Jr., Lynnfield, Harold T. King, Andover, Joseph W. Knapp, Georgetown, and Frederick M. Smith, Ipswich, Mass., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 3, 1965, Ser. No. 436,838
10 Claims. (Cl. 325—304)



A diversity receiver in which the selection between received signals is made on the basis of different criteria depending upon operating conditions. Whenever reception over the channel normally preferred is above a selected threshold this channel is selected without regard to the reception over the other channel. If the preferred channel falls below threshold, the switch operates in a bistable mode and selects the better signal. The switch reverts to the preferred channel when that channel returns to threshold. An override is provided which prevents selection of a channel whose pilot signal is absent.

3,401,341
AUTOMATIC SWITCHING OF RECEIVER MODE RESPONSIVE TO CHARACTERISTIC OF RECEIVED SIGNAL

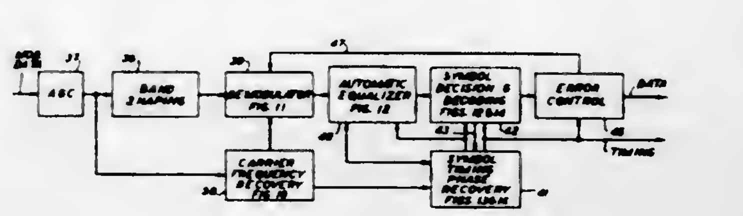
Leonard R. Kahn, 81 S. Bergen Place,
Freeport, N.Y. 11520
Filed Oct. 21, 1965, Ser. No. 500,005
5 Claims. (Cl. 325—316)



1. The method of operating a communications receiver equipped to receive a modulated RF signal having a varying peak-to-average voltage ratio and applying such signal to amplitude modulation detection means and thence to a utilization circuit; said method comprising: sensing the peak voltage of the received signal; sensing the average voltage of the received signal; comparing the peak and average voltages to develop a control signal which is an indication of the peak-to-average voltage ratio of the received signal; and utilizing such control signal to cause application of the incoming signal to said amplitude modulation detection means only when said peak-to-average voltage ratio is less than a predetermined value.

3,401,342
SUPPRESSED CARRIER TRANSMISSION SYSTEM FOR MULTILEVEL AMPLITUDE MODULATED DATA SIGNALS

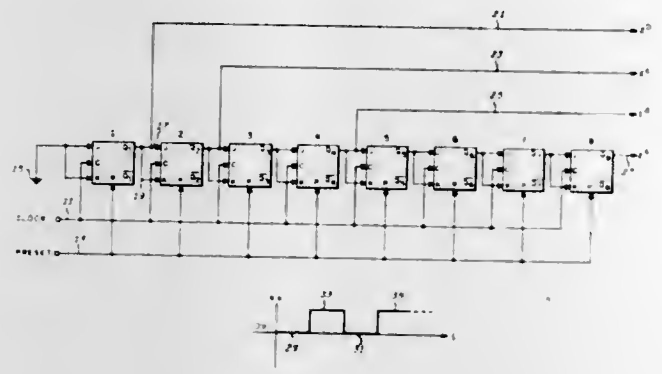
Floyd K. Becker, Colts Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 28, 1965, Ser. No. 459,659
20 Claims. (Cl. 325—324)


AGC
BAND SHAPING
DEMODULATOR
AUTOMATIC EQUALIZER
SYMBOL DECISION & DECODING
ERROR CONTROL
DATA
CARRIER FREQUENCY RECOVERY
SYMBOL TIMING PHASE RECOVERY
TIMING

A data transmission system employing vestigial sideband modulation and multilevel coding is provided to ensure efficient bandwidth utilization. An automatic transversal filter equalizer is coordinated with automatic phase and symbol recovery circuits during an initial start-up sequence to provide a reconstituted data signal at a receiver. A digital AGC circuit is employed to ensure that the multilevel coded signal can be accurately decoded.

3,401,343
HIGH SPEED BINARY COUNTER EMPLOYING J-K FLIP-FLOPS

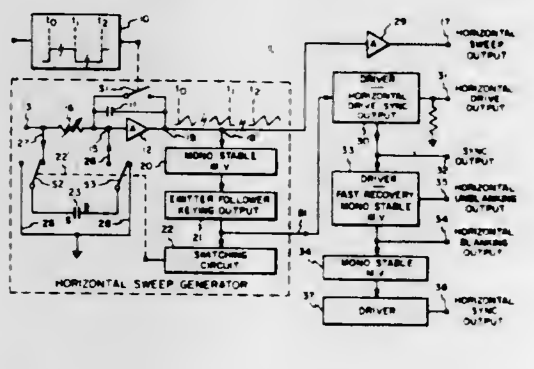
Robert M. O'Lear, Yonkers, N.Y., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed May 23, 1966, Ser. No. 552,289
9 Claims. (Cl. 328—41)



1. An n-stage binary counter for counting clock pulses comprising a J-K flip-flop for each stage in the counter, said stages being arranged serially and considered numbered consecutively for identification; means to apply a steady enabling voltage to the flip-flop in the first stage; means between each pair of adjacent stages to enable the higher-valued stage of said pair only when the lower-valued stage of the same pair is in a given binary state; means to apply each clock pulse to each stage; means to extract a first output signal when the first stage is in said given binary state; and means to extract additional output signals from those stages only whose identifying numbers form a binary sequence.

3,401,344
HORIZONTAL SWEEP GENERATOR INCLUDING A CAPACITIVE RESET MILLER INTEGRATOR

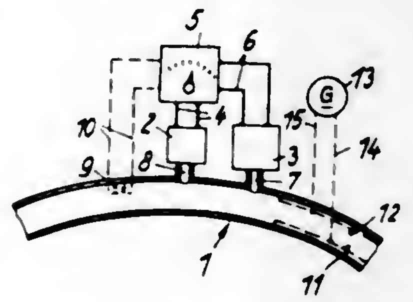
Donald M. Andrus, Lincolndale, and John W. Gray, Pleasantville, N.Y., assignors to General Precision Systems, Inc., a corporation of Delaware
Filed Jan. 5, 1966, Ser. No. 518,837
4 Claims. (Cl. 328—128)



A Miller integrator whose output is connected to a monostable multivibrator is provided with a capacitive reset input which in turn is operated by a switching circuit controlled by the pulse output of the monostable multivibrator. During the interpulse period the switching circuit operates to connect one side of a capacitor to a potential input source while at the same time connecting the other side of the capacitor to ground. During the pulse period of the monostable multivibrator the switch circuit is operated to connect the one side of the capacitor to ground and the other side of the capacitor to the input of the Miller integrator amplifier thus applying a potential which opposes that of the potential input source.

3,401,345
CHARGED PARTICLE ACCELERATOR HAVING A PRESSURE RANGE OF 10^{-5} TO 10^{-7} TORR

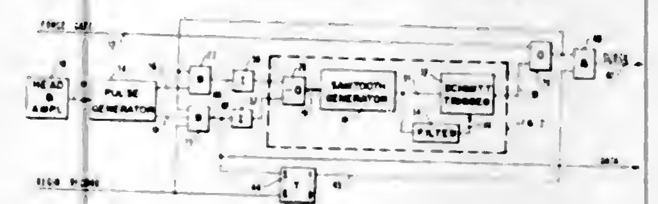
Franz Karl Petersilka and Rudolf Paul Schittenhelm, Erlangen, and Robert Weiss, Uttenreuth, Germany, assignors to Siemens-Reiniger-Werke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed July 22, 1965, Ser. No. 474,022
Claims priority, application Germany, July 24, 1964, S 92,249
2 Claims. (Cl. 328—237)



A charged particle accelerator of the betatron type in which the radiation output is improved by adjusting and maintaining the vacuum in the tube to a value within the range of approximately 10^{-5} to 10^{-7} torr, such that the amplitude of oscillations of the accelerated particles are maintained at a maximum without striking the tube walls.

3,401,346
BINARY DATA DETECTION SYSTEM EMPLOYING PHASE MODULATION TECHNIQUES

Paul J. Brown, Poughkeepsie, N.Y., and Earl G. McDonald, Jr., Shelburne, Vt., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 28, 1965, Ser. No. 517,024
8 Claims. (Cl. 329—104)

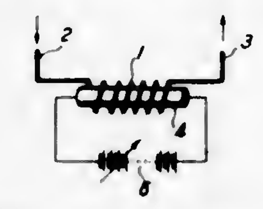


A phase-encoded binary data detection circuit in which a frequency controlled time gate is utilized to distinguish between binary ones and binary zeros. A ramp voltage is generated every time a data transition (i.e. a one or a zero) occurs. The ramp rises until the next data transition at which time it is abruptly terminated and a new ramp started. Each time the ramp voltage reaches a firing level it fires a threshold device which controls the time gate. The firing level of the threshold device is controlled by the amplitude of the ramp voltage so that as the frequency of data increases the firing point is made earlier on the ramp. The result is that the threshold device turns on earlier for high frequencies and later for low frequencies, thus providing a time gate for data which is variable with respect to frequency.

3,401,347
MICROWAVE SEMICONDUCTOR AMPLIFIER

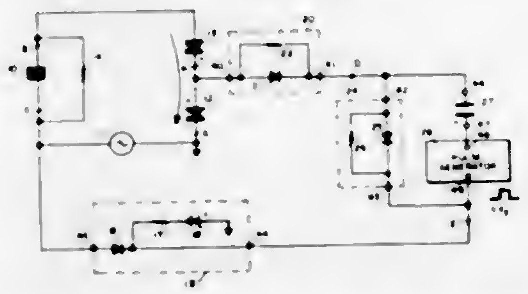
Masao Sumi, Tokyo-to, Japan, assignor to Nippon Telegraph and Telephone Public Corporation, Tokyo-to, Japan, a public corporation of Japan
Filed Apr. 19, 1967, Ser. No. 632,022
Claims priority, application Japan, Apr. 25, 1966, 41/25,913
10 Claims. (Cl. 330—5)

A device provided with a slow-wave circuit and a semiconductor plate or rod, such as n-type InSb or n-type GaAs, working under a high DC electric field; where at least one microwave travelling along the slow-wave circuit is amplified by the coupling with an electron stream which is drifting in the semiconductor plate at a drift velocity slightly higher than the phase velocity of the slow wave travelling along the slow-wave circuit in the longitudinal direction thereof.



3,401,348
FERROELECTRIC AMPLIFIER

Stephen Yando, Huntington, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware
Filed Dec. 23, 1965, Ser. No. 515,943
8 Claims. (Cl. 330—7)

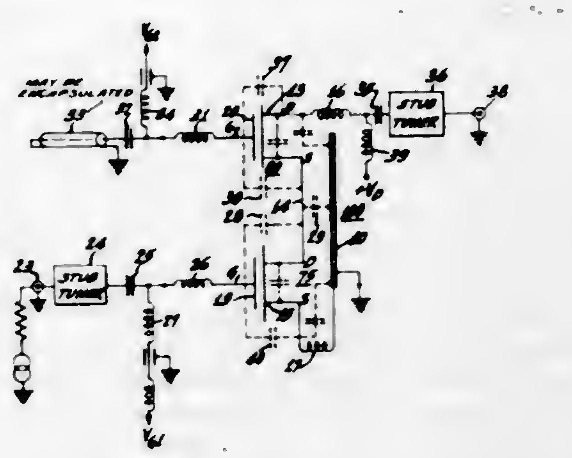


1. A voltage amplifier for varying the voltage across a load impedance in accordance with the magnitude of the voltage output of a signal source which comprises:
(a) first and second series-connected ferroelectric capacitors;
(b) means coupling an alternating source in series with said load impedance and said ferroelectric capacitors;
(c) first asymmetrically conductive switching means having first and second terminals, said first terminal being coupled to the junction of said first and second series-connected ferroelectric capacitors;
(d) a capacitor having first and second terminals, said first terminal being coupled to the second terminal of said first switching means;
(e) second asymmetrically conductive switching means having first and second terminals, said first terminal being coupled to the first terminal of said capacitor;
(f) means coupling a signal source between the second terminal of said second switching means and the second electrode of said capacitor, the output signal from said source charging said capacitor to render said first switching means conductive whereby said ferroelectric capacitors are discharged in accordance with the magnitude of said output signal; and
(g) bias voltage means coupled between one of the terminals of said signal source and the junction of the load impedance and the AC signal source, said bias voltage means producing a voltage at said terminal having an instantaneous magnitude exceeding the instantaneous magnitude of the voltage at the junction of said ferroelectrics.

3,401,349
WIDE BAND HIGH FREQUENCY AMPLIFIER

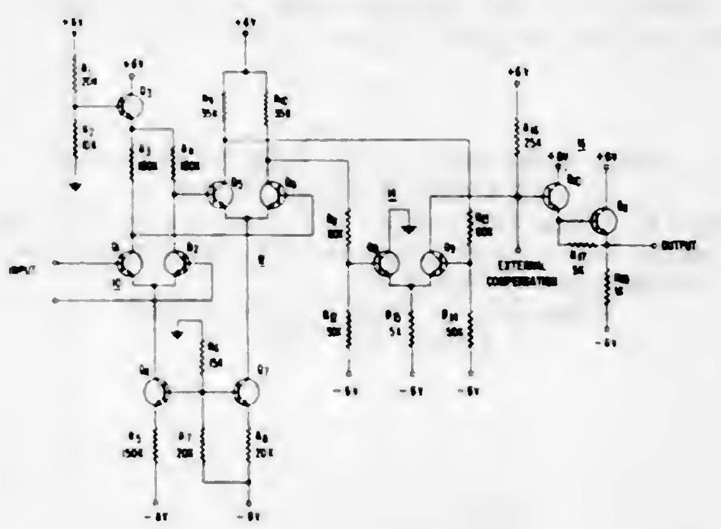
Muni M. Mitchell, Edison, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 2, 1966, Ser. No. 591,509
8 Claims. (Cl. 330—27)

1. A wideband amplifier comprising:
first and second field effect transistors, each having gate, source and drain electrodes formed on a substrate of semiconductor material;
an input signal circuit coupled between the gate and source electrodes of said first transistor;
first means connecting the source electrode of said first transistor to a point of reference potential;
second means coupling the drain electrode of said first transistor to the source electrode of said second transistor;
an output signal circuit coupled between the drain electrode of said second transistor and said point of reference potential;
and third means connecting the gate electrode of said second transistor to said point of reference potential, said third means including an inductive reactance for neutralizing interelectrode capacitance of said second transistor over a first fractional part of a wideband spectrum of frequencies and for providing a regenerative increase in the forward gain of said first and second transistors over a second fractional part of said wideband frequency spectrum.



3,401,350
DIFFERENTIAL AMPLIFIER

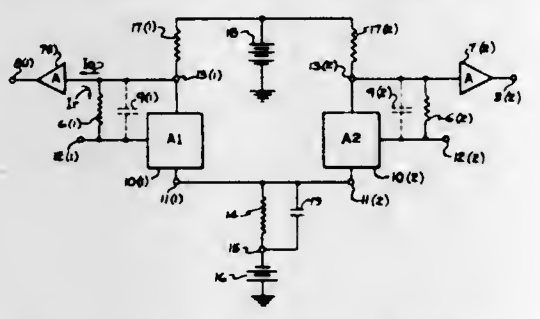
David M. Barton, Bridgeton, and Ronald L. Koepp, Creve Coeur, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Mar. 22, 1965, Ser. No. 441,557
1 Claim. (Cl. 330—30)



A transistorized differential amplifier having high common mode rejection and high differential gain is achieved with a fewer number of stages of amplification. In first and second stages of amplification, constant current generators are connected to common emitter connections to provide high common mode rejection. Also, the differential output impedance of the first stage is made at least 20 times greater than the differential input impedance of the second stage thereby increasing the percentage of the first stage differential output current which drives the second stage of amplification. The latter results in a higher differential gain for the amplifier.

3,401,351
DIFFERENTIAL AMPLIFIER

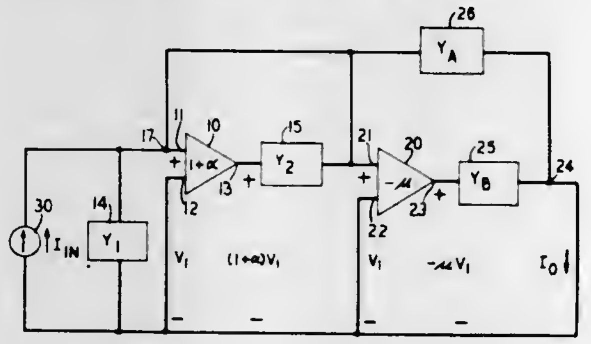
Thomas G. Ellestad, Santa Clara, Calif., assignor to General Electric Company, a corporation of New York
Filed Dec. 18, 1964, Ser. No. 419,394
10 Claims. (Cl. 330—69)



In order to provide a differential amplifier with improved common mode rejection without the use of additional active devices, low frequency and high frequency compensating means are implemented to cancel the effects of common mode signals without affecting the differential signal response. Low frequency common mode rejection is improved by providing compensating resistors between the input and the output terminals of each of the active elements of the differential amplifier pair whereby common mode current flowing through the output terminals of each of the active elements is opposed by an equal and opposite compensating current to deliver net common mode signals to zero to external loads. The effects of stray capacitance, which normally cause a decline in common mode rejection ratio as frequency increases, are minimized by providing a small compensating capacitor across a resistor common to the current paths of the active elements. Inasmuch as parasitic capacitances permit direct coupling of high frequency common mode signals from the input terminals to the output terminals of the active devices, the added small capacitor provides compensation by reducing the normal degenerative effect of the common resistor such that compensating currents flow through the output terminals of the active devices in opposition to the common mode signals directly coupled through the parasitic capacitances.

3,401,352
TWO-PORT NETWORK FOR REALIZING TRANSFER FUNCTIONS

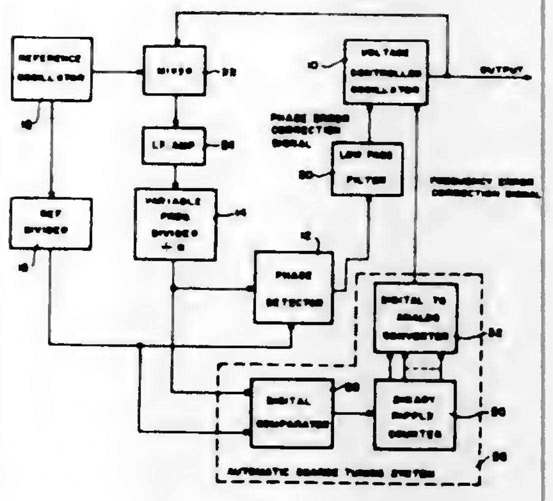
Sanjit K. Mitra, Old Bridge, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Dec. 29, 1966, Ser. No. 605,683
3 Claims. (Cl. 330—99)



1. An active two-port network comprising, in combination, a first section comprising two input terminals and two output terminals a first of each of said terminals being connected to ground, a first amplifier having a gain $1+\alpha$, two input terminals and an output terminal, a first of said first amplifier input terminals being connected to said second of said first section input terminals and the second of said amplifier input terminals being connected to ground, means connecting said amplifier output terminal to the second output terminal of said first section, an R-C network having an admittance Y_1 connected across said input terminals of said first amplifier, a second R-C circuit having an admittance Y_2 connected between said first section input and output terminals, a second section having two input terminals and two output terminals a first of said terminals being connected to ground, a second amplifier having a gain $-\mu$, two input terminals and an output terminal a first of said second amplifier input terminals being connected to said second of said second section input terminals and the second of said second amplifier input terminals being connected to ground, an R-C circuit having an admittance Y_B connected between the output of said second amplifier and the second output terminal of said second section, an R-C circuit having an admittance Y_A connected between said second output terminal of said second section and the second input terminal of said second section, and means interconnecting the ports of said sections so that a general transfer function is generated.

3,401,353
AUTOMATIC COARSE TUNING SYSTEM FOR A FREQUENCY SYNTHESIZER

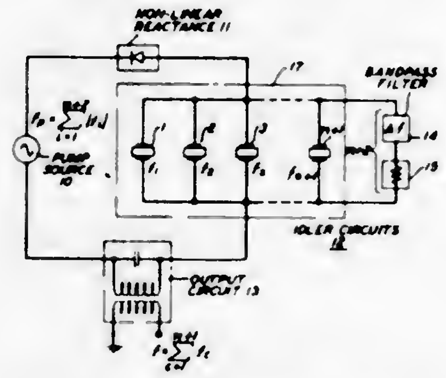
Richard J. Hughes, Williamsville, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed July 6, 1967, Ser. No. 651,618
8 Claims. (Cl. 331—11)



In an indirect digital frequency synthesizer including a voltage controlled oscillator having a feedback loop connected from its pulse output to its phase control input via a frequency divider, phase detector and low pass filter, a circuit for coarse tuning the oscillator to within a frequency range allowing the phase detector to accomplish phase lock of a feedback pulse train, with the pulse train from a reference frequency source. The coarse tuning circuit comprises a digital network for comparing the feedback pulses with the reference pulse train in a manner to generate output pulses when the feedback pulses are not interlaced in time with the reference pulses in an alternating one-to-one manner, and to provide no pulse output when the feedback and reference signals are so interlaced. These output pulses are applied to a binary counter and thence to a digital to analog converter connected at the output of the counter to provide a frequency error correction signal in the form of a staircase waveform for application to a control element of the oscillator. The digital comparator comprises a pair of pulse generators through which the feedback and reference pulse trains are respectively applied, a pair of flip-flops controlled by the outputs from the pulse generators, and an arrangement of logic gates controlled by the flip-flops for inhibiting or allowing output pulses from the pulse generators.

3,401,354
FREQUENCY STABILIZED OSCILLATOR

Harold Seidel, Warren Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York
Filed June 1, 1967, Ser. No. 642,871
3 Claims. (Cl. 331—46)



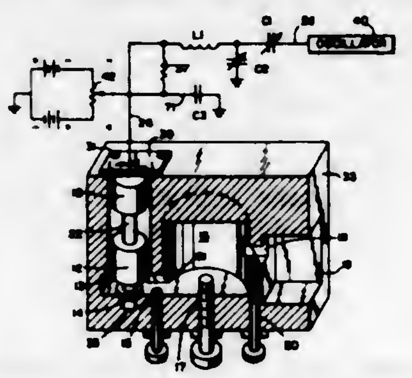
This application describes signal sources whose frequencies are substantially independent of temperature. The invention is particularly adapted to crystal-controlled oscillators.

In accordance with the invention, two or more resonators are combined in a manner such that the temperature sensitivities of the individual resonators are collectively compensated. In one embodiment of the invention, the resonators are piezoelectric crystals used as idler circuits in a parametric oscillator. In a second embodiment of the invention, a plurality of separate oscillators are coupled to a common nonlinear impedance. The number of idler circuits (or oscillators) used is one more than the order of correction sought.

The output frequency is equal to the algebraic sum of the crystal (oscillator) frequencies, where the frequencies are computed by individually summing to zero each of the *n* order frequency deviations for the $n+1$ crystals (oscillators).

3,401,355
STEP RECOVERY DIODE FREQUENCY MULTIPLIER

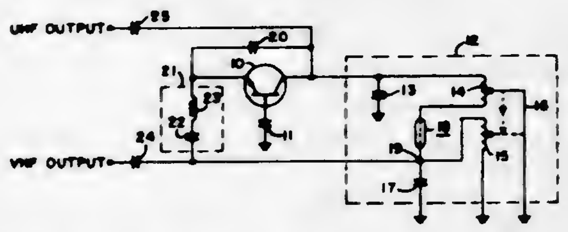
Peter H. Kafitz, La Jolla, Calif., assignor to Ryan Aeronautical Co., San Diego, Calif.
Filed Oct. 31, 1966, Ser. No. 590,717
1 Claim. (Cl. 331—53)



A frequency multiplier employing a step recovery diode for providing continuous wave, higher harmonic, electromagnetic energy output in response to a continuous wave input signal and which step recovery diode is biased by a selectively variable bias to selectively vary the phase of the electro-magnetic energy output independently of the frequency and phase of the input signal.

3,401,356
TUNABLE OSCILLATOR CIRCUITS CAPABLE OF OSCILLATION WITHIN BOTH A HIGH AND A LOWER FREQUENCY BAND

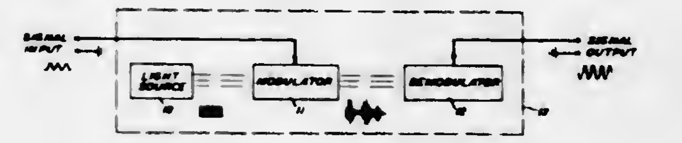
Thomas Cafarella, Forest Hills, and George Doncese, Glen Cove, N.Y., assignors to Hazeltine Research Inc., a corporation of Illinois
Filed Oct. 5, 1966, Ser. No. 584,442
10 Claims. (Cl. 331—117)

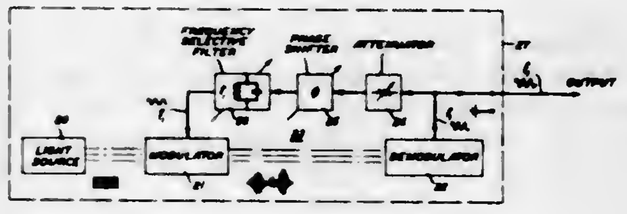


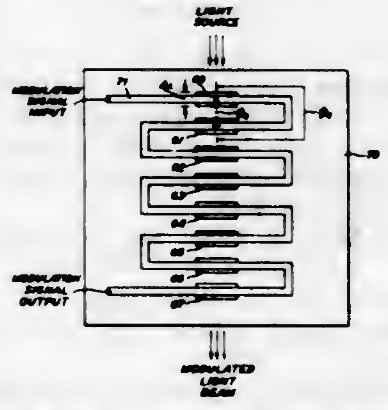
Disclosed is a tunable oscillator circuit including an electron device and capable of oscillation over both a high frequency band and a lower frequency band. The oscillator utilizes the frequency dependent impedance characteristic of a series resonant circuit connected in a feedback loop between a variable resonant load circuit and electron device. Also disclosed is the use of a frequency dependent resistance device connected between a first circuit operative in a high frequency band and a second circuit operative in a lower frequency band. The device includes a conductor and a body of ferrite material coaxial therewith, for automatically providing a relatively high resistance coupling for frequencies in the high frequency band and a relatively low resistance coupling for frequencies in the lower frequency band. Other embodiments of the tunable oscillator circuit and the resistance device are disclosed.

3,401,357
ELECTROMAGNETIC WAVE AMPLIFIER OSCILLATOR AND MODULATOR

Lucian A. D'Asaro, Madison, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 11, 1965, Ser. No. 478,912
8 Claims. (Cl. 332—7.51)







5. A traveling wave modulator comprising:
a plurality of spatially distributed junction diodes;
means for projecting a beam of optical wave energy

through said diodes in a direction along said junctions, said wave energy propagating therealong at a given velocity;

and means for coupling a propagating modulating signal to said diodes where the velocity of propagation of said signal in the direction of said optical beam is substantially equal to said given velocity.

8. In combination, a laser for producing an optical wave of a prescribed frequency;

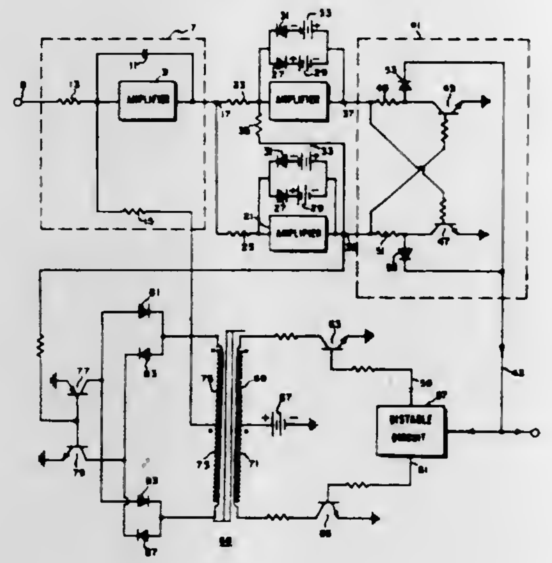
a modulator supplied with said optical wave for impressing thereon a signal wave;

a demodulator which is in proximate relationship with the modulator and to which is applied directly the modulated signal wave for extracting therefrom the signal wave;

the product of the modulator efficiency and the demodulator efficiency being greater than unity whereby the intensity of the extracted signal wave is larger than the intensity of the impressed signal wave.

3,401,358
SIGNAL CONVERTER HAVING BIPOLAR DETECTOR AND FEEDBACK CIRCUITS

Teddy G. Saunders, San Francisco, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Oct. 23, 1965, Ser. No. 503,437
4 Claims. (Cl. 332—12)



A voltage-to-frequency converter includes a bipolar level detector and a bipolar feedback pulse circuit for operation on input signals of either polarity, thereby obviating the need for conventional polarity inverting amplifiers at the input of the converter or for separate pulse feedback circuits each responsive only to a signal at one polarity.

3,401,359
TRANSISTOR SWITCHING MODULATORS AND DEMODULATORS

Floyd K. Becker, Colts Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 4, 1966, Ser. No. 531,935
11 Claims. (Cl. 332—16)

1. A switching circuit comprising

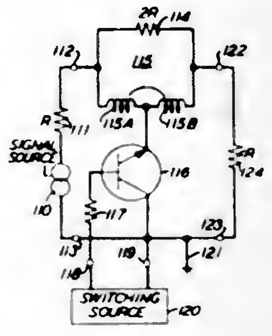
a modulating signal source having a known internal resistance,

a load circuit having a resistance matching that of said internal resistance,

a center-tapped inductor interconnecting said source and said load,

a bridging resistor at twice the value of either of said signal source or said load connected across said inductor,

a solid-state switching device having its output and common electrodes connected between said center tap and a reference point shared with said signal source and load,

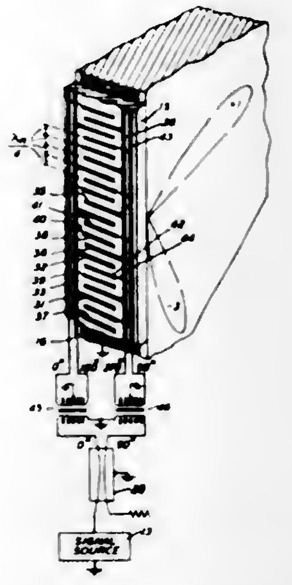


an input electrode on said switching device, and

a switching-wave source connected to said input electrode.

3,401,360
PHASED TRANSDUCER ARRAYS FOR ELASTIC WAVE TRANSMISSION

Erich O. Schulz-Du Bois, Oldwick, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 13, 1965, Ser. No. 486,900
7 Claims. (Cl. 333—30)

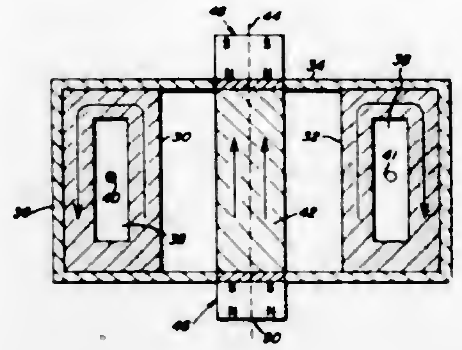


1. A transducer for launching a directed elastic wave comprising means for producing electric fields of a first phase in a first plurality of regions spaced along a line and of a second phase 90° or an odd multiple thereof removed from said first phase in a plurality of regions interposed between said first regions along said line and displaced one-quarter or an odd multiple thereof of the distance between adjacent first regions away from said first regions, and means interposed in said regions and responsive to said fields to produce elastic waves of vibration.

3,401,361
RECIPROCAL LATCHING FERRITE PHASE SHIFTER

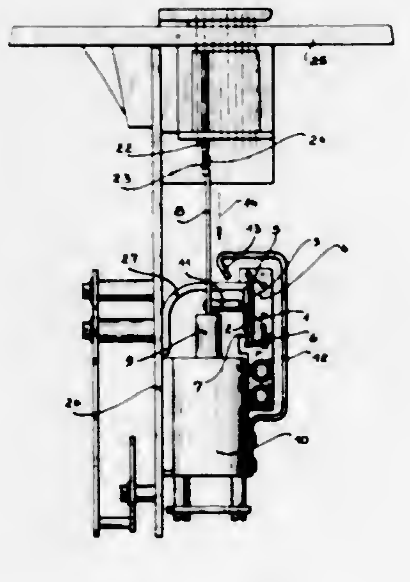
Ernst F. R. A. Schloemann, Weston, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed May 17, 1966, Ser. No. 550,729
23 Claims. (Cl. 333—31)

A reciprocal phase shifter having discrete ferrite bodies providing a symmetrical distribution of magnetization states about the center plane of a waveguide transmission structure. A pair of outer toroid body members are arranged equidistantly on either side of a third separate discrete central ferrite body member which is bisected by the center plane. The outer body members provide a binary magnetization state capability by reversal of current direction and the central body member is either permanently magnetized or electromagnetically controlled by separate means. To obtain reciprocal phase shift the outer toroid bodies are required to be magnetized in opposite directions. The phase shift characteristics of the ferrite material at the center of the guide is always dependent on the direction of magnetization of the outer bodies. The applied magnetic fields are transverse to the direction of electromagnetic wave energy propagation.



3,401,362
ARRANGEMENT FOR SIGNALLING THE MOVEMENT AND/OR THE ATTRACTED POSITION OF AN ARMATURE OF AN ELECTROMAGNET

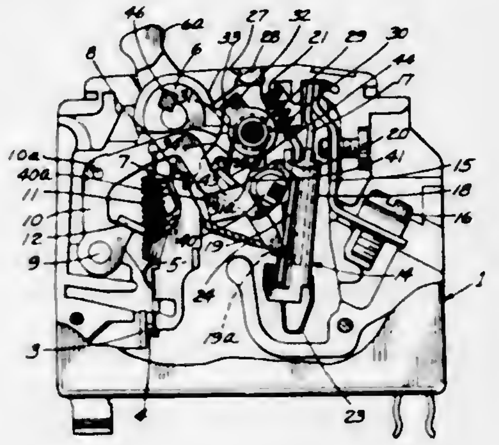
Franz Spiroch, Frankfurt, Gerald Friedl, Langenselbold uber Hanau, and Werner Beckert, Frankfurt, Germany, assignors to Eichner-Organisation, G.m.b.H., Frankfurt am Main, Germany
Filed Oct. 21, 1966, Ser. No. 588,474
Claims priority, application Germany, Oct. 23, 1965, E 30,348
7 Claims. (Cl. 335—17)



1. In an arrangement of the character described, in combination, switch means having a pair of contact means movable between an open and a closed position and constructed to normally stay in one of said positions and to move to the other of said positions thereof when subjected to a magnetic field; support means supporting said switch means; and an electromagnet having an armature movable in a given direction from a rest position to an active position upon energizing the electromagnet, and a member of soft iron on said armature arranged so that at least part of the magnetic field produced during energizing said electromagnet passes through said member of soft iron to magnetize the latter, said armature and said soft iron member thereon arranged relative to said switch means in such a manner that upon energizing of said electromagnet and movement of said armature from said rest to said active position at least part of the magnetic field produced in said soft iron member acts, when said armature is in said active position, on said switch means to move the latter from said one to the other position thereof.

3,401,363
MULTIPOLE CIRCUIT BREAKER WITH TRIP INDICATOR

Charles D. Vyskocil and Robert W. Dunham, Cedar Rapids, Iowa, assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Nov. 10, 1966, Ser. No. 593,518
3 Claims. (Cl. 337—17)



1. In a circuit breaker:

a contact making and breaking assembly comprising a stationary contact, a movable contact, and a movable carrier for the movable contact;

a trip mechanism comprising a pivoted trip lever rotatable about its axis to tripped and untripped position, respectively,

current-responsive trip means operative under normal current conditions to latch the trip lever in untripped position and operative under abnormal current conditions to release the trip lever for movement to tripped position,

means operative to move the trip lever to tripped position when the lever is released by the trip mechanism,

and means connecting the trip lever and movable contact carrier for moving the carrier out of contact making position when the trip lever is moved to tripped position while the manual operation is in ON position;

an indicator movable into and out of an indicating position;

a manual operator movable to ON and OFF positions for moving the movable contact to and from contact making position, respectively;

and means connecting the trip lever and movable contact carrier for moving the carrier out of contact making position when the trip lever is moved to tripped position while the manual operator is in ON position;

a movable trip bar element;

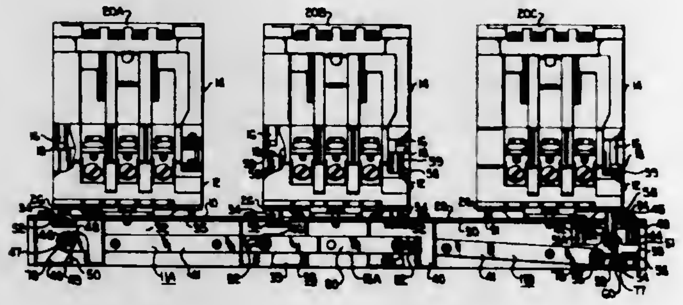
means connecting the trip bar element to the trip lever for rocking the bar element by the lever when the lever is tripped;

means connecting the trip bar element to the indicator so as to move the indicator to an indicating position by the trip bar element when the trip lever is moved to tripped position, and

means operative to move the indicator to a nonindicating position when the trip lever is moved to untripped position.

3,401,364
MECHANICAL INTERLOCK FOR THREE OR MORE SWITCHES

Harold E. Whiting, Milwaukee, Wis., assignor to Square D. Company, Park Ridge, Ill., a corporation of Michigan
Filed June 22, 1966, Ser. No. 559,523
10 Claims. (Cl. 335—160)



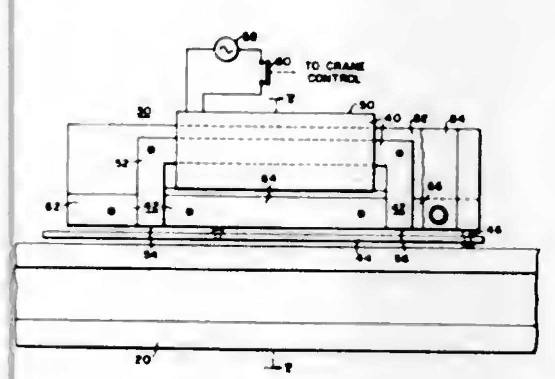
1. An interlock assembly for preventing simultaneous operation of three or more independently operable devices wherein N equals the number of devices and each of said devices has an element movable along a linear axis, comprising:

- (1) a support having $2N-2$ spaced openings extending between a top surface and a bottom surface of the support and the devices mounted side by side in a row on the top surface to have the movable element of $N-2$ devices each aligned with two adjacent openings and the element of the devices at the extreme opposite ends of the row each aligned with one of the openings,
- (2) $N-1$ interlock mechanisms with each of said mechanisms having:
  - (a) a pair of movable plungers with each plunger having a base portion and a stem portion,
  - (b) means mounting the pair of plungers so the plungers are spaced from each other and have the base portions carried in a space between the bottom surface and a panel for mounting the support and the stem portions extend through adjacent openings into engagement with the elements of adjacent devices, said plungers each being guided by the mounting means for movement along the axis of movement of the element which it engages, and
  - (c) means interconnecting the base portions of the pair of plungers for preventing simultaneous movement of the pair of plungers, and
- (3) $N-2$ link means, with each of said link means including a link interconnecting the interconnecting means of a pair of adjacent interlock mechanisms for transmitting movements of the interconnecting means of one of the pair of adjacent interlocking mechanisms to the interconnecting means of the other of said adjacent pair of interlock mechanisms.

3,401,365
MAGNETIC TRACK CLEANER

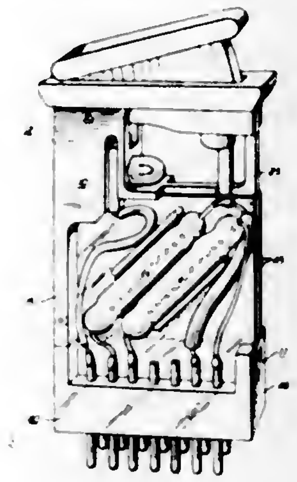
Ralph H. Grader and James A. Freshwater, Muncie, Ind., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 7, 1966, Ser. No. 585,205
9 Claims. (Cl. 335—289)

A track cleaner adapted for mounting on a crane, which frees and removes magnetic particles from the crane rails. The track cleaner includes means for vibrating magnetic particles on the track, means for attracting the particles against a non-magnetic plate, and means for removing the particles from the plate and depositing them in collecting means.



3,401,366
SWITCHING DEVICE RESPONSIVE TO A ROTATING MAGNET

Edward V. Paholek, Brooklyn, N.Y., and Norman Wasserman, Columbus, Ohio, assignors to Bell Telephone Laboratories Incorporated, Murray Hill, N.J., a corporation of New York
Filed Nov. 16, 1966, Ser. No. 594,889
10 Claims. (Cl. 335—206)



1. In a switching device the combination comprising:

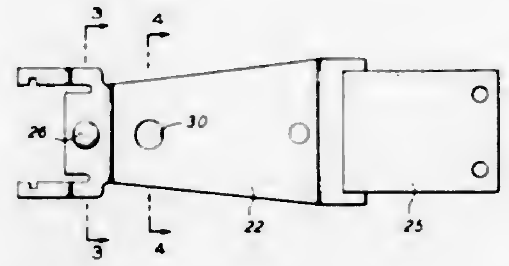
first means for switching, said first means for switching having a longitudinal axis and being operable in response to a magnetic flux applied along such longitudinal axis;

second means for switching, said second means for switching having a longitudinal axis and being operable response to a magnetic flux applied along said longitudinal axis, said second means for switching being disposed with said longitudinal axis substantially at right angles to the longitudinal axis of said first means for switching; and

flux means for supplying a magnetic flux, said flux means having opposite magnetic poles disposed between said first and second means for switching and being adapted to rotate from a position wherein said poles are aligned with the longitudinal axis of said first means for switching to a position wherein said poles are aligned with the longitudinal axis of said second means for switching whereby the switching state of said first and second means for switching alternates.

3,401,367
MAGNETICALLY LATCHING TYPE RELAY CONTAINING A FLUX LIMITING CONSTRICTION

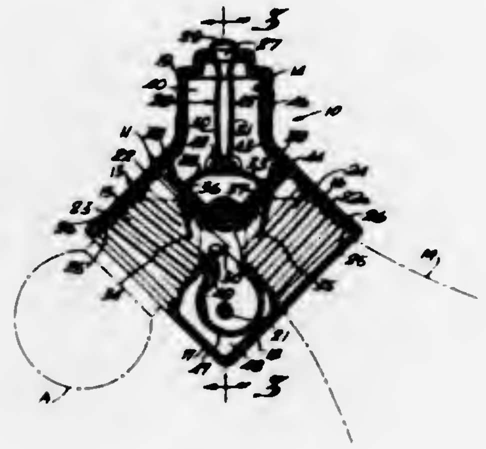
Thomas G. Grau, New Albany, and Virgil L. Marsh, Grove City, Ohio, assignors to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York
Filed Sept. 19, 1966, Ser. No. 580,286
5 Claims. (Cl. 335—253)



A magnetic latching wire spring relay is disclosed wherein the armature includes a serial section of flux conducting cross-sectional area which is reduced with respect to its remaining flux conducting cross-sectional area.

3,401,368
ELECTRICAL RECEPTACLE DEVICE WITH MAIN LAMP AND THERMOSTATICALLY-CONTROLLED AUXILIARY LAMP SOCKETS

Henry Herion, 216 Sutherland St., City Island, N.Y. 10464
Filed Feb. 12, 1968, Ser. No. 704,845
6 Claims. (Cl. 337—1)



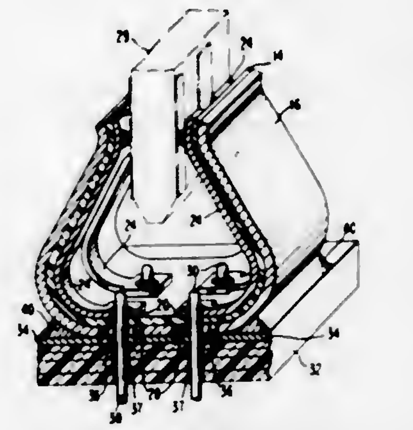
An electrical receptacle device having a main lamp socket and an auxiliary lamp socket adapted to receive an auxiliary lamp operative only upon failure of a main lamp in the main lamp socket. The two sockets are arranged in inverted V disposition in a common housing providing a heating chamber between the socket screw-base ferrules. A spiral-wound bi-metallic conductor is arranged in the heating chamber, having one end affixed to the main lamp socket ferrule and the other end extending through a side opening in the auxiliary lamp socket ferrule for movement in and out of contact, selectively, with the screw-base electrode of an auxiliary lamp in the auxiliary lamp socket in response to temperature conditions in the heating chamber effected by non-operation and operation, respectively, of a main lamp in the main lamp socket.

ERRATUM

For Class 337—221 see:
Patents Nos. 3,401,243 through 3,401,247, inclusive

3,401,369
CONNECTOR

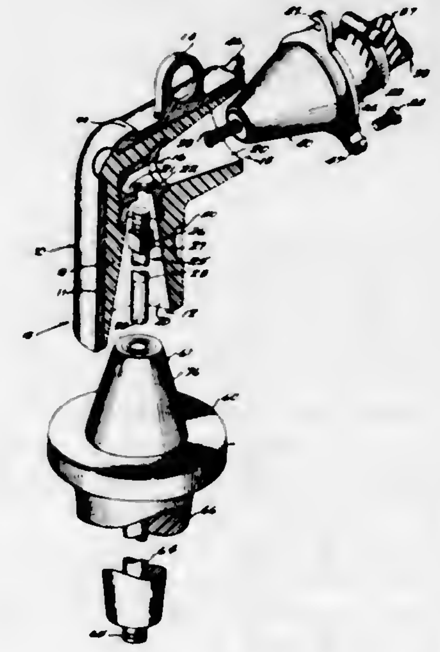
Paul H. Palmateer, Wappingers Falls, and Kevin J. Roche, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 7, 1966, Ser. No. 555,729
5 Claims. (Cl. 339—17)



A laminated impedance matched connector is provided which includes a sheet of dielectric material, on one side of which a plurality of electrical contact members are formed using conventional printed circuit techniques. On the other side of the dielectric sheet, a resilient conductive ground plane is bonded. The laminate is formed into a substantially U-shaped configuration to receive the edge connectors from printed circuit boards. The distance between the electrical contact members and the resilient conductive ground plane achieves the desired impedance matching characteristic and provides a continuous transmission line characteristic from board to interconnector to board.

3,401,370
SEPARABLE CONNECTOR FOR UNDERGROUND SYSTEM

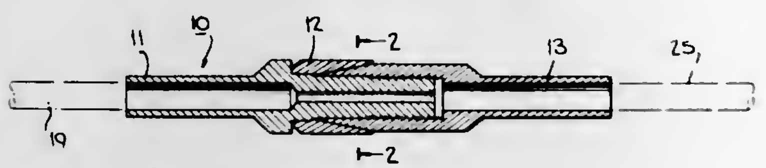
William J. Weinfurt, Elm Grove, and Davis M. Phillips, South Milwaukee, Wis., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Aug. 10, 1966, Ser. No. 571,495
19 Claims. (Cl. 339—91)



Electrical apparatus comprising a dead front electrical connector for making connection to a bushing of an underground electrical apparatus, and cable termination means for fastening a shielded cable to the connector. The apparatus includes mating frusto-conical sealing and insulating surfaces. The cable termination further includes a resilient gland surrounding the cable and having back-to-back frusto-conical surfaces, and an electrical stress relief cone for compressing the gland in contact with the mating frusto-conical cavity of the connector.

3,401,371
FERRULE FOR CONNECTING ANTENNAE TOGETHER

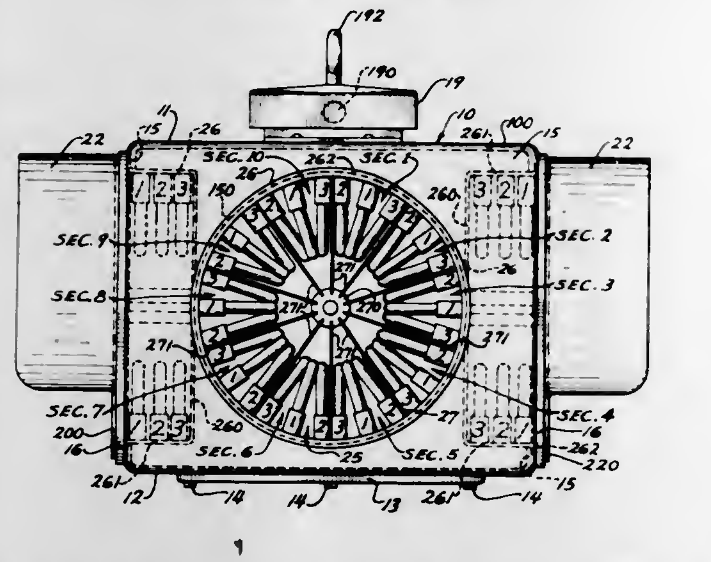
John S. Hammond, Newberry, S.C., assignor to Columbia Products Company, Columbia, S.C., a corporation of South Carolina
Filed Apr. 27, 1966, Ser. No. 545,665
7 Claims. (Cl. 339—268)



The female terminal element having a tapered and slotted end portion is threaded into the cavity formed by the male element and ring element so that the fingers are both compressed against the male terminal element and held in place by a friction fit. The ring element is fixed on the male terminal element to define the cavity.

3,401,372
TRAFFIC CONTROL SIGNALS

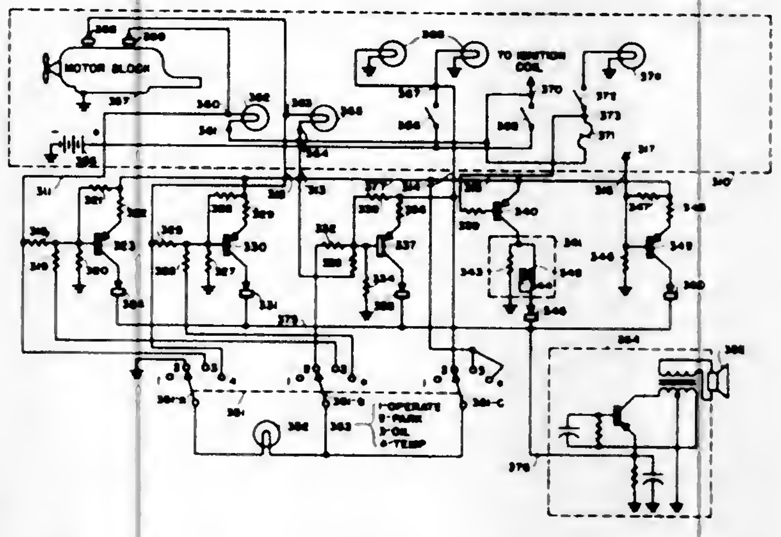
Edgar J. Smoot, Dearborn, Mich., assignor of one-half to Robert A. Smoot, Dearborn, Mich.
Filed Oct. 22, 1965, Ser. No. 501,353
3 Claims. (Cl. 340—43)



An electrically controlled and illuminated traffic control signal having a plurality of faces for controlling traffic at street intersections, at least one face of which includes a circular shaped signal cluster bowl and means dividing the same into a plurality of sectors, each sector including one Amber light bulb, one Red light bulb and one Green light bulb connected through timing means to a source of electric current illuminating said sectors within the circular bowl at said one face: first all Red, then sequentially slowly changing illumination in each sector beginning at the right of top center from Red to Amber until all but the last sector are Amber, then changing illumination in all sectors to Green, then sequentially slowly changing illumination in each sector beginning at the right of top center from Green to Amber until all sectors but the last are Amber, and then changing all sectors to Red, the said slow changing of illumination in said cluster bowl from Red to Amber or Green to Amber having the effect of gradually wiping out the Red or Green signal respectively by an arcuate sweep of Amber light.

3,401,373
VEHICLE WARNING AND ALARM SYSTEM

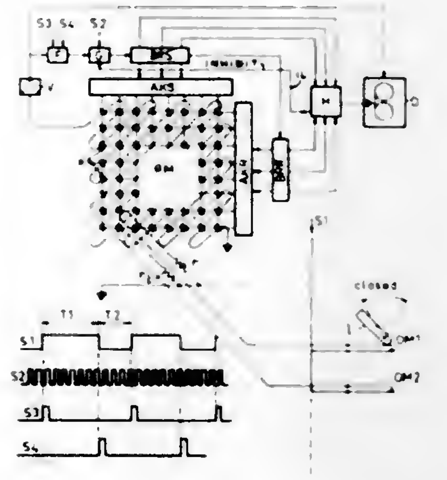
Ray D. Risner, 174 Ampere Ave., Oakhurst, N.J. 07755
Filed Oct. 24, 1965, Ser. No. 504,480
8 Claims. (Cl. 340—52)



This invention discloses an electronic audible alarm system utilizing transistors and transistor switching means. The system is attachable to any vehicle having a chargeable electrical source, to indicate a multiplicity of malfunctions and operable conditions such as open warning lights, high water temperature, low oil pressure, prolonged delay turn signals, etc.

3,401,374
CHECKING ARRANGEMENT FOR PASSING PERSONS, PARTICULARLY FOR CHECKING THE WORK-TIME

Nils Gustaf Erik Stemme, Snorregatan 3F, Kungalv, Sweden
Filed July 15, 1965, Ser. No. 472,156
Claims priority, application Sweden, July 17, 1964, 8,784/64
15 Claims. (Cl. 340—172.5)



A system for recording the presence and absence or arrival and departure of persons to and from a factory, office, enclosure, etc., comprises at least one switch panel connected to the input of a memory the output of which is connected to a recorder such as a tape recorder for punched strips or magnetic tape. The switch panel is provided with manual switches, one for each person to be checked. Each switch has two stable visual states indicating by the position of a switch toggle, signal lamp or the like, the presence or absence, respectively, of the person to which the switch is allotted (labelled). Each switch has one or two pulse contacts being temporarily closed when the switch is changed over from one stable position to the other, whereby a "set" pulse generator being common to all of the switches is temporarily connected to a "set" line output of the switch and transmits one set pulse to this line. The set lines are connected to separate memory elements of the memory, such as a magnetic core matrix memory; so that any element receiving a pulse from the associated switch and set line is set owing to the temporary movement of the switch. At cyclically repeated intervals, and independent on whether none, one or more of the memory elements are in the set state, the memory is read and reset, the resetting operation being interrupted, if required, as long as the information read from a core is recorded.

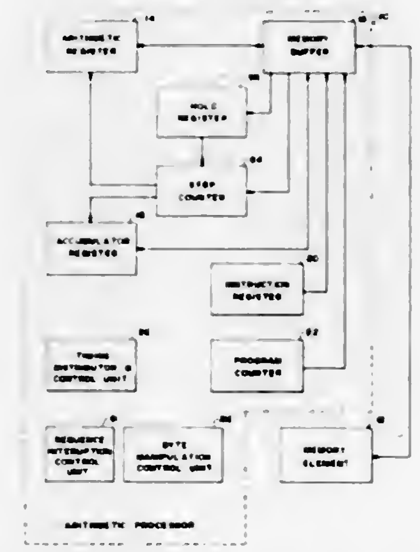
At least one separate memory element is set by the output of a clock-time pulse generator and is likewise read during every reading cycle so that the read output of the memory represents arrival and departure of all persons to be checked and being identified by their respective memory elements and, directly or indirectly, the clock time of every recorded arrival and departure. The output of the memory is recorded by the recorder which moves one step for every record. The time may be recorded either as a clock time code accompanying every personal record or as clock pulse records, one for every minute, so that in the latter case the absolute clock time of a record can be determined by accumulative counting of the recorded clock pulses from a datum instant to the instant of any personal record being read out.

Thus, the records are such that the information of the tape can be supplied to a computer which adds, separately for every person, the time periods of presence to obtain the total time of presence of any person during, say, a week, and also indicates any late arrivals and early departures.

The system may be designed such that the number of said set conductors is less than the number of switches and persons to save the number of set lines through which the panel or panels are connected to a remote memory and recorder.

3,401,375
APPARATUS FOR PERFORMING CHARACTER OPERATIONS

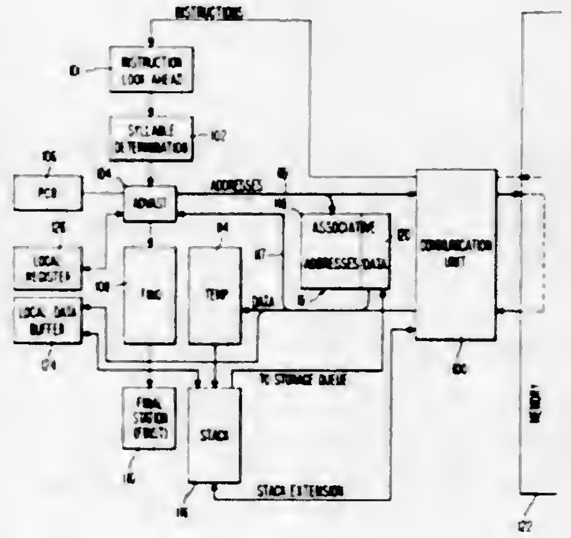
Chester G. Bell, Concord, and Alan Kotok, Belmont, Mass., assignors to Digital Equipment Corporation, Maynard, Mass.
Filed Oct. 1, 1965, Ser. No. 491,954
26 Claims. (Cl. 340—172.5)



Apparatus for performing digital data processing operations on a byte of one or more contiguous digits within a word that contains other information in addition to the byte is described. Each word may contain several bytes and the invention provides apparatus whereby any byte can be operated on without disturbing other bytes in the same word, special control words known as "byte pointers" control the extraction of bytes from, or the storage of bytes in, successive positions within the data words or successive words in memory. Apparatus is also provided to index the information in the control words automatically to insure storage and retrieval of bytes in the proper sequence.

3,401,376
CENTRAL PROCESSOR

George H. Barnes, West Chester, Richard E. Bradley, Wayne, Simon E. Gluck, Malvern, Albert Sankin, King of Prussia, Joseph Shifman, Villanova, and Richard A. Stokes, West Chester, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 26, 1965, Ser. No. 509,908
39 Claims. (Cl. 340—172.5)

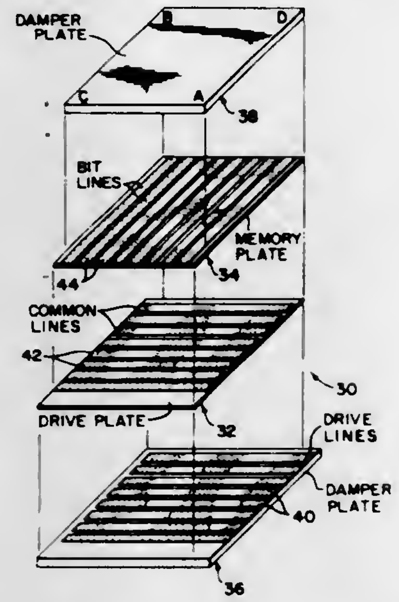


A new central processor module for a modular data processor system is disclosed. Among other features, it has an advanced look-ahead system which is capable of selectively performing only that future work which will be used. Thus it does not perform advanced computations which will become unnecessary due to an unforeseen branching of the program. Nor does it perform work which must later be undone in order to return the program to an earlier condition. The disclosed central processor also possesses the ability to concurrently perform a plurality of program segments. It accomplishes this by having a plurality of units which are capable of substantially independent operation. The processor also possesses structure for providing alternate memory bounds. In addition, the processor includes functionally separate scratch pad memories and controls plus an associative memory which cooperates therewith. Still further, the processor automatically effects indirect jumps and it has a variable length local stack extension plus the capability of extending the stack memory into the main memory.

3,401,377
CERAMIC MEMORY HAVING A PIEZOELECTRIC DRIVE MEMBER

Peter G. Bartlett, Bettendorf, Iowa, and Joseph E. Meschi, Moline, Ill., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed May 23, 1967, Ser. No. 640,717
28 Claims. (Cl. 340—173.2)

Improved ceramic memory devices and arrays which include, for each memory bit, a driver plate and a memory plate. The memory plate is constructed of ferroelectric material so that it may be polarized negatively or positively by application of an electric field and thereby store binary information. The drive plate is constructed of piezoelectric material and is bonded to the memory plate, as by epoxy or heat fusing. The drive plate serves, when actuated, to transmit mechanical forces to the memory plate, which develops an output signal of a polarity in accordance with its state of polarization. This application discloses improved ceramic memory devices and arrays facilitating manufacture in high quantity.

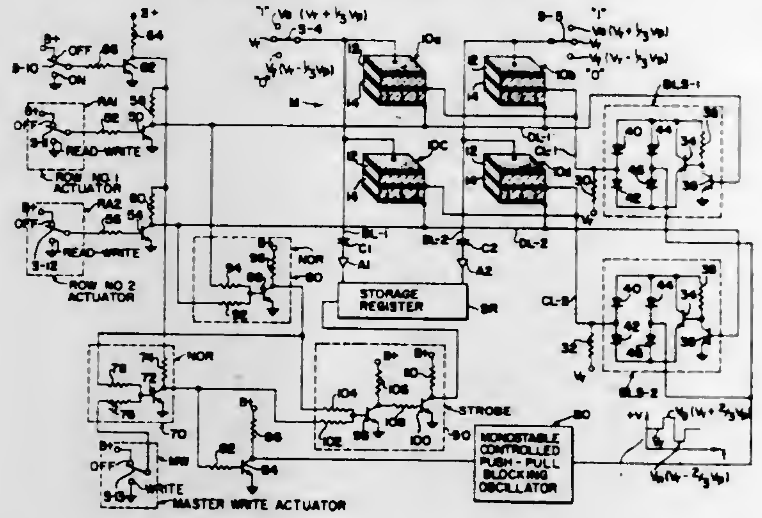


3,401,378
FERROELECTRIC CAPACITOR MATRIX BIT LINE DRIVER

Peter G. Bartlett, Davenport, Iowa, and Joseph E. Meschl, Lyons, Ill., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Filed Dec. 29, 1967, Ser. No. 694,708

8 Claims. (Cl. 340—173.2)



Apparatus is disclosed herein for applying binary signals to a ferroelectric storage capacitor matrix. Voltage levels of various values are applied to opposing surfaces of each memory means in a matrix. The values of these voltages are dependent upon the polarization potential required to polarize a memory means. An improved bit line driver circuit serves to apply voltage levels to bit lines of the matrix during the process of applying binary signals to the matrix.

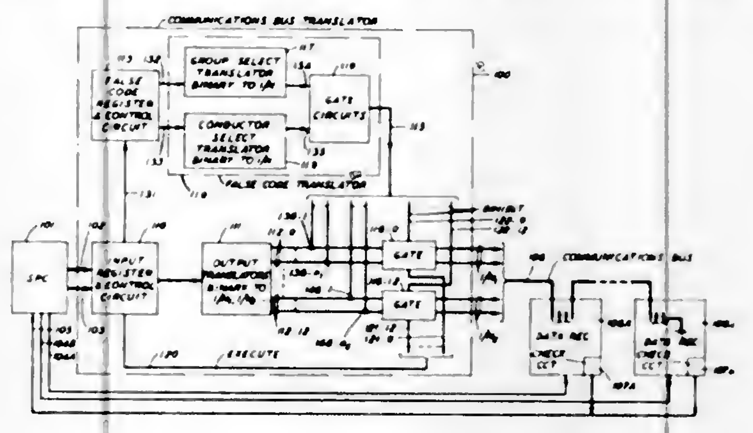
3,401,379
FALSE CODE GENERATOR

Edward M. Prell, Little Silver, Allen F. Rehert, East Brunswick, and Livio A. Rigazio, West New York, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 10, 1966, Ser. No. 519,761

10 Claims. (Cl. 340—172.5)

A register-translator is disclosed which may be selectively controlled to generate either good or bad 1-out-of-N type combinational coded output information. In its normal mode of operation, the circuit receives plural order binary data words at its input and generates a plurality of 1-out-of-N type information bits which are applied over corresponding output conductors to remotely situated data receivers. When it is desired to exercise the error detector in a data receiver, a special sequence of control signals, including the binary input data words, are applied to the circuit which, in response thereto, generates defective 1-out-of-N type output information, i.e., either 0-out-of-N or more than 1-out-of-N. The defective information is generated with the assistance of an auxiliary register which receives and stores binary information specifying the manner in which a binary word stored in a main input register is to be rendered defective when translated from binary to 1-out-of-N form.



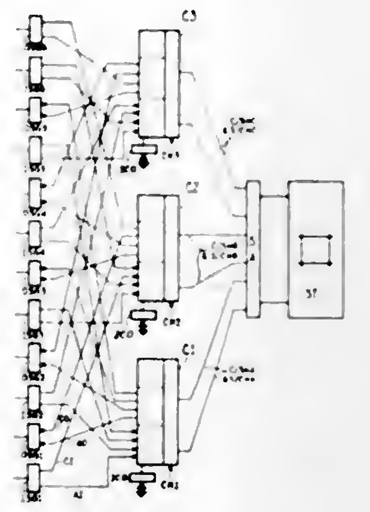
3,401,380
ELECTRICAL SYSTEMS FOR THE RECEPTION, STORAGE, PROCESSING AND RE-TRANSMISSION OF DATA

Hamish Vernon Bell, Orran Terence Pate, and David Hartley, Liverpool, England, assignors to Automatic Telephone & Electric Company Limited

Filed May 11, 1966, Ser. No. 549,241

Claims priority, application Great Britain, May 13, 1965, 20,177/65

7 Claims. (Cl. 340—172.5)



1. An automatic data processing system comprising a plurality of data processing devices each obeying substantially identical programmes not necessarily in synchronism, a plurality of input/output lines or channels divided into a plurality of equal groups, the number of groups being equal in number to the number of data processing devices whereby each of said data processing devices under "no fault" conditions serves exclusively one group of input/output lines or channels and means effective under detected fault conditions in one of said data processing devices for automatically allocating by

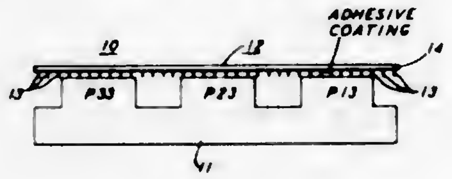
exclusive connections the input/output lines served by the faulty device equally among the remaining non-faulty devices.

3,401,381
WAFFLE IRON MEMORY WITH MAGNETIC TAPE OVERLAY

Andrew H. Bobeck, Chatham, and James L. Smith, Bedminster, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 1, 1964, Ser. No. 393,545

4 Claims. (Cl. 340—174)



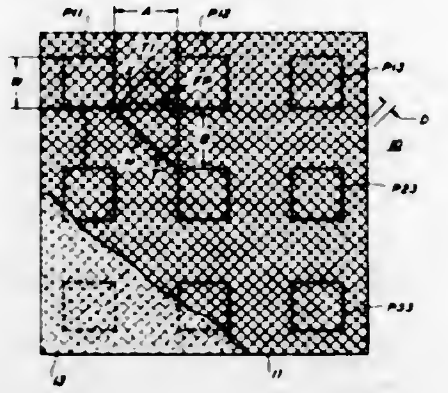
1. In combination, a relatively low reluctance base plate having a plurality of posts thereon, said posts having a prescribed width, and an overlay juxtaposed with said posts, said overlay comprising a plurality of magnetically retentive tapes on a nonmagnetic adhesive film, said tapes being spaced apart fixed distances small compared with said prescribed width.

3,401,382
MAGNETIC WAFFLE IRON MEMORY STRUCTURE

Andrew H. Bobeck, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 1, 1964, Ser. No. 393,546

7 Claims. (Cl. 340—174)



1. In combination, a relatively low reluctance magnetic base plate having a plurality of posts thereon, said posts having a prescribed width, and an overlay juxtaposed with said posts, said overlay comprising intersecting first and second sets of magnetically retentive tapes, the tapes of each of said first and second sets being spaced apart distances small compared with said prescribed width, the tapes of said first set being in contact with the tapes of said second set at the intersections therebetween.

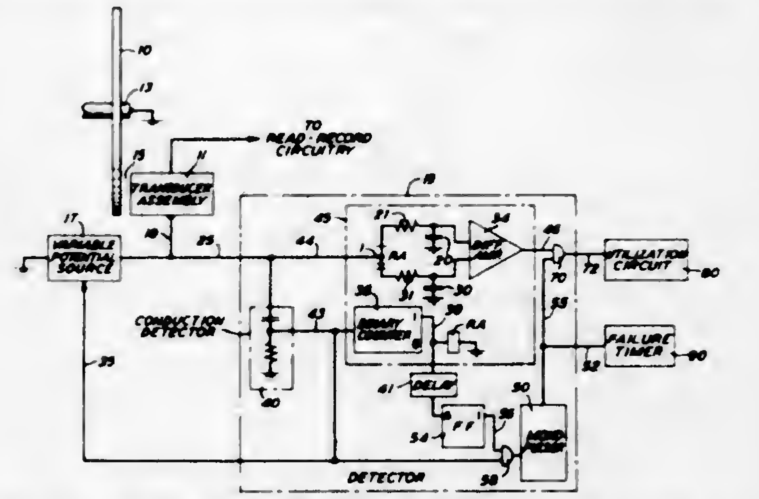
3,401,383
TRANSDUCER DISPLACEMENT DETECTOR

Cyrus F. Ault, Lincroft, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 10, 1964, Ser. No. 417,391

12 Claims. (Cl. 340—174.1)

A change in the displacement between a transducer head and adjacent storage surface is detected by monitoring the breakdown voltage across the gap therebetween. A variable potential source increases the voltage across the gap between these elements periodically. A potential level change detector compares successive levels of breakdown voltage to detect a change in the displacement between transducer head and storage surface.

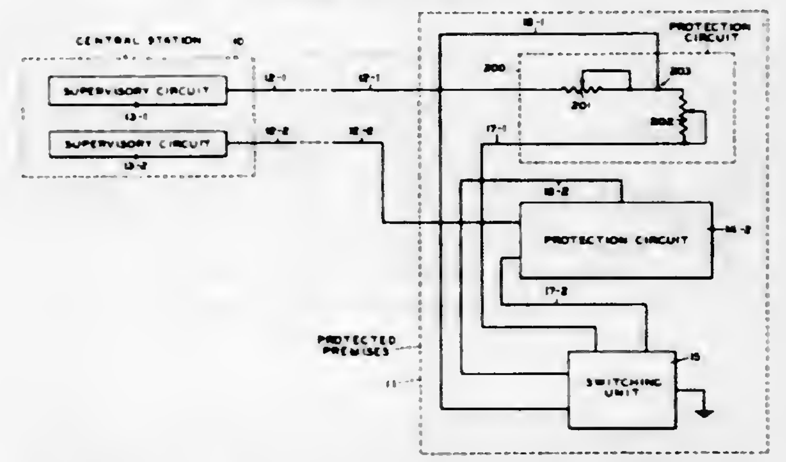


3,401,384
MONITORING APPARATUS AND METHOD FOR ELECTRICAL PROTECTION SYSTEMS

Raymond J. Highstone, Brooklyn, N.Y., and Manfred W. Muehter, Livingston, N.J., assignors to American District Telegraph Company, Jersey City, N.J., a corporation of New Jersey

Filed Dec. 28, 1965, Ser. No. 516,896

7 Claims. (Cl. 340—276)



1. Apparatus for increasing the security of an electrical protection system in which a protected location is conductively coupled to a central station which comprises at least two conductive means for coupling said protected location to said central station,

at said central station, a first supervisory circuit and a second supervisory circuit, each supervisory circuit including a source of supervisory current coupled to a corresponding one of said conductive means and current-sensitive means coupled to said corresponding conductive means to detect predetermined changes in supervisory current therein, and

at said protected location, a first protection circuit and a second protection circuit respectively corresponding to said first and second supervisory circuits at said central station, wherein each protection circuit is provided with an input terminal, a shunt terminal and an output terminal, and wherein at least one of said protection circuits is provided with at least one detection device connected between said input terminal and said output terminal so that operation of said detection device alters the flow of supervisory current in said protection circuit,

means for connecting the input terminal of each of said protection circuits to a corresponding one of said conductive means to couple each protection circuit to a corresponding supervisory circuit at said central station, so that supervisory current is directed to each protection circuit,

a ground point,

switching means interposed between said ground point and said output terminals of said first and second protection circuits, said switching means including:

first relay means and second relay means respectively corresponding to said first and second protection circuits, wherein each of said relay means is provided with a winding having first and second terminals, an armature, and a contact,

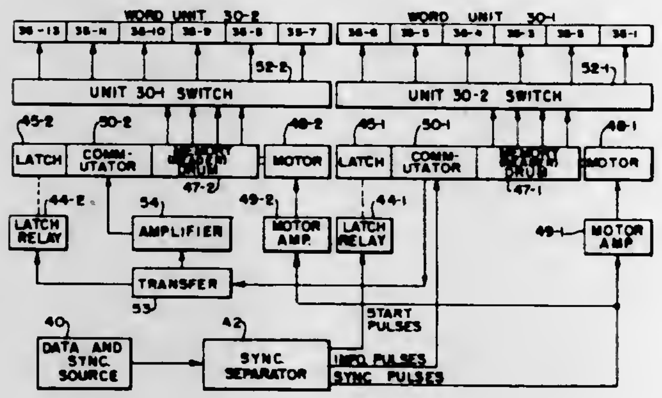
means for connecting the second terminal of each relay means to said ground point,

means for connecting the armature of each relay to the first terminal of the winding of the other relay,

two first conductor means for connecting the output terminals of said first and second protection circuits to said respective first terminals of said windings of said corresponding first and second relay means, and

two second conductor means for connecting the shunt terminals of each of said first and second protection circuits to said contacts of said second and first relay means, respectively, wherein each of said shunt terminals is located in said respective first and second protection circuits at a point selected to shunt a predetermined portion of the respective protection circuit in response to the energizing of the relay means corresponding to the other protection circuit.

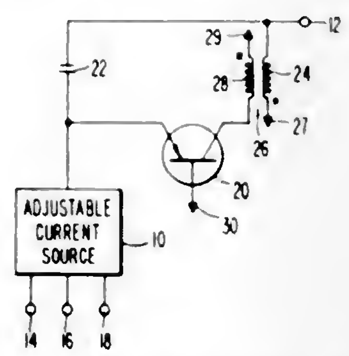
3,401,385
SERIAL PULSE CONTINUOUS MESSAGE INDICATOR SYSTEM
David Lawrence Jaffe, Great Neck, N.Y., assignor to Polarad Electronics Corporation, Long Island City, N.Y., a corporation of New York
Filed Nov. 3, 1964, Ser. No. 408,478
13 Claims. (Cl. 340—339)



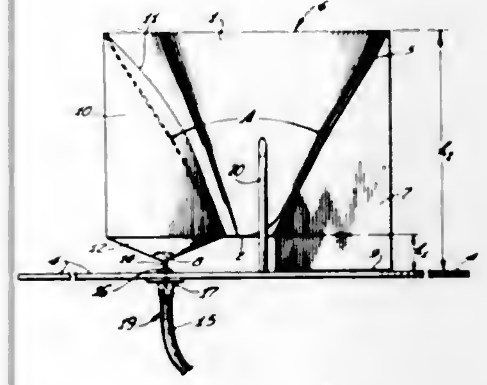
A message display system in which serially occurring data pulses control apparatus actuate alphanumeric devices to produce a continually moving, parade type display on the alphanumeric display devices.

3,401,386
FREQUENCY CONTROL
Gilbert Yanishevsky, Philadelphia, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 6, 1964, Ser. No. 365,276
9 Claims. (Cl. 340—347)

Relaxation oscillator apparatus in which the frequency of oscillation is controlled by the application of digital input words which control, either directly or indirectly through decoding means, the supply of additive current of preset magnitudes into the feedback path of the oscillator and thereby establish the period of oscillation as a preselected function of the input words.

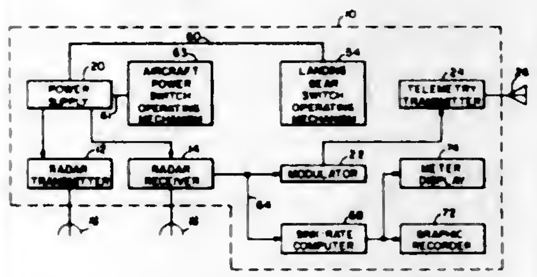


3,401,387
SLOTTED CONE ANTENNA
Dale W. Milligan, Chatsworth, and Robert D. Wanselow, Woodland Hills, Calif., assignors to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed Feb. 16, 1966, Ser. No. 527,874
8 Claims. (Cl. 343—767)



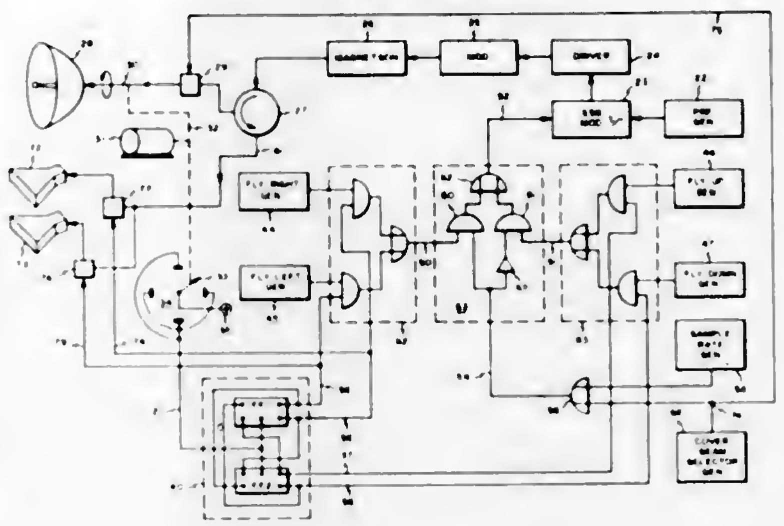
1. An antenna comprising an inverted, slotted cone, an offset feed member intersecting the surface of said cone, and a ground leg connected to said cone near the slot therein.

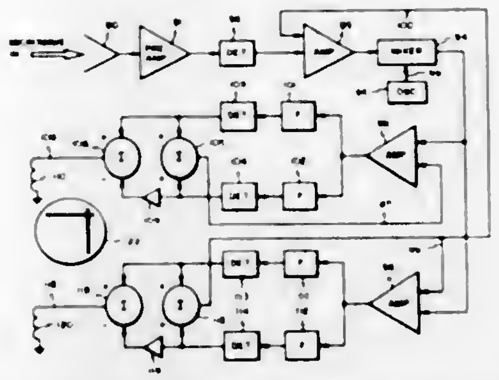
3,401,388
CLOSURE-RATE DETERMINING RADAR SYSTEM
Edward T. Phillips, San Diego, Calif., assignor to Ryan Aeronautical Co., San Diego, Calif.
Filed Dec. 27, 1966, Ser. No. 604,694
4 Claims. (Cl. 343—8)



This invention relates to the use of a low power, broad beam, radar transmitter-receiver unit for determining the component of closure-rate of an object, such as an aircraft, toward and perpendicular to, a smooth surface, such as a landing area. The unit receives the specular portion of the reflected energy from the surface and produces a Doppler signal that is processed to provide the desired perpendicular component of closure-rate information.

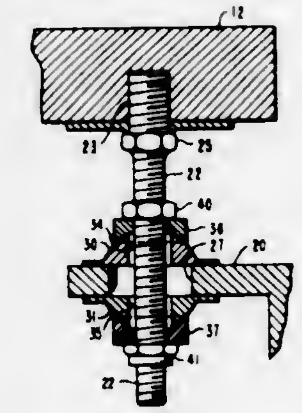
3,401,389
TACTICAL LANDING APPROACH RADIO SYSTEM
Donald J. Toman, Pleasantville, N.Y., assignor to General Precision Systems Inc., a corporation of Delaware
Filed Mar. 6, 1967, Ser. No. 620,974
8 Claims. (Cl. 343—108)





Apparatus for guiding a vehicle toward a predetermined position including microwave transmitter means for establishing a fixed orthogonal set of reference planes in space. The planes are created by encoding each quadrant in the transmitted beam's cross-section with a distinct pair of multiplexed pulse repetition frequencies. A receiver mounted aboard the vehicle includes frequency selective circuits for detecting the transmitted pulse repetition frequencies and distinguishing therebetween. The corresponding signals are then processed to provide positional analog information relative to each plane.

3,401,390
ADJUSTABLE POSITIONING AND SUPPORT DEVICE FOR ANTENNA REFLECTOR PANELS
Alfonso A. Braccini, La Mesa, and Donald R. Carr, Lemon Grove, Calif., assignors to Whittaker Corporation, a corporation of California
Filed May 28, 1965, Ser. No. 459,769
7 Claims. (Cl. 343—915)



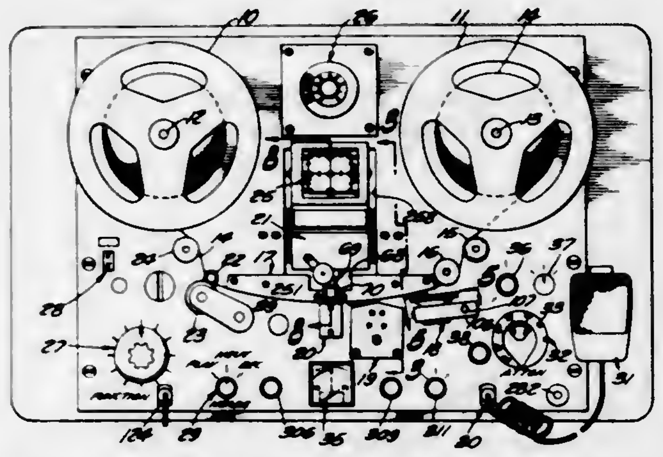
The mechanism for positioning antenna reflector panels in a selectable position and attitude relative to a backup structure includes a mounting bracket attached to the backup structure. Each panel has an elongated stud member affixed thereto and extending through an enlarged aperture in the mounting bracket. A pair of base members have convex outer bearing surfaces and flat inner bearing surfaces which when urged together positively engage the opposing surfaces of the bracket about the aperture. Central openings of substantially greater diameter than the stud member extend through the base members to permit angular displacement of the stud member relative to the bracket surfaces. A pair of clamping members having concave inner bearing surfaces for frictionally engaging the convex outer spherical surfaces of the base members are adjustably positioned along the length of the stud member on opposite sides of the base members. The clamping members are moved toward one another to force the abutting bearing surfaces in positive frictional engagement with one another to fix the panel in the desired position relative to the mounting bracket.

3,401,391
PROCESS OF RECORDING MICROWAVE FREQUENCY SIGNALS ON A MEDIUM COMPOSED OF DIVERSELY SENSITIVE SPIN RESONANT MATERIALS AND ARTICLE
Francis Owen Rice, Washington, D.C., assignor to Litton Systems, Inc., College Park, Md.
Filed Nov. 20, 1962, Ser. No. 239,094
17 Claims. (Cl. 346—1)

1. A method of recording a frequency spectrum of a radio frequency wave comprising:

disposing a plurality of differently characterized resonant materials at different positions over a spatial region and subjecting said materials simultaneously to a uniform magnetic field to tune the materials selectively into energy absorptive relationship with different frequencies of the radio frequency wave, and exposing said materials directly to the wave.

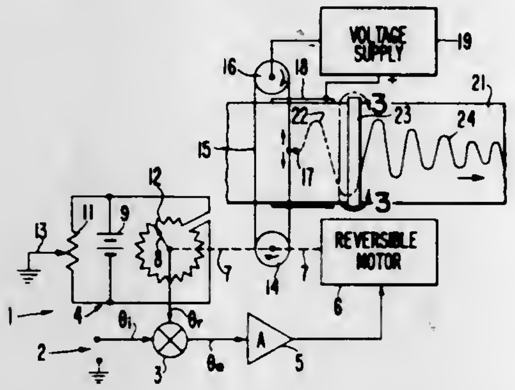
3,401,392
DIRECT WRITING OPTICAL OSCILLOGRAPH
Robert C. Richards, Los Angeles, Calif., assignor to Microsound, Inc., Los Angeles, Calif., a corporation of California
Filed Oct. 23, 1965, Ser. No. 503,794
16 Claims. (Cl. 346—17)



A direct writing oscillograph which accurately records a transparent analog trace of a signal in permanent form on a strip of tape whereupon the trace can be visually analyzed by the projection of a light through the trace to form an enlarged image, and the trace can be directly played back by projecting a light through the trace onto light responsive cells; and the method of analyzing sound or other electrical signals using such a device.

3,401,393
ELECTROGRAPHIC RECORDER EMPLOYING A MOVING STYLUS

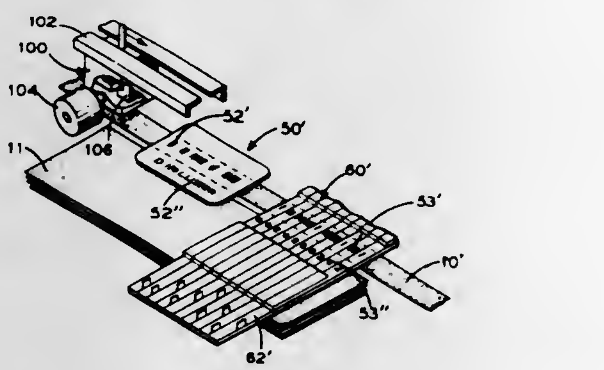
Eugene F. Cirimele, Sunnyvale, and Ivor Brodie, Palo Alto, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Sept. 6, 1966, Ser. No. 577,436
7 Claims. (Cl. 346—32)



An electrographic recorder is disclosed. The recorder includes a movable writing electrode for depositing a line charge image upon the dielectric charge retentive surface of an electrographic recording paper in response to an input signal to be measured. The recording paper is drawn from a supply roll past the movable writing electrode to produce a strip chart type recording. The charge image on the recording paper is developed by passing the charge image over an inking slot in an inking channel. The ink comprises a slurry of pigment particles in a liquid vehicle which is supplied to the inking channel at less than atmospheric pressure to cause the recording paper to be drawn into contact with the liquid ink in the inking slot. The pigment particles are drawn out of the suspension in the liquid and deposited on the charge image, thereby developing same. Various mechanical arrangements are provided for moving the electrographic writing electrode over the recording paper. For example, a reversible motor, cable and pulley are employed in one embodiment. In another embodiment, a galvanometer movement is employed for moving the writing electrode. In another embodiment, a helical conductor is rotated in response to the input signal for causing the conductor to produce a trace on the recording paper.

3,401,394
MAGNETIC SHUNTING RECORDER

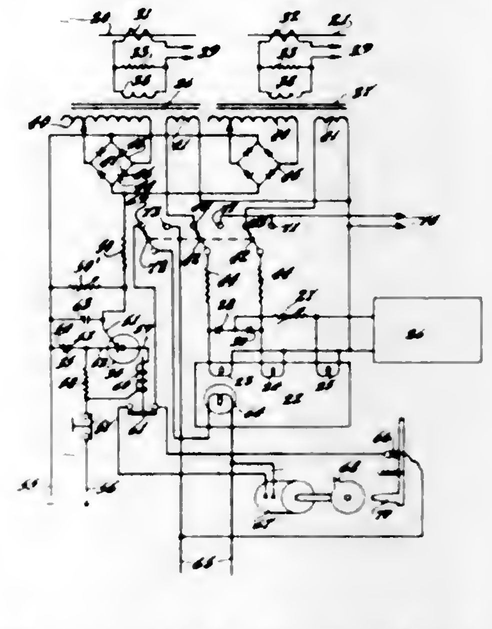
Eugene Leonard, Sands Point, Edgar Wolf, New Hyde Park, Francis C. Marino, Huntington, and Wolfgang F. Heine, Huntington Station, N.Y., assignors to Digitronics Corporation, Albertson, N.Y., a corporation of Delaware
Filed Apr. 3, 1964, Ser. No. 357,085
8 Claims. (Cl. 346—74)



An information recording apparatus which records fixed and variable data on a magnetic tape and simultaneously prints "hard copy" in visual form on a record form. The fixed data is represented by first magnetic shunting elements in a laminar record medium. The variable data is represented by a carrier of second magnetic shunting elements that is selectively movable over the magnetic tape. When the fixed and variable data magnetic shunting elements are in place a permanent magnet is moved over to the elements and the tape to cause the recording. In addition associated with the permanent magnet is a pressure roller which presses portions of the laminar record medium and the carrier having bosses thereon to cause an impression recording on a visual record form.

3,401,395
FAULT RECORDER

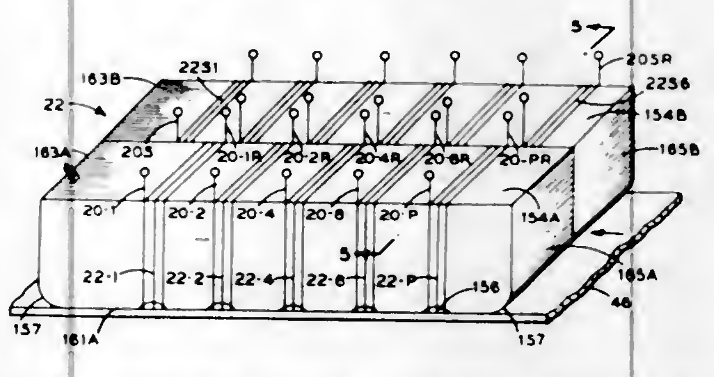
John H. Neher, 600 Sussex Road, Wynnewood, Pa. 19096
Filed Sept. 21, 1964, Ser. No. 397,909
7 Claims. (Cl. 346—74)



A continuous loop magnetic tape recorder for facilitating determinations of the causes of power circuit faults which provides records of current and/or voltage for prefault and postfault periods of at least several minutes. The desired parameter is continuously recorded on the tape and the record is erased just before beginning the succeeding cycle of the loop. The occurrence of a fault triggers an overcurrent fault detector which starts a motor-driven timer arranged to stop the tape transport upon timing out.

3,401,396
SERIAL MULTIBIT MAGNETIC RECORDING HEAD STRUCTURE

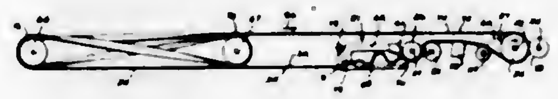
Edgar Wolf, New Hyde Park, and Francis C. Marino, Huntington, N.Y., assignors to Digitronics Corporation, Albertson, N.Y., a corporation of Delaware
Filed May 10, 1965, Ser. No. 454,473
10 Claims. (Cl. 346—74)



A data transmission system comprises a magnetic tape recorder, and a signal transmitter connected via a telephone channel and a signal receiver. The magnetic tape recorder includes a magnetic recording transducer which records characters as a combination of bits serially along the magnetic tape. The recorded character bits are interleaved with sprocket bits. The so recorded magnetic tape is then read to cause a signal transmitter to transmit tone signals via a telephone channel to a signal receiver.

3,401,397
TAPE RECORDING MECHANISM WITH ENDLESS MAGNETIC TAPE STORED IN A FIGURE 8

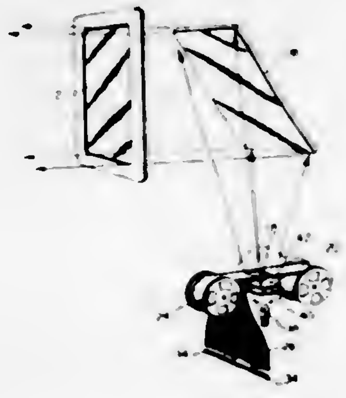
James T. Blakistone, Pasadena, and Irving Karsh, Los Angeles, Calif., assignors to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Continuation of application Ser. No. 288,721, June 18, 1963. This application June 13, 1967, Ser. No. 645,839
20 Claims. (Cl. 346—74)



One embodiment of the invention reduces the overall width of an endless tape transport mechanism to approximately the same width as the tape, by twisting an internal loop of tape within the magazine through about 180°. This twist enables the tape drive to draw an external loop of tape from the magazine in the plane of rotation of the tape magazine rollers.

3,401,398
ELECTRICAL IMPULSE RECORDING AND PROJECTION SYSTEM

Bernard Lichtenstein, North Massapequa, N.Y., assignor to Edo Corporation, College Point, N.Y., a corporation of New York
Filed July 14, 1966, Ser. No. 565,164
12 Claims. (Cl. 346—107)

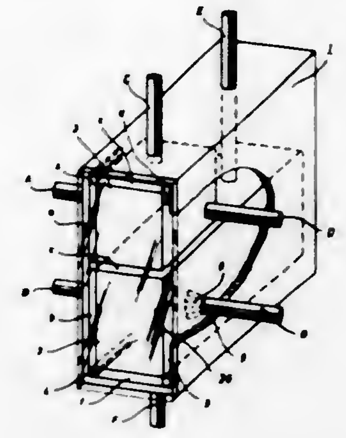


An electrical impulse recording and projection system which includes multiple channel light sources activated by electrical impulses, optical fibers for light transmission to a film for exposure of the film, developing means adjacent the film and including a source of infra-red rays for developing the exposed film, and projection means including light substantially free of rays which would further expose and develop the film.

3,401,399
DEVICE FOR PROJECTING SYMBOLS ON A LIGHT-SENSITIVE RECORDING CARRIER

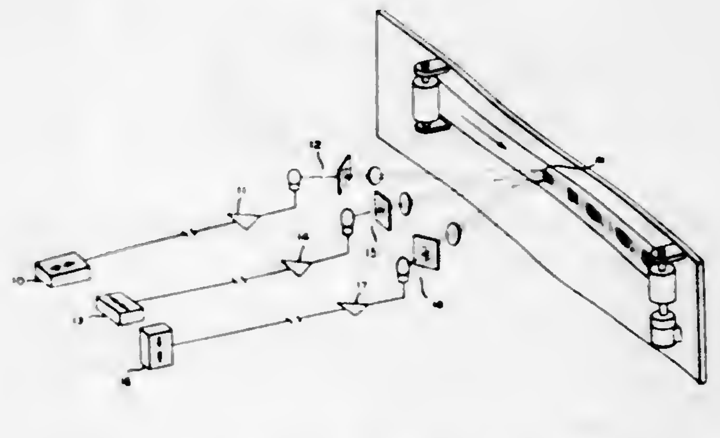
Ruben Valdemar Tegholm, Johanneshov, Sweden, assignor to Svenska Diamantbergborrnings Aktiebolaget, Sundbyberg, Sweden, a joint-stock company of Sweden
Filed Mar. 31, 1967, Ser. No. 627,419
Claims priority, application Sweden, Apr. 1, 1966, 4,435/66
3 Claims. (Cl. 346—107)

A device for converting electrical signals to corresponding symbols which may be recorded on for example a self-developing recording paper. Two rods of conductive material and having rectangular cross sections are placed side by side in a box-like envelope which has a rectangular cross section and is open at one end. A space is left between the rods and the envelope as well as between the rods themselves. The electrical signals are caused to generate spark discharges in the spaces and the light emanating from the spaces is utilized for recording the symbols.



3,401,400
APPARATUS FOR COLOR DISPLAY OF SEISMIC DATA

Joe Pat Lindsey, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 20, 1966, Ser. No. 588,113
4 Claims. (Cl. 346—108)

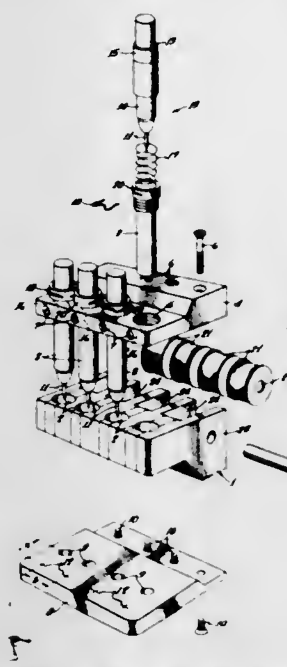


Apparatus for color display of seismic data in which the independent spatial variables of a seismic signal are summed by varying the intensity of a plurality of colored light sources in response to the magnitude of the variables, the color assigned to each variable being different. All the light sources are focused on a common region of a photographic film.

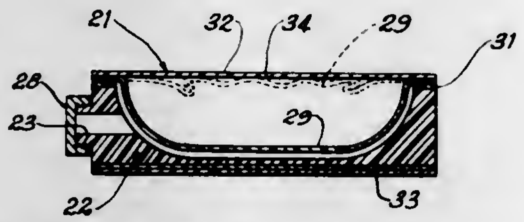
3,401,401
MULTIPLE PEN PLOTTER CARTRIDGE

Joseph Robin Read, La Mirada, and Robert C. Morton, Fullerton, Calif., assignors to California Computer Products, Inc., Anaheim, Calif., a corporation of California
Filed Mar. 10, 1967, Ser. No. 622,323
10 Claims. (Cl. 346—140)

The present invention relates to an apparatus for alternately selecting among several drawing pens having different styluses and colors and includes a plurality of electromagnets having adjacent pole faces with a pen assembly for each electromagnet. The electromagnets are selectively energized to bring a corresponding pen in contact with the platen of an incremental or analog plotter in response to external command signals.



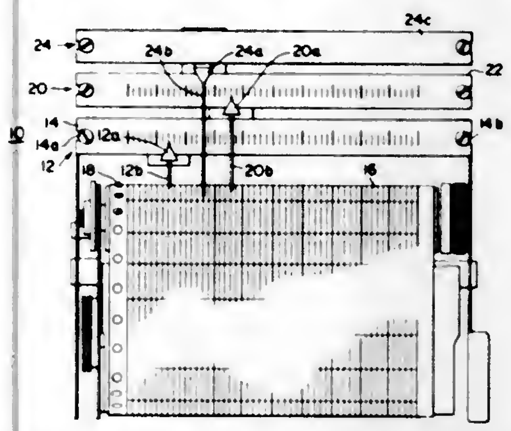
3,401,402
CLOSED INK RESERVOIR FOR RECORDING INSTRUMENTS
Peter Scheuzger, Highland Park, and Marshall S. Joseph and Hiroshi Ono, Chicago, Ill., assignors to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois
Filed May 10, 1967, Ser. No. 637,591
7 Claims. (Cl. 346—140)



Closed ink reservoir for recording instruments, comprising rigid molded polyethylene tray, thin flexible fluorohalocarbon plastic membrane heat sealed marginally to upper edge of tray and generally conforming to interior shape of tray when collapsed with reservoir empty, heavier cover film overlying and marginally heat sealed to flexible membrane for absorbing shock loads encountered in shipping and handling and as barrier to water vapor transmission from ink and perforated to subject membrane to atmospheric pressure in use, and bottom film heat sealed to base of tray for additional protection against ink coagulation, with snap-fit retention of reservoir in instrument and a two-part shipping container having one part formed to receive the reservoir and the other part formed to receive a pressure pad for absorbing shocks, vibrations and stresses incurred in shipping and handling to prevent resultant rupturing of the reservoir.

3,401,403
STACKABLE PEN AND SLIDEWIRE MODULE FOR STRIP CHART RECORDER
Walton Freace Staley, Jr., Philadelphia, Pa., assignor to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 27, 1967, Ser. No. 634,246
4 Claims. (Cl. 346—145)

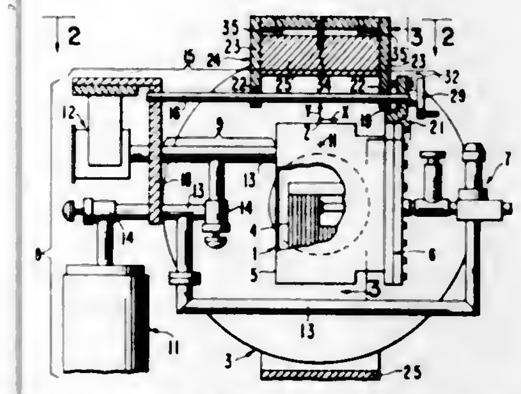
An automatic self-balancing recorder for recording and indicating the values of one or more measured quantities in which most of the elements necessary for recording or indicating a single condition, i.e. a slidewire and trolley, scale, pen carriage structure and guide means therefor, slidewire contact, and means to support a drive connection for the pen carriage structure are incorporated in a pen module which is constructed and arranged to include a mounting facility for stacking one on top of another. The recorder includes means for supporting the pen modules in cantilever fashion in stacked array so that to add another pen and indicator and additional measuring system components to expand the cability of the recorder, all that needs to be done is to add a pen module to the stack and other required components and hook up the cable the pen carriage structure to the capstan of a servo motor, electrically connect slidewire to the measuring system and connect the recording pen to its ink supply.



3,401,404
MEROCYANINE DYE-SENSITIZED PHOTOGRAPHIC MATERIALS COMPRISING SILVER HALIDE EMULSION LAYERS CONTAINING AZO-DYES
Bernhard Seidel, Cologne-Mulheim, and Oskar Riester, Leverkusen, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Jan. 26, 1965, Ser. No. 428,205
Claims priority, application Germany, Feb. 13, 1964, A 45,221
3 Claims. (Cl. 96—99)

Particularly desirable sensitization of silver-dye-bleach silver halide emulsions is effected with certain substituted merocyanine dyes.

3,401,405
TRANSLATABLE SUPPORT FOR MOVING THE VACUUM SYSTEM AND THE MASS SPECTROMETER RELATIVE TO THE MAGNET
Raymond A. Erickson, San Jose, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Apr. 4, 1966, Ser. No. 539,918
2 Claims. (Cl. 250—41.9)



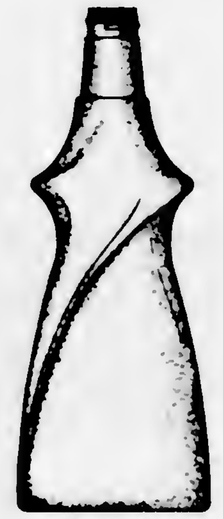
A mass spectrometer system is disclosed. The mass spectrometer includes an ion mass analyzer chamber disposed in the magnetic gap of a magnet. The magnet includes a yoke structure interconnecting the poles of the magnet and bridging across the magnetic gap externally of the

gap. A vacuum system, including a pair of vacuum pumps and a rigid exhaust manifold, is connected to the mass analyzer chamber for evacuating the chamber. A hanger structure is affixed to the yoke of the magnet for supporting the mass analyzer and vacuum system. A movable carriage supports the vacuum system and mass analyzer from the hanger structure. The movable carriage includes a pair of parallel rods passable through and axially slidable through the hanger structure. A drive screw is affixed to the carriage and the drive screw threadably mates with a threaded portion of the hanger over only a limited extent of the full movable travel of the support rods through the hanger. The support rods have a sufficient length such that the full extent of movable travel of the carriage is sufficient to move the mass analyzer chamber substantially out of the gap of the magnet to facilitate access to the mass analyzer for maintenance and the like. Adjusting screws are provided on the hanger structure for producing small adjustments of the position of the mass analyzer within the gap of the magnet.

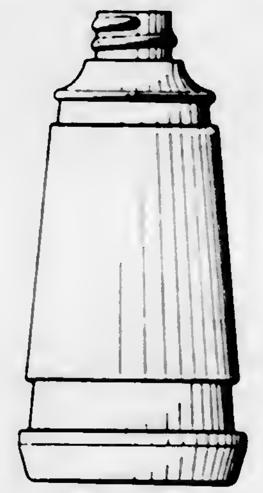
DESIGNS

SEPTEMBER 10, 1968

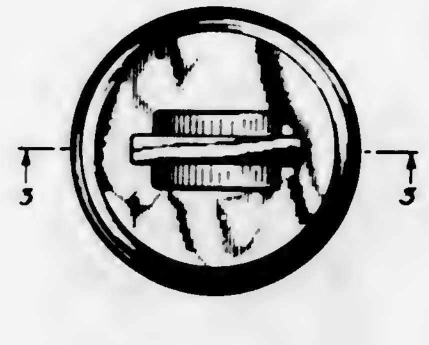
212,183
BOTTLE
Arthur F. Hileman, San Francisco, Calif., assignor to Safeway Stores Incorporated, Oakland, Calif., a corporation of Maryland
Filed Jan. 10, 1967, Ser. No. 5,368
Term of patent 14 years
(Cl. D9—115)



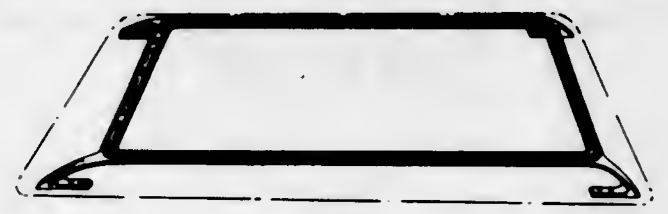
212,184
BOTTLE OR SIMILAR ARTICLE
Wilburn Q. Smith, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 23, 1967, Ser. No. 9,125
Term of patent 14 years
(Cl. D9—119)



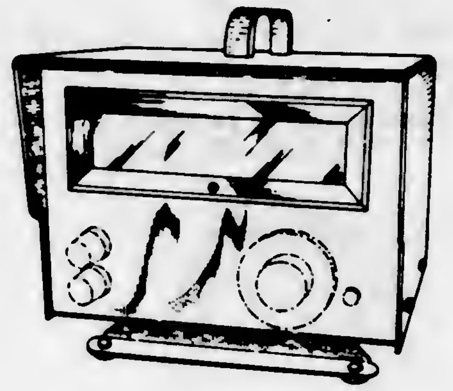
212,185
PAINT CAN LID
Thomas V. O'Leary, 1722 Martins Lane,
Gladwyne, Pa. 19035
Filed Mar. 16, 1967, Ser. No. 6,252
Term of patent 14 years
(Cl. D9—264)



212,186
LUGGAGE RACK
John A. Bott, 931 Lake Shore Drive,
Grosse Pointe Shores, Mich. 48236
Continuation of design application Ser. No. 6,032, Mar. 2, 1967. This application Oct. 27, 1967, Ser. No. 9,517
Term of patent 14 years
(Cl. D14—27)



212,187
METER OR SIMILAR INSTRUMENT
Louis W. Pignolet, Chatham, N.J., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Dec. 4, 1967, Ser. No. 9,632
Term of patent 14 years
(Cl. D26—1)



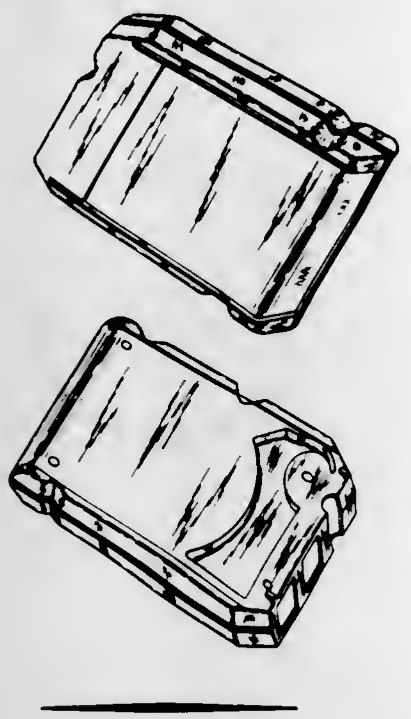
212,188
TAPE CARTRIDGE

Robert Adell, Birmingham, Mich., assignor to Adell International, Inc., Detroit, Mich., a corporation of Michigan

Filed Oct. 5, 1967, Ser. No. 8,878

Term of patent 14 years

(Cl. D26—14)



212,189
PORTABLE TYPE MAGNETIC TAPE RECORDING AND PLAYBACK APPARATUS OR SIMILAR ARTICLE

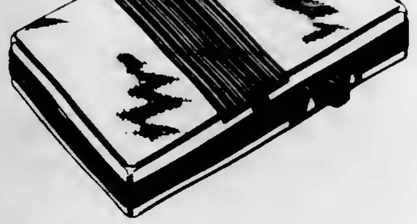
Gerhard Dietrich, Fuerth, Bavaria, Germany, assignor to Max Grundig, Fuerth, Bavaria, Germany

Filed Dec. 5, 1967, Ser. No. 9,642

Claims priority, application Germany Oct. 30, 1967

Term of patent 14 years

(Cl. D26—14)



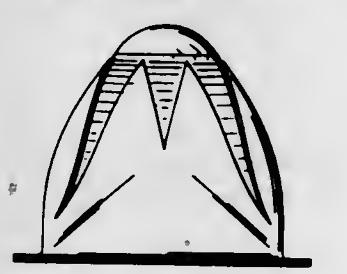
212,190
CHRISTMAS TREE ORNAMENT

Jerome L. Asner, 2604 SW. 65th St. 73159, and Edward N. Campbell, 4068 NW. 61st St. 73112, both of Oklahoma City, Okla.

Filed July 5, 1967, Ser. No. 7,712

Term of patent 14 years

(Cl. D29—1)



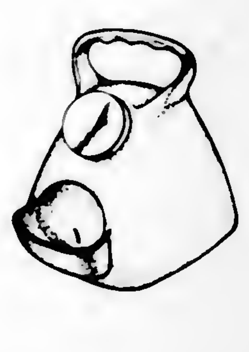
212,191
PET CANTEEN

Joseph C. Mineo, Los Angeles County, Calif. (6735 Shoup Ave., Canoga Park, Calif. 91304)

Filed Nov. 3, 1967, Ser. No. 9,268

Term of patent 14 years

(Cl. D30—13)



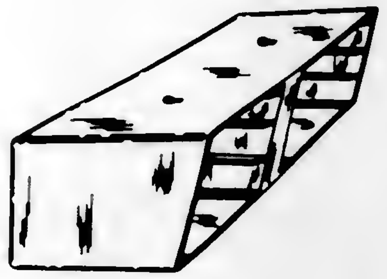
212,192
RACK FOR STEREO TAPE CARTRIDGES

Robert Adell, Birmingham, Mich., assignor to Adell International, Inc., Detroit, Mich., a corporation of Michigan

Filed Jan. 3, 1967, Ser. No. 5,280

Term of patent 14 years

(Cl. D33—3)



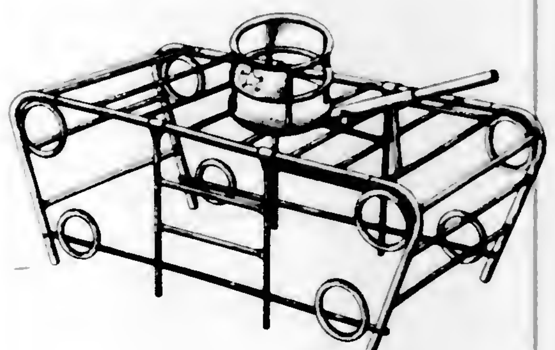
212,193
PLAYGROUND CLIMBING DEVICE OR SIMILAR ARTICLE

Morris R. Rudy, Burnham, Pa., assignor, by mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 11, 1967, Ser. No. 9,714

Term of patent 14 years

(Cl. D34—5)



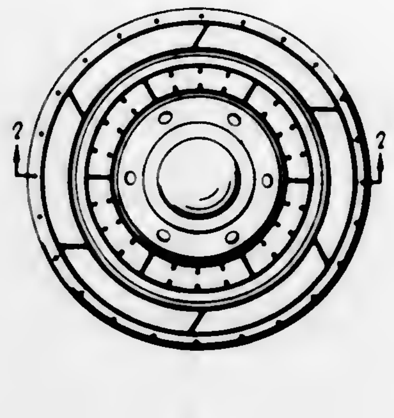
212,194
FLYING SAUCER TOY

Jerome L. Asner, 2604 SW. 65th St. 73159, and Edward N. Campbell, 4068 NW. 61st St. 73112, both of Oklahoma City, Okla.

Filed July 5, 1967, Ser. No. 7,710

Term of patent 14 years

(Cl. D34—15)



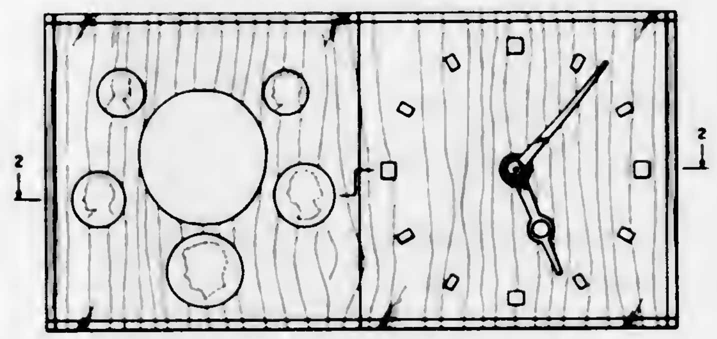
212,195
COMBINED FACE AND HANDS FOR A CLOCK

Roy Lee Baker, Rural Route, Shipman, Ill. 62685

Filed June 14, 1967, Ser. No. 7,474

Term of patent 14 years

(Cl. D42—7)



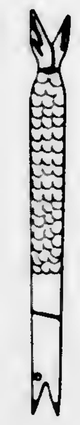
212,196
FORK

Michael J. Pasquale, 115 Grove St., Middletown, Conn. 06457

Filed Jan. 24, 1968, Ser. No. 10,268

Term of patent 14 years

(Cl. D44—29)



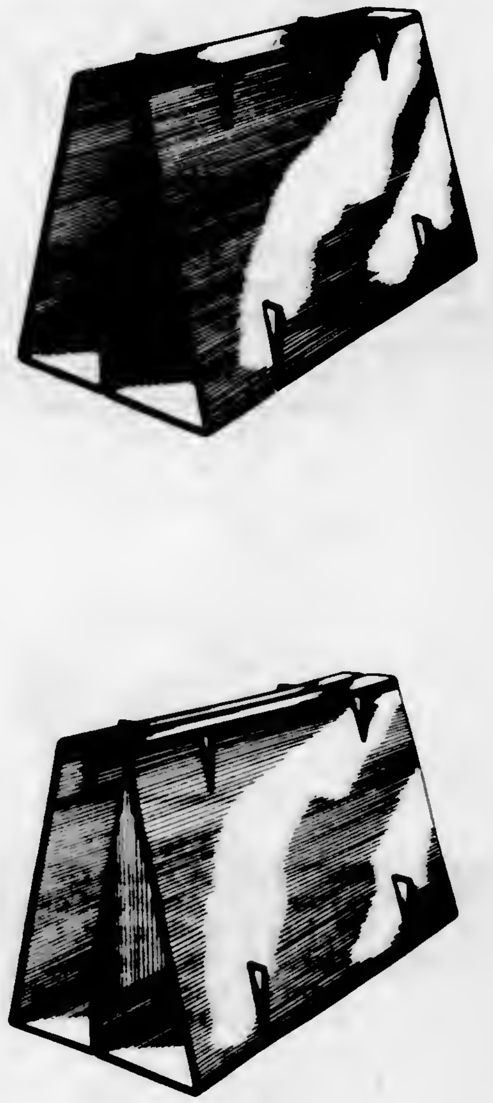
212,197
SAWHORSE OR SIMILAR ARTICLE

John J. Rohde, Richmond, Va., assignor to Albemarle Paper Company, Richmond, Va., a corporation of Virginia

Continuation of design applications Ser. No. 5,079, Ser. No. 5,080, Ser. No. 5,081, and Ser. No. 5,094, Dec. 19, 1966. This application Sept. 29, 1967, Ser. No. 9,097

Term of patent 14 years

(Cl D54—1)



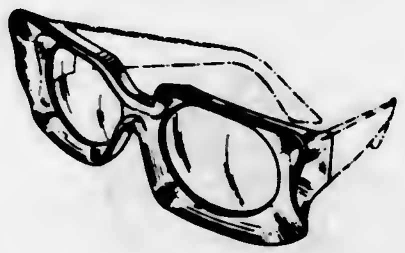
212,198
PAIR OF SUNGLASSES

Jack Bloch, Leominster, Mass., assignor to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware

Filed Nov. 1, 1967, Ser. No. 9,233

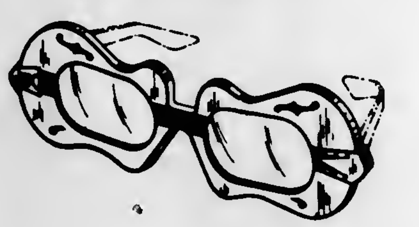
Term of patent 14 years

(Cl. D57—1)



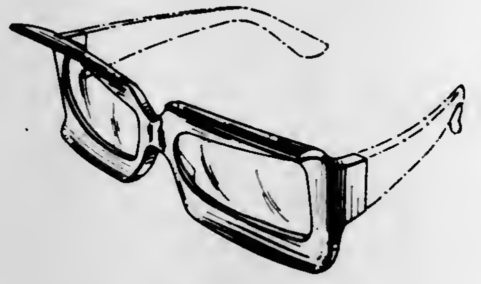
212,199
PAIR OF SUNGLASSES

Jack Bloch, Leominster, Mass., assignor to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware
Filed Nov. 1, 1967, Ser. No. 9,234
Term of patent 14 years
(Cl. D57—1)



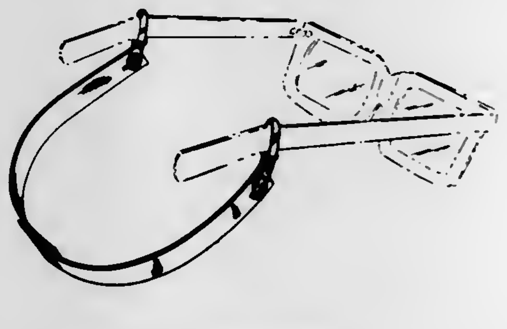
212,200
PAIR OF SUNGLASSES

Jack Bloch, Leominster, Mass., assignor to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware
Filed Nov. 1, 1967, Ser. No. 9,235
Term of patent 14 years
(Cl. D57—1)



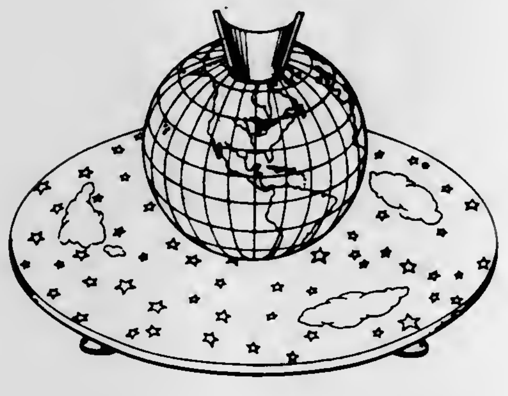
212,201
STRAP SUPPORT FOR A PAIR OF SPECTACLES

Harry Grayson, Los Angeles County, Calif.
(P.O. Box 517, North Hollywood, Calif. 91609)
Filed Dec. 18, 1967, Ser. No. 9,836
Term of patent 14 years
(Cl. D57—1)



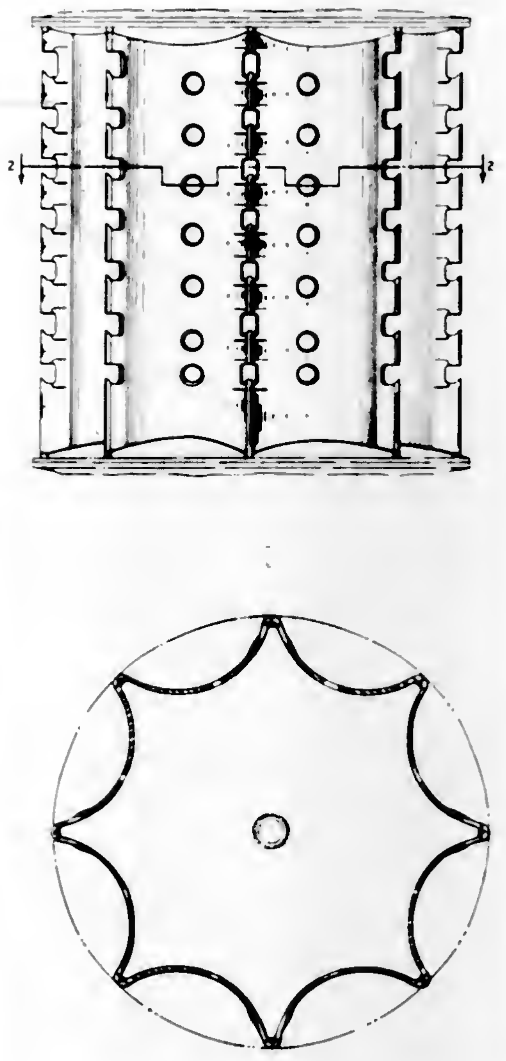
212,202
DISPLAY STAND FOR A TOY

Robert Roland Ruby, 8562 Harris Ave., Baltimore, Md. 21234
Filed Mar. 27, 1967, Ser. No. 6,390
Term of patent 7 years
(Cl. D80—9)



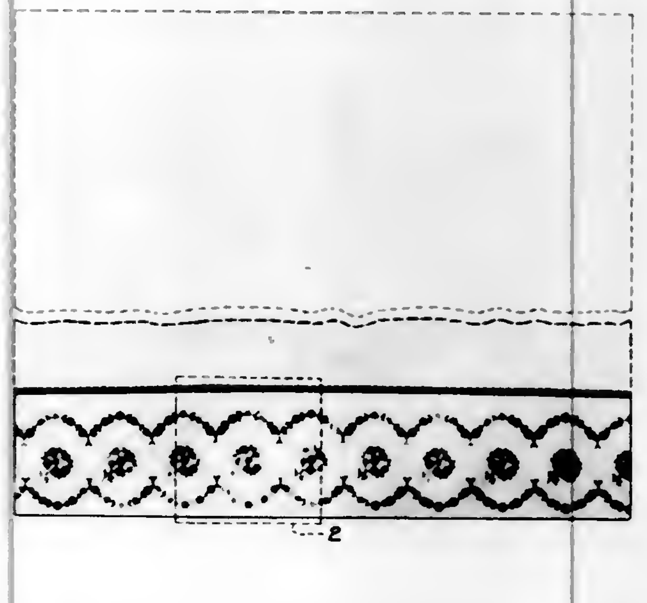
212,203
RACK FOR SUNGLASSES OR THE LIKE

Rea Porterfield Brown, Armonk, N.Y., assignor to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware
Filed Aug. 21, 1967, Ser. No. 8,342
Term of patent 14 years
(Cl. D80—9)



212,204
PILLOW CASE OR SIMILAR ARTICLE OF BED LINEN

Ralph H. August, New York, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed July 31, 1967, Ser. No. 8,056
Term of patent 14 years
(Cl. D92—26)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 10TH DAY OF SEPTEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Armco Steel Corp.: *See*—
  Goller, George N. Re. 26,454.
Dearborn, Howard K. Gun drill. Re. 26,452, 9–10–68, Cl. 77—68.
Edwards, Bryant, to Illinois Tool Works. Thin walled plastic closure. Re. 26,453, 9–10–68, Cl. 220—42.
Goller, George N., to Armco Steel Corp. Stainless steel strip, wire, woven wire belts and cloth, and methods of making the same. Re. 26,454, 9–10–68, Cl. 148—12.3.
Illinois Tool Works: *See*—
  Edwards, Bryant. Re. 26,453.
Jones, Eldon D. Bolster hoist. Re. 26,455, 9–10–68, Cl. 298—22.

LIST OF PLANT PATENTEES

Armstrong, David L., and H. C. Swim, to Armstrong Nurseries, Inc. Rose plant. 2,832, 9–10–68, Cl. 20.
Armstrong Nurseries, Inc.: *See*—
  Armstrong, David L., and Swim. 2,832.
Carlton Rose Nurseries, Inc.: *See*—
  Mansuino, Quinto. 2,833.
Conklin, Henry A.: *See*—
  Perry, Anthony. 2,831.
Mansnino, Quinto, to Carlton Rose Nurseries, Inc. Rose plant. 2,833, 9–10–68, Cl. 23.
Perry, Anthony, to H. A. Conklin. Rose plant. 2,831, 9–10–68, Cl. 11.
Swim, Herbert C.: *See*—
  Armstrong, David L., and Swim. 2,832.

LIST OF DESIGN PATENTEES

Adell International, Inc.: *See*—
  Adell, Robert. 212,188.
  Adell, Robert. 212,192.
Adell, Robert, to Adell International, Inc. Tape cartridge. 212,188, 9–10–68, Cl. D26—14.
Adell, Robert, to Adell International, Inc. Rack for stereo tape cartridges. 212,192, 9–10–68, Cl. D33—3.
Albemarle Paper Co.: *See*—
  Rohde, John J. 212,197.
Asner, Jerome L., and E. N. Campbell. Christmas tree ornament. 212,190, 9–10–68, Cl. D29—1.
Asner, Jerome L., and E. N. Campbell. Flying saucer toy. 212,194, 9–10–68, Cl. D34—15.
August, Ralph H., to Cannon Mills Co. Pillow case or similar article of bed linen. 212,204, 9–10–68, Cl. D92—26.
Baker, Roy L. Combined face and hands for a clock. 212,195, 9–10–68, Cl. D42—7.
Bloch, Jack, to Foster Grant Co., Inc. Pair of sunglasses. 212,198, 9–10–68, Cl. D57—1.
Bloch, Jack, to Foster Grant Co., Inc. Pair of sunglasses. 212,199, 9–10–68, Cl. D57—1.
Bloch, Jack, to Foster Grant Co., Inc. Pair of sunglasses. 212,200, 9–10–68, Cl. D57—1.
Bott, John A. Luggage rack. 212,186, 9–10–68, Cl. D14—27.
Brown, Rea P., to Foster Grant Co., Inc. Rack for sunglasses or the like. 212,203, 9–10–68, Cl. D80—9.
Campbell, Edward N.: *See*—
  Asner, Jerome L., and Campbell. 212,190.
  Asner, Jerome L., and Campbell. 212,194.
Cannon Mills Co.: *See*—
  August, Ralph H. 212,204.
Dietrich, Gerhard, to M. Grundig. Portable type magnetic tape recording and playback apparatus or similar article. 212,189, 9–10–68, Cl. D26—14.
Foster Grant Co., Inc.: *See*—
  Bloch, Jack. 212,198.
  Bloch, Jack. 212,199.
  Bloch, Jack. 212,200.
  Brown, Rea P. 212,203.
Grayson, Harry. Strap support for a pair of spectacles. 212,201, 9–10–68, Cl. D57—1.
Grundig, Max: *See*—
  Dietrich, Gerhard. 212,189.
Hileman, Arthur F., to Safeway Stores Inc. Bottle. 212,183, 9–10–68, Cl. D9—115.
Mineo, Joseph C. Pet canteen. 212,191, 9–10–68, Cl. D30—13.
O'Leary, Thomas V. Paint can lid. 212,185, 9–10–68, Cl. D9—264.
Pasquale, Michael J. Fork. 212,196, 9–10–68, Cl. D44—29.
Pegnolet, Louis W., to Weston Instruments, Inc. Meter or similar instrument. 212,187, 9–10–68, Cl. D26—1.
Phillips Petroleum Co.: *See*—
  Smith, Wilburn Q. 212,184.
Rohde, John J., to Albemarle Paper Co. Sawhorse or similar article. 212,197, 9–10–68, Cl. D54—1.
Ruby, Robert R. Display stand for a toy. 212,202, 9–10–68, Cl. D80—9.
Rudy, Morris R., to The Singer Co. Playground climbing device or similar article. 212,193, 9–10–68, Cl. D34—5.
Safeway Stores Inc.: *See*—
  Hileman, Arthur F. 212,183.
Singer Co., The: *See*—
  Rudy, Morris R. 212,193.
Smith, Wilburn Q., to Phillips Petroleum Co. Bottle or similar article. 212,184, 9–10–68, Cl. D9—119.
Weston Instruments, Inc.: *See*—
  Pegnolet, Louis W. 212,187.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 10TH DAY OF SEPTEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- AB Lars Ljungberg & Co. : *See—*
  - De Bernard du Grail, Alain C. J. R. 3,400,726.
- ACF Industries, Inc. : *See—*
  - Anderson, Clifford E. 3,400,730.
  - Powell, Richard G. 3,400,833.
- AVI Alpenlandische Veredelungs-Industrie Gesellschaft m.b.H. : *See—*
  - Dietner, Herbert, Schulz, Ritter, and Boyer. 3,400,508.
- AWB Mfg. Co., Inc. : *See—*
  - Cole, Donald W., Mitchell, and Whitlock. 3,400,982.
- Ache, Richard P., and R. H. Glatthorn, to Westinghouse Electric Corp. Apparatus and method for joining tubes to plate. 3,401,251, 9–10–68, Cl. 219—125.
- Ackerman, Ernest B. Production of water from the atmosphere. 3,400,515, 9–10–68, Cl. 55—179.
- Active Engineering, Inc. : *See—*
  - Crandall, Loid, and Leone. 3,400,445.
- Admiral Corp. : *See—*
  - Kolomayets, George, and Bury. 3,400,935.
  - Stute, Carlton F. 3,400,847.
- Adrian & Busch K.G. Schuhmaschinenfabrik : *See—*
  - Bechtold, Johann. 3,400,561.
- Agfa-Gevaert Aktiengesellschaft : *See—*
  - Kiper, Gerd. 3,400,645.
  - Kiper, Gerd, and Von Albedyll. 3,400,646.
  - Seidel, Bernhard, and Riester. 3,401,404.
- Ahrens, Hermann H., Fr., to Daimler-Benz Aktiengesellschaft. Cover arrangement for the outer paneling of large-space vehicles, especially buses. 3,400,969, 9–10–68, Cl. 296—28.
- Aileo, Jackson A., to L. P. Frieder. Positioning means for sound attenuating ear cups on safety helmets. 3,400,406, 9–10–68, Cl. 2—6.
- Aileo, Jackson A., to L. P. Frieder. Helmet with retractable visor. 3,400,407, 9–10–68, Cl. 2—6.
- Aine, Harry E. : *See—*
  - Mione, Carlo A. 3,400,789.
- Air Products and Chemicals, Inc. : *See—*
  - McEvoy, James E. 3,401,099.
- Akao, Katsuo : *See—*
  - Onishi, Tsuneo, Higashiyama, and Akao. 3,400,915.
- Akesson-Rydin, Urban. Fastening device. 3,400,435, 9–10–68, Cl. 24—247.
- Åkesson, Yngve R., to Produits Findus S.A. Vegetable trimming apparatus. 3,400,740, 9–10–68, Cl. 146—81.
- Aktiebolaget Astra : *See—*
  - Saeter, Peter E., and Lindberg. 3,401,172.
- Aktiengesellschaft fur Feinmechanik vormals Jetter & Scheerer : *See—*
  - Hux, Hans, and Frick. 3,400,711.
- Alexander, Edwin S. Spillproof containers. 3,400,855, 9–10–68, Cl. 220—90.4.
- All American Engineering Co. : *See—*
  - Cotton, Robert B. 3,400,903.
- Allen, Doreen E. : *See—*
  - Cottrill, John E. 3,400,947.
- Allen, Ivis J., to Ford Motor Co. Engine lubrication system. 3,400,785, 9–10–68, Cl. 184—6.
- Allied Chemical Corp. : *See—*
  - McGinley, John V. 3,401,129.
- Allied Chemical Corp. : *See—*
  - Paterson, Richard M. L. 3,401,076.
- Allis Chalmers Mfg. Co. : *See—*
  - Horn, John M., and Mayo. 3,400,907.
- Allis-Chalmers Mfg. Co. : *See—*
  - Manion, Jean P., and Losin. 3,401,108.
  - Menzel, Gerhart, and Klotz. 3,401,081.
- Almgren, Harald, to Blomqvists Verkstadsaktiebolag. Selective multiple clutch. 3,400,794, 9–10–68, Cl. 192—48.91.
- Altenweger, Alois, to Zellweger Ltd. Frames for warp-tying or knotting machines. 3,400,424, 9–10–68, Cl. 16—35.
- Aluma-Grip Co. of America, Inc. : *See—*
  - Woods, Bernard A., Jr., and R. M. Woods. 3,400,447.
- Aluminium Laboratories Ltd. : *See—*
  - Howie, Henry J., Rance, Rapson, and Southam. 3,400,923.
- Aluminum Co. of America : *See—*
  - Nock, Joseph A., Jr., and Vruggink. 3,400,450.
- Amala, Raymond S. : *See—*
  - Walker, James B., and Amala. 3,401,026.
- Amchem Products, Inc. : *See—*
  - Steinbrecher, Lester, Buczkowski, and Harrison. 3,401,065.
- American Cyanamid Co. : *See—*
  - Hofmann, Corris M., and Safir. 3,401,176.
  - Wright, William B., Jr., Brabander, and Hardy. 3,401,202.
- American District Telegraph Co. : *See—*
  - Highstone, Raymond J., and Muehter. 3,401,384.
- American Gas Association, Inc. : *See—*
  - Granryd, Eric G. U. 3,400,555.
- American Home Products Corp. : *See—*
  - Bell, Stanley C. 3,401,159.
  - Bell, Stanley C. 3,401,200.
- American Motors Corp. : *See—*
  - Martens, Jack E. 3,400,962.
- American Pipe and Construction Co. : *See—*
  - Lee, Herbert S., and O'Conner. 3,400,437.
- American Seating Co. : *See—*
  - Scaggs, Robert T., Meares, and Lindsey. 3,400,502.
- American Sterilizer Co. : *See—*
  - Gidner, Robert R. 3,401,091.
- Ammon, Johannes H., J. Schlichting, and T. S. Sprague, to The Babcock & Wilcox Co. Integral steam generator and nuclear reactor combination. 3,401,082, 9–10–68, Cl. 176—54.
- Ampex Corp. : *See—*
  - Narma, Rein, and Johnson. 3,401,236.
- Amtsberg, Lester A., and W. K. Wallace, to Chicago Pneumatic Tool Co. Ultra-torque nut runner with motor brake. 3,400,633, 9–10–68, Cl. 91—59.
- Anderson, Arthur E. : *See—*
  - Fergason, James L., and Anderson. 3,401,262.
- Anderson, Arthur R., to Hooker Chemical Corp. Reinforced concrete parts for electrolytic cells. 3,401,109, 9–10–68, Cl. 204—242.
- Anderson, Arthur W. : *See—*
  - Corlett, Donald A., Jr., Anderson, Elliker, and Krabbenhoft. 3,401,044.
- Anderson, Clifford E., to ACF Industries, Inc. Preselective control of remotely located electrically operated apparatus. 3,400,730, 9–10–68, Cl. 137—236.
- Anderson Donald R. : *See—*
  - Anderson, Wayne E., and D. R. 3,400 479.
- Anderson, Ralph F., to National Lock Co. Pocket door assembly. 3,400,490, 9–10–68, Cl. 49—372.
- Anderson, Wayne E. and D. R. Animal tag for attachment to dewlap and method of attaching same. 3,400,479, 9–10–68 Cl. 40—300.
- Andrus, Donald M., and J. W. Gray, to General Precision System, Inc. Horizontal sweep generator including a capacitive reset Miller integrator. 3,401,344, 9–10–68, Cl. 328—128.
- Andrycha, Joseph J. : *See—*
  - Roberts, Hobart V., Jr., and Andrycha. 3,400,687.
- Angus, George, & Co. Ltd. : *See—*
  - Dixon, Sidney, and Chinnery. 3,400,989.
- Anyos, Tom, and W. W. Moyer, Jr., to Borg-Warner Corp. Photochemical process for preparing α,β-dichloropropionitrile. 3,401,105, 9–10–68, Cl. 204—158.
- Archer Daniels Midland Co. : *See—*
  - Korf, Christiaan. 3,401,130.
- Arm, Helmut, and R. Löwenfeld, to Fabwerke Hoechst Aktiengellschaft vormals Meister Lucius & Bruning. Dyeing preparations for the manufacture of water-insoluble azo dyestuffs on textile material of aromatic polyesters or triacetylcellulose. 3,401,002, 9–10–68, Cl. 8—46.
- Armbruster, Ronald H. D., and J. S. Ringler, to The E. W. Bliss Co. Method and apparatus for trimming extruded can bodies. 3 400,620, 9–10–68, Cl. 82—47.
- Arneson, Edwin L., to Federal Paper Board Co., Inc. Article carrier. 3,400,856, 9–10–68, Cl. 220—113.
- Arnold, Franz, C. Wermuth, and H. Wagner. Clamping device. 3,400,924, 9–10–68, Cl. 269—228.
- Arnold, Paul : *See—*
  - Barhite, Burl B., and Arnold. 3,400,679.
- Aron, Mitchell : *See—*
  - Spira, Seymour L., and Aron. 3,400,955.
- Arrow Mfg. Co. : *See—*
  - Dorn. Russell J. 3,400,771.
- Asahi Kasei Kogyo Kabushiki Kaisha : *See—*
  - Ohfuka, Toshio, Yokoyama, Sato, and Inai. 3,400,531.
- Ashton, Shirley B. : *See—*
  - Martin, Thomas W., Sr., Rogers, and Ashton. 3,400,927.
- Askins, William J., to International Harvester Co. Elevating dozer blade. 3,400,763, 9–10–68, Cl. 172—63.
- Associated Electrical Industries Ltd. : *See—*
  - Darke, James A. 3.401,308.
- Ault, Cyrus F., to Bell Telephone Laboratories, Inc. Transducer displacement detector. 3,401,383, 9–10–68, Cl. 340—174.1.
- Austin, John : *See—*
  - Kraiman, Eugene, and Austin. 3,401,203.
- Automatic Telephone & Electric Co. : *See—*
  - Bell, Hamish V., Pate, and Hartley. 3,401,380.
- Aviation Instrument Mfg. Co. : *See—*
  - Bostwick, Dunbar W. 3,400,581.
- Axelsson, Sten S., to A. B. Bahco. Portable stove. 3,400,705, 9–10–68, Cl. 126—44.
- Babcock & Wilcox Co., The : *See—*
  - Ammon, Johannes H., Schlichting, and Sprague. 3,401.082.
  - Boll, Richard H. 3,400,513.
  - Dickson, Edwin J. 3,400,672.
  - Hemker, Fritz L. 3,400,921.
- Babock & Wilcox, Ltd. : *See—*
  - Bagley, Roy, and Evans. 3,400,689.
- Babler, Otto : *See—*
  - Spohr, Albert R., and Babler. 3,400,437.

- Bacher, Ludwig. Spring unit for spring suspension of axles for transportation vehicles. 3,400,946, 9–10–68, Cl. 280—124.
- Baermann, Max. Magnetic closure device. 3,400,964, 9–10–68, Cl. 292—251.5.
- Bagley, Roy, and R. H. Evans, to Babcock & Wilcox, Ltd. Vapour generators. 3,400,689, 9–10–68, Cl. 122—510.
- Bahco, A. B. : *See—*
  - Axelsson, Sten S. 3,400,705.
- Bailey Meter Co. : *See—*
  - McEvoy, James E. 3,400,638.
- Bakan, Joseph A. : *See—*
  - Brynko, Carl, and Bakan. 3,401,123.
- Baldwin, John L. E., to Rank-Bush Murphy Ltd. Magnetic playback head switching apparatus. 3,401,231, 9–10–68, Cl. 178—6.6.
- Baldwin, Richard E., and B. P. Marples, to English Numbering Machines Ltd. Printing arrangements. 3,400,659, 9–10–68, Cl. 101—274.
- Balke, Roy L., and J. T. Duane, to General Electric Co. Method of making encapsulated electrical members. 3,400,454, 9–10–68, Cl. 29—596.
- Balz, Gunther W., to Roto-Finsh Co. Finishing apparatus having horizontal curvilinear chamber. 3,400,495, 9–10–68, Cl. 51—163.
- Banes Fred W. : *See—*
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- Banta, Andrew R., to Ingersoll-Rand Co. Method and article for protecting condenser tubes. 3,400,755, 9–10–68, Cl. 165—1.
- Barainsky, Rudolf, to Firma Dyna-Plastik-Werk G.m.b.H. Method of and apparatus for extruding high-viscous thermoplastic plastics materials. 3,400,428, 9–10–68, Cl. 18—12.
- Barbu, Bernard, and J. Huyghe, to Commissariat a l'Energie Atomique. Method and device for providing protection against scale formation on a heat exchange surface. 3,400,754, 9–10–68, Cl. 165—1.
- Barfield, Charles G. : *See—*
  - Ralston, William K., May, and Barfield. 3,400 653.
- Barhite, Burl B., and P. Arnold. Submersible hull construction. 3,400,679, 9–10–68, Cl. 114—16.
- Barkowski, Erich : *See—*
  - Müller, Paul A., and Barkowski. 3.400,723.
- Barnes, Arthur G., to British Aircraft Corp. (Operating) Ltd. Flight simulator display apparatus. 3,401,228, 9–10–68, Cl. 35—10.2.
- Barnes, George H., R. E. Bradley, S. E. Gluck, A. Sankin, J. Shifman, and R. A. Stokes, to Burroughs Corp. Central processor. 3,401,376, 9–10–68, Cl. 340—172.5.
- Barnett, Marjorie L. : *See—*
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- Baron, Guy : *See—*
  - Tiraspolsky, Wladimir, Baron, and Castela. 3,400,773.
- Barre, Holden M., Jr. : *See—*
  - Phillpott, Robert J., and Barre. 3,400,488.
- Barrett, Paul A., A. G. Caldwell, and L. P. Walls. Treatment of oepression with N-benzylpiperazine. 3,401,224, 9–10–68, Cl. 424—250.
- Barringer, Brian W., to Rank Organisation Ltd. Measuring and recording arrangements. 3,400,468, 9–10–68, Cl. 33—174.
- Bartlett, Peter G., and J. E. Meschi, to E. W. Bliss Co. Ceramic memory having a piezoelectric drive member. 3,401,377, 9–10–68, Cl. 340—173.2.
- Bartlett, Peter G., and J. E. Meschi, to E. W. Bliss Co. Ferroelectric capacitor matrix bit line driver. 3,401,378, 9–10–68, Cl. 340—173.2.
- Barton, David M., and R. L. Koepp, to Monsanto Co. Differential amplifier. 3,401,350, 9–10–68, Cl. 330—30.
- Bartz, Theodore J., to E. W. Bliss Co. Method of blending powdered metal and lubricant prior to sintering. 3,401,033, 9–10–68, Cl. 75—.5.
- Baskin, Charles M. Membrane surfaced runways. 3,400,644, 9–10–68, Cl. 94—7.
- Bastle, Clifford F., and J. J. Lester, to Controls Co. of America. Reversing valve. 3,400,736, 9–10–68, Cl. 137—625.29.
- Battelle Development Corp., The : *See—*
  - Bouladon, Gabriel, and Zuppiger. 3,400,665.
  - Corlett, Donald A., Jr., Anderson, Elliker, and Krabbenhoft. 3,401,044.
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- Battelle Institut e.V. : *See—*
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- Bauer, Peter, to Bowles Engineering Corp. Throttle valve construction. 3,400,908, 9–10–68, Cl. 251—58.
- Baughman, George W., to Westinghouse Air Brake Co. Movable block vehicle speed control system. 3,401,259, 9–10–68, Cl. 246—187.
- Beard, Horace M. Bait holder. 3,400,484, 9–10–68, Cl. 43—44.6.
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- Bechtold, Johann, to Adrian & Busch K.G. Schuhmaschinenfabrik. Machines for roughing the overlasted portions of shoe uppers. 3,400,561, 9–10–68, Cl. 69—6.5.
- Beck, Alfred C., G. E. Conklin, and A. R. Hutson, to Bell Telephone Laboratories, Inc. Gas lens for optical frequency range using two or more gases having unequal refractive indices. 3,400,993, 9–10–68, Cl. 350—179.
- Becker, Floyd K., to Bell Telephone Laboratories, Inc. Suppressed carrier transmission system for multilevel amplitude modulated data signals. 3,401,342, 9–10–68, Cl. 325—324.
- Becker, Floyd K., to Bell Telephone Laboratories, Inc. Transistor switching modulators and demodulators. 3,401,359, 9–10–68, Cl. 332—16.
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- Beckman Instruments, Inc. : *See—*
  - Hersch, Paul, and Deuringer. 3,401,098.
- Bede, James R. Airfoil construction. 3,400,904, 9–10–68, Cl. 244—124.
- Behnke, Donald A., to Sibley Machine and Foundry Corp. Method of treating cores. 3,400,751, 9–10–68, Cl. 164—7.
- Bellman, John L., to Cornell Aeronautical Laboratory, Inc. Airspeed indicating apparatus. 3,400,584, 9–10–68, Cl. 73—182.
- Belf, Leon J., to Imperial Smelting Corp. (N.S.C.) Ltd. Tetrafluoronitrobenzonitriles. 3,401,191, 9–10–68, Cl. 260—465.
- Bell, Charles T. Velocity indicator for bows and arrows. 3,401,334, 9–10–68, Cl. 324—70.
- Bell, Chester G., and A. Kotok, to Digital Equipment Corp. Apparatus for performing character operations. 3,401,375, 9–10–68, Cl. 340—172.5.
- Bell, Edward R. : *See—*
  - Dunlop, Arthur K., Blytas, and Bell. 3,401,112.
- Bell, Hamish V., O. T. Pate, and D. Hartley, to Automatic Telephone & Electric Co. Electrical systems for the reception, storage, processing and re-transmission of data. 3,401,380, 9–10–68, Cl. 340—172.5.
- Bell, J. Harold, and E. E. Daniels, to Weather-Proof Co. Door frame assembly. 3,400,492, 9–10–68, Cl. 49—504.
- Bell, Kenneth, and F. J. Kott, to National Dairy Products Corp. Apparatus for testing containers according to height and lip seal. 3,400,815, 9–10–68, Cl. 209—73.
- Bell, Stanley C., to American Home Products Corp. Benzodiazepine derivatives. 3,401,159, 9–10–68, Cl. 260—239.3.
- Bell, Stanley C., to American Home Products Corp. Intermediates for the preparation of 1.3-dihydro-5-aryl-2H-1, 4-benzodiazepin-2-ones 4-oxides. 3,401,200, 9–10–68, Cl. 260—562.
- Bell Telephone Laboratories, Inc. : *See—*
  - Ault, Cyrus F. 3,401,383.
  - Beck, Alfred C., Conklin, and Hutson. 3,400,993.
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  - Becker, Floyd K. 3,401,359.
  - Bobeck, Andrew H. 3,401,382.
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  - Corbin, Joseph E., Helfrich, Heller, Nocodemus, Smith, Spencer, and Townley. 3,401.235.
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- Benassw, Raffaello. Moistening apparatus particularly for use in mixing argillaceous products. 3,400,914, 9–10–68, Cl. 259—8.
- Bende, Albert, to The Budd Co. Retracting clamp. 3,400,836, 9–10–68, Cl. 214—1.
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  - Miller, Donald L. 3,400,795.
  - Potter, Frederick M. 3,401,290.
  - Wertheimer, Harry P. 3,400,663.
- Bennison, Michael N., to W. J. Clarkson, Ltd. Threading of sewing machine needles. 3,400,678, 9–10–68. Cl. 112—225.
- Benoit, George J., Jr., to Chevron Research Co. Preparation of mixed alkenyl succinimides. 3,401,118, 9–10–68, Cl. 252—51.5.
- Benton, Robert C., to Chemcut Corp. Method and apparatus for uniformly etching printed circuits by control of the conveyor speed. 3,401,068, 9–10–68, Cl. 156—3.
- Berger, Abe, to General Electric Co. Method for preparing organo germanium tin and silicon hydride. 3,401,183, 9–10–68, Cl. 260—429.
- Berger, Thomas W., C. C. Simmons, and J. E. Smith, to Minnesota Mining and Mfg. Co. Method and apparatus for waterproofing textiles. 3,401,052, 9–10–68, Cl. 117—105.4.
- Bergere, Emric W. Twelve-lobe fastener. 3,400,626, 9–10–68, Cl. 85—9.
- Berkley & Co., Inc. : *See—*
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- Berlincourt, Don A. : *See—*
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- Berry, Jean-Luc : *See—*
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- Berthold, Robert V., and R. A. Herrett, to Union Carbide Corp. Method of defoliating cotton plants. 3,401,030, 9–10–68, Cl. 71—69.

- Bessett, Clifford H., to Packaging Corp. of America. Molded receptacle. 3,400,873, 9–10–68, Cl. 229—2.5.
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- Bethlehem Steel Corp.: *See*—
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- Birkebak, Richard C. Apparatus and method of measuring emissivity of an object. 3,401,263, 9–10–68, Cl. 250—83.3.
- Bixler, Kenneth D.: *See*—
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- Black, Robert L., Jr., to Parks-Cramer Co. Air outlet suspension system for textile traveling cleaners. 3,400,423, 9–10–68, Cl. 15—312.
- Blades, Herbert, and J. R. White, to E. I. du Pont de Nemours and Co. Methylene chloride solution of polyethylene terephthalate. 3,401,140, 9–10–68, Cl. 260—33.8.
- Blakistone, James T., and I. Karsh, to Schlumberger Technology Corp. Tape recording mechanism with endless magnetic tape stored in a figure "8". 3,401,397, 9–10–68, Cl. 346—74.
- Blaw-Knox Co.: *See*—
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  - Bartlett, Peter G., and Meschi. 3,401,378.
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  - Michelson, Anatol. 3,400,534.
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- Bloss, Herman, to The Seymour Products Corp. Latching device. 3,400,562, 9–10–68, Cl. 70—70.
- Blytas, George C.: *See*—
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- Bobeck, Andrew H., to Bell Telephone Laboratories, Inc. Magnetic waffle iron memory structure. 3,401,382, 9–10–68, Cl. 340—174.
- Bobeck, Andrew H., and J. L. Smith, to Bell Telephone Laboratories, Inc. Waffle iron memory with magnetic tape overlay. 3,401,381, 9–10–68, Cl. 340—174.
- Bobowski, George: *See*—
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- Boggs, Le Roy R., to Koppers Co., Inc. Cut-off mechanism. 3,400,426, 9–10–68, Cl. 18—4.
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- Bolvin, Robert W., to The Bendix Corp. Tester for semiconductor devices having a Zener diode controlled bias removal protection circuit. 3,401,338, 9–10–68, Cl. 324—158.
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- Boosen, Karl-Josef, and G. Reese, to Therachemie Chemisch therapuitische Gesellschaft m.b.H. Diaminoanthraquinones and their use as human hair dyes. 3,401,003, 9–10–68, Cl. 8—10.1.
- Booth, Jack J., and W. C. Branch. Slush beverage machine. 3,400,551, 9–10–68, Cl. 62—135.
- Boothe, Willis A., to General Electric Co. Rate of change of pressure sensor. 3,400,729, 9–10–68, Cl. 137—81.5.
- Borbely, Gyula: *See*—
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- Borberg, Willy, and R. A. White, to General Precision Systems Inc. Heat dissipating film gate. 3,400,995. 9–10–68, Cl. 352—222.
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- Borg-Warner Corp.: *See*—
  - Engle, Jack F. 3,400,611.
  - Schlott, Richard J., Scardiglia, and Goldberg. 3,401,148.
  - Thourson, Thomas L. 3,400,656.
- Borgmann, August R., K. J. Hayes, H. E. and M. F. Paul, to The Norwich Pharmacal Co. Treatment of urinary tract infection. 3,401,221, 9–10–68, Cl. 424—273.
- Borsini, Giancarlo, M. Modena, C. Nicora, and M. Ragazzini, to Montecatini Edison S.p.A. Process for the production of fluorinated polymeric materials. 3,401,155, 9–10–68, Cl. 260—87.7.
- Bosch, Robert, G.m.b.H.: *See*—
  - Hoyer, Karl. 3,400,889.
- Bostwick, Dunbar W., to Aviation Instrument Mfg. Corp. Aircraft flight control system. 3,400,581, 9–10–68, Cl. 73—178.
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  - Finley, Roy D., Flanigan, and Bowen. 3,401,043.
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- Bowles Engineering Corp.: *See*—
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- Bowman, Francis, A. C. Cooper, and F. Irving, to Imperial Chemical Industries Ltd. Mass coloration of polyester resins. 3,401,142, 9–10–68, Cl. 260—40.
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- Brace, Robert S., to International Harvester Co. Balanced brake system. 3,400,788, 9–10–68, Cl. 188—152.
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- Branch, William C.: *See*—
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- Brown, Harold L. Self-mounting frame. 3,400,477, 9–10–68, Cl. 40—10.
- Brown, Jack L. Pipe coupling. 3,400,954, 9–10–68, Cl. 285—110.
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- Brown & Sharpe Mfg. Co.: *See*—
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- Buchwald, Robert M., to General Motors Corp. Universally indexing lock means. 3,400,956, 9–10–68, Cl. 287—53.
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- Buning, Robert, and G. Bier, to Dynamit Nobel A.G. Process for the preparation of acrolein copolymers. 3,401,149, 9–10–68, Cl. 260—73.
- Burch, James R., to General Electric Co. Composite photoelectric relay including an electromagnetic relay. 3,401,311, 9–10–68, Cl. 317—124.
- Burdyn, Ralph F., to Mobil Oil Corp. Method and apparatus for particle segregation. 3,400,819, 9–10–68, Cl. 209—270.
- Burg, Stanley P., to United Fruit Co. Controlled atmosphere storage system for plant material. 3,400,650, 9–10–68, Cl. 99—271.
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- Burroughs Corp.: *See*—
  - Houghton, Frank A. 3,400,792.
  - Yanishevsky, Gilbert. 3,301,386.
- Burroughs Wellcome & Co. (U.S.A.) Inc.: *See*—
  - Walton, Eric. 3,401,201.
- Burrows, Arthur T. C., to Geo. W. King, Ltd. Conveyor systems. 3,400,666, 9–10–68, Cl. 104—96.
- Burwell, Blair T., to Miami Copper Co. Division of Tennessee Corp. Process and reagent for recovery of molybdenite from copper sulfide-molybdenite flotation concentrates. 3,400,817, 9–10–68, Cl. 209—167.
- Burwell, Jerome E., to The Goodyear Tire & Rubber Co. Method of molding a foam cushion having seam grooves. 3,401,217, 9–10–68, Cl. 264—45.
- Bury, Allen J.: *See*—
  - Kolomayets, George, and Bury. 3,400,935.
- Buskirk, Morris B.: *See*—
  - Norris, Coma F., Buskirk, and Winn. 3,400,793.
- Buynak, Eugene B., and M. R. Hilleman, to Merck & Co., Inc. Rubella vaccine and its preparation. 3,401,084, 9–10–68, Cl. 195—1.3.
- CSF-Compaignia Generale de Telegraphic Sans Fil: *See*—
  - Rigot, Roger. 3,401,296.
- Cafarella, Thomas, and G. Doncese, to Hazeltine Research Inc. Tunable oscillator circuits capable of oscillation within both a high and a lower frequency band. 3,401,356, 9–10–68, Cl. 331—117.
- Cain, Robert M.: *See*—
  - Parmater, Lee W., Cain, Weissert, and J. Q. Parmater. 3,400,579.
- Caldwell, Albert G.: *See*—
  - Barrett, Paul A., Caldwell, and Walls. 3,401,224.
- Caldwell, E. L., & Sons, Inc.: *See*—
  - Caldwell, Frederick C. 3,400,521.
- Caldwell, Frederick C., to E. L. Caldwell & Sons, Inc. Tractor-drawn mowing machine. 3,400,521, 9–10–68, Cl. 56—6.
- Calgon Corp.: *See*—
  - Mahon, John H. 3,401,046.
- Callin, Charles, and H. R. Gillespie. Combination doll house and toy chest. 3,400,485, 9–10–68, Cl. 46—11.
- Caloric Corp.: *See*—
  - Spaonara, Domenick, and Redstreake. 3,401,000.
- Cameron, Frank L., to Westinghouse Electric Corp. Circuit breaker having improved flashover characteristics. 3,401,245, 9–10–68, Cl. 337—199.
- Cameron, Frank L.: *See*—
  - Upton, Chester W., Jr., Patterson, and Cameron. 3,401,247.
- Campbell, David N., to The Hymatic Engineering Co. Ltd. Tubular heat exchanger with elastomeric outer sleeve. 3,400,757, 9–10–68, Cl. 165—134.
- Canada Iron Foundries Ltd.: *See*—
  - Maisonneuve, Hubert J. 3,400,769.
- Canadian International Paper Co.: *See*—
  - Lessard, Jean H. 3,400,880.
- Can-Do Products Ltd.: *See*—
  - Kingsep, Nicholas J. 3,400,664.
- Canteen Corp.: *See*—
  - Pearl, Donald C. 3,400,861.
- Carborumdum Co., The: *See*—
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- Cardy, Charles F.: *See*—
  - Crampton, Clifford A., Bowen, Cardy, and Poole. 3,401,195.
- Carlson, Chesley F. Photographic copyboard. 3,400,630, 9–10–68, Cl. 88—24.
- Carlson, Ray L. Method of making and reconditioning ball valves. 3,400,440, 9–10–68, Cl. 29—157.1.
- Carlton, Stuart S., and B. C. Raynes, ½ to Rand Development Corp., and ½ to United States of America, Interior. Process using coal in sewage treatment. 3,401,114, 9–10–68, Cl. 210—30.
- Carney, William J., to The Goodyear Tire & Rubber Co. Method of preparing condensation polyester resin. 3,401,150, 9–10–68, Cl. 260—75.
- Carr, Barney J., deceased (E. H. Carr, special administratrix), to Kamon Corp. Pulsed neutron generator with variable potential control grid. 3,401,264, 9–10–68, Cl. 250—84.5.
- Carr, Charles J., and M. D. Hughes. Well drilling impact tool and apparatus. 3,400,772, 9–10–68, Cl. 175—92.
- Carr, Donald R.: *See*—
  - Braccini, Alfonso A., and Carr. 3,401,390.
- Carr, Elisabeth H.: *See*—
  - Carr, Barney J. 3,401,264.
- Carrier Corp.: *See*—
  - Orbesen, Gordon B. 3,400,553.
- Carroll, John E., and G. G. Landis, to The Lincoln Electric Co. Multiple output direct current generator. 3,401,289, 9–10–68, Cl. 310—183.
- Carta, Franklin O., and H. Stargardter, to United Aircraft Corp. High performance pinned root rotor. 3,400,912, 9–10–68, Cl. 253—77.
- Cascade Corp.: *See*—
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- Case, Noel L., and B. J. Tuschak, to Louis Marx & Co., Inc. Lap counter. 3,400,667, 9–10–68, Cl. 104—150.
- Casey, John A. Manufacture of sugar. 3,401,059, 9–10–68, Cl. 127—61.
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- Champion, Donald D.: *See*—
  - Favors, Jack E., Morales, and Champion. 3,400,735.
- Chaumont, Henri J., to Compagnie de Saint-Gobain. Grinding and polishing apparatus. 3,400,501, 9–10–68, Cl. 51—358.
- Cheetham, Ivan C., to Dunlop Rubber Co. Ltd. Apparatus for the measurement of internal friction of materials. 3,400,571, 9–10–68, Cl. 73—9.
- Chemcut Corp.: *See*—
  - Benton, Robert C. 3,401,068.
- Chemische Werke Albert: *See*—
  - Rohlfs, Hans A., and Schmidt. 3,401,013.
- Chemische Werke Huls Aktiengesellschaft: *See*—
  - Wulf, Horst-Dieter, and Gelfert. 3,401,206.
- Chevron Research Co.: *See*—
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  - Jaffe, Joseph. 3,401,125.
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- Chicago Aerial Industries, Inc.: *See*—
  - Goldhammer, Jerome S., Mohan, and Wayne. 3,401,232.
- Chicago Pneumatic Tool Co.: *See*—
  - Amtsberg, Lester A., and Wallace. 3,400,633.
- Chiddix, Max E., R. W. Wynn, and E. O. Leonard, to GAF Corp. Corrosion inhibitors. 3,401,120. 9–10–68. Cl. 252—146.
- Chilpan, Kurt C., to Maremont Corp. Traveler cleaner. 3,400,529, 9–10–68, Cl. 57—57.
- Chinnery, Reginald H.: *See*—
  - Dixon, Sidney, and Chinnery. 3,400,989.
- Chmiel, Jadwiga. Process for the preparation of hydrogen fluoride from ammonium hydrogen fluoride and sulphuric acid. 3,401,016, 9–10–68, Cl. 23—153.
- Chow, Alfred W., J. R. E. Hoover, and R. J. Stedman, to Smith Kline & French Laboratories. Heterocyclic acylaminobenzimidazoles. 3,401,173, 9–10–68, Cl. 260—309.2.
- Christenson, Harlan B., to Berkley & Co., Inc. Nylon fishing rod winding. 3,400,481, 9–10–68, Cl. 43—24.
- Chu, Paul T.: *See*—
  - Shellene, Kent R., Fraser, and Chu. 3,400,984.
- Ciba Ltd.: *See*—
  - Wahli, Robert. 3,400,632.
- Cirimele, Eugene F., and I. Brodie, to Varian Associates. Electrographic recorder employing a moving stylus. 3,401,393, 9–10–68, Cl. 346—32.
- Cirri, Gianfranco, to Fabbrica Italiana Valvole Radio Elettriche F.I.V.R.E. S.p.A. Fluid cooled hollow cathode discharge tube. 3,401,292, 9–10–68, Cl. 318—32.
- Cities Service Oil Co.: *See*—
  - Revukas, Anthony J. 3,401,184.
- Citron, Edward M.: *See*—
  - Raynovich, George, Jr. 3,400,627.
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- Clark Equipment Co.: *See*—
  - Hand, Eugene F. 3,400,778.
- Clark-Feather Mfg. Co.: *See*—
  - Clark, James T. 3,400,500.
- Clark, James T., to Clark-Feather Mfg. Co. Cylinder hones. 3,400,500, 9–10–68, Cl. 51—353.
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- Clarkson, W. J., Ltd.: *See*—
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- Cleereman, Kenneth J., and D. J. Dirkse, to The Dow Chemical Co. Method for plastic film encapsulation. 3,401,071, 9–10–68, Cl. 156—244.
- Clevite Corp.: *See*—
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  - Curran, Daniel R., and Koneval. 3,401,276.
  - Curran, Daniel R., and Koneval. 3,401,283.
- Clitheroe, Jay B., and S. S. Mele, to Mountain Fuel Supply Co. Beneficiation of certain phosphate rock ores by froth flotation. 3,400,813, 9–10–68, Cl. 209—3.
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- Coates, Kenneth W., Jr.: *See*—
  - Vandergrift, Alic M. 3,400,996.
- Cobaugh, George D., D. F. Stock, and B. E. Wishon, to Dresser Industries, Inc. Furnace construction. 3,401,053, 9–10–68, Cl. 117—125.

- Cobb, Clifton A., A. Mason, and J. L. McConnell, to Whirlpool Corp. Detergent computer. 3,400,774, 9-10-68, Cl. 177—71.
- Coe, Merrill J., to Brown Co. Carry-out tray. 3,400,875, 9-10-68, Cl. 229—28.
- Coffey, Henry F.: *See—*
  - Kuzel, Norbert R., and Coffey. 3,401,087.
- Cogliati, Guido, R. De Leone, E. Mezi, G. Scibona, and R. Lanz, to Comitato Nazionale per l'Energia Nucleare. Process for producing dense particles of oxides of actinides usable as fuels for nuclear reactors. 3,401,122, 9-10-68, Cl. 252—301.1.
- Cogswell, David W., to United Aircraft Corp. Thermal garment and the construction thereof. 3,400,756, 9-10-68, Cl. 165—46.
- Colditz, Werner: *See—*
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- Cole, Donald W., A. E. Mitchell, and B. I. Whitlock, to AWB Mfg. Co., Inc. Wheel balancer for dual tired vehicle. 3,400,982, 9-10-68, Cl. 301—5.
- Cole, Robert E., C. C. Roecks, R. Sommerer, and E. D. Welle, to General Electric Co. Tape handler reel control system. 3,400,895, 9-10-68, Cl. 242—55.12.
- Coletta, Vincent, to Bristol-Meyers Co. Methods for preparing pharmaceutical compositions. 3,401,216, 9-10-68, Cl. 264—117.
- Colgate-Palmolive Co.: *See—*
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- Collins, Douglas, to Sutton and Sons Ltd. Shaker type dispenser. 3,400,860, 9-10-68, Cl. 222—184.
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- Computer Accessories Corp.: *See—*
  - Zenzefilis, George E. 3,400,721.
- Conaway, Robert W., and J. S. Spindler, to The Goodyear Tire & Rubber Co. Anti-slosh media for fuel tanks. 3,400,854, 9-10-68, Cl. 220—85.
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- Conrad, Ernest W. Lawn dice having finger holes. 3,400,932, 9-10-68, Cl. 273—146.
- Conrad, Hans-Joachim, and W. Schroder, to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung. Sealing construction with tiltable sealing strip. 3,400,940, 9-10-68, Cl. 277—94.
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- Continental Can Co., Inc.: *See—*
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- Conway, Joseph C.: *See—*
  - Shaler, Amos J., and Conway. 3,400,848.
- Cooke-Yarborough, Edmund H., to Bell Telephone Laboratories, Inc. Logic arrangement employing light generating diodes, photosensitive diodes and reflecting grating means. 3,401,260, 9-10-68, Cl. 250—209.
- Coon, John M., and R. G. Sturm. Projectile. 3,400,661, 9-10-68, Cl. 102—93.
- Cooper, Albert C.: *See—*
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- Cooper, Roydon B., to Pall Corp. Magnetic filter assembly. 3,400,823, 9-10-68, Cl. 210—223.
- Coover, Harry W., Jr., to Eastman Kodak Co. Three-component aluminum-titanium tetrahalide catalysts for olefin polymerization. 3,401,157, 9-10-68, Cl. 260—93.7.
- Corbin, Joseph E., J. H. Helfrich, K. A. Heller, K. L. Nocodemus, G. W. Smith, Jr., A. E. Spencer, Jr., and R. C. Townley, to Bell Telephone Laboratories, Inc. Time division communication system. 3,401,235, 9-10-68, Cl. 179—18.
- Corey, Philip D., and D. A. Porter, to General Electric Co. Buck and boost voltage regulator. 3,401,329, 9-10-68, Cl. 323—18.
- Corlett, Donald A., Jr., A. W. Anderson, P. R. Elliker, and K. L. Krabbenhoft, to The Battelle Development Corp. Chemical sensitization of bacterial spores to radiation in food. 3,401,044, 9-10-68, Cl. 99—217.
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  - Keller, Norbert L., and Cornillaud. 3,400,787.
- Cornwall, Alfred H. Coding and decoding of documents. 3,400,629, 9-10-68, Cl. 88—24.
- Cosgrove, Joseph J., to Radio Corp. of America. Method of making a laminated ferrite memory. 3,400,455, 9-10-68, Cl. 29—604.
- Cotton, Robert B., to All American Engineering Co. Thrust augmenter means. 3,400,903, 9-10-68, Cl. 244—68.
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  - Papin, Franklin E., Toler, and Cotton. 3,400,471.
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  - Start, Ernest, and Wilby. 3,400,560.
- Cottrill, John E., to G. H. Stallard and D. E. Allen. Two-wheel suspension system. 3,400,947, 9-10-68, Cl. 280—124.
- Cowan, George R., B. W. Dunnington, and A. H. Holtzman, to E. I. du Pont de Nemours and Co. Process for synthesising diamond. 3,401,019, 9-10-68, Cl. 23—209.1.
- Cox, Clyde M., to Phillips Petroleum Co. Vapor liquid mixing in fractionation overhead system. 3,401,098, 9-10-68, Cl. 203—2.
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- Cox, Robert J.: *See—*
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- Craig, Paul N., and J. R. E. Hoover, to Smith Kline & French Laboratories. 2-amidobenzimidazoles. 3,401,171, 9-10-68, Cl. 260—309.2.
- Crain, Robert L.: *See—*
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- Cramer, Harold W. Method and apparatus for testing pipelines. 3,400,574, 9-10-68, Cl. 73—40.5.
- Crampton, Clifford A., D. G. Bowen, C. F. Cardy, and A. Poole. Process of producing sulphamic acid derivatives. 3,401,195, 9-10-68, Cl. 260—501.12.
- Crandall, Loid, and L. D. Leone, to Active Engineering, Inc. Method of making unitary tire repair cartridge. 3,400,445, 9-10-68, Cl. 29—451.
- Crankshaw, John H. Sealing arrangement. 3,400,937, 9-10-68, Cl. 277—3.
- Crawford, Robert F.: *See—*
  - Woods, William C., Goldsmith, and Crawford. 3,401,174.
- Creel, William E., and E. Farley. Hydraulic log tong. 3,400,966, 9-10-68, Cl. 294—87.
- Cresswell, Roger A., and G. S. Kitson, to Rolls-Royce Ltd. Jet nozzle chain drive and mounting means therefor. 3,400,540, 9-10-68, Cl. 60—232.
- Cricchi, James R., and W. G. Reininger, to Westinghouse Electric Corp. Storage tube. 3,401,294, 9-10-68, Cl. 313—68.
- Criddle, Dean W.: *See—*
  - Dreher, John L., and Criddle. 3,401,027.
- Cronburg, Claude I. L., Jr., H. T. King, J. W. Knapp, and F. M. Smith, to Bell Telephone Laboratories, Inc. Diversity receiver with revertive action to a preferred selection. 3,401,340, 9-10-68, Cl. 325—304.
- Croon, Ingemar L.-A., and L. G. Kjellander, to Domsjo, Mo och, Aktiebolag. Method of treating stored wood chips. 3,401,085, 9-10-68, Cl. 195—8.
- Crossley Bros. Ltd.: *See—*
  - Wood, Jeffrey H., and Henshall. 3,400,690.
- Crowell, Merton H., to Bell Telephone Laboratories, Inc. Video storage tube. 3,401,299, 9-10-68, Cl. 315—12.
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  - Moskowitz, Arthur, Kovach, and Wells. 3,401,035.
- Cubitt, Robert B., H. L. Marder, and W. O. Tundermann, to Colgate-Palmolive Co. Diapers. 3,400,717, 9-10-68, Cl. 128—284.
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- Cupit, Carl, C. J. Oliva, C. Broad, Jr., and R. A. Gritchen, to International Harvester Co. Speed control device. 3,400,697, 9-10-68, Cl. 123—97.
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- Curran, Daniel R., and D. A. Berlincourt, to Clevite Corp. Composite resonator. 3,401,275, 9-10-68, Cl. 310—8.2.
- Curran, Daniel R., and D. J. Koneval, to Clevite Corp. Piezoelectric resonators and method of tuning the same. 3,401,276, 9-10-68, Cl. 310—9.
- Curran, Daniel R., and D. J. Koneval, to Clevite Corp. Piezoelectric resonator. 3,401,283, 9-10-68, Cl. 310—9.5.
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- Curtiss-Wright Corp.: *See—*
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  - Jones, Charles. 3,400,691.
  - Jones, Charles. 3,400,692.
  - Jones, Charles. 3,400,939.
  - Richardson, Harry L. 3,400,536.
- Cutters Machine Co., Inc.: *See—*
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- Dahms, James B., and B. P. Edmonds, to Kalium Chemicals Ltd. Apparatus for inserting down hole mechanism through bore holes. 3,400,980, 9-10-68, Cl. 299—5.
- Daigle, Robert V.: *See—*
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- Daiwa Can Co., Ltd.: *See—*
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- Dalik, Herbert A., to The Flintkote Co. Automatic feeding and discharging system for machine tools. 3,400,837, 9-10-68, Cl. 214—1.
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- Daniele, Messa, to Mes Dan Annodatori Tessili di Pietro Messa. Apparatus for knotting threads with the so-called weaver's knot. 3,400,960, 9-10-68, Cl. 289—3.
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- Daniluk, Jersy, to Ford Motor Co. Tilt cab latch mechanism. 3,400,970, 9-10-68, Cl. 296—35.
- Dardaine, Edgar J. M., and J.-L. Berry, to E. P. Remy & Cie. Device for metering liquid or semi-fluid products and apparatus incorporating the same. 3,400,739, 9-10-68, Cl. 141—146.
- Darke, James A., to Associated Electrical Industries Ltd. Circuit arrangements for detecting phase unbalance. 3,401,308, 9-10-68, Cl. 317—47.
- Darnell, Donald E., to Power Components, Inc. Parts lifting equipment for die press. 3,400,593, 9-10-68, Cl. 74—29.
- D'Asaro, Lucian A., to Bell Telephone Laboratories, Inc. Electromagnetic wave amplifier oscillator and modulator. 3,401,357, 9-10-68, Cl. 332—7.51.
- Data Products Corp.: *See—*
  - McMillan, Norman, and Foret. 3,400,800.
- Dathe, Christian: *See—*
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- Daugherty, Phillip M., C. K. Lovejoy, and H. L. Vaughan, to Scripto, Inc. Fountain pen having a porous rod type nib. 3,400,998, 9-10-68, Cl. 401—198.
- Daum, John L., and R. B. Spurgin, to Delta Mfg. and Engineering Corp. Carwashing apparatus. 3,400,727, 9-10-68, Cl. 134—99.
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- Davis, Dhu A. J., to D. J. Davis Co., Inc. Electric solder gun tip. 3,401,255, 9-10-68, Cl. 219—233.
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- Davis, Ronald C., to A. R. Scheppmann. Under ground cable laying vehicle with force feed device. 3,400,542, 9-10-68, Cl. 61—72.6.
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- De Bernard du Grail, Alain C. J. R., to AB Lars Ljungberg & Co. Apparatus for treating of biological preparations. 3,400,726, 9-10-68, Cl. 134—95.
- De Forest, Charles R. Positive locking drain plug. 3,400,683, 9-10-68, Cl. 114—185.
- De Jongh, Hendrik P., and F. J. Zeelen, to Organon Inc. Process for the manufacture of multiple unsaturated aliphatic compounds. 3,401,210, 9-10-68, Cl. 260—678.
- De Leone, Ruggero: *See—*
  - Cogliati, Guido, De Leone, Mezi, Scibona, and Lanz. 3,401,122.
- Delta Mfg. and Engineering Corp.: *See—*
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- Demag Aktiengesellschaft: *See—*
  - Langlitz, Karl-Heinz. 3,400,922.
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- De Niet, Johan M. D. Brackets. 3,400,881, 9-10-68, Cl. 211—176.
- Denki Kagaku Kogyo Kabushiki Kaisha: *See—*
  - Ogura, Hirokatsu, and Iwamoto. 3,401,018.
- Dennis, David D., P. F. Swenson, and P. F. Swenson, Jr., to Swenson Research, Inc. Fuel-fired heat pump system. 3,400,554, 9-10-68, Cl. 62—238.
- Deuringer, Rudolf: *See—*
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- De Voss, Edwin A., to Northrop Corp. Surveillance system. 3,400,614, 9-10-68, Cl. 77—5.
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- Dickson, Edwin J., to The Babcock & Wilcox Co. Furnace roof hangers for refractory brick. 3,400,672, 9-10-68, Cl. 110—99.
- Dietner, Herbert, H. Schulz, J. Ritter, and W. Boyer, to AVI Alpenlandische Veredelungs-Industrie Gesellschaft m.b.H. Framework girder without lower chord. 3,400,508, 9-10-68, Cl. 52—691.
- Di Gennaro, Vincent, to Vibro-Plus Products, Inc. Vibrating apparatus. 3,400,728, 9-10-68, Cl. 134—151.
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- Digital Systems, Inc.: *See—*
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  - Wolf, Edgar, and Marino. 3,401,396.
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- Dion, Narcisse, to Dion Freres, Inc. Manually operable retractable wheel mount for semi-portable farm equipment and the like. 3,400,944, 9-10-68, Cl. 280—43.24.
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  - Cleereman, Kenneth J., and Dirkse. 3,401,071.
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  - Schmitt, Karl, Gude, Rindtorff, and Disteldorf. 3,401,190.
- Di Vietri, John J. Combination belt tightening and handle device. 3,400,870, 9-10-68, Cl. 224—58.
- Dix, Cyril H., to The General Electric Co. Ltd. Noise reduction in a travelling wave tube employing a helix input coupler. 3,401,298, 9-10-68, Cl. 315—3.6.
- Dixon, Sidney, and R. H. Chinnery, to George Angus & Co. Ltd. Bearing seals. 3,400,989, 9-10-68, Cl. 308—187.2.
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- Dole Valve Co., The: *See—*
  - Kelly, Douglas E. 3,400,698.
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  - Croon, Ingemar L-A., Kjellander. 3,401,085.
- Doncese, George: *See—*
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- Dorn, Russell J., to Arrow Mfg. Co. Mobile percussion unit. 3,400,771, 9-10-68, Cl. 173—43.
- Dotto, Gianni A., to P. R. Mallory & Co., Inc. Current control circuit with silicon controlled rectifiers and a phase shifting circuit. 3,401,265, 9-10-68, Cl. 250—206.
- Dotto, Gianni A., to P. R. Mallory & Co., Inc. Low speed-high torque motor. 3,401,279, 9-10-68, Cl. 310—22.
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  - Ingram, Arthur P., Jr. 3,401,199.
  - Majewski, Theodore E. 3,401,209.
  - Wessling, Ritchie A., and Zimmerman. 3,401,152.
  - Zimmermann, Robert L., and Pickelman. 3,401,153.
- Downing, Gar E., to General Steel Industries, Inc. Machine for forming cut-backs in pipe coating. 3,400,418, 9-10-68, Cl. 15—88.
- Drace, Lawrence V., of ½ to Western Laundry & Linen Rental Co. Laundry processing assembly. 3,400,467, 9-10-68, Cl. 34—45.
- Drayer, Dennis E., to Marathon Oil Co. Crystal separation of dimethylnaphthalene. 3,400,548, 9-10-68, Cl. 62—58.
- Dreher, John L., and D. W. Criddle, to Chevron Research Co. Light hydrocarbon liquids containing a jellifying agent comprising polyureas. 3,401,027, 9-10-68, Cl. 44—7.
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- Driver Southall Ltd.: *See—*
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- Dunlevy, Barry O., and L. E. Harper, Jr., to TRW, Inc. Liner for crucibles. 3,401,227, 9-10-68, Cl. 13—35.
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- Eden, Jamal S., to The B. F. Goodrich Co. Catalytic method of preparing unsaturated acids and aldehydes. 3,401,197, 9-10-68, Cl. 260—533.

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- Imperial Chemical Industries Ltd.: *See*—
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- Imperial Smelting Corp. (N.S.C.) Ltd.: *See*—
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- Ingersoll-Rand Co.: *See*—
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- Inoue, Takayuki, K. Kato, H. Fujita, Y. Kiyohisa, T. Toyama, and T. Yoshimoto, to Mitsui Kagaku Kogyo Kabushiki Kaisha (Mitsui Chemical Industry Co., Ltd.) Monofluorophenyl-4'-nitrophenylether derivatives as herbicides. 3,401,031, 9–10–68, Cl. 71—124.
- Institut Francais du Petrole des Carburants et Lubrifiants: *See*—
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- Jablonski, Edward R., to McGraw-Edison Co. Clamping device. 3,400,436, 9–10–68, Cl. 24—275.
- Jablonski, Edward R., to McGraw-Edison Co. Safety latch for luminaires. 3,400,963, 9–10–68, Cl. 292—247.
- Jackson, Norman C., to The Standard Products Co. Channel shaped strip structure. 3,401,075, 9–10–68, Cl. 161—64.
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- James, Ivor F., to Ford Motor Co. Safety armrest. 3,400,979, 9–10–68, Cl. 297—412.
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- Johnson, Ivan R., and F. A. Swindell, to General Motors Corp. Automatic transmission. 3,400,613, 9–10–68, Cl. 74—869.
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- Johnson, Richard A., W. V. Miller, and R. A. Essig, to Luxaire, Inc. Electrically controlled refrigerant charging device. 3,400,552, 9–10–68, Cl. 62—149.
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- Jones, Charles, to Curtiss-Wright Corp. Oil seal construction for rotary engines. 3,400,939, 9–10–68, Cl. 277—59.
- Jones, Charles, to Curtiss-Wright Corp. Seal construction for rotary combustion engines. 3,400,691, 9–10–68, Cl. 123—8.
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- Jones, John P., Jr., to Mobil Oil Corp. Bow thruster. 3,400,682, 9–10–68, Cl. 114—151.
- Jones, John R., to Morphy-Richards (Cray) Ltd. Timing control arrangements for electric cooking appliances. 3,400,592, 9–10–68, Cl. 74—3.5.
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- Kalwaites, Frank, to Johnson & Johnson. Apparatus for removing a fibrous web from a rotatable surface. 3,400,430, 9–10–68, Cl. 19—106.
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- Katz, Leon, to GAF Corp. Germicidal material produced by modifying textile fibers with a methylolated lactam and treating same with iodine. 3,401,005, 9–10–68, Cl. 8—115.5.
- Kawabata, Yoshikazu, and M. Yamashita, to Nihon Gakki Kabushiki Kaisha. Electronic musical instrument of just intonation. 3,401,229, 9–10–68, Cl. 84—1.04.
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- Kerfoot, Oliver C., and D. D. Krehbiel, to Continental Oil Co. Conversion of diphenylalkane to higher value products. 3,401,208, 9–10–68, Cl. 260—671.
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- Keyes, William C., to The Carborumdum Co. Belt sanding and polishing machine. 3,400,493, 9–10–68, Cl. 51—138.
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- Kiper, Gerd, and J. Von Albedyll, to Agfa-Gevaert Aktiengesellschaft. Adjustable automatic camera. 3,400,646, 9–10–68, Cl. 95—10.
- Kirkman, Earl L. Heating assembly for an electric furnace with non-linear resistance heating elements. 3,401,225, 9–10–68, Cl. 13—24.
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- Klingofstrom, Svante, and E. S. L. Svensson, to Flymo Societe Anonyme. Lawn mowers. 3,400,523, 9–10–68, Cl. 56—25.4.
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- Kojima, Hideo, to Hitachi, Ltd. Structure of exhaust chamber in gas turbines. 3,400,911, 9–10–68, Cl. 253—39.
- Kollonitsch, Janos, and R. J. Tull, to Merck & Co., Inc. Esters of 5H-dibenzo[a,d]cycloheptene. 3,401,192, 9–10–68, Cl. 260—471.
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- Krapcho, John, to E. R. Squibb & Sons, Inc. Therapeutically active benzothiazines. 3,401,166, 9–10–68, Cl. 260—243.
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Staley, Walton F., Jr. 3,401,403.

Legrand, Pierre. Heat exchanger with imbricated bundles of exchange tubes. 3,400,759, 9–10–68, Cl. 165—173.

Leis, Arthur F. and C. A. Stock pusher. 3,400,838, 9–10–68, Cl. 214—1.3.

Leis, Charles A.: *See—*
Leis, Arthur F. and C. A. 3,400,838.

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Leningradsky Institute Tochnoi Mekhaniki i Optiki: *See—*
Roosinov, Mikhail M., Ivanov, and Novik. 3,400,994.

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Chiddix, Max E., Wynn, and Leonard. 3,401,120.

Leonard, Eugen, E. Wolf, F. C. Marino, and W. F. Heine, to Digitronics Corp. Magnetic shunting recorder. 3,401,394, 9–10–68, Cl. 346—74.

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Leppert, Dale C., to North Electric Co. Inverter circuit having increased frequency starting. 3,401,327, 9–10–68, Cl. 321—11.

Leskinen, Paul E. Press matrix. 3,400,655, 9–10–68, Cl. 100—295.

Lessard, Jean H., to Canadian International Paper Co. Free film sleeved valve in multiwall bag. 3,400,880, 9–10–68, Cl. 229—62.5.

Lester, John J.: *See—*
Bastie, Clifford F., and Lester. 3,400,736.

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Lindberg, Ulf H. A.: *See—*
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Lindsay, William T., Jr., to Westinghouse Electric Corp. Water conversion process and apparatus. 3,401,094, 9–10–68, Cl. 203—7.

Lindsey, Joe P., to Phillips Petroleum Co. Apparatus for color display of seismic data. 3,401,400, 9–10–68, Cl. 346—108.

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Lindsey, Seth B., and J. H. Klancke, to Phillips Mfg. Co. Inc. Propane heater for internal combustion engine. 3,400,700, 9–10–68, Cl. 123—142.5.

List, Hans. Device for the measurement of the consumption of liquids. 3,400,577, 9–10–68, Cl. 73—113.

List, Hans: *See—*
Siding, Gerhard. 3,400,693.

Lister, Paul J., and A. Krynytzky, to The B. F. Goodrich Co. Hose curing unit. 3,400,427, 9–10–68, Cl. 18—6.

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Rice, Francis O. 3,401,391.

Littwin, Arthur K., to A. K., R. L., D. F. Littwin, and H. A. Young. Apparatus and method for controlling magnetism. 3,401,313, 9–10–68, Cl. 317—157.5.

Littwin, Donald F.: *See—*
Littwin, Arthur K. 3,401,313.

Littwin, Robert L.: *See—*
Littwin, Arthur K. 3,401,313.

Litwinoff, Richard, to Sulzer Bros. Ltd. Steam generator having a minimum load firing system. 3,400,559, 9–10–68, Cl. 122—479.

Lloyd, Wayne B., and E. R. Schlissler, to Westinghouse Electric Corp. Manipulator apparatus. 3,400,541, 9–10–68, Cl. 61—69.

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Opitz, Charles L. 3,401,063.

Lockie, Arthur M., and H. W. Book, to Westinghouse Electric Corp. Method of coating electrical conductors. 3,401,058, 9–10–68, Cl. 117—232.

Logan, Lewis J. Welding apparatus. 3,401,250, 9–10–68, Cl. 219—98.

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Meyer, Frederick W. A., Long, and Lake. 3,401,115.

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Newport, Stanley B., and Long. 3,400,583.

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Manion, Jean P., and Losin. 3,401,108.

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Daugherty, Phillip M., Lovejoy, and Vaughan. 3,400,998.

Lovejoy, Charles K. Burner valve. 3,401,001, 9–10–68, Cl. 431—344.

Lovett, John R., and A. J. Passannante, to Esso Research and Engineering Co. Alkyleneamine polymers containing nitroformate groups. 3,401,156, 9–10–68, Cl. 260—89.7.

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Meinhardt, Norman A. 3,401,185.

Lucca, Salvatore: *See—*
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Ludwig, Herbert. Injection molding apparatus for articles, especially footwear. 3,400,429, 9–10–68, Cl. 18—30.

Lueck, Arthur M., to Sylvania Electric Products Inc. Film thickness monitoring apparatus. 3,400,687, 9–10–68, Cl. 118—9.

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MacArthur, Norman C., to Hercules Inc. Copolymers of rosin containing monomers and vinyl monomers. 3,401,154, 9–10–68, Cl. 260—78.5.

MacChesney, Chester M., to Ellamac Inc. Structural members with preformed concrete reinforcing devices. 3,400,507, 9–10–68, Cl. 52—659.

MacDavid, Kenneth R.: *See—*
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Mackenzie, Benjamin, and A. W. Forman, to Driver Southall Ltd. Automatic weigher with rapping means to aid discharge of materials. 3,400,775, 9–10–68, Cl. 177—113.

Macklin, Martin R., to TRW Inc. Electrolytic process for concentrating carbon dioxide. 3,401,100, 9–10–68, Cl. 204—103.

MacLaren, David S. Sewage aerator. 3,400,918, 9–10–68, Cl. 261—87.

Macleod & Miller Engineers Ltd.: *See—*
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Macrum, Edward W.: *See—*
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Madden, Eugene, to Cox Instruments Division. Contaminant sampling apparatus and method. 3,400,575, 9–10–68, Cl. 73—61.

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McClurg, Glenn O., Nerwin, and Puidak. 3,401,332.

Magnesium Elektron Ltd.: *See—*
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Maguire, George A., M. A. Ostrofsky, and V. C. Szeligo, to Continental Can Co., Inc. Method of preparing a surface for welding. 3,400,449, 9–10–68, Cl. 29—483.

Mahon, John H., to Calgon Corp. Method of making a composition useful in meat curing. 3,401,046, 9–10–68, Cl. 99—222.

Maisonneuve, Hubert J., to Canada Iron Foundries Ltd. Hydraulic spike hammer or the like. 3,400,769, 9–10–68, Cl. 173—15.

Majewski, Theodore E., to The Dow Chemical Co. Recovery of biphenyl from HDA polymer. 3,401,209, 9–10–68, Cl. 260—672.

Majkrzak, John R.: *See—*
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Makowski, Alexander G. Package and packaging method. 3,400,810, 9–10–68, Cl. 206—65.

Mallory Battery Co. of Canada Ltd.: *See—*
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Dotto, Gianni A. 3,401,265.
Dotto, Gianni A. 3,401,279.
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Malter, Richard L. Ammunition projectile. 3,400,660, 9–10–68, Cl. 102—42.

Manion, Jean P., and E. T. Losin, to Allis-Chalmers Mfg. Co. Process for the glow discharge manufacture of hydrazine, from pre-heated ammonia. 3,401,108, 9–10–68, Cl. 204—177.

Marathon Oil Co.: *See—*
Drayer, Dennis E. 3,400,548.

Marder, Herman L.: *See—*
Cubitt, Robert B., Marder, and Tundermann. 3,400,717.

Maremont Corp.: *See—*
Chilpan, Kurt C. 3,400,529.

Marino, Francis C.: *See—*
Leonard, Eugen, Wolf, Marino, and Heine. 3,401,394.

Marino, Francis C.: *See—*
Wolf, Edgar, and Marino. 3,401,396.

Marples, Bernard P.: *See—*
Baldwin, Richard E., and Marples. 3,400,659.

Marsh, Donald B., to Westinghouse Air Brake Co. Fail-safe standard amplitude signal sources. 3,401,274, 9–10–68, Cl. 307—297.

Marsh, Virgil L.: *See—*
Grau, Thomas G., and Marsh. 3,401,367.

Marshall, Carol E.: *See—*
Marshall, William B., and Norman. 3,401,022.

Marshall, William B. (deceased, by C. E. Marshall), and H. W. Norman, to Motorola Inc. Apparatus for horizontal zone refining of semiconductive materials. 3,401,022, 9–10–68, Cl. 23—273.

Martens, Jack E., to American Motors Corp. Safety door latch arrangement. 3,400,962, 9–10–68, Cl. 292—216.

Martensen, Uwe H., to International Harvester Co. Seeding attachment for implement. 3,400,678, 9–10–68, Cl. 111—70.

Martin, Elmer E., R. F. Brandon, E. R. Summers, and W. S. Zogorski, to General Electric Co. Electric motor with permanent magnet stator poles and method of making. 3,401,281, 9–10–68, Cl. 310—42.

Martin, Thomas W., Sr., A. S. Rogers, and S. B. Ashton, to Cutters Machine Co., Inc. Cloth spreading machine. 3,400,927, 9–10–68, Cl. 270—31.

Marx, Louis, & Co., Inc.: *See—*
Case, Noel L., and Tuschak. 3,400,667.

Mase, Gerald D., and P. O. Powers, to Standard Oil Co. Hot melt adhesives containing poly-dimethyl alpha-methyl styrene resin. 3,401,131, 9–10–68, Cl. 260—28.5.

Mason, Anthony: *See—*
Cobb, Clifton A., Mason, and McConnell. 3,400,774.

Mason, Ronald F., and J. L. Van Winkle, to Shell Oil Co. Hydrocarbylene-bis(monophosphabicyclononanes) and the preparation thereof. 3,401,204, 9–10–68, Cl. 260—606.5.

Mather Co., The: *See—*
Hudson, Raymond A., Walchle, and Varney. 3,400,988.

Matson, Carl G. Vibrator apparatus. 3,400,770, 9–10–68, Cl. 173—32.

Matson, Carl G. Vibrator. 3,400,913, 9–10–68, Cl. 259—1.

Matson, Carl G. Trailer load transferring and antisway hitch. 3,400,948, 9–10–68, Cl. 280—406.

Matta, Romeo, to Phillips Petroleum Co. Two-zone distillation process and system having vapor flows controlled by the pressure differential. 3,401,092, 9–10–68, Cl. 203—1.

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Matthews, John, to National Research Development Corp. Apparatus for controlling the drying of particulate materials. 3,400,468, 9–10–68, Cl. 34—52.

Matthews, Richard A., and H. A. Johansen, to Samuel Moore and Co. Composite tubing product and apparatus for manufacturing the same. 3,400,737, 9–10–68, Cl. 138—111.

Mattwell, Michael O. Irrigation system. 3,400,891, 9–10–68, Cl. 239—66.

May, George A., to Northern Electric Co. Ltd. Binary flip-flop. 3,401,273, 9–10–68, Cl. 307—247.

May, James. Rack for slender articles. 3,400,828, 9–10–68, Cl. 211—60.

May, Patrick L.: *See—*
Ralston, William K., May, and Barfield. 3,400,653.

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Mayer, Edward: *See—*
Ruhl, Charles A. L., and Mayer. 3,400,790.

Mayo, Howard A., Jr.: *See—*
Horn, John M., and Mayo. 3,400,907.

McClaren, Jay L. Method and apparatus for conditioning grain. 3,400,466, 9–10–68, Cl. 34—25.

McClellan, James M., Jr.: *See—*
Grace, Oscar M., and McClellan. 3,401,133.

McClintock, Eugene P. Movable table for sewing drapery lengths. 3,400,674, 9–10–68, Cl. 112—2.

McClurg, Glenn O., H. N. Nerwin, and H. Puidak, to Magnaflux Corp. Magnetic leakage field and eddy current flaw detection system. 3,401,332, 9–10–68, Cl. 324—37.

McConnell, James L.: *See—*
Cobb, Clifton A., Mason, and McConnell. 3,400,774.

McConnell, John R. Automatic fusion welder for structural steel members. 3,401,254, 9–10–68, Cl. 219—125.

McCornack, Robert R. Fluid valve with self-cleaning metering orifice. 3,400,731, 9–10–68, Cl. 137—245.

McDonald, Earl G., Jr.: *See—*
Brown, Paul J., and McDonald. 3,401,346.

McDonald's System, Inc.: *See—*
Weimer, Ralph E., Fallis, and Yud. 3,400,824.

McEvoy, James E., to Air Products and Chemicals, Inc. Electrolytic method of gas separation. 3,401,099, 9–10–68, Cl. 204—129.

McEvoy, James E., to Bailey Meter Co. Overpressure seal for differential pressure responsive device. 3,400,638, 9–10–68, Cl. 92—10.

McGinley, John V., to Allied Chemical Corp. Floor tile comprising polyvinyl chloride chlorinated polyethylene and filler. 3,401,129, 9–10–68, Cl. 260—23.

McGraw-Edison Co.: *See—*
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Jablonski, Edward R. 3,400,963.
Lemens, Donald J. 3,401,305.
Van Dusen, Harold A., Jr. 3,400,905.
Weinfurt, William J., and Phillips. 3,401,370.

McIntosh, Ralph A., J. D. Hornak, and L. J. Yarrish, to B. J. Labranche. Toroidal coil winding machine. 3,400,894. 9–10–68, Cl. 242—4.

McIntyre, Raymond D., and F. W. Woodward, to Ford Motor Co. Vehicle windshield having integral sun shield. 3,400,972, 9–10–68, Cl. 296—97.

McKay, Dwight L., to Phillips Petroleum Co. Method for removing water and hydrocarbons from gaseous HCl. 3,400,512, 9–10–68, Cl. 55—69.

McKeown, John B., to Macleod & Miller Engineers Ltd. Extended aeration sewage treatment plants. 3,400,822, 9–10–68, Cl. 210—195.

McLaughlin, Emmett J., to Westinghouse Electric Corp. Fluorescent tube lampholder with compact switching means operable with the insertion and removal of a fluorescent lamp. 3,401,242, 9–10–68, Cl. 200—51.07.

McLean, Arthur F., to Ford Motor Co. Automotive gas turbine fuel control system. 3,400,535, 9–10–68, Cl. 60—39.28.

McLean, Wesley J.: *See—*
Ernest, Robert P., McLean, and Postma. 3,400,694.

McManus, John A., to Mallory Battery Company of Canada Ltd. Ion pump. 3,400,882, 9–10–68, Cl. 230—69.

McMillan, Norman, and C. H. Foret, to Data Products Corp. Printing ribbon support apparatus including ribbon guide means. 3,400,800, 9–10–68, Cl. 197—151.

McNaney, Joseph T. Coplanar light beam deflection and selection apparatus. 3,400,992, 9–10–68, Cl. 350—160.

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Scaggs, Robert T., Meares, and Lindsey. 3,400,502.

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Meerik, Albert, and H. Soe, to Misomex Aktiebolag. Friction brake for a tubular member. 3,400,786, 9–10–68, Cl. 188—67.

Meiklejohn, I. G., & Co., Ltd.: *See—*
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Meiklejohn, Ian G., to I. G. Meiklejohn & Co., Ltd. Hand-propelled trolleys. 3,400,943, 9–10–68, Cl. 280—41.

- Meinhardt, Norman A., to The Lubrizol Corp. Metal salts of phosphorus acids and process. 3,401,185, 9-10-68, Cl. 260—429.9.
- Mele, Salvatore S.: *See*—
  - Clitheroe, Jay B., and Mele. 3,400,813.
- Melloh, Wilhelm: *See*—
  - Hoffmann, Helmut, and Melloh. 3,401,007.
- Melpar Inc.: *See*—
  - Papin, Franklin E., Toler, and Cotton. 3,400,471.
- Menzel, Gerhart, and C. E. Klotz, to Allis-Chalmers Mfg. Co. Hydraulic holddown for nuclear reactor fuel assembly. 3,401,081, 9-10-68, Cl. 176—50.
- Mercier, Jean. Position control system. 3,400,537, 9-10-68, Cl. 60—52.
- Merck & Co., Inc.: *See*—
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  - Firestone, Raymond A., Reinhold, and Sletzinger. 3,401,178.
  - Kollonitsch, Janos, and Tull. 3,401,192.
  - Zeissig, Alexander. 3,401,219.
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  - Hoffmann, Arno, Lang, Neumann, Waldi, and Hartel. 3,401,086.
- Mercury Instruments, Inc.: *See*—
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- Meredith, Leonard C.: *See*—
  - Frederick, Eugene G., and Meredith. 3,401,042.
- Merker, Reuven, H. P. Soguero, and S. Lucca, to The Metalux Corp. Electrodeposition of nickel. 3,401,097, 9-10-68, Cl. 204—49.
- Mes Dan Annodatori Tessili di Pietro Messa: *See*—
  - Daniele, Messa. 3,400,960.
- Meschi, Joseph E.: *See*—
  - Bartlett, Peter G., and Meschi. 3,401,377.
  - Bartlett, Peter G., and Meschi. 3,401,378.
- Messier, Leo J. Convertible chair construction for infants. 3,400,976, 9-10-68, Cl. 297—118.
- Mesta Machine Co.: *See*—
  - Iversen, Lorenz. 3,400,498.
- Metalux Corp., The: *See*—
  - Merker, Reuven, Soguero, and Lucca. 3,401,097.
- Metzner, Arthur B.: *See*—
  - Savins, Joseph G., and Metzner. 3,400,796.
- Meyer, Frederick W. A., C. A. Long, and V. M. Lake, to The Sanitas Co. Ltd. Sewage treatment system. 3,401,115, 9-10-68, Cl. 210—60.
- Meyer Products Inc.: *See*—
  - Peitl, Josef. 3,400,475.
- Mezi, Enzo: *See*—
  - Cogliati, Guido, De Leone, Mezi, Scibona, and Lanz. 3,401,122.
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  - Burwell, Blair T. 3,400,817.
- Michelson, Anatol, to E. W. Bliss Co. High energy drive unit. 3,400,534, 9-10-68, Cl. 60—27.
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- Midland-Ross Corp.: *See*—
  - Janett, Leslie G. 3,400,469.
  - Zanow, Andrey L. 3,400,834.
- Mihic, Wlajko. Tool insert. 3,400,616, 9-10-68, Cl. 77—58.
- Miki, Eiji, to Xerox Corp. Phase control system utilizing single or multiple pole slip. 3,401,321, 9-10-68, Cl. 318—85.
- Miller, Donald L., to The Bendix Corp. Electromagnetic clutch with torque responsive disconnect means. 3,400,795, 9-10-68, Cl. 192—56.
- Miller, Lewis F., and R. K. Spielberger, to International Business Machines Corp. Method of rendering noble metal conductive composition non-wettable by solder. 3,401,126, 9-10-68, Cl. 252—514.
- Miller, Marshall B., M. H. Fitzwater, and A. A. Zook. Automatic non-freezing, hot-water-saving, purge system for vehicle washing apparatus. 3,400,725, 9-10-68, Cl. 134—57.
- Miller, William P., II, to The Goodyear Tire & Rubber Co. Method of at least partially removing a tire stud from a tire. 3,400,443, 9-10-68, Cl. 29—400.
- Miller, William V.: *See*—
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- Milligan, Dale W., and R. D. Wanselow, to Northrop Corp. Slotted cone antenna. 3,401,387, 9-10-68, Cl. 343—767.
- Mills, Ivor W., to Sun Oil Co. Method of preparing wax-polyethylene blends. 3,401,169, 9-10-68, Cl. 260—28.5.
- Minnesota Mining and Mfg. Co.: *See*—
  - Berger, Thomas W., Simmons, and Smith. 3,401,052.
- Mione, Carlo A., to R. L. Mossino and H. E. Aine. Disc brake friction pad and disc brake system. 3,400,789, 9-10-68, Cl. 188—264.
- Misher, Allen, to Smith Kline & French Laboratories. Method of producing gastrointestinal spasmolytic activity with polyoxypropylene - polyoxyethylene polymers. 3,401,218, 9-10-68, Cl. 424—78.
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  - Meerik, Albert, and Soe. 3,400,786.
- Mitchell, Arlan E.: *See*—
  - Cole, Donald W., Mitchell, and Whitlock. 3,400,982.
- Mitchell, Muni M., to Radio Corp. of America. Wide band high frequency amplifier. 3,401,349, 9-10-68, Cl. 330—27.
- Mitra, Sanjit K., to Bell Telephone Laboratories Inc. Two-port network for realizing transfer functions. 3,401,352, 9-10-68, Cl. 330—99.
- Mitsui Kagaku Kogyo Kabushiki Kaisha (Mitsui Chemical Industry Co., Ltd.): *See*—
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  - Okubo, Ichiro, and Tsujimoto. 3,401,048.
- Mizenko, John M., to International Harvester Co. Seal evaluation test fixture. 3,400,572, 9-10-68, Cl. 73—37.
- Mobay Chemical Co.: *See*—
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- Mobil Oil Corp.: *See*—
  - Burdyn, Ralph F. 3,400,819.
  - Jones, John P., Jr. 3,400,682.
  - Lee, Eugene K., and Kerns. 3,400,783.
  - Savins, Joseph G., and Metzner. 3,400,796.
- Modena, Mario: *See*—
  - Borsini, Giancarlo, Modena, Nicora, and Ragazzini. 3,401,155.
- Mohan, William L., Jr.: *See*—
  - Goldhammer, Jerome S., Mohan, and Wayne. 3,401,232.
- Molstedt, Byron V., and R. L. Scheuermann, to Esso Research and Engineering Co. High temperature transfer line heater. 3,400,920, 9-10-68, Cl. 263—21.
- Monsanto Co.: *See*—
  - Barton, David M., and Koepp. 3,401,350.
  - Brown, Gordon E. 3,401,070.
  - Davis, Walter M. 3,400,871.
  - Fantl, Joel, Hahn, Heaps, and Williams. 3,401,134.
  - Gordon, Richard S., and Machlin. 3,401,039.
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  - Trementozzi, Quirino A., and Tedeschi. 3,401,213.
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- Montgomery, Orin C., and W. N. Doggett, to Phillips Petroleum Co. Seismic firing and recording system. 3,400,781, 9-10-68, Cl. 181—.5.
- Montgomery, Robert L., to Northrop Corp. Combination punch press die. 3,400,438, 9-10-68, Cl. 29—1.2.
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  - Weldacher, Michael. 3,400,928.
- Moore, George C., Co.: *See*—
  - Siciliano, Samuel F. 3,400,576.
- Moore, Samuel, and Co.: *See*—
  - Matthews, Richard A., and Johansen. 3,400,737.
- Moore, Thomas A. Leathercraft tool. 3,400,458, 9-10-68, Cl. 30—164.9.
- Moore, William H., to Meehanite Metal Corp. Mixing ladle. 3,401,034, 9-10-68, Cl. 75—61.
- Morales, Gerald A.: *See*—
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- Mullin, John B., to National Research Development Corp. Crystal melt-growth process wherein the melt surface is covered with an inert liquid. 3,401,023, 9-10-68, Cl. 23—301.
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- Ogura, Hirokatsu, and S. Iwamoto, to Denki Kagaku Kogyo Kabushiki Kaisha. Method of producing boron carbide. 3,401,018, 9-10-68, Cl. 23—208.
- Ohfuka, Toshio, H. Yokoyama, H. Sato, and Y. Inai, to Asahi Kasei Kogyo Kabushiki Kaisha. Bulky yarns. 3,400,531, 9-10-68, Cl. 57—140.
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- Okubo, Ichiro, and M. Tsujimoto, to Mitsui Kagaku Kogyo Kabushiki Kaisha (Mitsui Chemical Industry Co., Ltd.). 2-styrylazole optical brightener. 3,401,048, 9-10-68, Cl. 117—33.5.
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Puente, Jose R., to Product Packaging Corp. Light tight package. 3,400,809, 9–10–68, Cl. 206—62.
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Roberts, Hobart V., Jr., and J. J. Andrycha, to Trico Products Corp. Fluid pressure power unit with magnetic latching means. 3,400,637, 9–10–68, Cl. 91—466.
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Rogers, Dick. Lineup clamp. 3,400,872, 9–10–68, Cl. 228—44.
Rogers, Thomas H., Jr., and N. R. Bender, to The Goodyear Tire & Rubber Co. Stabilized polyurethane compositions. 3,401,145, 9–10–68, Cl. 260—45.95.
Rogers, Walter C., Jr., to Royal Development Co., Inc. Footrest and associated linkage for chair. 3,400,975, 9–10–68, Cl. 297—75.
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Schlamp, Herman, and Weber. 3,400,704.
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Ross, Peter G. Semi-conductor cooling means. 3,400,543, 9-10-68, Cl. 62—3.

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Ruhl, Charles A. L., P. P. Polko, and E. Mayer, to International Harvester Co. Transmission having slow-down brake and dump valve. 3,400,601, 9-10-68, Cl. 74—339.

Ruhl, Charles A. L., and E. Mayer. Valve and motor-brake controls operated thereby. 3,400,790, 9-10-68, Cl. 192—3.

Rumsey, Rollin D., to Houdaille Industries, Inc. Hatchway covers and piston lever hatch actuators therefor. 3,400,748, 9-10-68, Cl. 160—188.

Ruprecht, Robert, and F. Hamm, to Ernst Heinkel Aktiengesellschaft. Variable-pitch sheave. 3,400,600, 9-10-68, Cl. 74—230.17.

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Bordenca, Carl. 3,401,051.

Saeman, Walter C., to Olin Mathieson Chemical Corp. Preparation of pure monocalcium phosphate. 3,401,014, 9-10-68, Cl. 23—109.

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Hofmann, Corris M., and Safir. 3,401,176.

Saijo, Toshiko. Sanitary belt. 3,400,718, 9-10-68, Cl. 128—291.

Sakurai, Takasi, to Nippon Denso Co. Ltd. Filter material for internal combustion engine air cleaner. 3,400,520, 9-10-68, Cl. 55—487.

Sallinger, Harry A. Differentially elevatable bathtub device. 3,400,410, 9-10-68, Cl. 4—185.

Salna, Karl, to International Harvester Co. Side dump bucket. 3,400,845, 9-10-68. Cl. 214—768.

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Sampietro, Achille C., to Ford Motor Co. Vehicle leading arm suspension system. 3,400,945, 9-10-68, Cl. 280—96.2.

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Sanborn, Frank E. Drill bit tip. 3,400,617, 9-10-68, Cl. 77—67.

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Sandy, Charles A., and V. Tullio, to E. I. du Pont de Nemours and Co. Tetramethyl lead manufacture. 3,401,189, 9-10-68, Cl. 260—437.

Sandy Hill Corp.: *See*—
Keller, Martin B. 3,401,080.

Sanitas Co. Ltd., The: *See*—
Meyer, Frederick W. A., Long, and Lake. 3,401,115.

Sankin, Albert: *See*—
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Sato, Yoshiko. Wheel-fitting device for wheelchairs. 3,400,990, 9-10-68, Cl. 308—191.

Sato, Yukio, to Takeda Chemical Industries, Ltd. Adhesive composition of an interpolymer containing ethylene glycol monomethacrylate admixed with a blocked polyisocyanate. 3,401,135, 9-10-68, Cl. 260—29.6.

Saunders, Teddy G., to Hewlett-Packard Co. Signal converter having bipolar detector and feedback circuits. 3,401,358, 9-10-68, Cl. 332—12.

Savins, Joseph G., and A. B. Metzner, to Mobil Oil Corp. Power transmission device employing a shear thickening liquid. 3,400,796, 9-10-68, Cl. 192—58.

Scaggs, Robert T., H. A. Meares, and L. D. Lindsey, to American Seating Co. Telescoping platform structure. 3,400,502, 9-10-68, Cl. 52—9.

Scardaci, Salvatore. Universal high speed ratchet adapter. 3,400,602, 9-10-68, Cl. 74—410.

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Schaffersmann, Heinz, and E. Tuchen, to Binder Magnete KG. Method and circuit for rapid excitation of a magnetic-field device. 3,401,310, 9-10-68, Cl. 317—123.

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Scheidt, Robert A. Cytologic endocrine evaluation device. 3,400,708, 9-10-68, Cl. 128—2.

Schellhammer, Charles T., to United Aircraft Corp. Automatic swaging method and tool. 3,400,570, 9-10-68, Cl. 72—435.

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Scheurer, Robert S. Sporting equipment. 3,400,415, 9-10-68, Cl. 9—342.

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Schleich, Fritz, and W. Scheffels, to United Aircraft Corp. Apparatus for the machining of material by means of a beam of charge carriers. 3,401,249, 9-10-68, Cl. 219—69.

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Schmitt, Karl, F. Gude, K. Rindtorff, Jr., and J. Disteldorf, to Scholven-Chemie Aktiengesellschaft. 3-(isocyanatomethyl)-3,5,5-tri-lower-alkyl cyclohexyl isocyanates. 3,401,190, 9-10-68, Cl. 260—453.

Schneider, Ervin J. Pneumatic circuit for rapidly transferring fluid under pressure from a work cylinder to a storage tank for subsequent use. 3,400,636, 9-10-68, Cl. 91—452.

Schneider, Walter, to VEB Fraktorenwerk Schonebeck. Automatic depth-control device for soil-working implements. 3,400,764, 9-10-68, Cl. 172—7.

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Schrötter, Hans O. Hand operated brake. 3,400,606, 9-10-68, Cl. 74—516.

Schubert, Bernhard, to Hauni Werke Korber & Co., KG. Apparatus for manipulating rod-like articles. 3,400,857, 9-10-68, Cl. 221—93.

Schultz, William H. Multiple dosage hypodermic syringe. 3,400,716, 9-10-68, Cl. 128—216.

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Schwarzer, Henry and E. Calendar clock. 3,400,510, 9-10-68, Cl. 58—4.

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Segredo, John D., to International Harvester Co. Adjustable combination guard and ledger plate. 3,400,524, 9-10-68, Cl. 56—98.

Seidel, Bernhard, and O. Riester, to Agfa-Gevaert Aktiengesellschaft. Merocyanine dye-sensitized photographic materials comprising silver halide emulsion layers containing azo-dyes. 3,401,404, 9-10-68, Cl. 96—99.

Seidel, Harold, to Bell Telephone Laboratories, Inc. Frequency stabilized oscillator. 3,401,354, 9-10-68, Cl. 331—46.

Seitz, Russell. Apparatus for machining hard materials. 3,400,494, 9-10-68, Cl. 51—148.

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Sellers, Henry G., Jr., to Tenneco Chemicals, Inc. Dipentene polymer compositions. 3,401,136, 9-10-68, Cl. 260—29.8.

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Shaler, Amos J., and J. C. Conway, to Pennsylvania State University. Hull structure with honeycombed interior surface for deep submergence vessels. 3,400,848, 9-10-68, Cl. 220—5.

Shatz, Solomon. Arrangement of electrical circuits and multiple electrical components. 3,401,309, 9-10-68, Cl. 317—101.

Shavel, John, Jr., and G. Bobowski, to Warner-Lambert Pharmaceutical Co. Oxobisbenzoxazin-2-ones and process for their production. 3,401,167, 9-10-68, Cl. 260—246.

Shavel, John, Jr., and G. C. Morrison, to Warner-Lambert Pharmaceutical Co. d,1-2,7-dihydroyohimbanes and process for their production. 3,401,170, 9-10-68, Cl. 260—288.

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Hendal, Willem P. 3,400,545.
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Sibley Machine and Foundary Corp.: *See*—
Behnke, Donald A. 3,400,751.

Siciliano, Samuel F., to George C. Moore Co. Stretch-testing machine for elastic fabric. 3,400,576, 9-10-68, Cl. 73—95.

Siding, Gerhard, to H. List. Valve gear for an internal combustion engine. 3,400,693, 9-10-68, Cl. 123—27.

Siegla, Donald C., to General Motors Corp. Invertible infrared surface heating unit. 3,401,256, 9-10-68, Cl. 219—454.

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Fuchs, Ekkehard. 3,401,261.
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Siemens-Reiniger-Werke Aktiengesellschaft: *See*—
Petersilka, Franz K., Schittenhelm, and Weiss. 3,401,345.

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Pearson, Kenneth C. 3,401,072.

Sikora, Arthur J.: *See*—
Ninger, Fred C., Sikora, and Snyder. 3,401,015.

Simmons, Carl C.: *See*—
Berger, Thomas W., Simmons, and Smith. 3,401,052.

Simms, T. S., & Co., Ltd.: *See*—
Wood, Frank R. 3,401,073.

Simonacco Ltd.: *See*—
Tarjan, Gusztav. 3,400,818.

Simonds, Omar H.: *See*—
Williams, Virgil C., and Simonds. 3,400,547.

Singer Co., The: *See*—
Bowers, Melville D., and Wendel. 3,400,677.
Off, Joseph W. A., and Raudonis. 3,400,841.
Raudonis, John A., Jr. 3,400,675.
Raudonis, John A., Jr. 3,400,676.

Singleton, Jack, to Fluid Dynamics Inc. Filter check valve. 3,400,821, 9-10-68, Cl. 210—136.

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Elad, Dov, Youssefyeh, and Sinnreich. 3,401,106.

Sippican Corp., The: *See*—
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Skil Corp.: *See*—
Frenzel, Carl J. 3,401,241.

Sletzinger, Meyer: *See*—
Firestone, Raymond A., Reinhold, and Sletzinger. 3,401,178.

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Van Westerveld, Jan, and Sligchers. 3,401,161.

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Smarker, Albert L. Rain canopy for automobile windshields. 3,400,750, 9-10-68, Cl. 160—368.

Smith, Frederick M.: *See*—
Cronburg, Claude I. L., Jr., King, Knapp, and Smith. 3,401,340.

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Smith, Henry E., to Friden, Inc. Last character visibility mechanism for a matrix page printer. 3,400,798, 9-10-68, Cl. 197—1.

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Smith, James L.: *See*—
Bobeck, Andrew H., and Smith. 3,401,381.

Smith, John: *See*—
Garden, William D., and Smith. 3,401,047.

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Craig, Paul N., and Hoover. 3,401,171.
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Smith, Raymond P., to Ford Motor Co. Vehicle control assembly. 3,400,607, 9-10-68, Cl. 74—560.

Smith, Raymond P., to Ford Motor Co. Motor vehicle station wagon camper body. 3,400,968, 9-10-68, Cl. 296—23.

Smith, Samuel G., Jr., R. F. Sellers, and A. S. Burhans, to Union Carbide Corp. Epoxy resins from bisphenols of 3,9-divinyl spirobi (m-dioxanes). 3,401,147, 9-10-68, Cl. 260—47.

Smith, William F. Apparatus for controlling the braking and acceleration of motorcycles and other motor-driven vehicles. 3,400,776, 9-10-68, Cl. 180—33.

Smiths Industries Ltd.: *See*—
Newport, Stanley B., and Long. 3,400,583.

Smoot, Edgar J., ½ to R. A. Smoot. Traffic control signals. 3,401,372, 9-10-68, Cl. 340—43.

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Smoot, Edgar J. 3,401,372.

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Snow, Gerald A. Theft-proof display rack. 3,400,812, 9-10-68, Cl. 206—72.

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  - Meerik, Albert, and Soe. 3,400,786.
- Soguero, Herman P. : *See*—
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- Solari & C. Udine S.p.A. : *See*—
  - Solari, Fermo. 3,400,598.
- Solari, Fermo, to Solari & C. Udine S.p.A. Device for controlling the advance of drums in a display drum apparatus. 3,400,598, 9–10–68, Cl. 74—142.
- Sommerer, Raymond : *See*—
  - Cole, Robert E., Roecks, Sommerer, and Welle. 3,400,895.
- Southam, Frederick W. : *See*—
  - Howie, Henry J., Rance, Rapson, and Southam. 3,400,923.
- Southern Machinery Co. : *See*—
  - Garrison, Joe K., Engels, and Jones. 3,400,791.
- Spaonara, Domenick, and E. M. Redstreake, to Caloric Corp. Domed screen radiant burner. 3,401,000, 9–10–68, Cl. 431—329.
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  - Laich, Alberto L. 3,400,596.
- Speed, Raymond A. : *See*—
  - Griffin, John R., Jones, and Speed. 3,401,212.
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  - Horn, John W., and Spencer. 3,400,797.
- Sperry Rand Corp. : *See*—
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- Spira, Seymour L., and M. Aron, to General Precision Inc. Overload limiting mechanism. 3,400,935, 9–10–68, Cl. 287—20.
- Spiroch, Franz, G. Friedl, and W. Beckert, to Eichner-Organisation G.m.b.H. Arrangement for signalling the movement and/or the attracted position of an armature of an electromagnet. 3,401,362, 9–10–68, Cl. 335—17.
- Spohr, Albert R., and O. Babler, to Sunbeam Corp. Shaver head release. 3,400,457, 9–10–68, Cl. 30—43.92.
- Spooner, Gilberx D. : *See*—
  - Lackey, Dale F., and Spooner. 3,401,280.
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  - Ammon, Johannes H., Schlichting, and Sprague. 3,401,082.
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  - Daum, John L., and Spurgin. 3,400,727.
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- Staar, Theophiel C. J. L., to Staar, S.A. Screen over window opening tape player. 3,400,936, 9–10–68, Cl. 274—11.
- Stafford, Milton C., to King of Prussia Research and Development Corp. Torque resisting system. 3,400,603, 9–10–68, Cl. 74—411.
- Stabeli, Paul, to Rieter Machine Works, Ltd. Apparatus for separating flock from an air stream. 3,400,518, 9–10–68, Cl. 55—428.
- Staley, Walton F., Jr., to Leeds & Northrup Co. Stackable pen and slidewire module for strip chart recorder. 3,401,403, 9–10–68, Cl. 346—145.
- Stallard, George H. : *See*—
  - Cottrill, John E. 3,400,947.
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  - Mase, Gerald D., and Powers. 3,401,131.
- Standard Products Co., The : *See*—
  - Jackson, Norman C. 3,401,075.
  - Toth, Richard H. 3,401,141.
- Stanwood, David A., to Swimquip, Inc. Method of chlorinating water in a reservoir and apparatus therefor. 3,401,116, 9–10–68, Cl. 210—62.
- Stargardter, Hans : *See*—
  - Carta, Franklin O., and Stargardter. 3,400,912.
- Stark, Klaus : *See*—
  - Eckert, Oskar, and Stark. 3,401,057.
- Start, Ernest, and K. T. Wilby, to William Cotton Ltd. Straight bar knitting machines. 3,400,560, 9–10–68, Cl. 66—110.
- Starvaski, Raymond R. : *See*—
  - Hill, William J., Starvaski, and Woodrow. 3,400,652.
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- Stedman, Robert J. : *See*—
  - Chow, Alfred W., Hoover, and Stedman. 3,401,173.
- Steele, Jack E., Jr., to General Electric Co. Electrolytic capacitor having a cover with sealing and venting means therein. 3,401,314, 9–10–68, Cl. 317—230.
- Steinbrecher, Lester, D. E. Buczkowski, and J. W. Harrison, to Amchem Products, Inc. Automatic control of nitrite addition in acid phosphate coating solutions. 3,401,065, 9–10–68, Cl. 148—6.15.
- Steinmetz, Hans W., to Georg Fischer Aktiengesellschaft. Apparatus for axially centering a workpiece in machines adapted to cut a workpiece to length and center the same. 3,400,618, 9–10–68, Cl. 82—2.5.
- Stemler, Joseph, to Ritter Pfaudler Corp. Dental handpiece. 3,400,459, 9–10–68, Cl. 32—26.
- Stemme, Nils G. E. Checking arrangement for passing persons, particularly for checking the work-time. 3,401,374, 9–10–68, Cl. 340—172.5.
- Stemmler, Kurt, to R. Winkler and K. Dunnebier. Apparatus for applying window material to window cutouts in the manufacture of window envelopes and the like. 3,400,641, 9–10–68, Cl. 93—61.
- Stemmler, Kurt, to R. Winkler and K. Dunnebier. Apparatus for folding and gumming the side flaps and folding the bottom flaps in the manufacture of envelopes and the like. 3,400,642, 9–10–68, Cl. 93—62.
- Stenger, Morris D., and L. J. Weber, to General Motors Corp. Window regulator. 3,400,489, 9–10–68, Cl. 49—348.
- Stephenson, Robert J., to Monsanto Chemicals Ltd. Flame-retardant synthetic resin composition. 3,401,127, 9–10–68, Cl. 260—2.5.
- Steyh, Joseph. Traversing mechanism. 3,400,594, 9–10–68, Cl. 74—37.
- Stiff, Bernard G. E., to The Lapointe Machine Tool Co. Ltd. Electrolytic shaping apparatus and feed rate control therefor based on field changes across the gap caused by a moving electrode. 3,401,102, 9–10–68, Cl. 204—143.
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  - Cobaugh, George D., Stock, and Wishon. 3,401,053.
- Stocklin, Emilio. Remote control valve for heating installations. 3,400,900, 9–10–68, Cl. 251—11.
- Stokes, Richard A. : *See*—
  - Barnes, George H., Bradley, Gluck, Sankin, Shifman, and Stokes. 3,401,376.
- Stoltz, John P. Adjustable support device for modelmaking. 3,400,926, 9–10–68, Cl. 269—309.
- Strange, John, to Tinnerman Products, Inc. Sheet metal fastener with resilient arms. 3,400,743, 9–10–68, Cl. 151—41.73.
- Strauss, Walter L. Cap shooting airplane. 3,400,486, 9–10–68, Cl. 46—176.
- Stringer, Loren F., to Westinghouse Electric Corp. Speed regulating system providing slowdown control for a motor having a unidirectional converter armature supply. 3,401,325, 9–10–68, Cl. 318—302.
- Strnad, John G., to Education Research Council of Greater Cleveland. Mathematics teaching device. 3,400,472, 9–10–68, Cl. 35—31.
- Strohmeier, Harald, and B. Hebenstreit, to Gebr. Bohler & Co., Aktiengesellschaft. Apparatus for feeding similar articles. 3,400,858, 9–10–68, Cl. 221—225.
- Strzelewicz, William B., Jr., to Whitin Machine Works. Comber nipper feed system. 3,400,431, 9–10–68, Cl. 19—225.
- Stuiber, Walter, to Grundig Elektro-Mechanische Versuchsanstalt Inh. Max Grundig. High speed type action. 3,400,799, 9–10–68, Cl. 197—17.
- Sturm, Rolland G. : *See*—
  - Coon, John M., and Sturm. 3,400,661.
- Stute, Carlton F., to Admiral Corp. Cabinet support member. 3,400,847, 9–10–68, Cl. 217—69.
- Sullivan, Herbert D., to International Harvester Co. Hydraulic tubing conector with vibration damping means. 3,400,953, 9–10–68, Cl. 285—50.
- Sullivan, John J. Tailor's trouser length and trouser cuff marker. 3,400,460, 9–10–68, Cl. 33—2.
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- Sumi, Masao, to Nippon Telegraph and Telephone Public Corp. Microwave semiconductor amplifier. 3,401,347, 9–10–68, Cl. 330—5.
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  - Martin, Elmer E., Brandon, Summers, and Zagorski. 3,401,281.
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  - Kraiman, Eugene, and Austin. 3,401,203.
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  - Erikson, Carl F. 3,400,987.
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  - Robinson, Keith D., Gursky, and Suter. 3,400,741.
- Sutton and Sons Ltd. : *See*—
  - Collins, Douglas. 3,400,860.
- Suzuki, Yoshihisa, to Hitachi, Ltd. Periodic permanent magnet focusing system for electron discharge devices. 3,401,295 9–10–68, Cl. 313—84.
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  - Tegholm, Ruben V. 3,401,399.
- Svensson, Ernst S. L. : *See*—
  - Klingofstrom, Svante, and Svensson. 3,400,523.

- Svensson, Nils V., to Gotaverken, Aktiebolaget. Workshop. 3,400,832, 9–10–68, Cl. 212—1.
- Swaine, Derik, and R. C. Wheeler, to Sylvania Electric Products Inc. Adjustable focus voltage control circuit. 3,401,301, 9–10–68, Cl. 315—31.
- Swart, Gilbert H., to The General Tire and Rubber Co. Rubber base composite propellant and method of use. 3,400,539, 9–10–68, Cl. 60—219.
- Sweetana, Andrew S., Jr. : *See*—
  - Rosa, John, Bryant, and Sweetana. 3,401,272.
- Swenson, Oscar W., to The Western Union Telegraph Co. Reusable inking cartridge. 3,400,801, 9–10–68, Cl. 197—171.
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  - Dennis, David D., P. F. Swenson, and P. F. Swenson, Jr. 3,400,554.
- Swenson, Paul F., Jr. : *See*—
  - Dennis, David D., P. F. Swenson, and P. F. Swenson, Jr. 3,400,554.
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- Swenson, Robert L., and J. L. Clark, to General Rubber Corp. Expansion joint assembly. 3,400,952, 9–10–68, Cl. 285—47.
- Swimquip, Inc. : *See*—
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- Sydoriak, Alexander. Portable boat. 3,400,685, 9–10–68, Cl. 115—24.
- Sylvania Electric Products Inc. : *See*—
  - Heida, Robert W., and La Point. 3,400,448.
  - Hughes, Richard J. 3,401,353.
  - Kluever, Harold C., and MacDavid. 3,401,339.
  - Lueck, Arthur M. 3,400,687.
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- Szabo, Karoly, and D. J. Broadbent, to Stauffer Chemical Co. Methods of killing pests selected from the group consisting of mites and insects with phosphonothioates. 3,401,220, 9–10–68, Cl. 424—211.
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  - French, Park, and Venaleck. 3,401,285.
  - French, Park, and Venaleck. 3,401,287.
  - Landers, Richard R. 3,401,271.
  - Macklin, Martin R. 3,401,100.
- Tabet, Michael A. Composite cover for photoelectric control unit and method for making same. 3,401,269, 9–10–68, Cl. 250—239.
- Tabet, Michael A. Composite cover for a light control unit. 3,401,270, 9–10–68, Cl. 250—239.
- Takayanagi, Kenjiro, to Victor Company of Japan, Ltd. Simultaneous recording of two signals per channel. 3,401,237, 9–10–68, Cl. 179—100.4.
- Takeda Chemical Industries, Ltd. : *See*—
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  - Tanabe, Hideo. 3,401,223.
- Takenouchi, Morio. Faucet camouflage. 3,401,074, 9–10–68, Cl. 161—7.
- Tanabe, Hideo, to Takeda Chemical Industries, Ltd. Method of relieving gastric acidity. 3,401,223, 9–10–68, Cl. 424—317.
- Tanaka, Shigezo, and K. Chiba, to Nippon Electric Co. Ltd. Semiconductor device utilizing an AuAl₂ layer as a diffusion barrier that prevents "purple plague." 3,401,316, 9–10–68, Cl. 317—234.
- Tarjan, Gusztav, to Simonacco Ltd. Froth flotation. 3,400,818, 9–10–68, Cl. 209—170.
- Taylor, Katherine M. : *See*—
  - Taylor, Paul E., and Bookout. 3,400,610.
- Taylor, Max W. Catamaran for underwater exploration. 3,400,680, 9–10–68, Cl. 114—16.
- Taylor, Paul E. (deceased) by K. M. Taylor, and C. C. Bookout, to Ford Motor Co. Locking differential gear. 3,400,610, 9–10–68, Cl. 74—710.5.
- Tedeschi, Alfred A. : *See*—
  - Trementozzi, Quirino A., and Tedeschi. 3,401,213.
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  - Frederick, Eugene G., and Meredith. 3,401,042.
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- Temple, Henry B. Fishhook bait holder. 3,400,483, 9–10–68, Cl. 43—44.6.
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- Tenneco Chemicals, Inc. : *See*—
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- Tepel, Gert : *See*—
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- Terry, Samuel M., to Hoover Ball and Bearing Co. Polyurethane foam product and method of making same. 3,401,128, 9–10–68, Cl. 260—2.5.
- Tessmer, Fred. Combustion chamber pistons. 3,400,701, 9–10–68, Cl. 123—193.
- Thakar, David H., and G. A. Nagel, to Wabash Smelting, Inc. Ladle and cover. 3,400,859, 9–10–68, Cl. 222—183.
- Therachemie Chemisch therapuitische Gesellschaft m.b.H. : *See*—
  - Boosen, Karl-Josef, and Reese. 3,401,003.
- Thoma, Wilhelm : *See*—
  - Wieden, Horst, Thoma, Oertel, Rellensman, and Nischk. 3,401,151.
- Thompson, Andy L. Belt-type automatic bunk feeder. 3,400,805, 9–10–68, Cl. 198—56.
- Thompson, Earl A., to Earl A. Thompson Mfg. Co. Valve train. 3,400,696, 9–10–68, Cl. 123—90.
- Thompson, Earl A., Mfg. Co. : *See*—
  - Thompson, Earl A. 3,400,696.
- Thompson, Fred E., to Western Electric Co., Inc. Coupled-line apparatus for measuring the thickness of thin films. 3,401,333, 9–10–68, Cl. 324—58.5.
- Thompson, Walter W. Suspended ceiling of removable panels. 3,400,506, 9–10–68, Cl. 52—484.
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  - Fleischer, Svend S. C., Thomsen, Hofmann, and Rossborg. 3,400,738.
- Thornton, Richard C. Vibrating game board having player guide means. 3,400,931, 9–10–68, Cl. 273—94.
- Thorpe, Merle L., and K. W. Harrington, to Humphreys Corp. Induction plasma generator including cooling means, gas flow means, and operating means therefor. 3,401,302, 9–10–68, Cl. 315—111.
- Thourson, Thomas L., to Borg-Warner Corp. Electrostatic duplicator for reproducing an image from electrical charge retaining ink particles fixed in place. 3,400,656, 9–10–68, Cl. 101—1.
- Thrasher, Shannon O. Muffler with tangential exhaust intake and porous ends. 3,400,784, 9–10–68, Cl. 181—40.
- Tilesi, Silvano. Injection molds for manufacturing thermoplastic lamp sockets. 3,400,453, 9–10–68, Cl. 29—592.
- Tiller, William A., and W. C. Johnston, to Westinghouse Electric Corp. Apparatus of zone refining and controlling solute segregation in solidifying melts by electromagnetic means. 3,401,021, 9–10–68, Cl. 23—273.
- Tinnerman Products, Inc. : *See*—
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- Tiraspolsky, Wladimir, G. Baron, and A. Castela, to Institut Francais du Petrole des Carburants et Lubrifiants. Reaming tools for wells bored in the ground. 3,400,778, 9–10–68, Cl. 175—107.
- Titan Abrasives Co. : *See*—
  - Shoemaker, Frank O. 3,400,497.
- Tobias, Philip E. Photocomposition corrector. 3,400,925, 9–10–68, Cl. 269—293.
- Toler, James R. : *See*—
  - Papin, Franklin E., Toler, and Cotton. 3,400,471.
- Toman, Donald J., to General Precision Systems, Inc. Tactical landing approach radio system. 3,401,389, 9–10–68, Cl. 343—108.
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- Torrington Co., The : *See*—
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- Toth, Richard H., to The Standard Products Co. Polyurethane with acetylene black as thixotropic agents. 3,401,141, 9–10–68, Cl. 260—37.
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- Totten, Ralph P., to Jim Robbins Seat Belt Co. Safety belt container. 3,400,978, 9–10–68, Cl. 297—389.
- Townley, Ray . : *See*—
  - Corbin, Joseph E., Helfrich, Heller, Nocodemus, Smith, Spencer, and Townley. 3,401,235.
- Toyama, Teruhiko : *See*—
  - Inoue, Takayuki, Kato, Fujita, Kiyohisa, Toyama, and Yoshimoto. 3,401,031.
- Tramposch, Herbert, to Pitney-Bowes, Inc. Fluid pump. 3,400,883, 9–10–68, Cl. 230—118.
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- Tri-Bro Tool Co., Inc. : *See*—
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- U.S. Baird Corp., The: *See*—
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  - Berthold, Robert V., and Herrett. 3,401,030.
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- Upton, Chester W., Jr., C. C. Patterson, and F. L. Cameron, to Westinghouse Electric Corp. Circuit interrupter of the dual bore type. 3,401,247, 9–10–68, Cl. 337—221.
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- Wilkes, John G., to The General Electric Co. Ltd. Formation of coatings on germanium bodies. 3,401,056, 9–10–68, Cl. 117—212.
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Yud, Frank, Jr.: *See*—
Weimer, Ralph E., Fallis, and Yud. 3,400,824.

Yulkowski, Leon. Method of manufacture of lever handle. 3,400,446, 9–10–68, Cl. 29—463.

Zabriskie, Clarence J.: *See*—
Frarey, John L., Handjani, and Zabriskie. 3,400,578.

Zagorski, Wladyslaw S.: *See*—
Martin, Elmer E., Brandon, Summers, and Zagorski. 3,401,281.

Zagorski, Wladyslaw S., to General Electric Co. Electric motor with permanent magnet stator poles and method of making. 3,401,282, 9–10–68, Cl. 310—42.

Zanow, Andrey L., to Midland-Ross Corp. Draft rigging with crosshead. 3,400,834, 9–10–68, Cl. 213—64.

Zaruba, Karl, to General Motors Corp. Internal combustion engine and cylinder block. 3,400,695, 9–10–68, Cl. 123—41.82.

Zeelen, Filippus J.: *See*—
De Jongh, Hendrik P., and Zeelen. 3,401,210.

Zeissig, Alexander, to Merck & Co., Inc. Moraxella bovis infectious bovine keratoconjunctivitis steam-killed bacterin. 3,401,219, 9–10–68, Cl. 424—92.

Zellweger Ltd.: *See*—
Altenweger, Alois. 3,400,424.

Zenzefilis, George E., to Computer Accessories Corp. Card selection and extraction means. 3,400,721, 9–10–68, Cl. 129—16.1.

Ziherl, Frank A., to Parker-Hannifin Corp. Liquid and chip separator. 3,400,827, 9–10–68, Cl. 210—377.

Zimmerman, Ray G.: *See*—
Wessling, Ritchie A., and Zimmerman. 3,401,152.

Zimmerman, Robert L., and D. M. Pickelman, to The Dow Chemical Co. Polymerization process for preparing homogenous vinylidene aromatic-maleic compounds copolymers. 3,401,153, 9–10–68, Cl. 260—78.5.

Zink, Walter, to Kimberly-Clark Corp. Papermaking machine for making corrugated paper. 3,401,077, 9–10–68, Cl. 162—117.

Zoja, Giorgio, to Giorgio Zoja Laboratorio Chimico Farmaceutico S.p.A. Process for the resolution of stereoisomers from racemic 1-hydroxy-2-amine butane. 3,401,194, 9–10–68, Cl. 260—501.1.

Zook, Alphio A.: *See*—
Miller, Marhall B., Fitzwater, and Zook. 3,400,725.

Zuppiger, Paul: *See*—
Bouladon, Gabriel, and Zuppiger. 3,400,665.

Zwicky, Alfred J.: *See*—
Wagner, Hans O., and Zwicky. 3,400,619.

CLASSIFICATION OF PATENTS

ISSUED SEPTEMBER 10, 1968

NOTE.—First number, class; second number, subclass; third number, patent number

2–	6	3,400,406
		3,400,407
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PATENTS

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Design Patents

6 : 212,183
212,191
212,201
9 : 212,196

17 : 212,195
24 : 212,202
25 : 212,198
212,199

25 : 212,200
26 : 212,186
212,188
212,192

34 : 212,187
36 : 212,203
212,204

40 : 212,184
212,190
212,194

42 : 212,185
212,193
51 : 212,197

Plant Patents

6 : 2,831

6 : 2,832

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

September 10, 1968 Volume 854 Number 2

TRADEMARKS

NOTICES

Service by Publication

A petition to cancel each of the registrations identified below having been filed, and the notice of such proceedings sent by registered mail to each registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrants listed herein, their assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancelation will be proceeded with as in the case of default.

National Sewing Machine Company, Belvidere, Ill., Reg. No. 543,434, Canc. No. 9189.

National Sewing Machine Company, Belvidere, Ill., Reg. No. 543,435, Canc. No. 9190.

National Sewing Machine Company, Belvidere, Ill., Reg. No. 546,662, Canc. No. 9191.

EDWIN L. REYNOLDS,
First Assistant Commissioner of Patents.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 22,406 (COCA-COLA), The Coca Cola Company, Tonic, syrup or beverage; **Reg. No. 47,189**, same, Non-alcoholic maltless beverages and the syrups for making such beverages; **Reg. No. 238,145**, same, Beverages and syrups for the manufacture of such beverages; **Reg. No. 238,146**, same; **Reg. No. 415,755** (COKE), same, Nonalcoholic maltless beverages and the syrups for making such beverages, **filed** June 20, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1026–JWC, *The Coca-Cola Company* v. *Lo Sha, Inc.*

Reg. No. 40,619 (PEPSI-COLA), Pepsi-Cola Company, Flavoring syrup for soda water; **Reg. No. 55,199**, same, PepsiCo, Inc., Tonic beverage; **Reg. No. 349,886**, same, Pepsi-Cola Company, Beverages and syrups for the manufacture of such beverages; **Reg. No. 349,965** (PEPSI-COLA AND DESIGN), same; **Reg. No. 350,201** (PEPSI-COLA), same, Bottle closures, particularly crowns; **Reg. No. 356,723**, same, Wooden receptacles and cases and racks for bottles, which cases and racks are sold in trade empty; **Reg. No. 369,426**, same, Beverage coolers sold in trade empty; **Reg. No. 824,151**, same, PepsiCo, Inc., Soft drinks and syrups and concentrates for the preparation thereof; **Reg. No. 111,506** (PEPSI), The Pepsi-Cola Co., Flavoring syrup for soda water; **Reg. No. 824,150**, same, PepsiCo, Inc., same; **Reg. No. 51,950** (PEP-KOLA), PepsiCo, Inc., Non-alcoholic tonic beverages; **Reg. No. 824,153** (MISCELLANEOUS DESIGN), same, Soft drinks, **filed** June 13, 1968, D.C., S.D. Mich. (Detroit), Doc. 31364, *PepsiCo, Inc.* v. *Red Arrow Bottling, Inc., National Beverage Marketing, Inc.*

Reg. No. 47,189. (See Reg. No. 22,406.)

Reg. No. 51,950. (See Reg. No. 40,619.)

Reg. No. 55,199. (See Reg. No. 40,619.)

Reg. No. 111,506. (See Reg. No. 40,619.)

Reg. No. 238,145. (See Reg. No. 22,406.)

Reg. No. 238,146. (See Reg. No. 22,406.)

CONDITION OF TRADEMARK APPLICATIONS AS OF JULY 31, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]............ 15,049
Date of oldest new application............ June 9, 1967
Date of oldest amended application (filing date)............ June 15, 1964

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	9–7–67	4–21–66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	11–1–67	5–16–66
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	10–27–67	6–15–64
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	6–9–67	3–14–66
Renewals (All Classes)	7–1–68	....
Sec. 12(c) Publications (All Classes)	7–1–68	....

Applications filed during the month of July 1968—2,564

Registrations Issued .... 527—No. 856,276 to No. 856,802
Renewals Issued 100

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

Reg. No. 327,217 (ALADDIN), Aladdin Industries, Inc., Electric illuminating lamps; **Reg. No. 375,931** (ALADDINITE), same, Magnetic powder and cores for use with inductive windings for radio and allied purposes; **Reg. No. 519,062** ("ALADDIN"), same, Electric lamp fixtures, particularly floor lamps, table lamps and bracket or pin-up lamps; **Reg. No. 512,843**, same, Aladdin Radio Industries, Incorporated, Radio receiving sets and parts thereof; transformers, coils, and magnetic coils and coil materials; **Reg. No. 522,989**, same, Aladdin Industries, Inc., Electric illuminating lamps; **Reg. No. 522,990**, same, filed Mar. 15, 1967, D.C., E.D. Mich. (Detroit), Doc. 29699, *Aladdin Industries, Inc.* v. *Edmond C. Houle, doing business as Aladin Kits Company*. Consent order for permanent injunction, May 8, 1968.

Reg. No. 349,886. (See Reg. No. 40,619.)

Reg. No. 349,985. (See Reg. No. 40,619.)

Reg. No. 350,201. (See Reg. No. 40,619.)

Reg. No. 356,723. (See Reg. No. 40,619.)

Reg. No. 360,426. (See Reg. No. 40,619.)

Reg. No. 375,091 (LYDIAN), American Type Founders Co., Inc., Printer's type; **Reg. No. 638,952** (MURRY HILL), same; **Reg. No. 703,662** (CRAW CLARENDON), same, Type faces; **Reg. No. 795,453** (CENTURY NOVA), same, filed June 17, 1968, D.C., S.D.N.Y., Doc. 68–C–2460, *American Type Founders Co., Inc.* v. *Prestype Inc.*

Reg. No. 375,931. (See Reg. No. 327,217.)

Reg. No. 415,755. (See Reg. No. 22,406.)

Reg. No. 519,062. (See Reg. No. 327,217.)

Reg. No. 521,843. (See Reg. No. 327,217.)

Reg. No. 522,989. (See Reg. No. 327,217.)

Reg. No. 522,990. (See Reg. No. 327,217.)

Reg. No. 524,505 (SCRABBLE), The Production and Marketing Corporation, Game including board and playing pieces; **Reg. No. 589,217**, same, Scoring devices and turn-tables used in playing of games and board games; **Reg. No. 617,871**, same, Production and Marketing Company, Score pads, filed June 18, 1968, D.C., E.D.N.Y. (Brooklyn), Doc. 68–C–597, *Production and Marketing Company* v. *E. S. Lowe Co., Inc.*

Reg. No. 589,217. (See Reg. No. 524,505.)

Reg. No. 602,054 (PERMA-WALL), The Logan Long Company, Insulated siding, for the outer weather-proof surfacing, of sidewalls of buildings and the like, filed June 21, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1161, *The Logan-Long Company* v. *Perma Wall Inc., David H. Kaplan and Victor Marsden.*

Reg. No. 617,871. (See Reg. No. 524,505.)

Reg. No. 638,952. (See Reg. No. 375,091.)

Reg. No. 642,237 (PENTRITOL), The Evron Company, Inc., Medical preparation for the treatment of angina pectoris, filed June 19, 1968, D.C., E.D. Mich. (Detroit), Doc. 31386, *Armour Pharmaceutical Company* v. *North American Pharmacal, Inc.*

Reg. No. 703,662. (See Reg. No. 375,091.)

Reg. No. 784,934 (JADE EAST), Swank, Inc., Cologne, after-shave lotion and deodorant, filed June 20, 1968, D.C., S.D.N.Y., Doc. 68–C–2516, *Swank, Inc.* v. *Almar Sales Co., Inc.*

Reg. No. 795,453. (See Reg. No. 375,091.)

Reg. No. 815,097 (PUNCH), Colgate-Palmolive Company, Laundry detergent, filed June 6, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1042, *Colgate-Palmolive Company* v. *Sanford Chemical Co., Inc.* On stipulation of the parties, consent judgment, June 14, 1968.

Reg. No. 824,150. (See Reg. No. 40,619.)

Reg. No. 824,151. (See Reg. No. 40,619.)

Reg. No. 824,153. (See Reg. No. 40,619.)

Reg. No. 826,713 (RIVER JACKS), Joseph Busik, Jr., doing business as Delaware Quarries, Natural stone cut or selected to various sizes and shapes, for decorative use in the construction of stone masonry and landscaping, filed June 14, 1968, D.C.N.J. (Trenton), Doc. 607–68, *Joseph Busik, Jr., doing business as Delaware Quarries* v. *Harold W. Lindblad and Raymond G. Lindblad.*

Reg. No. 839,728 (SPINRITE), Pedigo Pork Rind Company, Inc., Fish bait and fish lures, filed June 3, 1968, D.C., W.D. Mo. (Springfield), Doc. 2417, *Pedigo Pork Rind Co., Inc.* v. *Blakemore Bug Co.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 264,438. Nevco Wood Products Co., Inc., Yonkers, N.Y. Filed Feb. 10, 1967.

nevco

Owner of Reg. No. 695,416.

Class 2—Receptacles

For Wood and Plastic Products—Namely, Holders, Boxes, Snack Bowls, Salad Sets, Shoeshine and Sewing Boxes, Sold Empty in the Trade, Planters, Salt and Pepper Sets, Egg Caddies and Cup Sets, and Coasters (Int. Cls. 21 and 26).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Kitchen, Cooking and Eating Utensils, Such as Cooking Baskets and Strainers; and Bar Accessories, Such as Ice Crushers, Spoons, Forks, Strainers, Bottle and Can Openers, and Pourers (Int. Cls. 8 and 21).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Knives, Forks, Spoons, Files, Carving Boards, Kitchen Spades, Steak Knives, Kitchen Saws, Slicers, Carving Sets, Meat Cleavers, Salad Scissors, Choppers and Slicers for Cheeses, Butter, Fruits and Other Foods, Pizza and Pie Cutters, Kitchen Scissors, Poultry Shears, Peelers and Corers; Mixing Spoons, Spatulas, Salad Fork and Spoon Sets, Meat Presses, Tongs, Foodboards, Scoops, Meat Tenderizers, Egg Slicers, Graters, Peelers, Can Openers, Jiggers, Cork-Screws, Ice Picks, Ice Tongs, and Lemon Squeezers (Int. Cl. 8).

Class 32—Furniture and Upholstery

For Bar Stools, Chairs, Tables, Racks, Shelves, Hat Stands, Training Chairs and Training Seats for Children, Drawers, Drying Racks for Clothes, Tie Racks, Valets, Step Stools, Benches, and Serving Wagons (Int. Cl. 20).

First use July 1, 1955.

SN 264,776. Allied Supermarkets, Inc., Detroit, Mich. Filed Feb. 16, 1967.

CAMELOT

Class 45—Soft Drinks and Carbonated Waters

For Root Beer (Int. Cl. 32).
First use Dec. 27, 1966.

Class 46—Foods and Ingredients of Foods

For Candied Dill Strips, Frozen Cod Fish, Peanut Butter, Dark Fudge Cake Mix, Sugar, Canned Cling Peaches, Tomato Soup, Evaporated Milk, Canned Tomato Juice, Vegetable Shortening, Strained Custard Baby Food, Instant Coffee, Gelatin, Dessert Powders, Mustard, Lima Beans (Canned), Mayonnaise, Saltines, Flour, Frozen Baby Limas, Cheese, Dinner Rolls, and Frozen Orange Juice (Int. Cls. 5, 29, 30, and 32).
First use Nov. 25, 1966.

SN 280,835. Garlock Inc., Palmyra, N.Y. Filed Sept. 21, 1967.

GYLON

Class 1—Raw or Partly Prepared Materials

For Fluorocarbon Plastic Material, With or Without Fillers, for Use in the Industrial Arts (Int. Cl. 1).
First use Nov. 12, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Clutch Discs and Thrust Washers for Bearings (Int. Cl. 7).
First use Oct. 3, 1966.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Gaskets, Valve Discs, Diaphragm Materials, Seals and Other Mechanical Packing Devices; Friction Materials, and Brake Linings (Int. Cls. 7 and 17).
First use Mar. 31, 1967.

SN 281,499. Sonotone Corporation, Elmsford, N.Y. Filed Sept. 29, 1967.

SONO-CERAMIC

Class 21—Electrical Apparatus, Machines, and Supplies

For Mechano-Electric Energy Transducers—Namely, Microphones (Int. Cl. 9).

Class 44—Dental, Medical, and Surgical Appliances

For Hearing Aids and Parts Therefor (Int. Cl. 10).

First use August 1967.

SN 282,204. Patco Products, Inc., Moonachie, N.J. Filed Oct. 10, 1967.

TRIPLE-CHEK

Owner of Reg. No. 736,220.

Class 6—Chemicals and Chemical Compositions

For Insecticide and Herbicide or Pre-Emergence Crabgrass Killer (Int. Cl. 5).

Class 10—Fertilizers

For Lawn Fertilizer (Int. Cl. 1).

First use May 5, 1966.

SN 283,298. Fedders Corporation, Edison, N.J. Filed Oct. 23, 1967.

FEDDERS

Owner of Reg. Nos. 517,896, 532,334, and 662,581.

Class 24—Laundry Appliances and Machines

For Clothes Washers and Dryers (Int. Cl. 7).
First use May 1964.

Class 31—Filters and Refrigerators

For Refrigerators and Freezers (Int. Cl. 11).
First use May 1964.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Air Conditioning Equipment—Namely, Heating, Cooling, Humidifying, and Dehumidifying Units for Home, Commercial, and Industrial Use (Int. Cl. 11).
First use March 1933.

SECTION 2

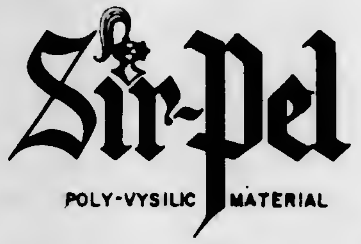
The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 268,489. Georgia-Bonded Fibers, Inc., Newark, N.J. Filed Apr. 6, 1967.



No claim is made to the wording "Poly-Vysilic Material," apart from the mark, without waiving any common law rights therein.

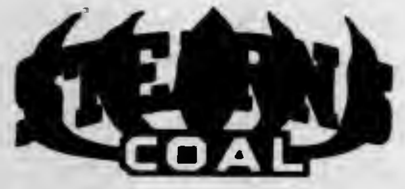
For Vinyl Material in Sheets and Rolls for Use as Upholstery, Shoe Component Materials, Luggage, and Belts (Int. Cl. 17).
First use Oct. 31, 1966.

SN 277,175. Hystron Fibers Incorporated, New York, N.Y. Filed July 31, 1967.

HYSTRON

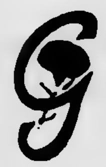
Owner of Reg. No. 601,186.
For Polyester Fibers (Int. Cl. 22).
First use June 30, 1967.

SN 281,324. Stearns Coal & Lumber Company, Inc., Stearns, Ky. Filed Sept. 27, 1967.



Applicant hereby disclaims exclusive right to the use of the word "Coal," apart from the mark as shown, reserving unto itself, however, any and all common law rights which it may possess. Owner of Reg. Nos. 283,055, 283,056, and 283,057.
For Coal (Int. Cl. 4).
First use 1940.

SN 281,981. Gregoire's Flowers, Inc., San Francisco, Calif. Filed Oct. 6, 1967.



Applicant disclaims the representation of a flower apart from the mark as shown.
For Cut Fresh Flowers (Int. Cl. 31).
First use about Apr. 1, 1963.

SN 282,736. Unarco Industries, Inc., Chicago, Ill. Filed Oct. 17, 1967.

UFS-25

For Polyurethane Products in Half-Tubular Form and Slab Form (Int. Cl. 17).
First use Nov. 28, 1966.

SN 299,276. Fashion Tress, Inc., Miami Beach, Fla. Filed May 29, 1968.

SYNTRESS

For Fibers for Artificial Hair (Int. Cl. 22).
First use on or about May 1, 1968.

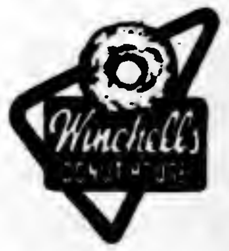
Class 2—Receptacles

SN 272,840. Martin-Marietta Corporation, New York, N.Y. Filed June 1, 1967.

MADISON

For Silos for Silage Storage and Parts and Accessories Therefor, Sold as a Unit (Int. Cl. 19).
First use on or before Sept. 30, 1928.

SN 272,970. Winchell Donut House, Inc., South El Monte, Calif. Filed June 2, 1967.



The term "Donut House" and the pictorial representation of a doughnut are disclaimed apart from the mark as shown.
For Paperboard Boxes and Cartons (Int. Cl. 16).
First use Jan. 12, 1962.

SN 283,726. Southern Graphic Industries, Nashville, Tenn. Filed Oct. 30, 1967.

For Phonograph Record Jackets (Int. Cl. 16).
First use June 16, 1967.

SN 285,164. Terrance L. Weber, d.b.a. Weber & Sons, Freehold, N.J. Filed Nov. 17, 1967.

TYMINDEX

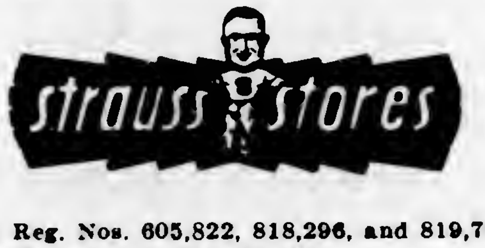
For Combination Shipping Carton and Filing Drawers for Employee Time Cards (Int. Cl. 16).
First use September 1955.

SN 285,470. Sterigard Company, Santa Ana, Calif. Filed Nov. 22, 1967.

STERIGARD

For Pressurized Containers (Int. Cl. 20).
First use May 17, 1966.

SN 291,908. Strauss Stores Corporation, Maspeth, N.Y. Filed Feb. 26, 1968.



Owner of Reg. Nos. 605,822, 818,296, and 819,705.
For Litter Receptacles (Int. Cl. 16).
First use at least February 1963.

SN 293,818. Flex-O-Glass, Inc., d.b.a. Warp Brothers, Chicago, Ill. Filed Mar. 21, 1968.

FLEX-O-BAGS

Owner of Reg. No. 716,484.
For Bags of Plain and Reinforced Plastic and of Various Sizes for Use as Liners for Trash and Garbage Cans, Waste Baskets and the Like; as Leaf and as Garden Waste Bags; and as Containers for Packaging for Sale or Storage of Items of All Kinds (Int. Cls. 20 and 21).
First use Feb. 14, 1968.

SN 296,845. Romuald J. Lafleur, Santa Rosa, Calif. Filed Apr. 29, 1968.

PUNK-RESIST

For Rural Mail Boxes (Int. Cl. 6).
First use Mar. 15, 1968.

SN 297,968. Bristol-Myers Company, New York, N.Y. Filed May 13, 1968.

FORCASTER

For Dispensing Container for Pharmaceutical Preparations (Int. Cl. 20).
First use Mar. 4, 1968.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 280,337. Schlesinger Brothers, Philadelphia, Pa. Filed Sept. 14, 1967.

DUNDEE

For Card Cases, Wallets, Key Cases, Money Clips, Attaché Cases, Brief Cases, and Letter Cases (Int. Cl. 18).
First use June 29, 1967.

SN 281,078. Robert A. Heyman Corp., New York, N.Y. Filed Sept. 25, 1967.

femmefolios

For Attaché Cases, Brief Cases, Overnight Cases, Cosmetic Cases, Ladies' and Girls' Purses, Handbags, and Tote Bags (Int. Cl. 18).
First use July 19, 1967.

SN 281,079. Robert A. Heyman Corp., New York, N.Y. Filed Sept. 25, 1967.

Whimsicases

For Attaché Cases, Brief Cases, Overnight Cases, Cosmetic Cases, Ladies' and Girls' Purses, Handbags, and Tote Bags (Int. Cl. 18).
First use July 19, 1967.

Class 4—Abrasives and Polishing Materials

SN 284,348. Chemical Associates, Inc., Houston, Tex. Filed Nov. 8, 1967.

SWIPE-A-SHINE

Owner of Reg. No. 547,377.
For Shoe Polish (Int. Cl. 3).
First use Mar. 1, 1966.

SN 291,356. Colgate-Palmolive Company, New York, N.Y. Filed Feb. 19, 1968.

AJAX

Owner of Reg. Nos. 799,697, 801,143, and others.
For Impregnated Scouring Pads (Int. Cl. 21).
First use May 11, 1963.

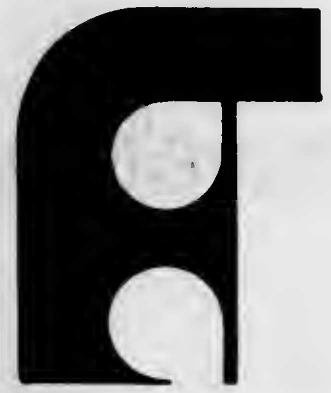
Class 5—Adhesives

SN 270,635. Whittaker Corporation, Los Angeles, Calif. Filed May 3, 1967.

ADHESIVE-PREPREG

For Fiber Glass Matting Impregnated With an Adhesive, Used as a Bonding Material in Lamination, in the Fabrication of Structural Components (Int. Cl. 1).
First use November 1966.

SN 280,407. Findley Adhesives Inc., Milwaukee, Wis. Filed Sept. 15, 1967.



The mark consists of a fanciful representation of the letters "f" and "a."

For Water Base, Hot Melt, Dry Resinous Solvent and Animal Adhesives for Industrial Applications (Int. Cl. 1).

First use May 1, 1967.

SN 281,055. Findley Adhesives Inc., Milwaukee, Wis. Filed Sept. 25, 1967.

FINDLEY

Owner of Reg. No. 569,928.

For Water Base, Hot Melt, Dry Resinous, Solvent and Animal Adhesives for Industrial Applications (Int. Cl. 1).

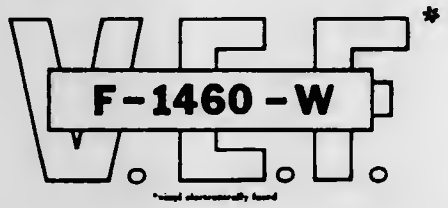
First use May 1, 1967; September 1920 as to "Findley's."

SN 287,952. Rexford Paper Company, Milwaukee, Wis. Filed Jan. 2, 1968.

For Gummed Paper Tape (Int. Cl. 16).

First use 1935.

SN 297,970. L. E. Carpenter & Company, Wharton, N.J. Filed May 13, 1968.



No claim is made to the words "Vinyl Electronically Fused" apart from the mark as shown.

For Paperhangers' Wall Paste (Int. Cl. 1).

First use on or about Apr. 1, 1968.

Class 6—Chemicals and Chemical Compositions

SN 245,352. Takeda Chemical Industries, Ltd., Higashi-ku, Osaka, Japan. Filed May 10, 1966.

VITACOPPER

Priority claimed under Sec. 44(d) on Japanese application filed Feb. 19, 1966; Reg. No. 754,431, dated Sept. 13, 1967. Owner of U.S. Reg. No. 609,434.

For Copper Sulphate Compositions for Fungicidal Use in Agriculture (Int. Cl. 5).

First use Mar. 22, 1966; in commerce Mar. 22, 1966.

SN 254,407. Technic, Inc., Cranston, R.I. Filed Sept. 13, 1966.

COTE D'OR

The mark is translatable in English as "gold coast."

For Gold Plating Solutions (Int. Cl. 1).

First use Aug. 31, 1966.

SN 271,131. Conversion Chemical Corporation, Rockville, Conn. Filed May 10, 1967.

KENBRITE

For Solutions for Electroplating Metal and Addition Agents Therefor—Namely, Electrolyte, Brightener, and Wetting Agent Formulations (Int. Cl. 1).

First use Apr. 20, 1967.

SN 274,216. Kewanee Oil Company, d.b.a. The Harshaw Chemical Company, Cleveland, Ohio. Filed June 19, 1967.

POLARIS

For Copper Electroplating Baths and Chemical Addition Agents for Use in Copper Electroplating Baths (Int. Cl. 1).

First use Apr. 13, 1967.

SN 279,738. Hoover Ball and Bearing Company, Ann Arbor, Mich. Filed Sept. 6, 1967.

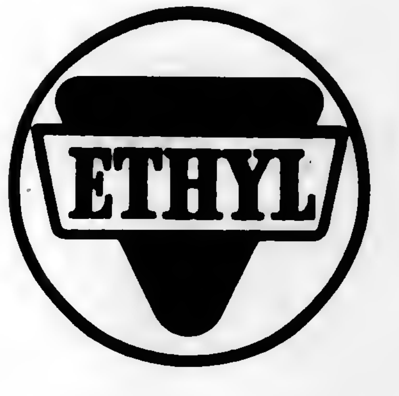
REYN-O-SOL

Owner of Reg. No. 735,130.

For Liquid Plastisols (Int. Cl. 1).

First use Nov. 5, 1953.

SN 280,309. Ethyl Corporation, Richmond, Va. Filed Sept. 14, 1967.



Owner of Reg. Nos. 187,410, 399,427, and others.

For Industrial and Development Chemicals—Namely, Aluminum Alkyls, Alum, Caustic Soda, Chlorinated Hydrocarbons, Hydropolymer Oil, Chlorinated Solvents, Linear Primary Alcohols, Ortho-Alkylated Antioxidants, Ortho-Alkylated Chemicals, Sodium Metallic, Alkyl Nitrates, and Organo-Metallics (Int. Cl. 1).

First use May 22, 1964; Feb. 27, 1925, in a different form.

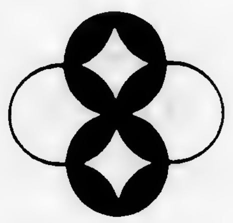
SN 282,063. The Forestal Land, Timber and Railways Company Limited, London, England. Filed Oct. 10, 1967.

FLOCCOTAN

For Flocculating Agents (Int. Cl. 1).

First use Mar. 23, 1961; in commerce May 20, 1965.

SN 283,021. Mercer Alloys Corporation, Los Angeles, Calif. Filed Oct. 20, 1967.



Owner of Reg. No. 833,563.

For Inorganic Chemicals—Namely, Molybdic Oxide, Calcium Molybdate, Nickel Oxide, Cadmium Nitrate, and Cadmium Hydroxide (Int. Cl. 1).

First use May 16, 1966.

SN 285,364. WTC Chemical Corporation, Tucson, Ariz. Filed Nov. 21, 1967.

SCREENDEX

For Test Kit Containing Chemical Compound Used To Determine Whether an Unknown Solid or Liquid Contains a Narcotic, Tranquilizer, Stimulant, or Halucinatory Drug (Int. Cl. 1).

First use on or about Feb. 1, 1967.

SN 285,539. General Motors Corporation, Detroit, Mich. Filed Nov. 24, 1967.

OPTIKLEEN

For Windshield Washer Solvent (Int. Cl. 1).

First use Nov. 5, 1965.

SN 285,728. Continental Oil Company, Ponca City, Okla. Filed Nov. 28, 1967.

CONOCLAD

For Aluminum Diethyl Hydride (Int. Cl. 1).

First use Oct. 25, 1967.

SN 286,315. Armour Agricultural Chemical Company, Chicago, Ill. Filed Dec. 6, 1967.

AMMOSPHERE

For Anhydrous Ammonia (Int. Cl. 1).

First use on or prior to Aug. 30, 1963.

SN 286,338. Geigy Chemical Corporation, Ardsley, N.Y. Filed Dec. 6, 1967.

TINOVETIN

Owner of Reg. Nos. 652,584, 700,749, and others.

For Wetting Agents (Int. Cl. 1).

First use Oct. 26, 1967.

SN 286,516. Engelhard Minerals & Chemicals Corporation, Newark, N.J. Filed Dec. 8, 1967.

SELECTOXO

For Oxidation Catalyst (Int. Cl. 1).

First use Sept. 8, 1967.

SN 286,692. Martens Chemical Corp., Middle Village, N.Y. Filed Dec. 11, 1967.

FLUF-DRI

For Fabric Softener (Int. Cl. 3).

First use February 1959.

SN 286,752. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed Dec. 12, 1967.

RAPITAN

Owner of German Reg. No. 814,344, dated Nov. 5, 1965.

For Tanning Agents Used in Tanning Leather (Int. Cl. 1).

SN 287,058. Geigy Chemical Corporation, Ardsley, N.Y. Filed Dec. 18, 1967.

SUMITOL

Owner of Reg. No. 820,563.

For Chemical Ingredient Used in the Manufacture of Herbicides (Int. Cl. 1).

First use Nov. 20, 1967.

SN 287,537. Geigy Chemical Corporation, Ardsley, N.Y. Filed Dec. 26, 1967.

END-ALL

For Chemical Ingredient Used in the Manufacture of Insecticides (Int. Cl. 1).

First use Dec. 12, 1967.

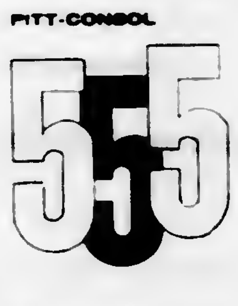
SN 288,022. M & W Manufacturing and Distributing Company, Lovington, N. Mex. Filed Jan. 3, 1968.

STOP IT

For Automobile Radiator and Block Sealer (Int. Cl. 17).

First use July 1, 1967.

SN 288,340. Pitt-Consol Chemical Company, Newark, N.J. Filed Jan. 8, 1968.



Owner of Reg. Nos. 695,505, 781,597, and others.

For Rubber Antioxidant (Int. Cl. 1).

First use Dec. 1, 1965.

SN 288,400. Wyrough and Loser, Inc., Trenton, N.J. Filed Jan. 8, 1968.

NO-DIE-DRAG

For Chemicals Used as Additions to Plastic or Rubber Compositions To Improve Processing in Mechanical Processing Devices (Int. Cl. 1).

First use Dec. 26, 1967.

SN 295,083. Standard Spray and Chemical Company, Lakeland, Fla. Filed Apr. 8, 1968.

FUNGI-SPERSE

For Fungicides and Insecticides (Int. Cl. 5).

First use at least as early as May 7, 1966.

SN 295,892. Smith Kline Instrument Company, Philadelphia, Pa. Filed Apr. 18, 1968.

ESKATAB

For Glucose Diagnostic Reagent for Laboratory Use (Int. Cl. 1).
First use Apr. 2, 1968.

Class 7 — Cordage

SN 299,817. Frank W. Winne & Son Incorporated, Philadelphia, Pa. Filed June 6, 1968.

FIBRILENE

For Fibrillated Polypropylene Rope (Int. Cl. 22).
First use Mar. 27, 1968.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 294,218. Swank, Inc., Attleboro, Mass. Filed Mar. 26, 1968.

GRAND PRIX

Owner of Reg. Nos. 736,006 and 749,612.
For Pyrophoric Lighters (Int. Cl. 34).
First use Feb. 29, 1968.

SN 300,592. Holland Penny Limited, Piccadilly, London, England. Filed June 17, 1968.

MERCHANT SERVICE

For Tobacco Pipes (Int. Cl. 34).
First use 1938; in commerce 1938.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 236,033. SKB Arms Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Jan. 6, 1966.

SKB

For Firearms—Namely, Shotguns, Rifles, Pistols, and Revolvers (Int. Cl. 13).
First use Sept. 3, 1965; in commerce Sept. 3, 1965.

SN 269,707. VEB Ernst-Thälmann-Werk Suhl, Suhl, Thuringia, Germany. Filed Apr. 20, 1967.

GEBRÜDER MERKEL
SUHL

Applicant disclaims exclusive right to use of the word "Suhl" apart from the mark as shown. Owner of U.S. Reg. No. 834,221.
For Shooting Arms, Especially for Hunting and Sports (Int. Cl. 13).
First use the beginning of 1954; in commerce 1955.

Class 10 — Fertilizers

SN 286,544. Metropolitan Waste Conversion Corporation, Wheaton, Ill. Filed Dec. 8, 1967.

ALIVE

For Organic Mulch and Soil Conditioner (Int. Cl. 1).
First use Nov. 14, 1967.

Class 11 — Inks and Inking Materials

SN 282,543. Central Compounding Company, Chicago, Ill. Filed Oct. 16, 1967.

O-33

For Ink Conditioner To Be Used as an Anti-Skinning and Drying Preparation (Int. Cl. 1).
First use Mar. 27, 1940.

SN 289,309. Lawter Chemicals, Inc., Chicago, Ill. Filed Jan. 22, 1968.

AQUA-HYDE

For Printing Ink Vehicle (Int. Cl. 1).
First use Jan. 17, 1968.

SN 293,051. Rohm and Haas Company, Philadelphia, Pa. Filed Mar. 12, 1968.

TUFFAK

Owner of Reg. No. 715,610.
For Colored Inks for Decorating and Painting Synthetic Plastic Film or Sheet (Int. Cl. 2).
First use on or about Jan. 10, 1968.

Class 12 — Construction Materials

SN 266,894. Kenton Industries, d.b.a. Home Equipment Mfg. Company, Stanton, Calif. Filed Mar. 16, 1967.

LUXURY TRIM

Applicant disclaims the word "Trim" apart from the mark as shown.
For Ceramic Tile, and Bathtub and Shower Tile Edging (Int. Cl. 17).
First use Jan. 6, 1967.

SN 267,549. Walter E. Selck and Co., Chicago, Ill. Filed Mar. 24, 1967.

BRITE-EDGE

Owner of Reg. No. 429,085.
For Metallic Mouldings Used To Finish the Edges of Counters, Wall Boards, and the Like, and Metallic Sink Rims (Int. Cl. 6).
First use July 13, 1945.

SN 272,277. Ickes-Braun Glasshouses, Inc., Aptakisic, Ill. Filed May 24, 1967.

IBG

For Glazed Structures—Namely, Greenhouses, Skylights, Housing for Swimming Pools, Conservatories, Solaria, Housings for Exhibit and Display Areas, Botanical Gardens, Laboratories, Atria, Roof Structures, and the Like, and Structural Components Therefor (Int. Cl. 19).
First use June 1, 1964.

SN 277,823. Ditta Mariotti Primo, Rome, Italy. Filed Aug. 8, 1967.

KALEIDO

Priority claimed under Sec. 44(d) on Italian application filed Feb. 28, 1967; Reg. No. 208,591, dated May 23, 1967. The word "Kaleido" is derived from the Italian word "Caleidoscopio" which is the equivalent of the English word "kaleidoscope."
For Marble and Travertine for Use in Construction (Int. Cl. 19).

SN 279,418. Seroc, Inc., San Francisco, Calif. Filed Aug. 30, 1967.

SEROC

For Construction Materials—Namely, Roof and Wall Tiles of Magnesite (Int. Cl. 19).
First use April 1965.

SN 280,069. Paul R. Kubly, d.b.a. Color Putty Co., Monroe, Wis. Filed Sept. 11, 1967.

COLOR PUTTY

No claim is made to the word "Putty" apart from the mark as a whole. Owner of Reg. Nos. 790,853 and 795,007.
For Hole and Crack Filling Material, Similar to Putty, But Colored To Match the Background Wherever It Is Used (Int. Cl. 2).
First use Feb. 15, 1962.

SN 284,430. PPG Industries, Inc., Pittsburgh, Pa., by change of name from Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Nov. 9, 1967.

DUALINER

For Fiber Glass Duct Liners and Insulation (Int. Cl. 17).
First use at least as early as Sept. 22, 1967.

SN 290,057. Simpson Timber Company, Seattle, Wash. Filed Feb. 1, 1968.

SIERRA GROOVE

Applicant disclaims the word "Groove" apart from the mark as shown. Owner of Reg. Nos. 782,670 and 827,754.
For Redwood Paneling (Int. Cl. 19).
First use Nov. 30, 1967.

SN 292,538. Allegheny Plastics, Inc., Coraopolis, Pa. Filed Mar. 6, 1968.

POLYTUBE

For Reinforcing Structures for Plastic Tank Walks, Floors and Covers, Plating Cells and Wire Cleaning Trays (Int. Cl. 19).
First use Dec. 29, 1967.

SN 292,789. Interior Roof Drain Systems, Inc., Lubbock, Tex. Filed Mar. 8, 1968.

cONEx

For Drain Conduits for Multi-Story Buildings (Int. Cl. 19).
First use Feb. 9, 1968.

SN 294,472. Chem-Tex Paint Company, Inc., Northfield, Ill. Filed Mar. 29, 1968.

CHEM-TEX

For Water-Base Plastic Putty for Filling Seams, Cracks, and Joints in Wood (Int. Cl. 2).
First use July 24, 1967.

SN 295,064. U-Form Associates, Oak Park, Mich. Filed Apr. 5, 1968.

U-FORM

For Plastic Building Construction Blocks (Int. Cl. 19).
First use Mar. 12, 1968.

SN 295,579. Williams Products, Inc., Troy, Mich. Filed Apr. 12, 1968.

ARCHCRAFT

For Simulated Beams, Arches, and Decorative Panels for Building Construction (Int. Cl. 19).
First use on or about Dec. 28, 1967.

SN 295,669. Portland Wire and Iron Works, Portland, Oreg. Filed Apr. 15, 1968.

KRIMPLOK

Owner of Reg. No. 663,989.
For Concrete Reinforcements Formed From Wire or Metal Rods (Int. Cl. 6).
First use Feb. 15, 1957.

SN 295,715. Bird & Son, Inc., East Walpole, Mass. Filed Apr. 16, 1968.

JET

For Composition Roofing Shingles (Int. Cl. 19).
First use June 5, 1967.

SN 297,780. M. L. Gordon Sash & Door Company, Minneapolis, Minn. Filed May 9, 1968.

DOR PAK

Owner of Reg. No. 737,670.
For Pre-Assembled Door and Casing Unit (Int. Cl. 19).
First use November 1960.

SN 297,809. Stratford Materials Corporation, North Amityville, N.Y. Filed May 9, 1968.

STRATCELL

For Construction Materials—Namely, Bituminous Fiber Expansion Joint Materials (Int. Cl. 17).
First use Aug. 13, 1965.

SN 298,122. General Plastics Corporation, Bloomfield, N.J. Filed May 14, 1968.

GENPAD

For Structural Bearing Pads (Int. Cl. 19).
First use June 8, 1966.

SN 298,146. Pacific Wood Products Company, Los Angeles, Calif. Filed May 14, 1968.

PENINSULA

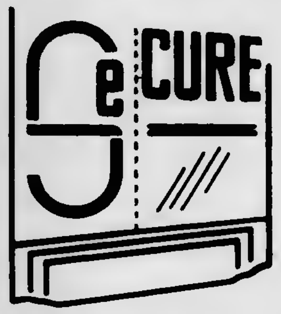
For Plywood Panels (Int. Cl. 19).
First use March 1968.

SN 298,190. Amerock Corporation, Rockford, Ill. Filed May 15, 1968.

SCULPTURED ACCENTS

For Decorative Moldings and Medallions for Panels, Walls, Doors, Furniture, and the Like (Int. Cl. 19).
First use May 2, 1968.

SN 298,460. Life-Time Bathtub Enclosures, Inc., Philadelphia, Pa. Filed May 17, 1968.



For Bathtub Enclosures (Int. Cl. 11).
First use Mar. 15, 1968.

SN 298,679. Allen-Bradley Company, Milwaukee, Wis. Filed May 21, 1968.

TEGA

For Building Products and, in Particular, Ceramic Surfacing Materials for Internal and External Walls, Floors, Patios, Walkways, and the Like (Int. Cl. 19).
First use Apr. 30, 1968.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 251,274. Bemis Manufacturing Company, Sheboygan Falls, Wis. Filed July 29, 1966.

MAYFAIR

For Toilet Seats (Int. Cl. 11).
First use Jan. 1, 1957.

SN 260,683. Republic Steel Corporation, Cleveland, Ohio. Filed Dec. 13, 1966.

CSR

For Stretch-Reduced, Butt-Weld Pipe (Int. Cl. 6).
First use Sept. 15, 1966.

SN 271,427. Anaconda Aluminum Company, Louisville, Ky. Filed May 15, 1967.

WONDERFOIL

Owner of Reg. No. 604,114.
For Rigid Aluminum Foil Containers (Int. Cl. 6).
First use Feb. 13, 1967.

SN 278,519. National Fittings Company of New York, Inc., Wyandanch, N.Y. Filed Aug. 17, 1967.

NAFCO

For Pipe Fittings and Pipe Nipples (Int. Cl. 6).
First use 1915.

SN 281,730. Texpak, Inc., New York, N.Y. Filed Oct. 3, 1967.

Pro

For Plastic Clips or Fasteners, for Use in Holding Fabrics Together or for Attaching Tags or Markers to Same (Int. Cl. 26).
First use Sept. 18, 1967.

SN 282,643. Vistron Corporation, Cleveland, Ohio. Filed Oct. 16, 1967.

TWIN-TEX

For Plastic Pipe (Int. Cl. 17).
First use prior to Nov. 8, 1955.

SN 286,858. United Shoe Machinery Corporation, Boston, Mass. Filed Dec. 13, 1967.

PARABOLT

For Screw Anchors (Int. Cl. 6).
First use Nov. 10, 1967.

SN 287,131. American Chain & Cable Company, Inc., New York, N.Y. Filed Dec. 18, 1967.

KUPLEX

For Metal Chain and Fittings and Attachments Therefor (Int. Cl. 6).
First use 1956.

SN 287,288. Gammon Technical Products, Inc., Newark, N.J. Filed Dec. 20, 1967.

JET TEST QD

For Quick Disconnect Coupler for Use With Fuel Testing Apparatus (Int. Cl. 6).
First use June 13, 1967.

SN 287,420. Continental Oil Company, Ponca City, Okla. Filed Dec. 22, 1967.

RUFF-COTE

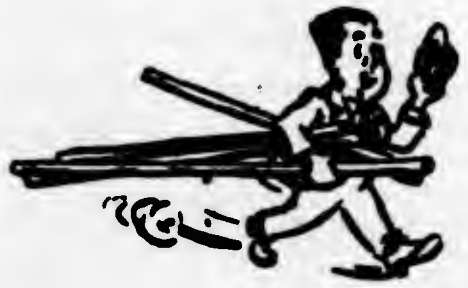
Owner of Reg. No. 815,635.
For Well Casing or Pipe (Int. Cl. 6).
First use May 27, 1967.

SN 287,602. Cenco Instruments Corporation, Chicago, Ill. Filed Dec. 26, 1967.

VRC

For Valves (Int. Cl. 6).
First use December 1961.

SN 288,093. R. J. Gallagher Company, Houston, Tex. Filed Jan. 4, 1968.



For Pipe, Valves, Fittings, and Wire Cloth (Int. Cl. 6).
First use in or before January 1956.

SN 288,393. A. C. Weber International, Inc., Chicago, Ill. Filed Jan. 8, 1968.

LA SCALA

For Finished House Cabinet and Furniture Hardware Comprising Hinges, Door and Drawer Pulls and Knobs, Screws, and Nuts, Brackets, Standards, Door and Wall Plates, and the Like (Int. Cl. 6).
First use Dec. 26, 1967.

SN 288,579. Acheson Manufacturing Company, Braddock, Pa. Filed Jan. 11, 1968.

ACHESON

For Pipe Fittings (Int. Cl. 6).
First use Dec. 27, 1958.

SN 288,851. Price-Pfister Brass Mfg. Co., Pacoima, Calif. Filed Jan. 15, 1968.

MARQUIS

For Bathroom and Kitchen Fittings for Sinks, Lavatories, Showers and Bath Tubs, and Parts Therefor (Int. Cl. 11).
First use Dec. 19, 1967.

SN 289,369. Lewis Weiner Industries, Inc., Long Island City, N.Y. Filed Jan. 2, 1968.

JOY

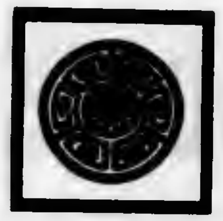
For Slide Fasteners (Int. Cl. 26).
First use Dec. 6, 1967.

SN 294,557. Sands Point Manufacturing Co. Inc., Great Neck, N.Y. Filed Apr. 1, 1968.

NATURAL

For Faucets Having a Special Finish (Int. Cl. 11).
First use on or about Oct. 5, 1967.

SN 294,707. David Kamenstein Inc., New York, N.Y. Filed Apr. 2, 1968.



For Pots and Pans Made From Enamelled Copper and Steel, Tea Kettles, Teapots, Pots With Spouts, Expresso Coffee Makers, Frying Pans, Sauce Pots, and Casseroles (Int. Cl. 21).
Firt use Oct. 31, 1967.

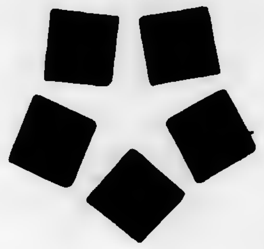
Class 14 — Metals and Metal Castings and Forgings

SN 292,731. Univertical Corporation, Detroit, Mich. Filed Mar. 7, 1968.

CU-BRITE

For Copper Alloy Anodes for Use in Copper Plating (Int. Cl. 9).
First use Oct. 25, 1967.

SN 299,812. Koninklijke Nederlandsche Hoogovens en Staalfabrieken N.V., IJmuiden, Velzen, Netherlands. Filed June 6, 1968.



Owner of Dutch Reg. No. 160,573, dated Aug. 2, 1966.
For Unwrought and Partly Wrought Base Metals and Their Alloys (Int. Cl. 6).
First use at least as early as Jan. 1, 1964; in commerce at least as early as Jan. 1, 1964.

SN 300,397. Foote Mineral Co., Exton, Pa. Filed June 14, 1968.

SOLVAN

For Ferrovanadium Alloy Used in the Production of Alloy and Carbon Steels (Int. Cl. 6).
First use May 31, 1968.

Class 16 — Protective and Decorative Coatings

SN 266,526. Finnaren and Haley, Incorporated, Philadelphia, Pa. Filed Mar. 13, 1967.

VELVASURF

For Interior Wall Paint (Int. Cl. 2).
First use at least as early as Sept. 9, 1960.

SN 266,605. United Paint Mfg. Co., Spokane, Wash. Filed Mar. 13, 1967.

RubberStone

For Synthetic Rubber Concrete Paint (Int. Cl. 2).
First use Feb. 1, 1951.

SN 280,014. Carboline Company, St. Louis, Mo. Filed Sept. 11, 1967.

CARBO ZINC

Applicant makes no claim to the word "Zinc" apart from the mark as shown.
For Surface Protecting Zinc Rich Coatings (Int. Cl. 2).
First use 1959.

SN 287,073. Kelley Technical Coatings, Inc., Louisville, Ky. Filed Dec. 18, 1967.

Poxolon

For Swimming Pool Coatings (Int. Cl. 2).
First use Oct. 21, 1960.

SN 297,336. Mattel, Inc., Hawthorne, Calif. Filed May 6, 1968.

SPECTRAFLAME

For Paint and Decorative Coatings for Toy Miniature Automobiles (Int. Cl. 2).
First use Feb. 20, 1968.

SN 299,521. Hempel's Marine Paints, Inc., New York, N.Y. Filed May 28, 1968.

HEMPADUR

For Paint (Int. Cl. 2).
First use on or about Jan. 10, 1960.

SN 299,522. Hempel's Marine Paints, Inc., New York, N.Y. Filed May 28, 1968.

HEMPANYL

For Paint (Int. Cl. 2).
First use on or about Jan. 10, 1960.

SN 299,523. Hempel's Marine Paints, Inc., New York, N.Y. Filed May 28, 1968.

HEMPATONE

For Paint (Int. Cl. 2).
First use on or about Jan. 10, 1960.

SN 299,524. Hempel's Marine Paints, Inc., New York, N.Y. Filed May 28, 1968.

HEMPINOL

For Paint (Int. Cl. 2).
First use on or about Jan. 10, 1960.

Class 17—Tobacco Products

SN 266,014. Douwe Egberts Koninklijke Tabaksfabriek-Koffiebranderijen-Theehandel N.V., Slachtedijk, Joure, Netherlands. Filed Mar. 6, 1967.

BREST

Owner of Dutch Reg. No. 154,326, dated Feb. 8, 1965.
For Cigarette Tobacco, Shag Tobacco, Pipe Tobacco, and Chewing Tobacco (Int. Cl. 34).

SN 268,164. DWG Corporation, Lima, Ohio. Filed Apr. 3, 1967.

SUGAR BABY

For Cigars (Int. Cl. 34).
First use Mar. 16, 1967.

SN 268,705. "21" Club Selected Items, Ltd., New York, N.Y. Filed Apr. 10, 1967.

PUNCHEON SELECTION SLENDORES

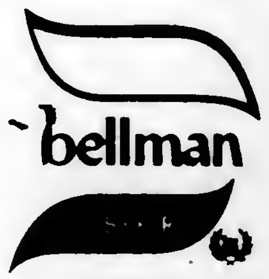
No claim is made to the word "Selection" apart from the mark as shown. Owner of Reg. No. 810,949.
For Cigars (Int. Cl. 34).
First use June 25, 1965.

SN 292,669. Austria Tabakwerke Aktiengesellschaft vorm. Osterreichische Tabakregie, Vienna, Austria. Filed Mar. 7, 1968.

PRINZ EUGEN

Owner of Austrian Reg. No. 51,063, dated Oct. 9, 1963.
For Cigarettes, Cigars, Cigarillos, Cheroots, Chewing Tobacco, Smoking Tobacco, and Snuffing Tobacco (Int. Cl. 34).

SN 292,866. Svenska Tobaks Aktiebolaget, Stockholm, Sweden. Filed Mar. 11, 1968.



"Sefir" is the Swedish equivalent for the English word "zephyr." Owner of Swedish Reg. No. 121,849, dated Dec. 15, 1967.
For Cigars (Int. Cl. 34).

SN 292,867. Svenska Tobaks Aktiebolaget, Stockholm, Sweden. Filed Mar. 11, 1968.

The word "Borkum" refers to a small German island on the Friesian coast and this island has a reef called "Borkum Riff." Owner of Swedish Reg. No. 103,331, dated July 13, 1962.
For Pipe Tobacco (Int. Cl. 34).

SN 292,868. Svenska Tobaks Aktiebolaget, Stockholm, Sweden. Filed Mar. 11, 1968.

JOHN SILVER

The name "John Silver" is that of a fictitious sea pirate. Owner of Swedish Reg. No. 61,193, dated May 17, 1946.
For Cigarettes (Int. Cl. 34).

SN 295,430. A. J. Golden, Inc., York, Pa. Filed Apr. 11, 1968.

BLUE RIBBON

Owner of Reg. No. 527,076.
For Cigars (Int. Cl. 34).
First use August 1909.

SN 298,733. Larus & Brother Company, Richmond, Va. Filed May 21, 1968.

SUBURBIA

For Smoking Tobacco (Int. Cl. 34).
First use May 16, 1968.

SN 298,734. Larus & Brother Company, Richmond, Va. Filed May 21, 1968.

PEBBLE BEACH

For Smoking Tobacco (Int. Cl. 34).
First use May 16, 1968.

SN 299,282. Philip Morris Incorporated, New York, N.Y. Filed May 29, 1968.

TIME

Owner of Reg. No. 321,727.
For Filter Cigarettes (Int. Cl. 34).
First use May 22, 1968.

Class 18—Medicines and Pharmaceutical Preparations

SN 264,227. Peter N. Petrak, d.b.a. "Rel-Eeze" Laboratory, Duarte, Calif. Filed Feb. 8, 1967.

"RĒL-EEZE"

For Massage Preparation for the Relief of Pain Associated With Arthritis and Rheumatic Afflictions (Int. Cl. 5).
First use Apr. 1, 1966.

SN 276,911. Allied Mills, Inc., Chicago, Ill. Filed July 27, 1967.

CALF KRUNCH

Applicant makes no claim to the exclusive use of the word "Calf" alone. Owner of Reg. Nos. 590,391, 818,391, and 818,789.
For Medicated Calf Feed Supplement (Int. Cl. 5).
First use Jan. 5, 1967.

SN 277,143. Calbiochem, Los Angeles, Calif. Filed July 31, 1967.

TRIAZURE

For Drug Used in the Treatment of Proliferating Skin Diseases, as Exemplified by Psoriasis (Int. Cl. 5).
First use June 19, 1967.

SN 277,900. Dunhall Inc., Gravette, Ark. Filed Aug. 9, 1967.

TRIAPRIN

For Analgesic Sedative Intended for Chronic and/or Intense Pain (Int. Cl. 5).
First use June 1, 1967.

SN 278,089. Ciba Limited, Basel, Switzerland. Filed Aug. 11, 1967.

ALMICORTEN

Priority claimed under Sec. 44(d) on Swiss Reg. No. 226,-117, dated June 26, 1967. Owner of U.S. Reg. No. 603,529.
For Cortical Steroid Preparation (Int. Cl. 5).

SN 279,815. Eli Lilly and Company, Indianapolis, Ind. Filed Sept. 7, 1967.

ZONOMUNE

For Influenza Virus Vaccine (Int. Cl. 5).
First use Aug. 23, 1967.

SN 284,287. American Cyanamid Company, Wayne, N.J. Filed Nov. 7, 1967.

GRAVIDOX

Owner of Reg. No. 435,074.
For Preparations Containing Thiamine Hydrochloride and Pyridoxine (Int. Cl. 5).
First use May 23, 1945.

SN 286,629. Bristol-Myers Company, New York, N.Y. Filed Dec. 11, 1967.

DYRACYCLINE

For Antibiotic (Int. Cl. 5).
First use Nov. 10, 1967.

SN 286,637. Bristol-Myers Company, New York, N.Y. Filed Dec. 11, 1967.

ECONOCYCLINE

For Antibiotic (Int. Cl. 5).
First use Nov. 10, 1967.

SN 295,207. Ralston Purina Company, St. Louis, Mo. Filed Apr. 9, 1968.

PUR-VAC

For Bovine Virus Diarrhea Vaccine (Int. Cl. 5).
First use Jan. 16, 1968.

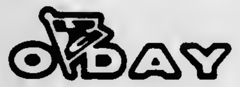
SN 295,208. Ralston Purina Company, St. Louis, Mo. Filed Apr. 9, 1968.

CHEK-R-VAC

For Bovine Rhinotracheitis Vaccine (Int. Cl. 5).
First use Jan. 16, 1968.

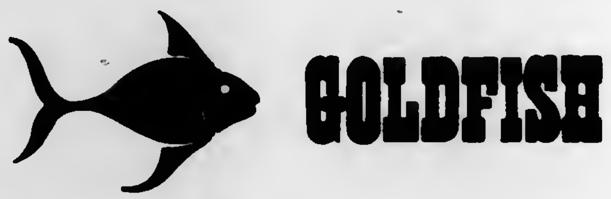
Class 19—Vehicles

SN 259,078. Bangor-Punta Operations, Inc., Bangor, Maine. Filed Nov. 21, 1966.



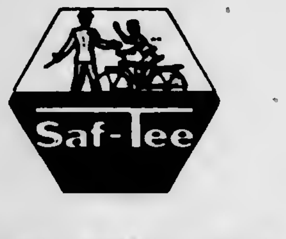
For Boats, Yachts, and Parts Thereof (Int. Cl. 12).
First use June 13, 1958.

SN 284,190. Goldfish Sailboat Company, Inc., Dallas, Tex. Filed Nov. 6, 1967.



For Sailboats (Int. Cl. 12).
First use Oct. 6, 1967.

SN 285,265. Steiber Cycle Corporation, Elmhurst, N.Y. Filed Nov. 20, 1967.



Applicant disclaims the representation of a bicycle and the word "Products," apart from the mark as shown.
For Bicycle Accessories—Namely, Bicycle Grips, Bicycle Mirrors, Bicycle Hub Shiners, Reflectors, Handlebars, Baskets, Brakes, Kickstands, Saddles, Pedals and Blocks, and Bells (Int. Cl. 12).
First use Nov. 20, 1964.

SN 291,863. General Motors Corporation, Detroit, Mich. Filed Feb. 26, 1968.

BUICK

Owner of Reg. Nos. 108,852, 647,618, and others.
For Automobiles and Parts Thereof (Int. Cl. 12).
First use in or before 1904.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 245,717. IXL Appliances Inc., Hollis, N.Y. Filed May 16, 1966.

IXL

For Toasters and Dishwashers (Int. Cls. 7 and 11).
First use March 1966.

SN 247,264. Shure Brothers Incorporated, Evanston, Ill. Filed June 3, 1966.

CONTROLLED MAGNETIC

For Microphones (Int. Cl. 9).
First use at least as early as Dec. 31, 1957.

SN 253,319. LTV Ling Altec, Inc., Anaheim, Calif. Filed Aug. 29, 1966.

ALTEC

Owner of Reg. Nos. 534,754 and 747,304.
For Electrical Equipment—Namely, Attenuators, Switches, Networks, Equalizers, Filters, Transformers, Amplifiers, Audio Controls, Microphones, Microphone Bases, and Microphone Extensions (Int. Cl. 9).
First use Aug. 29, 1949.

SN 255,275. Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden. Filed Sept. 28, 1966.

QUADRUS

The Latin word "Quadrus" means "fourth." Owner of Swedish Reg. No. 113,226, dated June 11, 1965.
For Fuel Cells; Fuel Cell Batteries; Electrical Batteries; and Accumulators, Comprising Electrodes and Acid for Emitting Electric Power (Int. Cl. 9).

SN 269,660. Theodore Granik, d.b.a. Televote Company of America, Washington, D.C. Filed Apr. 20, 1967.

TELEVOTE

For Electronic Voting System, Including a Signal Transmitter for Each Votor to Send His Vote as an Electric Information Signal, and an Automatic Electric Scanner To Receive the Information Signals and Provide Suitable Readout Signal Information to a Readout Device Connected Thereto (Int. Cl. 9).
First use on or about Dec. 17, 1965.
Subj. to Intf. with SN 258,554.

SN 276,029. Multronics, Inc., Rockville, Md. Filed July 14, 1967.

MULTRONICS

For Radio Communication Transmitters, Inductors, and Phase Sampling Loops (Int. Cl. 9).
First use at least as early as Dec. 31, 1958.

SN 279,483. The Hobart Manufacturing Company, Troy, Ohio. Filed Aug. 31, 1967.

MAGNESTART

For Device for Starting and Stopping Automatic Food Waste Disposers (Int. Cl. 9).
First use July 6, 1967.

SN 280,726. Precision Systems Company, Inc., Somerville, N.J. Filed Sept. 19, 1967.

LEV-L-OHM

For Generators for Applying High Frequency, High Voltage, Electrical Energy to Printed Circuit Resistors To Electronically Adjust the Resistance Values Thereof, and Electronic Monitors for Pre-Setting Target Resistances in Said Generators (Int. Cls. 7 and 9).
First use June 5, 1967.

SN 282,409. The Verplex Company, Essex, Conn. Filed Oct. 12, 1967.

VERPLEX

For Lamp Shades and Electrical Lighting Fixtures (Int. Cl. 11).
First use 1926 on lamp shades.

SN 284,394. Reda Pump Company, Bartlesville, Okla. Filed Nov. 8, 1967.

TGR

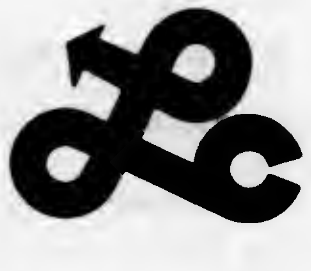
For Electrical Power Cables for Use in Deep Well Pumping (Int. Cl. 9).
First use Oct. 27, 1967.

SN 284,395. Reda Pump Company, Bartlesville, Okla. Filed Nov. 8, 1967.

BTR

For Electrical Power Cables for Use in Deep Well Pumping (Int. Cl. 9).
First use Sept. 29, 1967.

SN 284,684. Litecontrol Corporation, Watertown, Mass. Filed Nov. 13, 1967.



The mark consists of the letters "LC" written in stylized fashion in a connected line having a triple loop configuration.
For Electric Lighting Fixtures (Int. Cl. 11).
First use May 31, 1967.

SN 285,831. Harman-Kardon Incorporated, Plainview, N.Y. Filed Nov. 29, 1967.

PROCAST

For Commercial Sound Equipment—Namely, Loudspeakers, Amplifiers, and Tuners (Int. Cl. 9).
First use on or about Aug. 1, 1967.

SN 285,832. Harman-Kardon Incorporated, Plainview, N.Y. Filed Nov. 29, 1967.

PROGUARD

For Commercial Sound Equipment—Namely, Loudspeakers, Amplifiers, and Tuners (Int. Cl. 9).
First use on or about Aug. 1, 1967.

SN 286,443. Notifier Company, Lincoln, Nebr., assignee of Notifier Corporation, Lincoln, Nebr. Filed Dec. 7, 1967.

ION-ALARM

For Electrically Operated Products of Combustion Detectors (Int. Cl. 9).
First use Nov. 22, 1967.

SN 286,952. Multi-Clean Products, Incorporated, St. Paul, Minn. Filed Dec. 14, 1967.

KARPET CHAMP

The word "Karpet" is disclaimed apart from the mark as a whole.
For Electrically Operated Carpet Scrubbing Machines for Commercial and Industrial Use (Int. Cl. 7).
First use Oct. 13, 1967.

SN 287,577. Joseph E. Podgor Co., Inc., Pennsauken, N.J. Filed Dec. 26, 1967.

KENN-KOP

For Electrostatic Contacting and Holding Machine for Graphic Arts Use (Int. Cl. 7).
First use June 1967.

SN 288,201. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed Jan. 5, 1968.

DYNAPHASE

For Electrical Controls for Starting, Stopping and Controlling the Speed of Electric Motors (Int. Cl. 9).
First use Dec. 18, 1967.

SN 288,395. Western Microwave Laboratories, Incorporated, Santa Clara, Calif. Filed Jan. 8, 1968.

SOLISTRON

For Solid State Oscillators (Int. Cl. 9).
First use March 1964.

SN 288,622. Kearney-National Inc., St. Louis, Mo. Filed Jan. 11, 1968.

ARC-KO

Owner of Reg. No. 740,541.
For Switches for Use in Power Plants, Substations, and Sectionalizing Locations on Electric Power Transmission and Distribution Systems (Int. Cl. 9).
First use Apr. 3, 1961.

SN 288,847. National Presto Industries, Inc., Eau Claire, Wis. Filed Jan. 15, 1968.

Owner of Reg. Nos. 703,792, 795,930, and others.
For Portable Electrical Radiant Heaters (Int. Cl. 11).
First use May 8, 1967.

SN 288,887. The Telex Corporation, Tulsa, Okla. Filed Jan. 15, 1968.

TELESET

Owner of Reg. No. 434,806.
For Headsets (Int. Cl. 9).
First use July 1962.

SN 300,314. Southern Stores, Inc., Jacksonville, Fla. Filed June 13, 1968.

SONIC

Owner of Reg. Nos. 805,581, 808,706, and others.
For Electrical Storage Batteries (Int. Cl. 9).
First use in or about August 1966.

SN 300,315. Southern Stores, Inc., Jacksonville, Fla. Filed June 13, 1968.

SUPER SONIC

Owner of Reg. Nos. 805,574, 808,706, and others.
For Electrical Storage Batteries (Int. Cl. 9).
First use in or about August 1966.

SN 300,316. Southern Stores, Inc., Jacksonville, Fla. Filed June 13, 1968.

ULTRA SONIC

Owner of Reg. Nos. 805,574, 808,706, and others.
For Electrical Storage Batteries (Int. Cl. 9).
First use in or about August 1966.

Class 22—Games, Toys, and Sporting Goods

SN 269,368. World Toy House, Inc., St. Paul, Minn. Filed Apr. 17, 1967.

THRIFT TOYS

No claim of exclusive right is made to "Toys," for the goods recited.
For Selected Assortment of Prepackaged Toys (Int. Cl. 28).
First use Aug. 14, 1959.

SN 270,932. Matsushiro USA, Inc., Bellevue, Wash. Filed May 8, 1967.

FUNMATE

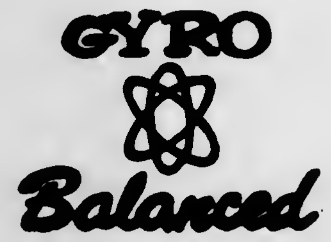
For Toys—Namely, Miniature Vehicles (Int. Cl. 28).
First use Feb. 2, 1967.

SN 271,125. Brunswick Corporation, Chicago, Ill. Filed May 10, 1967.

SUPER 88

For Golf Balls (Int. Cl. 28).
First use Aug. 28, 1961.

SN 272,368. Everlast World's Boxing Headquarters Corp., Bronx, N.Y. Filed May 25, 1967.



For Punching Bags (Int. Cl. 28).
First use January 1964.
Subj. to Intf. with SN 282,018.

SN 272,604. Graco Metal Products, Inc., Elverson, Pa. Filed May 29, 1967.

SNOOZER

For Motor Operated Baby Type Swings (Int. Cl. 28).
First use Apr. 21, 1967.

SN 273,465. Atlantic Lures, Inc., Providence, R.I. Filed June 9, 1967.

NORTHERN WOBBLER

No claim is made to the word "Wobbler" except as used with the remainder of the mark.
For Fishing Lures (Int. Cl. 28).
First use October 1960.

SN 276,545. De Luxe Topper Corporation, Elizabeth, N.J. Filed July 21, 1967.

BABY TIP TOE

No claim of exclusive right is made to "Baby" for a doll, apart from the mark as shown.
For Dolls (Int. Cl. 28).
First use June 16, 1967.

SN 276,699. Shooting Equipment, Inc., Chicago, Ill. Filed July 24, 1967.

GUERILLA-GUARD

For Protective Shields for Use With Target and/or Shooting Ranges (Int. Cl. 28).
First use November 1962.

SN 277,561. James Frederick Liston, Ottawa, Ontario, Canada. Filed Aug. 4, 1967.

SUPERANG

For Boomerangs (Int. Cl. 28).
First use June 19, 1967.

SN 277,794. Paul A. Price Co., Inc., d.b.a. Papco, Roslyn, N.Y. Filed Aug. 8, 1967.

GOOFY-GOO

For Prepakaged Toy Molding Compound (Int. Cl. 28).
First use June 20, 1967.

SN 279,274. The Coleman Company, Inc., Wichita, Kans. Filed Aug. 29, 1967.

GEMINI

For Tents for Outdoor Camping (Int. Cl. 22).
First use during or before December 1966.

SN 279,275. The Coleman Company, Inc., Wichita, Kans. Filed Aug. 29, 1967.

LODESTAR

For Tents for Outdoor Camping (Int. Cl. 22).
First use during or before December 1966.

SN 279,370. The Coleman Company, Inc., Wichita, Kans. Filed Aug. 30, 1967.

BLUE STAR

For Tents for Outdoor Camping (Int. Cl. 22).
First use during or before December 1966.

SN 279,371. The Coleman Company, Inc., Wichita, Kans. Filed Aug. 30, 1967.

SATELLITE

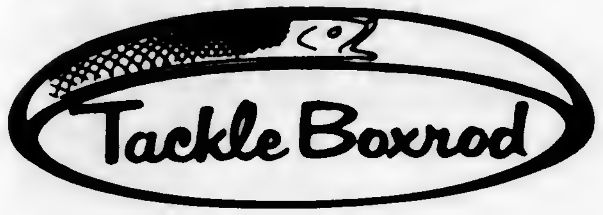
For Tents for Outdoor Camping (Int. Cl. 22).
First use during or before January 1967.

SN 279,373. The Coleman Company, Inc., Wichita, Kans. Filed Aug. 30, 1967.

POLESTAR

For Tents for Outdoor Camping (Int. Cl. 22).
First use during or before November 1966.

SN 281,409. Woodstream Corporation, Lititz, Pa. Filed Sept. 28, 1967.



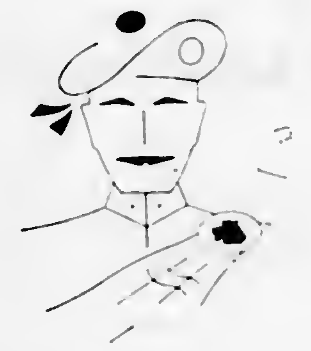
The word "Tackle" is disclaimed apart from the mark as shown.
For Fishing Poles (Int. Cl. 28).
First use Sept. 6, 1967.

SN 282,675. Brunswick Corporation, Chicago, Ill. Filed Oct. 17, 1967.

GREAT-SCOT

For Golf Clubs and Golf Balls (Int. Cl. 28).
First use Apr. 1, 1967.

SN 282,676. Brunswick Corporation, Chicago, Ill. Filed Oct. 17, 1967.



For Golf Clubs (Int. Cl. 28).
First use Apr. 1, 1967.

SN 284,623. Createk, Los Angeles, Calif. Filed Nov. 13, 1967.

ELECTION '68

For Equipment or Apparatus for Playing a Board Game (Int. Cl. 28).
First use July 1, 1967.

SN 287,287. Erwin Weller Company, Sioux City, Iowa. Filed Dec. 20, 1967.

STRIP-ON

Owner of Reg. No. 595,868.
For Fishing Tackle Spinner Units for Mounting Minnows Thereon (Int. Cl. 28).
First use Sept. 1, 1926.

SN 287,356. Fred Arbogast Company, Inc., Akron, Ohio. Filed Dec. 21, 1967.

SCUDDER

For Artificial Fish Lures (Int. Cl. 28).
First use on or about Sept. 8, 1967.

SN 287,822. Lannom Manufacturing Company, Incorporated, Tullahoma, Tenn. Filed Dec. 29, 1967.

CLUTCHER SEAM

Applicant disclaims the exclusive right to the word "Seam" apart from the mark as shown.
For Indoor Baseballs and Soft Balls (Int. Cl. 28).
First use July 6, 1965.

SN 292,553. Classic Industries, Inc., Culver City, Calif. Filed Mar. 6, 1968.

Jewel Box MINI-ZOO

For Miniature Animals (Int. Cl. 28).
First use on or about Feb. 1, 1968.

SN 292,575. The A. C. Gilbert Company, New Haven, Conn. Filed Mar. 6, 1968.

LITE-A-TUNE

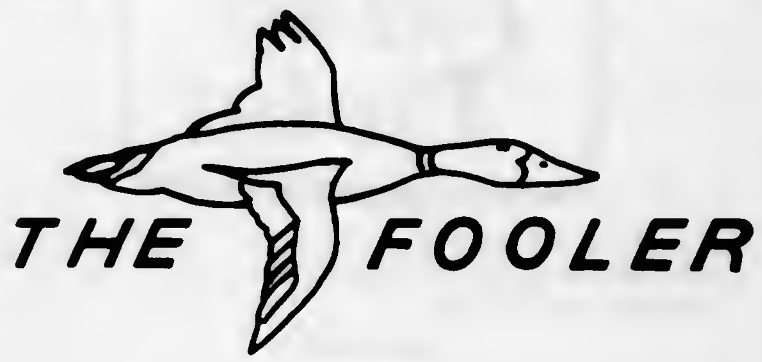
For Toy Musical Instruments, Including Toy Pianos (Int. Cl. 28).
First use February 1966.

SN 292,663. Allied Doll and Toy Corp., Brooklyn, N.Y. Filed Mar. 7, 1968.

PICTURE BOOK

For Plush Stuffed Toys (Int. Cl. 28).
First use Jan. 23, 1948.

SN 292,764. Crosby Mfg. Co., Crosby, Minn. Filed Mar. 8, 1968.



For Duck Decoy (Int. Cl. 28).
First use Feb. 6, 1968.

SN 292,893. De Luxe Topper Corporation, Elizabeth, N.J. Filed Mar. 11, 1968.

BABY PARTY

No claim of exclusive right is made to "Baby" for a doll, apart from the mark as shown. Owner of Reg. Nos. 782,757, 802,618, and 833,265.
For Dolls and Dolls' Accessories (Int. Cl. 28).
First use Feb. 20, 1968.

SN 293,161. Monogram Models, Inc., Morton Grove, Ill. Filed Mar. 13, 1968.

RED BARON

For Scale Model Assembly Kits of Automobiles (Int. Cl. 28).
First use Jan. 30, 1968.

SN 293,340. Converse Rubber Corporation, Malden, Mass. Filed Mar. 15, 1968.

TRACK STAR

For Track Shoes (Int. Cl. 25).
First use Aug. 12, 1959.

SN 293,599. Robert A. Stephens, Shreveport, La. Filed Mar. 18, 1968.

IDDI DECOY

The word "Decoy" is disclaimed apart from the mark as shown.
For Waterfowl Decoys (Int. Cl. 28).
First use Feb. 22, 1968.

SN 293,999. Wham-O Mfg. Co., San Gabriel, Calif. Filed Mar. 25, 1968.

SHRINKIES

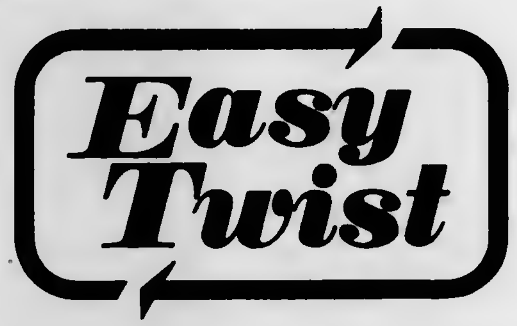
For Printed Plastic Sheets Containing Cartoon-Type Figures and Similar Subject Matter, Designed for Children's Use as Toys and Other Items of Amusement (Int. Cl. 28).
First use Feb. 26, 1968.

SN 296,489. Primoff & Eichner Associates, New Rochelle, N.Y. Filed Apr. 25, 1968.

COMPUT-A-TUTOR

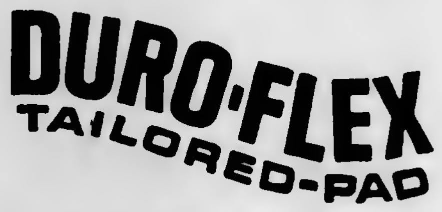
For Equipment Sold as a Unit for Playing an Educational-Type Parlor Game (Int. Cl. 28).
First use Apr. 1, 1968.

SN 299,532. Donco Products Corp., Lakeview, Oreg. Filed June 3, 1968.



For Exercise Board (Int. Cl. 28).
First use Jan. 15, 1968.

SN 300,400. King Athletic Goods Company, Philadelphia, Pa. Filed June 14, 1968.



The word "Pad" is disclaimed apart from the mark as shown.
For Padding for Baseball Gloves (Int. Cl. 28).
First use Oct. 1, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 253,696. Westinghouse Air Brake Company, Chicago, Ill. Filed Sept. 1, 1966.

For Shaker Conveyors and Parts Thereof (Int. Cl. 7).
First use May 23, 1966.

SN 260,029. The Reliance Electric and Engineering Company, Euclid, Ohio, by merger from Dodge Manufacturing Corporation, Mishawaka, Ind. Filed Dec. 5, 1966.

GEARMASTER

For Variable Speed Drives of the Gear Reducer Type (Int. Cl. 7).
First use Nov. 7, 1966.

SN 265,449. True Temper Corporation, Cleveland, Ohio. Filed Feb. 24, 1967.

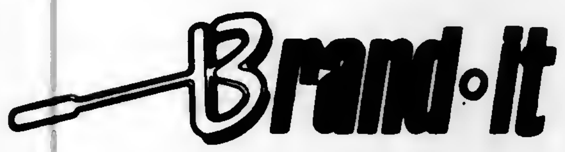
WEAR 'N WEAR

For Hand Tools—Namely, Scoops, Shovels, Spades, Hoes, Ditch Bank Blades, Tinners' Snips, Hooks, Scythes, Shears, Chisels, Machetes, Weeders, Edgers, Dock Cutters, Sidewalk Scrapers, Axes, Adzes, Hatchets, Mattocks, and Trowels (Int. Cl. 8).
First use Jan. 5, 1967.

SN 266,865. Curtiss-Wright Corporation, Wood-Ridge, N.J. Filed Mar. 16, 1967.

Owner of Reg. Nos. 787,504 and 822,786.
For Coil or Spring Clutch and Brake Mechanism Units, and Components Thereof (Int. Cl. 7).
First use Mar. 29, 1966.

SN 267,502. Brunswick Corporation, Chicago, Ill. Filed Mar. 24, 1967.



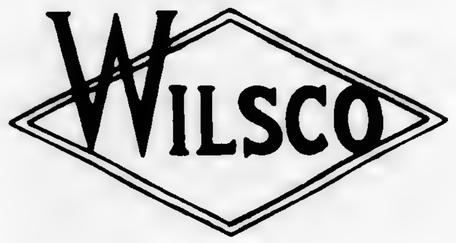
For Imprinting Device for Marking Golf Balls (Int. Cl. 8).
First use July 21, 1966.

SN 270,624. The Valeron Corporation, Detroit, Mich. Filed May 3, 1967.

VALCO-DEX

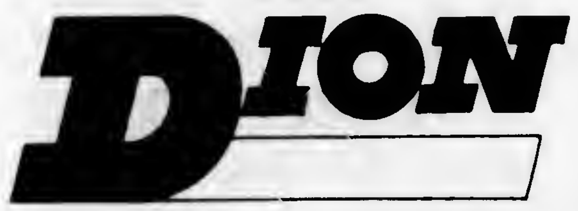
For Cutting Tool Assembly Including Holder and Bit (Int. Cl. 7).
First use Mar. 15, 1967.

SN 278,145. Wilsco Sales and Engineering Company, Flemington, N.J. Filed Aug. 11, 1967.



For Underground Pumping Stations for Water and Sewage (Int. Cl. 11).
First use June 1965.

SN 278,637. J. R. Kanik, Inc., Black River, N.Y. Filed Aug. 21, 1967.



For Farm Machinery—Namely, Mobile Self-Unloading Forage Boxes, Forage Blowers, Forage Harvesters, Barn Cleaners, Silo Unloaders, Self-Propelled Windrowers, Pull-Type Windrowers, and Hay Conditioners (Int. Cl. 7).
First use Aug. 31, 1955.

SN 281,911. The National Super Service Company, Toledo, Ohio. Filed Oct. 5, 1967.

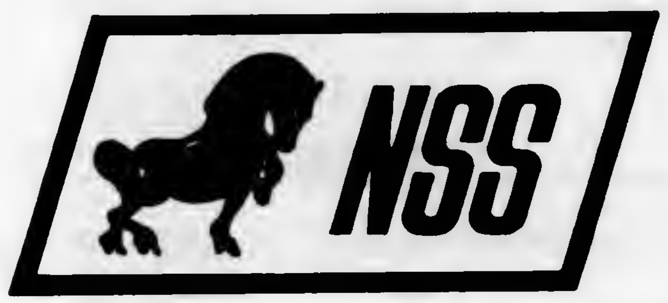
For Industrial and Commercial Vacuum Cleaners With a Tiltably Discharging Waste Canister (Int. Cl. 7).
First use May 19, 1966.

SN 281,912. The National Super Service Company, Toledo, Ohio. Filed Oct. 5, 1967.

NSS

For Commercial Floor and Rug Maintenance Equipment—Namely, Vacuum Cleaners, Vacuum Scrubbers, Litter Sweepers, Floor Scrubbing and Polishing Machines, Rug Champooing Machines, and Parts Thereof (Int. Cl. 7).
First use May 19, 1966.

SN 281,913. The National Super Service Company, Toledo, Ohio. Filed Oct. 5, 1967.



For Commercial Floor and Rug Maintenance Equipment—Namely, Vacuum Cleaners, Vacuum Scrubbers, Litter Sweepers, Floor Scrubbing and Polishing Machines, Rug Shampooing Machines, and Parts Thereof (Int. Cl. 7).
First use May 19, 1966.

SN 282,124. Otto Niederer Sons, Inc., Pennington, N.J. Filed Oct. 9, 1967.

EGO-PAK

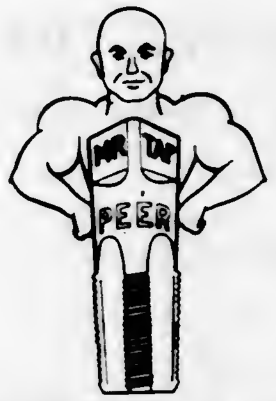
For Automatic Conveyor Type Egg Orienting Machine, Usually for Transferring Eggs From an Egg Grader to an Egg Packager (Int. Cl. 7).
First use July 17, 1967.

SN 283,033. Propulsion Systems, Inc., Port Washington, N.Y. Filed Oct. 20, 1967.

RATE-CONN

For Steering Systems for Marine Vessels, Comprising: Wheelhouse Control, Namely, Steering Console or Lever Steerer; Rudder Angle Indicator; Pump Unit for Driving a Ship's Hydraulic Rudder Actuator; Contactor Panel Containing Power Contactors for Controlling Solenoid Valves of the System; Rudder Repeatback Unit; Optional Hydraulic Rudder Actuator; and Related Accessories and Controls (Int. Cl. 12).
First use Oct. 10, 1967.

SN 283,581. Serva Tool Corporation, Dayton, Ohio. Filed Oct. 27, 1967.



Without prejudice to whatever rights applicant has already established in the mark as used in its entirety, applicant disclaims the use of the word "Tap" and the representations of the goods, apart from the mark as shown.
For Metal Cutting Tools—Namely, Hole-Threading Taps for Hand or Machine Use (Int. Cls. 7 and 8).
First use July 7, 1967.

SN 284,956. Wilton Corporation, Schiller Park, Ill. Filed Nov. 15, 1967.

PROCOM

For Hydraulic Clamps for Holding Workpieces During Machining Operations (Int. Cl. 7).
First use Apr. 1, 1967.

SN 285,512. American Tractor Equipment Corporation, Oakland, Calif. Filed Nov. 24, 1967.

VYBA

For Tractor-Mounted Earth Rippers (Int. Cl. 7).
First use Apr. 12, 1966.

SN 289,851. Western Auto Supply Company, Kansas City, Mo. Filed Jan. 29, 1968.

WESTLINE

Owner of Reg. No. 509,631.
For Carpenters', Machinists', and Mechanics' Hand Tools (Int. Cl. 8).
First use on or about Sept. 8, 1953.

Class 24 — Laundry Appliances and Machines

SN 296,236. The Maytag Company, Newton, Iowa. Filed Apr. 23, 1968.

THE ANYWHERE DRYER

The term "Dryer" is disclaimed apart from the mark as shown.

For Laundry Appliances—Namely, Dryers (Int. Cl. 7).

First use Apr. 1, 1968.

Class 25 — Locks and Safes

SN 287,055. Kitty Zaidener, London, England. Filed Dec. 15, 1967.

KROOKLOK

For Anti-Theft Devices for Road Vehicles (Int. Cl. 12).

First use September 1964; in commerce Sept. 30, 1967.

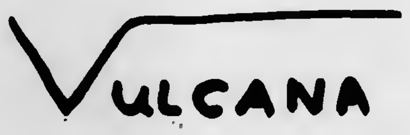
SN 287,630. Builders Brass Works Corporation, Los Angeles, Calif. Filed Dec. 27, 1967.

MITEY-LOK

For Security Lock for Sliding Doors and Windows (Int. Cl. 6).

First use August 1965.

SN 300,018. Straube Industries Inc., Waynesboro, Pa. Filed June 7, 1968.



For Locks (Int. Cl. 6).

First use 1961.

Class 26 — Measuring and Scientific Appliances

SN 243,668. Baxter Laboratories, Inc., Morton Grove, Ill., assignee of Hyland Laboratories, Los Angeles, Calif. Filed Apr. 18, 1966.

SERUM SKIMMER

For Device for Separating the Elements of Immiscible Fluid Systems and Fluid-Solid Systems—Namely, a Pneumatic Separator Ram (Int. Cl. 9).

First use Mar. 9, 1966.

SN 269,546. Lab-Line Instruments, Inc., Melrose Park, Ill. Filed Apr. 19, 1967.

'LO-BOY'

For Constant Temperature Bath Unit for Use in Clinical and Biomedical Laboratories for Softening Tissue Specimens (Int. Cl. 9).

First use May 13, 1966.

SN 271,247. Foto-Quelle GmbH, Nuremberg, Germany. Filed May 11, 1967.

APOLLO

Owner of German Reg. No. 823,552, dated Aug. 31, 1966.

For Binoculars; Opera Glasses; Magnifying Glasses; Spectacles; Microscopes; Still Cameras; Motion Picture Cameras; Flashguns; Flash Bulbs; Exposure Meters; Picture Projectors; Picture Screens; Framed Transparencies; Undeveloped Black and White Films and Color Films; Thermometers; Barometers; and Manometers (Int. Cls. 1 and 9).

SN 271,851. Spectra-Physics, Inc., Mountain View, Calif. Filed May 18, 1967.

STABILITE

For Helium-Neon Lasers (Int. Cl. 9).

First use Apr. 29, 1967.

SN 272,421. Spiratone, Inc., Flushing, N.Y. Filed May 25, 1967.

TELECTRIC

For Photographic Lenses Using Electric or Electronic Mechanism (Int. Cl. 9).

First use May 25, 1967.

SN 274,419. EG & G, Inc., Bedford, Mass. Filed June 21, 1967.

MICROFLASH

Owner of Reg. No. 726,990.

For Electronic Flash Devices that Produce Light Flashes Having Time Durations of One Millimicrosecond or Less, and Associated Equipment Including Power Supplies, Capacitor Banks, and Flashtubes (Int. Cl. 9).

First use in or about May 1966.

SN 279,574. Standard-Thomson Corporation, Waltham, Mass. Filed Sept. 1, 1967.

GROVE

Owner of Reg. No. 760,180.

For Automotive Engine Thermostats (Int. Cl. 9).

First use May 23, 1962.

SN 280,847. A-V Communications, Inc., Farmingdale, N.Y. Filed Sept. 21, 1967.

AVCOM

For Slide Rules, Triangles, Protractors, French Curves, and Scales; and Sensitized Photo Paper and Film (Int. Cls. 1 and 9).

First use July 1965.

SN 282,302. Stock Equipment Company, Cleveland, Ohio. Filed Oct. 11, 1967.

SECOAL

For Nuclear Alarm Indicator for Determining the Presence or Absence of Bulk Solid or Liquid Material Flowing in a Conduit (Int. Cl. 9).

First use June 30, 1966.

SN 283,151. Photovolt Corporation, New York, N.Y. Filed Oct. 23, 1967.

DIGICORD

For pH Meters (Int. Cl. 9).

First use Sept. 15, 1967.

SN 283,887. Graflex, Inc., Rochester, N.Y. Filed Nov. 1, 1967.

STROBOMATIC

Owner of Reg. Nos. 523,660, 664,697, and others.

For Electronic Flash Unit for Photographic and Other Purposes (Int. Cl. 9).

First use Sept. 28, 1967.

SN 289,127. Rozin Optical Export Corp., New York, N.Y. Filed Jan. 18, 1968.

CRYSTALITE

For Lenses for Eyeglasses (Int. Cl. 9).

First use July 1967.

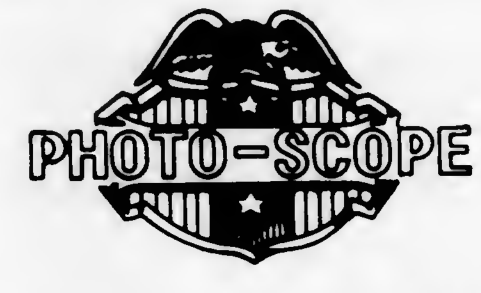
SN 289,666. F. W. Dwyer Mfg. Co., Inc., Michigan City, Ind. Filed Jan. 29, 1968.

RATE-MASTER

For Flowmeters (Int. Cl. 9).

First use Jan. 11, 1968.

SN 292,328. Security Electronics, Inc., Omaha, Nebr. Filed Mar. 4, 1968.



For Surveillance Equipment—Namely, Oscillating Cameras (Int. Cl. 9).

First use in or about December 1967.

SN 299,716. Federal Products Corporation, Providence, R.I. Filed June 3, 1968.

SIZE-MINDER

For Grinding Gage (Int. Cl. 9).

First use Apr. 23, 1968.

SN 299,732. Dytro Corporation, Hicksville, N.Y. Filed June 5, 1968.

PDVM

For Printing Digitizer (Int. Cl. 9).

First use Apr. 25, 1968.

SN 299,733. Dytro Corporation, Hicksville, N.Y. Filed June 5, 1968.

LOGMATIC

For Printing Digitizer (Int. Cl. 9).

First use Apr. 25, 1968.

Class 29 — Brooms, Brushes, and Dusters

SN 273,614. Deseret Pharmaceutical Company, Inc., Sandy, Utah. Filed June 12, 1967.

E-Z-SCRUB

For Surgical Scrub Brushes (Int. Cl. 21).

First use at least as early as May 26, 1967.

Class 31 — Filters and Refrigerators

SN 271,641. Rite Hardware Manufacturing Co., Glendale, Calif. Filed May 16, 1967.

WHITECAPSUL

Owner of Reg. No. 699,819.

For Self-Powered, Air Filtering Helmet Backpack With Controlled Atmosphere Protective Helmet, for Use by Workers in Air Contaminated Areas (Int. Cl. 9).

First use Jan. 24, 1967.

SN 271,652. Peter Spence & Sons Limited, Widnes, England. Filed May 16, 1967.

ZEOSORB

Owner of British Reg. No. 854,965, dated Oct. 5, 1963.

For Crystalline Zeolites, Being Molecular Sieves for Catalytic, Ion Exchange, Gas Separation, and Selective Adsorbency Uses (Int. Cl. 1).

SN 277,335. Amicon Corporation, Cambridge, Mass. Filed Aug. 2, 1967.

BIOLON

For Selectively Permeable Ultrafiltration Membranes (Int. Cl. 11).

First use July 21, 1967.

SN 279,285. Dean Products, Inc., Brooklyn, N.Y. Filed Aug. 29, 1967.

STEEMSINK

Owner of Reg. No. 697,112.

For Cooling Plates, Emersion Coolers, Cooling Cabinets, Cooling Shrouds, Cooling Drums, Refrigerated Filter Presses, Refrigerated Dip Pans, Utensils for Cooling and Refrigerating Food, Chemicals, Gases and Liquids, Cooling Platens, Refrigerated Counter Tops, and Coolers for Sterilizing Laboratory Equipment (Int. Cl. 11).

First use September 1966.

SN 289,429. Sporlan Valve Company, St. Louis, Mo. Filed Jan. 23, 1968.

CATCH-ALL

Owner of Reg. No. 525,826.

For Dehydrating and Filtering Units of the Cartridge Type for Liquid Refrigerants (Int. Cl. 11).

First use May 1, 1947.

Class 32 — Furniture and Upholstery

SN 258,332. United Cabinet Corporation, Jasper, Ind. Filed Nov. 9, 1966.

CHARACTER PATINA

The word "Patina" is disclaimed apart from the mark as shown.

For Kitchen Cabinets (Int. Cl. 20).

First use Sept. 7, 1966.

SN 283,988. The Dalton Foundries, Inc., Warsaw, Ind. Filed Nov. 2, 1967.

COMFORT-EZE

For Removable Cushion Seats for Pews (Int. Cl. 20).

First use July 28, 1967.

SN 287,947. Port-A-Crib, Inc., Ballwin, Mo. Filed Jan. 2, 1968.

PORT-A-DRESSER

For Juvenile Dressers (Int. Cl. 20).
First use Nov. 16, 1967.

SN 292,152. Alma Desk Company, High Point, N.C. Filed Feb. 29, 1968.

Applicant disclaims the representation of the bookshelves apart from the mark as shown.
For Library Furniture—Namely, Desks; Tables, Designed for Reading and Studying; Chairs; Tables, Designed for the Display of Books; Newspaper and Magazine Racks, Card Catalog Cases, and Book Shelving (Int. Cl. 20).
First use Feb. 10, 1967.

SN 294,379. Dayco Corporation, Dayton, Ohio. Filed Mar. 28, 1968.

DAYCOR

Owner of Reg. Nos. 804,673 and 809,186.
For Mattresses and Pillows (Int. Cl. 20).
First use on or about Jan. 30, 1968.

SN 296,314. Dayco Corporation, Dayton, Ohio. Filed Apr. 23, 1968.

TRI-FOAM

For Pillows (Int. Cl. 20).
First use on or about Feb. 26, 1967.

SN 299,921. Virco Mfg. Corporation, Los Angeles, Calif. Filed June 7, 1968.

V21

For Chairs and Tables (Int. Cl. 20).
First use Oct. 1, 1967.

Class 33 — Glassware

SN 285,821. Dearborn Glass Company, Argo, Ill. Filed Nov. 29, 1967.

SOUNDTROPANE

For Laminated Glass Sheets (Int. Cl. 21).
First use Nov. 22, 1967.

SN 285,822. Dearborn Glass Company, Argo, Ill. Filed Nov. 29, 1967.

PROTECTOPANE

For Laminated Glass Sheets (Int. Cl. 21).
First use Nov. 27, 1967.

SN 285,823. Dearborn Glass Company, Argo, Ill. Filed Nov. 29, 1967.

NEUTROPANE

For Laminated Glass Sheets (Int. Cl. 21).
First use Nov. 13, 1967.

SN 285,824. Dearborn Glass Company, Argo, Ill. Filed Nov. 29, 1967.

DIFFUSOPANE

For Laminated Glass Sheets (Int. Cl. 21).
First use Nov. 3, 1967.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 264,076. Modern Maid, Inc., Chattanooga, Tenn. Filed Feb. 6, 1967.

VENT-PAK

For Self-Contained Ventilating System in Both Gas and Electric Eye-Level Ranges (Int. Cl. 11).
First use Dec. 4, 1966.

SN 264,077. Modern Maid, Inc., Chattanooga, Tenn. Filed Feb. 6, 1967.

Clean-A-Matic

For Cooking Ranges With Self-Cleaning Electric and Gas Ovens (Int. Cl. 11).
First use Dec. 4, 1966.

SN 275,908. Automatic Burner Corporation, Chicago, Ill. Filed July 13, 1967.

ABC MITE

The stippling shown in the drawing is for shading purposes only, and no claim is made to specific colors. Owner of Reg. Nos. 281,933, 422,233, and 603,002.
For Oil Burners (Int. Cl. 11).
First use May 25, 1967.

SN 276,318. Gordon & Piatt, Inc., Winfield, Kans. Filed July 19, 1967.

For Combustion Equipment—Namely, Gas Furnace, Oil Burners, Gas-Oil Burners, Forced Draft Burners, and Control Cabinets for Gas, Oil, Gas-Oil and Forced Draft Burners (Int. Cl. 11).
First use in or before December 1955.

SN 280,026. DCA Corporation, Grand Rapids, Mich. Filed Sept. 11, 1967.

CONVERTA

For Fuel-Operated Heater-Dryer for Waste Materials Such as Chicken Manure (Int. Cl. 11).
First use on or about Feb. 1, 1967.

SN 280,271. Ronson Corporation, Woodbridge, N.J. Filed Sept. 13, 1967.

TABLE CHEF

For Portable Gas Ranges (Int. Cl. 11).
First use June 15, 1967.

SN 283,446. Landam Products Corporation, New York, N.Y. Filed Oct. 26, 1967.

THE LANDAM
FLO-HOT

For Electric Water Heaters (Int. Cl. 11).
First use Sept. 26, 1967.

SN 283,764. Blaser Corporation, East Rutherford, N.J. Filed Oct. 31, 1967.

COMPUTEMP

For Computer Room Air Conditioning Units (Int. Cl. 11).
First use on or about Aug. 1, 1965.

SN 288,795. Cory Corporation, Chicago, Ill. Filed Jan. 15, 1968.

AQUA
BELT

For Humidifiers (Int. Cl. 11).
First use Dec. 15, 1967.

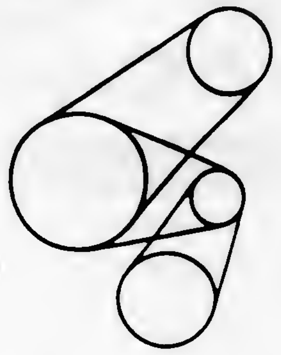
SN 289,049. Walker Manufacturing & Sales Corporation, St. Joseph, Mo. Filed Jan. 17, 1968.

SHUR-FLO

For Domestic and Industrial Draft Inducers (Int. Cl. 11).
First use July 1956.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 245,938. Maurey Manufacturing Corporation, Chicago, Ill. Filed May 18, 1966.



For V-Belts (Int. Cl. 7).
First use Oct. 8, 1956.

SN 284,801. C. E. Conover & Co., Inc., Fairfield, N.J. Filed Nov. 14, 1967.

CON-O-TFE

Applicant disclaims the designation "TFE" apart from the mark as shown.
For Sealing Rings Made of Polytetrafluoroethylene for Static, Reciprocating and Oscillating Seals (Int. Cl. 17).
First use June 1967.

Class 36 — Musical Instruments and Supplies

SN 275,707. Tele-Tone Company, Inc., Mount Vernon, N.Y. Filed July 10, 1967.

LIVING PHONOGRAPH

Applicant disclaims the word "Phonograph" apart from the mark as shown.
For Phonographs and Parts Thereof (Int. Cl. 9).
First use May 9, 1967.

SN 279,456. C. G. Conn Ltd., Elkhart, Ind. Filed Aug. 31, 1967.

MULTI÷VIDER

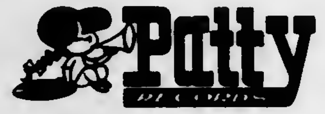
For Electronic Tone Modifiers, With Amplifier, for Use in Connection With Wind Instruments—Namely, Flutes, Piccolos, Clarinets, Saxophones, Trumpets, Cornets, French Horns, Flugelhorns, Oboes, Bassoons, and the Like (Int. 9).
First use July 7, 1967.

SN 286,685. Ionic Organ Company, Morristown, N.J. Filed Dec. 11, 1967.

Gem
SOLID STATE

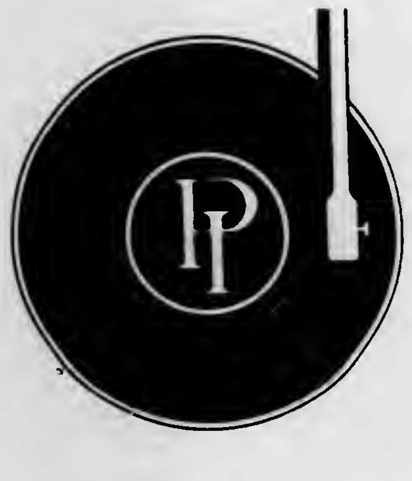
Applicant disclaims the term "Solid State" apart from the mark as shown.
For Electronic Organs (Int. Cl. 15).
First use Mar. 1, 1966.

SN 286,815. Galmen Production Corporation, New York, N.Y. Filed Dec. 13, 1967.



Applicant Disclaims the word "Records," and the representation of a phonograph record, apart from the mark as shown.
For Phonograph Records (Int. Cl. 9).
First use Aug. 15, 1961.

SN 289,421. Peters International, Inc. New York, N.Y. Filed Jan. 23, 1968.



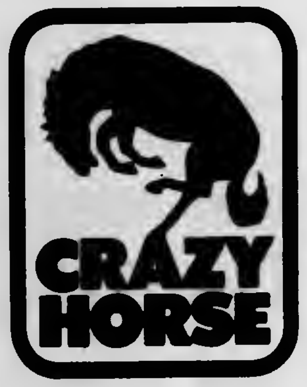
Applicant disclaims the representation of a phonograph record and a tone arm apart from the mark as shown.
For Phonograph Records (Int. Cl. 9).
First use June 1, 1967.

SN 292,384. International Video Corporation, Mountain View, Calif. Filed Mar. 4, 1968.

IVC

For Magnetic Tape Recorders and Reproducers and Magnetic Tape Reels (Int. Cl. 9).
First use Sept. 25, 1967.

SN 300,394. Capitol Records, Inc., Los Angeles, Calif. Filed June 14, 1968.



For Phonograph Records (Int. Cl. 9).
First use May 13, 1968.

Class 37 — Paper and Stationery

SN 251,478. Oliver Ross Stevens, State College, Pa. Filed Aug. 1, 1966.

Leisure Time

For Paper Place Mats (Int. Cl. 27).
First use Dec. 1, 1965.

SN 260,581. Plastic Sealing Corporation, Los Angeles, Calif. Filed Dec. 12, 1966.

VIS

For Plastic Pages in Which Slides Are Placed and Are Sold in a File Folio Envelope (Int. Cl. 16).
First use Aug. 8, 1962.

Class 38 — Prints and Publications

SN 269,944. Vance Publishing Corporation, Chicago, Ill. Filed Apr. 24, 1967.

CANNER PACKER CP

Owner of Reg. No. 694,260.
For Trade Magazine (Int. Cl. 16).
First use October 1966.

Class 39 — Clothing

SN 239,149. Izod, Ltd., New York, N.Y. Filed Feb. 18, 1966.

The words "Camisa de Espana" are disclaimed apart from the mark as shown, without prejudice to any common law rights therein. "Camisa de Espana" means "shirt of Spain" in Spanish.
For Men's and Boys' Shirts, Sweaters, Slacks, and Walking Shorts (Int. Cl. 25).
First use Jan. 26, 1966.

SN 272,255. Bond Stores, Incorporated, New York, N.Y. Filed May 24, 1967.

Bond Fifth Avenue

Owner of Reg. No. 305,592.
For Men's Suits, Slacks, Sport Coats, Neckwear, Shorts; Knit, Sport, Dress, and T-Shirts; Ladies' Suits and Coats (Int. Cl. 25).
First use July 1, 1960.

SN 274,306. John Brown, d.b.a. John Brown's Leather Works, Chicago, Ill. Filed June 20, 1967.

JOHN BROWN'S LEATHER WORKS

Applicant disclaims the words "Leather Works" apart from the mark as shown.
For Leather Footwear (Int. Cl. 25).
First use Nov. 1, 1965.

SN 278,222. The Kendall Company, Walpole, Mass. Filed Aug. 14, 1967.

square B

Owner of Reg. Nos. 726,538 and 799,591.
For Infants' and Toddlers' Diapers, Shirts, Gowns, Kimonos, Sacques, Training Pants, Coveralls, Sleepers, Creepers, Rompers, Sacque and Panty Sets, Pajamas, Underwear, and Bibs (Int. Cl. 25).
First use Sept. 1, 1966, on diapers.

SN 281,090. Lorch-Westway Corporation, Dallas, Tex. Filed Sept. 25, 1967.

DAWNLEIGH

For Ladies' Dresses, Coat and Dress Ensembles, and Jacket and Dress Ensembles (Int. Cl. 25).
First use Mar. 13, 1967.

SN 282,144. Societe Carvil, Paris, France. Filed Oct. 9, 1967.

CARVIL

Priority claimed under Sec. 44(d) on French Reg. No. 725,932, dated Aug. 24, 1967.
For Boots and Shoes (Int. Cl. 25).

SN 286,151. Junior Gallery, Inc., New York, N.Y. Filed Dec. 4, 1967.

DIMINU

For Ladies' and Misses' Coats and Suits (Int. Cl. 25).
First use Sept. 12, 1967.

SN 287,626. Anjac Corporation, Denver, Colo. Filed Dec. 27, 1967.

TiesPlus

The word "Ties" is disclaimed apart from the mark as shown. Owner of Reg. No. 840,057.
For Neckwear (Int. Cl. 25).
First use at least as early as Dec. 11, 1967.

SN 290,983. Storktowne Products, Inc., Chicago, Ill. Filed Feb. 13, 1968.

For Bathrobes, Dusters, Sleeping Wear, and Pajamas (Int. Cl. 25).
First use Jan. 29, 1965.

SN 291,652. Uniroyal, Inc., New York, N.Y. Filed Feb. 21, 1968.

SUNFISH

For Jackets and Shoes (Int. Cl. 25).
First use Dec. 12, 1967.

SN 292,610. Bernard E. Powers, Fitchburg, Mass. Filed Mar. 6, 1968.

HUNTER JUNIORS

Applicant disclaims the word "Juniors" apart from the mark as shown. Owner of Reg. No. 561,046.
For Young Women's Slacks, Shorts, Skirts, Suits, Dresses, and Pedal Pushers (Int. Cl. 25).
First use Jan. 21, 1968.

SN 293,496. Frayne Sportswear Mfrs. Inc., Tampa, Fla. Filed Mar. 18, 1968.

COUNTRY TROTTER

For Women's and Girls' Sportswear—Namely, Jackets, Pants, Shorts, and Shirts (Int. Cl. 25).
First use Feb. 14, 1968.

SN 297,542. De Gee, Inc., Asbury Park, N.J. Filed May 7, 1968.

CATHY DEE

For Ladies' All-Weather Coats and Ladies' Car Coats (Int. Cl. 25).
First use Apr. 26, 1968.

SN 299,533. Hat Corporation of America, New York, N.Y. Filed June 3, 1968.

COUNTER-SPY

For Hats for Men and Women (Int. Cl. 25).
First use on or about Nov. 1, 1967.

SN 300,396. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed June 14, 1968.

WISH-AWAYS

For Diapers (Int. Cl. 25).
First use Apr. 5, 1968.

Class 40—Fancy Goods, Furnishings, and Notions

SN 300,225. Fashion Tress, Inc., Miami Beach, Fla. Filed June 12, 1968.

GISMO

For Hair Rollers (Int. Cl. 26).
First use on or about June 1, 1968.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 274,867. Fiber Industries, Inc., Charlotte, N.C. Filed June 27, 1967.

SERENE

Owner of Reg. Nos. 518,149 and 805,957.
For Mattress Pads (Int. Cl. 24).
First use May 9, 1967.

SN 287,531. East Orange Mill End Shops, East Orange, N.J. Filed Dec. 26, 1967.

East Orange
MILL END SHOPS

The words "Mill End Shops" are disclaimed apart from the mark as shown.
For Piece Goods Used for Drapery and Upholstery Purposes (Int. Cl. 24).
First use 1939.

Class 44—Dental, Medical, and Surgical Appliances

SN 264,234. Popper & Sons, Inc., New York, N.Y. Filed Feb. 8, 1967.

STERI-CASE

For Sanitary Glass Sterilizing Case for Fever Thermometers (Int. Cl. 9).
First use February 1957.

SN 272,630. I.G.R. Corporation, New York, N.Y., assignee of Adolph Posner and Richard Inglima (joint owners), New York, N.Y. Filed May 29, 1967.

TONOKAP

For Endplate for Tonometers (Int. Cl. 10).
First use on or about May 4, 1967.

SN 279,126. Vita Zahnfabrik H. Rauter K.G., Sackingen, Germany. Filed Aug. 25, 1967.

ARTIGRAPH

Owner of German Reg. No. 826,425, dated Nov. 22, 1966.
For Adjustable Articulator, Measuring and Surveying Instrument for All Types of Work in Prosthetic Dentistry (Int. Cl. 10).

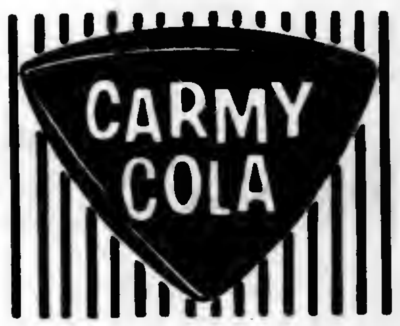
SN 294,884. Dynamic Classics, Ltd., New York, N.Y. Filed Apr. 4, 1968.

SALONETTE

For Electric Heating Pad Shaped to Fit the Contours of a Human Face, for Use as a Heated Face Mask (Int. Cl. 10).
First use Jan. 5, 1968.

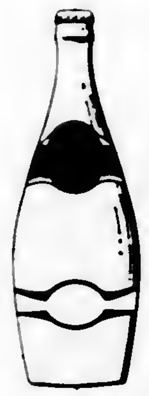
Class 45—Soft Drinks and Carbonated Waters

SN 273,253. Carmy Cola Corporation, Laval, Quebec, Canada. Filed June 7, 1967.



Applicant disclaims the word "Cola."
For Carbonated Cola-Type Soft Drink (Int. Cl. 32).
First use Aug. 25, 1966; in commerce Aug. 25, 1966.

SN 297,637. Source Perrier, S.A., Vergeze, Gard, France. Filed May 8, 1968.



The representation of the container is disclaimed apart from the mark as shown. The drawing is lined for green and yellow, and color is claimed as a feature of the mark. Owner of U.S. Reg. Nos. 315,850 and 603,685.
For Natural, Mineral and Aerated Waters (Int. Cl. 32).
First use 1922; in commerce 1922; Sept. 4, 1900, as to "Perrier."

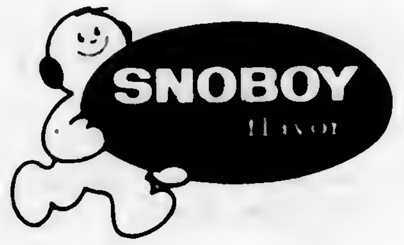
Class 46—Foods and Ingredients of Foods

SN 230,359. Circus Ices, Inc., Los Angeles, Calif. Filed Oct. 18, 1965.

HAWAIIAN
ICES

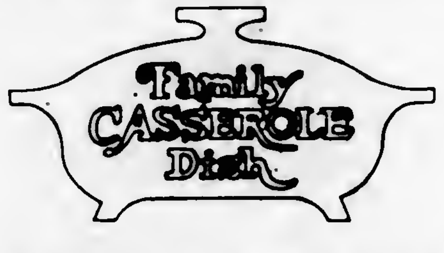
The word "Ices" is disclaimed apart from the mark as shown.
For Frozen Confection—Namely, a Flavored Ice Product (Int. Cl. 30).
First use June 1963.

SN 241,448. Fine Foods, Inc., Seattle, Wash. Filed Mar. 21, 1966.



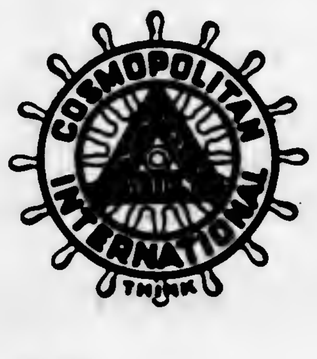
Owner of Reg. Nos. 546,047, 721,099, and others.
For Fresh Fruits, Fresh and Frozen Vegetables, Fresh and Frozen Berries, Fresh and Frozen Fruit Juices, Frozen Mixed Vegetables, Frozen French Fried and Hashed Brown Potatoes (Int. Cls. 29, 31, and 32).
First use Oct. 20, 1964; Mar. 1, 1946 in a different form; Apr. 9, 1925 as to "Snoboy"; January 1947 as to "Picked for Flavor."

SN 264,336. On-Cor Frozen Foods, Inc., Chicago, Ill. Filed Feb. 9, 1967.



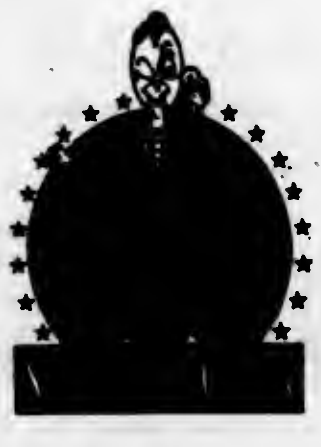
Applicant disclaims the word "Dish" apart from the mark as shown.
For Cooked, Frozen, Ready-To-Heat-and-Serve, Prepared Dinners Consisting of Meat and Vegetables (Int. Cl. 29).
First use Oct. 15, 1966.

SN 264,392. Cosmopolitan International, Fort Worth, Tex. Filed Feb. 10, 1967.



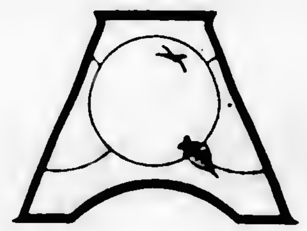
For Candy (Int. Cl. 30).
First use Oct. 1, 1956.

SN 264,916. Donald J. Divine, Parsons, Kans. Filed Feb. 17, 1967.



The word "Chicken" is disclaimed apart from the mark as shown.
For Cooked Chicken (Int. Cl. 29).
First use Dec. 1, 1966.

SN 269,837. Adams Packing Association, Inc., Auburndale, Fla. Filed Apr. 24, 1967.



Applicant disclaims the representation of the fruit, apart from the mark as shown, without any disclaimer of its common law rights in said representation.
For Fresh Citrus Fruits—Namely, Oranges, Grapefruit and Tangerines; Canned Juices and Fruits—Namely, Grapefruit Juice, Orange Juice, Tangerine Juice and Grapefruit Sections; Chilled Juice Packed in Glass—Namely, Orange Juice and Grapefruit Juice; and Citrus Essential Oils (Int. Cls. 3, 29, 31, and 32).
First use October 1964 on fresh citrus fruits.

SN 283,517. C. A. Fortune & Company, River Forest, Ill. Filed Oct. 27, 1967.

C·A·F

For General Line of Bakery Goods, Specifically Cookies (Int. Cl. 30).
First use June 1, 1967.

SN 286,467. Kellogg Company, Battle Creek, Mich. Filed Dec. 8, 1967.

ROLLY TOASTERS

For Pastry of the Type Intended To Be Warmed in a Toaster Before Serving (Int. Cl. 30).
First use Nov. 29, 1967.

SN 292,747. Ocoma Foods Company, d.b.a. Hayden House Foods Company, Omaha, Nebr. Filed Mar. 8, 1968.

Town
House

For Fresh Dressed Turkeys (Int. Cl. 29).
First use Jan. 1, 1957.

SN 298,983. Van Buren Packing Company, Hartford, Mich. Filed May 23, 1968.

COPIA BRAND

The word "Brand" is disclaimed apart from the mark as shown.
For Fresh Vegetables, Specifically Tomatoes (Int. Cl. 31).
First use April 1968.

Class 47 — Wines

SN 233,680. Caves Alianca-Vinicola de Sangalhos S.A.R.L., d.b.a. Caves Alianca, Sangalhos, Portugal. Filed Dec. 1, 1965.

Aliança

Owner of U.S. Reg. No. 794,174.
For Wines (Int. Cl. 33).
First use 1958; in commerce 1958.

SN 233,681. Caves Alianca-Vinicola de Sangalhos S.A.R.L., d.b.a. Caves Alianca, Sangalhos, Portugal. Filed Dec. 1, 1965.

ALIANÇA

Owner of U.S. Reg. No. 794,174.
For Wines (Int. Cl. 33).
First use 1958; in commerce 1958.

SN 274,226. Mogen David Wine Corporation, Chicago, Ill. Filed June 19, 1967.

CHATAUQUA

For Wines (Int. Cl. 33).
First use Nov. 18, 1966.

SN 296,488. Morlant (de la Marne) Societe Anonyme, Ay, Marne, France. Filed Apr. 25, 1968.

Morlant
(de la Marne)

Without waiver of any common law rights in the mark as a whole, applicant disclaims the phrase "de la Marne" apart from the mark as shown. Owner of U.S. Reg. No. 308,318; and French Reg. No. 711,189, dated July 13, 1966.
For Wines, Sparkling Wines, and Champagne Wines (Int. Cl. 33).

SN 297,502. E. & J. Gallo Winery, d.b.a. Gallo Vineyards, Modesto, Calif. Filed May 7, 1968.

Tickle Pink

No claim is made to the word "Pink" apart from the mark as shown.
For Rosé Wines (Int. Cl. 33).
First use May 3, 1968.

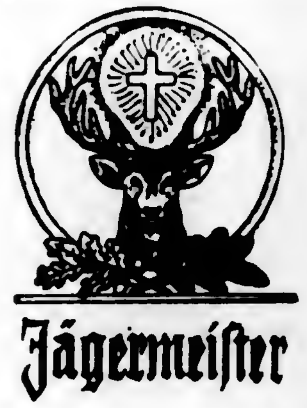
Class 49 — Distilled Alcoholic Liquors

SN 222,766. David Sherman Corporation, St. Louis, Mo. Filed July 6, 1965.

RUBINOFF

Applicant claims use for the area comprising the states of Arkansas, Illinois, Louisiana, Missouri, and Texas.
For Vodka (Int. Cl. 33).
First use Feb. 27, 1959.
Subj. to Conc. Use Proc. with SN 274,571.

SN 271,633. Curt Mast, Wolfenbuttel, Germany. Filed May 16, 1967.



Applicant disclaims the representation of the crucifix apart from the mark as shown. The word "Jagermeister" translated means "master of the hunt." Owner of German Reg. No. 490,436, dated May 27, 1935.
For Liqueurs, Specifically Herbalic Liqueurs (Int. Cl. 33).

SN 273,365. The Black Prince Distillery, Inc., Nutley, N.J. Filed June 8, 1967.

GUARDSMAN

For Gin, Blended Whiskey, and Scotch Whisky (Int. Cl. 33).
First use Mar. 1, 1939.

SN 274,220. Mar-Salle Chicago Co., Chicago, Ill. Filed June 19, 1967.

JOSE MONCADO

"Jose Moncado" is not the name of any particular living individual.
For Rum (Int. Cl. 33).
First use Apr. 7, 1934.

SN 274,221. Mar-Salle Chicago Co., Chicago, Ill. Filed June 19, 1967.

MAR-SALLE

For Cordials, Liqueurs, Brandies, Gin, and Grain Alcohol for Beverage Purposes (Int. Cl. 33).
First use Jan. 2, 1934, on cordials.

SN 285,076. Tullamore Dew Limited, Dublin, Ireland Filed Nov. 16, 1967.

GIVE EVERY MAN HIS DEW

No registration rights are claimed for the word "Dew" apart from the mark as shown. Owner of U.S. Reg. No. 641,914.
For Irish Whiskey (Int. Cl. 33).
First use 1938; in commerce September 1954.

SN 290,369. Paramount Distillers, Incorporated, Cleveland, Ohio. Filed Feb. 6, 1968.

STRAIGHT WESTERN

For Distilled Bourbon Whiskey (Int. Cl. 33).
First use Oct. 12, 1967.

SN 299,651. Continental Distilling Corporation, d.b.a. Continental Distilling Co., Philadelphia, Pa. Filed June 4, 1968.

GRINGA

For Gin (Int. Cl. 33).
First use at least as early as May 20, 1968.

Class 50 — Merchandise Not Otherwise Classified

SN 268,254. John Harold Wills, d.b.a. Jayvee Custom Enterprises, Fort Lauderdale, Fla. Filed Apr. 3, 1967.

JAYVEE

For Custom-Made Objects of Art, for Use in Home Decorating (Int. Cl. 20).
First use Jan. 16, 1967.

SN 276,862. Poloron Products, Inc., New Rochelle, N.Y. Filed July 26, 1967.

POLORON

Owner of Reg. No. 434,558.
For Decorative Plaques, Door, Wall and Table Decorations for Christmas and Other Occasions, Formed of Plastic and Other Materials (Int. Cl. 20).
First use at least as early as September 1947.

SN 285,417. Frederick H. Good, Los Angeles, Calif. Filed Nov. 22, 1967.

TOTEHANGER

For Portable Holder and Carrier for Clothes Hangers Through Which the Hooks of Coat Hangers Are Placed To Facilitate Carrying by Hand (Int. Cl. 21).
First use Sept. 5, 1967.

SN 300,231. Pappagallo, Inc., New York, N.Y. Filed June 12, 1968.

Pappagallo

Owner of Reg. No. 678,919.
For Shoe Trees (Int. Cl. 21).
First use at least as early as September 1966.

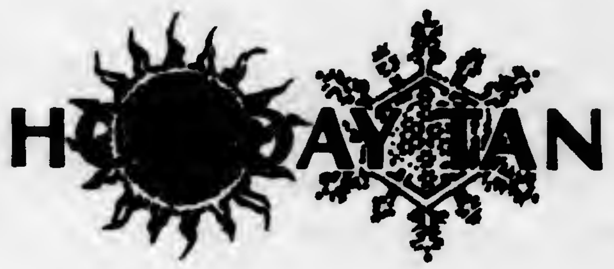
Class 51 — Cosmetics and Toilet Preparations

SN 205,218. Yardley of London, Inc., Totowa, N.J. Filed Oct. 30, 1964.

CLEAN AND SPARKLE

For Cleansing Lotion (Int. Cl. 3).
First use Sept. 21, 1964.

SN 278,799. Holiday Magic, Inc., San Rafael, Calif. Filed Aug. 22, 1967.



Applicant disclaims exclusive right to the word "Tan" apart from the mark as shown. Owner of Reg. No. 825,890.
For Sun Tan Cream (Int. Cl. 3).
First use May 28, 1967.

SN 279,127. Westbury Cosmetics Corp., Westbury, N.Y. Filed Aug. 25, 1967.

PATRICIA HUNT

The name "Patricia Hunt" is fictitious.
For Lipstick (Int. Cl. 3).
First use April 1967.

SN 279,206. The Mennen Company, Morristown, N.J. Filed Aug. 28, 1967.

LILIKOI

"Lilikoi" is a Hawaiian term to designate a passion fruit.
For After-Shave Lotion (Int. Cl. 3).
First use Aug. 8, 1967.

SN 280,430. L'Oreal, Paris, France. Filed Sept. 15, 1967.

ELEGIS

The word "Elegis" has no meaning in the French language, but is fanciful. Owner of French Reg. No. 713,934, dated Sept. 16, 1966.
For Hair Setting Lotion (Int. Cl. 3).

SN 280,757. Samuel Bonat & Bro., Inc., West Paterson, N.J. Filed Sept. 20, 1967.

FIRM LAC

The word "Firm" is disclaimed apart from the mark as shown. Owner of Reg. No. 766,116.
For Hair Spray (Int. Cl. 3).
First use Aug. 8, 1967.

SN 281,829. Sybil Ives Incorporated, Yonkers, N.Y. Filed Oct. 4, 1967.

SYBIL IVES

The name "Sybil Ives" is fictitious. Owner of Reg. No. 798,908.
For Cold Perm Preparation, Cream Neutralizer, and Setting Lotion (Int. Cl. 3).
First use July 25, 1964.

SN 282,058. Clairol Incorporated, New York, N.Y. Filed Oct. 9, 1967.

FIRST DAY BLONDE

Applicant disclaims the word "Blonde" apart from the mark as shown.
For Women's Hair Lightener, Hair Rinse and Hair Tinting, Dyeing and Coloring Preparations (Int. Cl. 3).
First use Aug. 16, 1967.

SN 282,646. Mary E. Lynne Weenink, d.b.a. Mary Lynne, Ravenna, Ohio. Filed Oct. 16, 1967.

"TACK ROOM"

For Perfume and After Shave Lotion (Int. Cl. 3).
First use Sept. 12, 1966.

SN 282,854. Yardley of London, Inc., Totowa, N.J. Filed Oct. 18, 1967.

MOD MASKS

Applicant disclaims the word "Masks" apart from the mark as shown.
For Color Face Mask (Int. Cl. 3).
First use June 27, 1967.

SN 283,424. Samuel Bonat & Bro., Inc., West Paterson, N.J. Filed Oct. 26, 1967.

BODY AND DEPTH

Owner of Reg. No. 775,982.
For Cold Permanent Waving Compositions (Int. Cl. 3).
First use Apr. 17, 1962.

SN 283,505. Avon Products, Inc., New York, N.Y. Filed Oct. 27, 1967.

MOUNTAIN SIGH

For Solid Perfume, Cologne Mist, Cream Sachet, Dusting Powder, Perfume, Perfume Oil, and Powder Sachet (Int. Cl. 3).
First use Oct. 13, 1967.

SN 283,561. Pigot & Smith Limited, Wigan, England. Filed Oct. 27, 1967.

MIMOSPRAY

For Deodorant Spray Specifically for Deodorizing the Female Vulva (Int. Cl. 5).
First use 1964; in commerce September 1966.

SN 287,936. New York Pencil Co., Inc., New York, N.Y. Filed Jan. 2, 1968.

HIS HONOR

For Cologne, Deodorant Stick, Hair Dressing, After Shave Cream and Skin Conditioner, and After Shave Lotion (Int. Cls. 3 and 5).
First use July 25, 1967.

SN 287,959. Sales Affiliates, Inc., New York, N.Y. Filed Jan. 2, 1968.

ZOTOS

Owner of Reg. Nos. 295,481, 803,479, and others.
For Hair Conditioners (Int. Cl. 3).
First use May 16, 1966.

SN 288,168. Armour and Company, Chicago, Ill. Filed Jan. 5, 1968.

GOLDEN SAND

For Personal Deodorant (Int. Cl. 5).
First use on or prior to Nov. 17, 1967.

SN 288,170. Armour and Company, Chicago, Ill. Filed Jan. 5, 1968.

COVENTRY

For Personal Deodorant (Int. Cl. 5).
First use on or prior to Nov. 17, 1967.

SN 288,176. Armour and Company, Chicago, Ill. Filed Jan. 5, 1968.

TONE

For Personal Deodorant (Int. Cl. 5).
First use on or prior to Nov. 17, 1967.

SN 288,178. Armour and Company, Chicago, Ill. Filed Jan. 5, 1968.

PUNCH

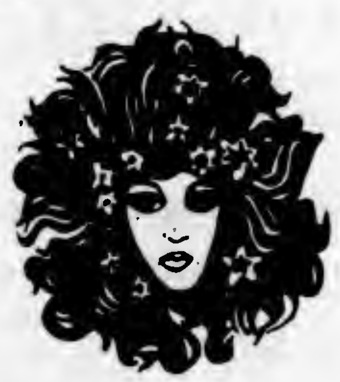
For Personal Deodorant (Int. Cl. 5).
First use on or prior to Nov. 17, 1967.

SN 294,999. Helzberg's Diamond Shops, Inc., Kansas City, Mo. Filed Apr. 5, 1968.

I AM LOVED

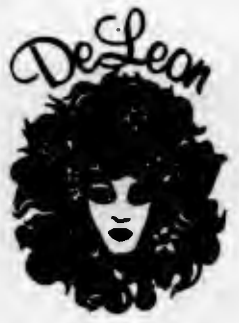
For Night Cream, Cologne, and Men's After Shave Lotion (Int. Cl. 3).
First use Mar. 26, 1968.

SN 297,247. De Leon Cosmetics Company, Inc., Omaha, Nebr. Filed May 3, 1968.



For Eye Makeup, Rouge, Hand and Body Lotions, Skin Creams, Freshener, Oils, and Face Powder (Int. Cl. 3).
First use Mar. 15, 1968.

SN 297,248. De Leon Cosmetics Company, Inc. Omaha, Nebr. Filed May 3, 1968.



For Rouge, Eye Makeup, and Face Powder (Int. Cl. 3).
First use Apr. 17, 1968.

SN 299,397. Carter-Wallace, Inc., New York, N.Y. Filed May 31, 1968.

WELL SPOKEN

For Mouthwash and Breath Freshener (Int. Cl. 3).
First use Apr. 30, 1968.

SN 299,722. Carter-Wallace, Inc., New York, N.Y. Filed June 5, 1968.

LOVELY ANGEL

Owner of Reg. Nos. 436,894 and 699,538.
For Facial Cleansing Cream (Int. Cl. 3).
First use Apr. 30, 1968.

SN 299,724. Carter-Wallace, Inc., New York, N.Y. Filed June 5, 1968.

EFFISAN

Owner of Reg. Nos. 592,154 and 650,022.
For Denture Cleanser Tablet (Int. Cl. 3).
First use Apr. 30, 1968.

SN 299,725. Carter-Wallace, Inc., New York, N.Y. Filed June 5, 1968.

LOOK LOVELY

Owner of Reg. Nos. 436,894 and 699,538.
For Facial Cleansing Cream (Int. Cl. 3).
First use Apr. 30, 1968.

SN 299,906. Carter-Wallace, Inc., New York, N.Y. Filed June 7, 1968.

ACTIVE

Owner of Reg. No. 805,734.
For Shave Cream Preparation and After Shave Lotion Preparation (Int. Cl. 3).
First use Apr. 30, 1968.

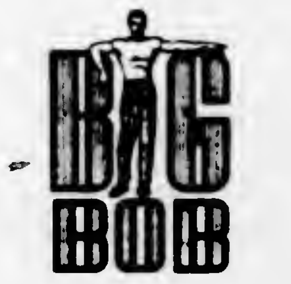
Class 52 — Detergents and Soaps

SN 240,033. Southwestern Petroleum Corporation, Fort Worth, Tex. Filed Mar. 2, 1966.

<SWEPCO>

Owner of Reg. Nos. 808,029, 836,592, and others.
For All-Purpose Cleaners (Int. Cl. 3).
First use Nov. 1, 1965.

SN 274,706. Robert H. Benson, d.b.a. Big Bob Mfg. Co., Kent, Wash. Filed June 26, 1967.



The mark is lined for the color red, and the individual shown in the drawing is fanciful.
For All-Purpose Household Cleaners (Int. Cl. 3).
First use Aug. 10, 1966.

SN 274,810. Lyman R. Lyon, Royal Oak, Mich. Filed June 26, 1967.

HEXIFOAM

For Foam Skin Cleanser (Int. Cl. 3).
First use Feb. 15, 1967.

SN 283,504. Avon Products, Inc., New York, N.Y. Filed Oct. 27, 1967.

MOUNTAIN SIGH

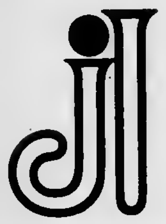
For Toilet Soap (Int. Cl. 3).
First use Oct. 13, 1967.

SN 283,759. Atlas Supply Company, Springfield, N.J. Filed Oct. 31, 1967.

ATLAS

Owner of Reg. Nos. 595,677, 773,856, and others.
For Detergent Particularly Useful for Washing Motor Vehicles and Equipment (Int. Cl. 3).
First use Aug. 11, 1967.

SN 285,135. Johnson Industries, Inc., Menlo Park, N.J. Filed Nov. 17, 1967.



Owner of Reg. Nos. 818,170 and 818,840.

For Toilet Soap, Hair Shampoo, and Powdered and Liquid Soap for the Face and Hands (Int. Cl. 3).

First use Oct. 5, 1965.

SN 285,782. West Chemical Products, Inc., Long Island City, N.Y. Filed Nov. 28, 1967.

WEST ELECTROSOLVE

Owner of Reg. Nos. 257,156, 665,581, and others.

For Liquid Solvent for Cleaning and Degreasing Electric Motors, Instruments, Mechanical Equipment, and Metal Surfaces Prior to Painting or Welding (Int. Cl. 1).

First use Oct. 1, 1967.

SN 285,995. The Chemithon Corporation, Seattle, Wash. Filed Dec. 1, 1967.

ALPHA SOFT

The word "Soft" is disclaimed apart from the mark as shown.

For Olefin Sulfonate Detergents (Int. Cl. 3).

First use on or about May 16, 1967.

SN 286,148. Interchemical Corporation, New York, N.Y. Filed Dec. 4, 1967.

Owner of Reg. Nos. 442,785, 846,884, and others.

For Liquid Cleaner for Lacquered or Enamel Surfaces; Synthetic Enamel Cleaner; Cleaning Material in Paste Form for Removing Grease Spots, Water Marks, Insect Stains from Automobile Bodies; Cleaning Material for Removing Rust and Film from Chrome Finishes and Other Metal Surfaces; Upholstery Cleaner; and a Preparation for the removal of Wax and Other Foreign Substances Preliminary to Refinishing the Surface (Int. Cl. 3).

First use on or about Jan. 1, 1956.

SN 287,151. DBA Products Co., Inc., Lake Bluff, Ill. Filed Dec. 18, 1967.

LIQUID LUSTRE

Applicant disclaims exclusive rights to the word "Liquid" apart from the mark as shown.

For Golf Ball Wash (Detergent Additive Added to Water for Washing Golf Balls) (Int. Cl. 3).

First use Oct. 13, 1945.

SN 288,169. Armour and Company, Chicago, Ill. Filed Jan. 5, 1968.

GOLDEN SAND

For Bath and Toilet Soap (Int. Cl. 3).

First use on or prior to Nov. 17, 1967.

SN 288,171. Armour and Company, Chicago, Ill. Filed Jan. 5, 1968.

COVENTRY

For Bath and Toilet Soap (Int. Cl. 3).

First use on or prior to Nov. 17, 1967.

SN 288,177. Armour and Company, Chicago, Ill. Filed Jan. 5, 1968.

TONE

For Bath and Toilet Soap (Int. Cl. 3).

First use on or prior to Nov. 17, 1967.

SN 288,183. Avon Products, Inc., New York, N.Y. Filed Jan. 5, 1968.

HER PRETTINESS

For Toilet Soap (Int. Cl. 3).

First use Dec. 20, 1967.

SN 288,562. Universal Oil Products Company, Des Plaines, Ill. Filed Jan. 10, 1968.

NEUTRA-SOLV

For Emulsifier for Cleaning Industrial Equipment (Int. Cl. 3).

First use Sept. 17, 1959.

SN 295,000. Helzberg's Diamond Shops, Inc., Kansas City, Mo. Filed Apr. 5, 1968.

For Hand and Toilet Soap (Int. Cl. 3).

First use Mar. 26, 1968.

SN 299,272. Baron Blakeslee, Inc., Chicago, Ill. Filed May 29, 1968.

STABELENE

For Degreasing Solvents (Int. Cl. 1).

First use on or about Oct. 5, 1952.

SN 299,280. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed May 29, 1968.

MONTESSA

For Hand Soap (Int. Cl. 3).

First use May 14, 1968.

SN 299,727. Colgate-Palmolive Company, New York, N.Y. Filed June 5, 1968.

PALMOLIVE

Owner of Reg. Nos. 113,591, 210,594, and others.

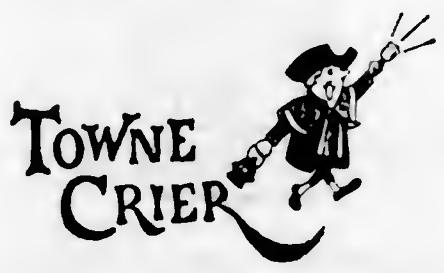
For Liquid Detergent for Washing Dishes and Clothes (Int. Cl. 3).

First use Aug. 1, 1963.

SERVICE MARKS

Class 100 — Miscellaneous

SN 254,445. Gourmand's, Inc., Abilene, Tex. Filed Sept. 14, 1966.

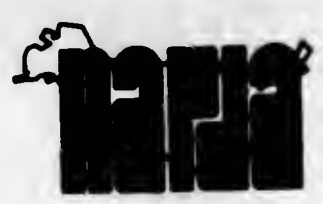


The drawing is lined for the colors brown and red.

For Restaurant Services (Int. Cl. 42).

First use Feb. 18, 1966.

SN 256,579. National Aircraft Parts Distributors Association, Elk Grove, Ill. Filed Oct. 17, 1966.



The representation of a map of the United States is disclaimed apart from the mark as illustrated.

For Association Services Rendered to Members Engaged in Merchandising Aircraft Parts and Supplies (Int. Cl. 42).

First use July 1, 1966.

SN 258,721. Quintin Blair, Cody, Wyo. Filed Nov. 15, 1966.

No claim is made to the word "Village" apart from the mark.

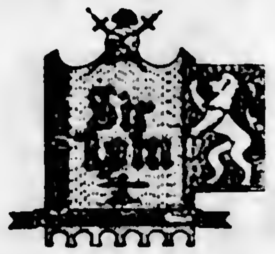
THE BUFFALO BILL VILLAGE

For Operating a Replica of a Village of the Old West, Including Such Tourist Conveniences as a Motel, Cafe, Gift Shop, and Similar Services (Int. Cl. 42).

First use June 1962.

Subj. to Intf. with SN 265,464 and SN 266,187.

SN 261,832. Charles Clifford Ford, d.b.a. Sir Loin, Denver, Colo. Filed Jan. 3, 1967.



The drawing is lined for the colors purple and gold.

For Restaurant Services (Int. Cl. 42).

First use Nov. 16, 1966.

SN 264,105. Safehouse Ltd., Milwaukee, Wis. Filed Feb. 6, 1967.

SAFE HOUSE

For Bar and Restaurant Services (Int. Cl. 42).

First use Sept. 1, 1966.

SN 265,464. Buffalo Bill's Steak Village, Inc., Los Angeles, Calif. Filed Feb. 27, 1967.

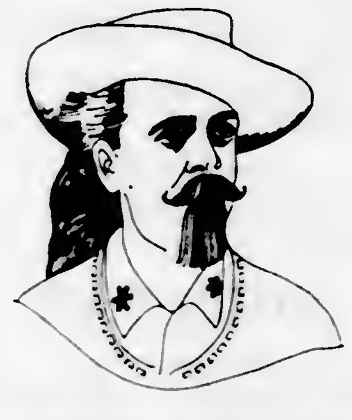
BUFFALO BILL'S

For Restaurant Services (Int. Cl. 42).

First use Sept. 8, 1966.

Subj. to Intf. with SN 258,721.

SN 266,187. Buffalo Bill's Steak Village, Inc., Los Angeles, Calif. Filed Mar. 8, 1967.



The trademark consists of a portrait of Colonel W. F. Cody (deceased), known in the annals of the West as "Buffalo Bill."

For Restaurant Services (Int. Cl. 42).

First use Sept. 8, 1966.

Subj. to Intf. with SN 258,721.

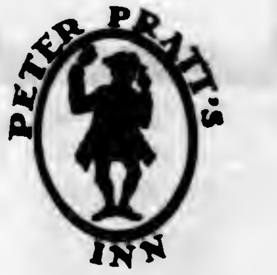
SN 266,868. Famous Recipe Fried Chicken, Inc., Lima, Ohio. Filed Mar. 16, 1967.

Owner of Reg. No. 832,750.

For Restaurant Services (Int. Cl. 42).

First use February 1966.

SN 266,916. Peter Pratt's Inn, Inc., Yorktown Heights, N.Y. Filed Mar. 16, 1967.



The word "Inn" is disclaimed apart from the mark as shown.

For Restaurant Services (Int. Cl. 42).

First use Dec. 4, 1965.

SN 270,210. Aeronautical Radio Inc., Annapolis, Md. Filed Apr. 28, 1967.

ARINC

Owner of Reg. Nos. 606,549 and 761,093.

For Consulting and Engineering Research Services Including Systems Architecture, in the Fields of Electronic, Physical and Organizational Systems (Int. Cl. 42).

First use October 1951.

SN 272,391. Mr. Steak, Inc., Denver, Colo. Filed May 25, 1967.

AMERICA'S FAVORITE FAMILY RESTAURANTS

Applicant disclaims the words "Family Restaurants" apart from the mark as shown.

For Restaurant Services (Int. Cl. 42).

First use in or about July 1966.

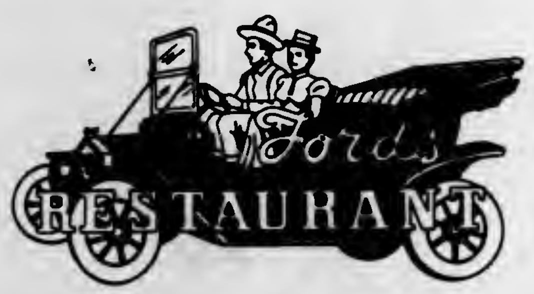
SN 275,433. Computer Aid Companies, Inc., Dallas, Tex. Filed July 6, 1967.

COMPUTAID

For Analyzing the Problems of Others, and Designing and Utilizing Computer Systems and Data Acquisition and Processing Systems and Equipment To Define and Implement Solutions to Such Problems (Int. Cl. 42).

First use on or about Apr. 19, 1967.

SN 277,655. Ford's Restaurant, Girard, Pa. Filed Aug. 7, 1967.

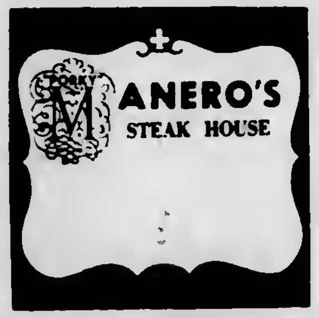


Applicant disclaims the word "Restaurant" apart from the mark.

For Restaurant Services (Int. Cl. 42).

First use October 1958.

SN 277,842. "Porky" Manero's Steak House, Westport, Conn. Filed Aug. 8, 1967.



No claim is made to the words "Steak House" apart from the mark as shown. Owner of Reg. Nos. 703,322 and 746,018.

For Restaurant Services (Int. Cl. 42).

First use Nov. 1, 1959.

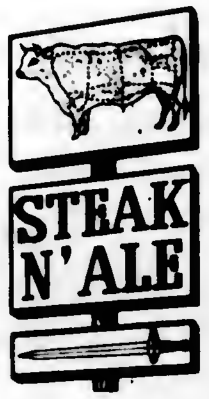
SN 282,218. Steak and Ale, Inc., Dallas, Tex. Filed Oct. 10, 1967.

STEAK N' ALE

For Restaurant Services (Int. Cl. 42).

First use as early as Mar. 13, 1967.

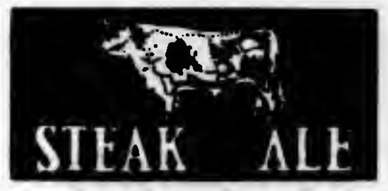
SN 282,221. Steak and Ale, Inc., Dallas, Tex. Filed Oct. 10, 1967.



For Restaurant Services (Int. Cl. 42).

First use as early as Mar. 13, 1967.

SN 282,222. Steak and Ale, Inc., Dallas, Tex. Filed Oct. 10, 1967.



For Restaurant Services (Int. Cl. 42).

First use as early as Feb. 27, 1966.

SN 285,986. Bobber Cafe, Inc., Baldwin, Wis. Filed Dec. 1, 1967.

BOBBER CAFE

The word "Cafe" is disclaimed apart from the mark as shown.

For Restaurant Services (Int. Cl. 42).

First use July 1, 1960.

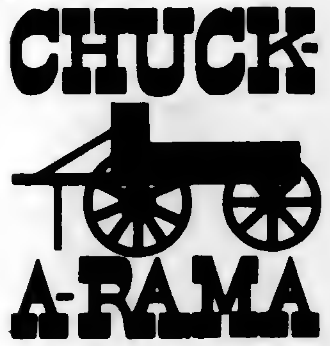
SN 286,180. Rerebas, Inc., McKee City, N.J. Filed Dec. 4, 1967.

ZABERERS

For Restaurant and Catering Services (Int. Cl. 42).

First use June 12, 1960.

SN 290,603. Greene-Tree, Inc., Salt Lake City, Utah. Filed Feb. 8, 1968.



For Restaurant Services (Int. Cl. 42).

First use on or about July 3, 1967.

SN 290,845. Golden West Steaks, Inc., Denver, Colo. Filed Feb. 12, 1968.

GOLDEN WEST STEAKS

The word "Steaks" is disclaimed apart from the mark as shown.

For Restaurant Services (Int. Cl. 42).

First use May 12, 1967.

SN 296,487. La Grenouille, Inc., New York, N.Y. Filed Apr. 25, 1968.

LA GRENOUILLE

The English translation of the mark from the French is "the frog."

For Restaurant Services (Int. Cl. 42).

First use Dec. 20, 1962.

Class 101 — Advertising and Business

SN 226,901. American Dairy Queen Corporation, Minneapolis, Minn., assignee of Dairy Queen National Development Company, St. Louis Mo. Filed Sept. 1, 1965.

LIVE A LITTLE!

For Retail Ice Cream and Ice Milk Store Services (Int. Cl. 35).

First use June 29, 1965.

SN 237,756. France Editions & Publications, Paris, France, assignee of Societe des Editions Mai, Paris, France. Filed Feb. 1, 1966.

ELLE

Priority claimed under Sec. 44(d) on French Reg. No. 539,700, dated Aug. 2, 1965. The word "Elle" means "she" in English. Owner of U.S. Reg. No. 758,137.

For Promoting the Sale of Women's Apparel by Others by Staging Style Shows and by the Preparation of Various Types of Advertising (Int. Cl. 35).

First use Mar. 20, 1951; in commerce Oct. 13, 1955.

SN 251,825. M & S Industries of Texas, Inc., Dallas, Tex. Filed Aug. 5, 1966.

THRIFT TOWN

For Drug Store Services (Int. Cl. 35).

First use July 15, 1966.

Subj. to Intf. with SN 250,535, SN 250,536, SN 250,537, and SN 253,658.

SN 262,157. S. Freedman & Sons, Inc., Washington, D.C. Filed Jan. 9, 1967.

For Distributorship Services for Paper Products Such as Containers, Towelings, Facial and Toilet Tissues, Wrappings, and the Like, and for Janitor Supplies Such as Floor Maintenance Equipment, Cleaners, Disinfectants, and Waxes (Int. Cl. 35).

First use Aug. 20, 1961.

SN 266,917. Public Relations Counsel, Inc., New York, N.Y. Filed Mar. 16, 1967.

"LADY OF THE HOUSE"

For Organizing, Conducting and Publicizing Art Exhibits and Contests To promote the Sale of Goods and Services of Others (Int. Cl. 35).

First use April 1965.

SN 270,655. Avis Girls, Los Angeles, Calif. Filed May 4, 1967.

INTERNATIONAL TEMPORARY PERSONNEL

No claim of exclusive right is made to "Temporary Personnel" for the services recited.

For Obtaining and Supplying Temporary Personnel for Others (Int. Cl. 35).

First use Apr. 4, 1966.

Subj. to Intf. with SN 276,236.

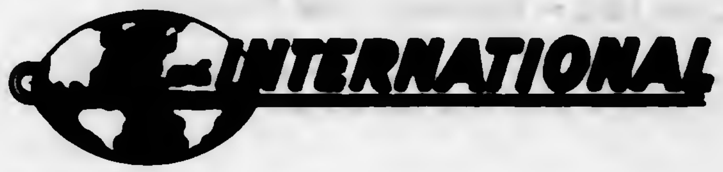
SN 275,656. Richard W. Griffiths, Pacific Palisades, Calif. Filed July 10, 1967.

G2

For Marketing Consulting Services (Int. Cl. 35).

First use on or before Sept. 1, 1963.

SN 276,236. International Personnel Service, Inc., Detroit, Mich. Filed July 18, 1967.



For Personnel and Employment Services (Int. Cl. 35).

First use June 24, 1962.

Subj. to Intf. with SN 270,655.

SN 276,479. Shendo Corporation, Boston, Mass. Filed July 20, 1967.

SHENDO

For Rendering Technical Assistance to Operators of Restaurants in All Phases of Their Business (Int. Cl. 35).

First use at least as early as Mar. 20, 1967.

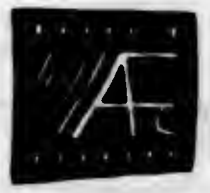
SN 277,125. Audio Fidelity Corporation, Richmond, Va. Filed July 31, 1967.

AUDIO FIDELITY

For Distributorship Services in the Field of Audio-Visual Equipment and Materials (Int. Cl. 35).

First use Mar. 1, 1954.

SN 277,126. Audio Fidelity Corporation, Richmond, Va. Filed July 31, 1967.



The mark is a fanciful showing of the letters "AFC."

For Distributorship Services in the field of Audio-Visual Equipment and Materials (Int. Cl. 35).

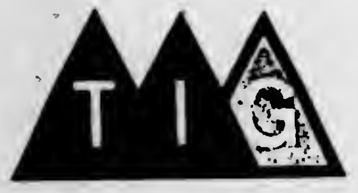
First use September 1960.

SN 284,242. Selective Educational Equipment, Inc., Newton, Mass. Filed Nov. 6, 1967.

SEE

For Mail-Order Services for Schools, Specializing in the Sale of School Supplies and Educational Equipment Including Kits Designed To Demonstrate and Teach Electrical Phenomena, Anthropological Phenomena, Biological Phenomena Including Live Plants and Animals Such as Protozoa, Mealworms and Gerbils, Agricultural Phenomena, Chemical Phenomena, Physical Phenomena, as Well as Equipment and Kits for Teaching Mathematics and Social Studies (Int. Cl. 35).
First use at least as early as Oct. 2, 1967.

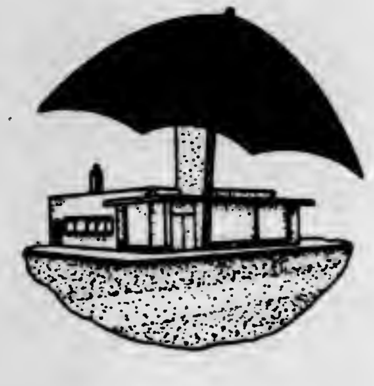
SN 285,761. Presbyterian Life, Inc., Philadelphia, Pa. Filed Nov. 28, 1967.



For Assisting Major National Advertisers in Their Consideration, Selection and Use of Religious Family Magazines, and To Promote the Sale of Advertising Space in the Contracting Religious Family Magazines by Offering Broader Circulation to Advertisers (Int. Cl. 35).
Firt use May 12, 1967.

Class 102 — Insurance and Financial

SN 244,683. D.S.R. Employees Federal Credit Union, Highland Park, Mich. Filed May 2, 1966.



Applicant, without waiving any of its common law rights, disclaims the words "Savings," "Credit," and "Insurance," apart from the mark as shown.
For Insurance Services, Including, Dispensing Information and Advice to Members Regarding Casualty, Liability and Life Insurance, and Arranging Family Insurance Plans; Financial Services, Including, Dispensing Information and Advice to Members Regarding Retirement and Savings Plans, Counselling Members on Family Budget Plans, Accepting Money From Members for Deposit, Payment of Debts and Other Financial Obligations of Members, and Making Loans to Members (Int. Cl. 36).
First use Dec. 20, 1962.

SN 255,017. Provident Life and Accident Insurance Company, Chattanooga, Tenn. Filed Sept. 23, 1966.

BENNY FITTS

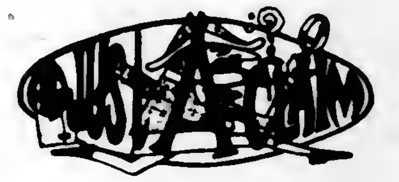
For Group Insurance Administration, in Promoting a Better Understanding by Insured Persons of the Nature and Purpose of Their Group Insurance Protection (Int. Cl. 36).
First use May 6, 1966.
Subj. to Intf. with SN 260,003.

SN 279,709. Ancient Order United Workmen, Seattle, Wash. Filed Sept. 6, 1967.

A.O.U.W.

For Underwriting Insurance Services—Namely, Life Insurance, Disability Income Insurance, and Retirement Income Insurance (Int. Cl. 36).
First use Oct. 24, 1906.

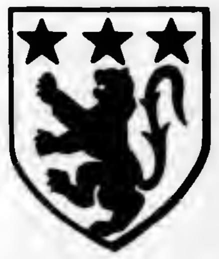
SN 282,974. Samuel Bild, d.b.a. Adjust-A-Claim, San Francisco, Calif. Filed Oct. 20, 1967.



No claim is made to the words "Adjust-A-Claim" apart from the mark shown.
For Insurance Claim Adjusting Services (Int. Cl. 36).
First use Sept. 1, 1965.

Class 103 — Construction and Repair

SN 282,912. The MacMillin Company, Inc., Keene, N.H. Filed Oct. 19, 1967.



For Building Construction (Int. Cl. 37).
First use May 8, 1965.

Class 104 — Communication

SN 269,271. Air Check Services Corporation of America, Chicago, Ill. Filed Apr. 17, 1967.

AIR CHECK

For Checking by Observation, Audio Tape, Disc, Wire, Film and Video Tape Recording and Monitoring, of Programming and Commercials Which Appear on Either AM or FM Radio and /or Television (Int. Cl. 38).
First use June 1958.

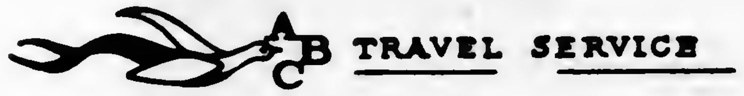
Class 105 — Transportation and Storage

SN 256,351. Esquire Travel Service, Inc., New York, N.Y. Filed Oct. 13, 1966.

ESQUIRE

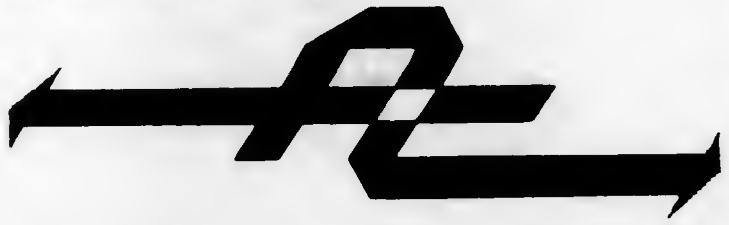
For Travel Agency Services (Int. Cl. 39).
First use Aug. 15, 1966.

SN 283,406. ABC Travel Service, S.A., Mexico City, Mexico. Filed Oct. 26, 1967.



Applicant disclaims the words "Travel Service" separately and apart from the mark.
For Travel Agency Services (Int. Cl. 39).
First use February 1960; in commerce February 1960.

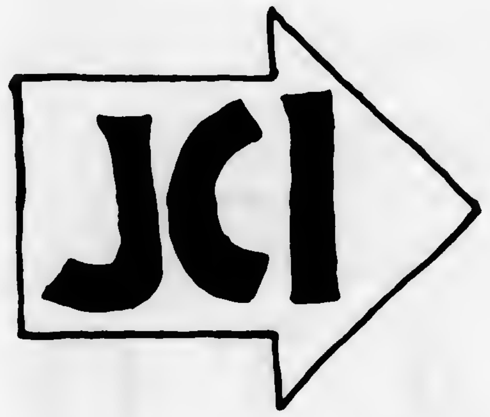
SN 284,272. The Atlantic Container Line, Ltd., New York, N.Y. Filed Nov. 7, 1967.



The drawing is lined for blue, but no claim is made to color.
For Transportation of Ocean-Going Cargo, in Chartered Vessels, and Storage Incidental Thereto (Int. Cl. 39).
First use Oct. 31, 1966.

Class 106 — Material Treatment

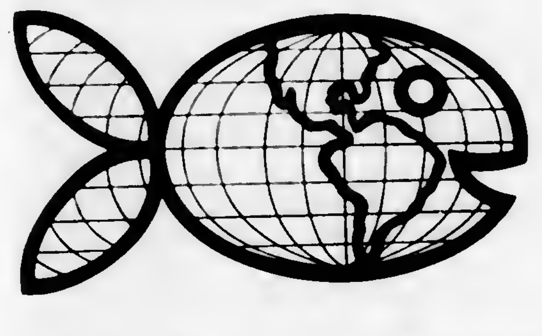
SN 258,378. Mal Heller, Brooklyn, N.Y. Filed Nov. 10, 1966.



For Dental Laboratory Services (Int. Cl. 40).
First use Oct. 14, 1966.

Class 107 — Education and Entertainment

SN 263,891. California International Sea Festival at Long Beach, Inc., Long Beach, Calif. Filed Feb. 3, 1967.



For Arranging and Staging Annual Fishing Competitions; Art Contests; and Water Ski, Boat, Diving, Swimming, and Related Aquatic Competitions (Int. Cl. 41).
First use in or about March 1966.

SN 266,997. Bankers Management & Services, Inc., Dallas, Tex. Filed Mar. 17, 1967.

THE FAMOUS FIVE

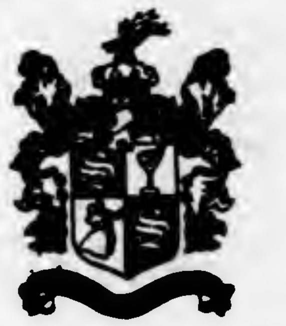
The word "Five" is disclaimed apart from the mark as shown.
For Musical Entertainment Services Rendered by a Vocal and Instrumental Group (Int. Cl. 41).
First use July 24, 1964.

SN 266,998. Bankers Management & Services, Inc., Dallas, Tex. Filed Mar. 17, 1967.

THE AMAZING FIVE

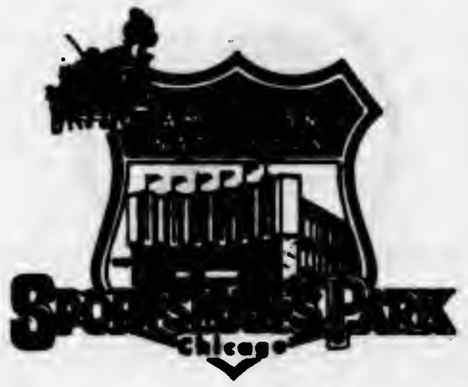
The word "Five" is disclaimed apart from the mark as shown.
For Musical Entertainment Services Rendered by a Vocal and Instrumental Group (Int. Cl. 41).
First use July 24, 1964.

SN 267,450. Stags of Great Neck, Inc., Forest Hills, N.Y. Filed Mar. 23, 1967.



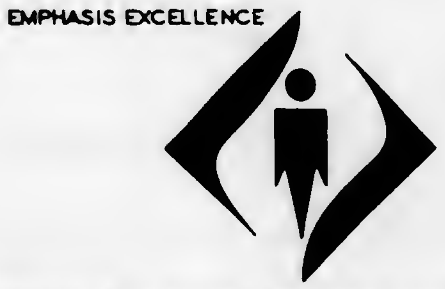
For Staging Dances for Unmarried Persons (Int. Cl. 41).
First use June 3, 1965.

SN 271,031. Chicago Downs Association, Inc., Cicero, Ill. Filed May 9, 1967.



Applicant disclaims the words "Park" and "Chicago," as well as the representation of the harness horse, apart from the mark as shown.
For Conducting Annual Harness Horse Stake Races (Int. Cl. 41).
First use on or about Aug. 1, 1956.

SN 271,810. Kilgore Junior College District, Kilgore, Tex. Filed May 18, 1967.



Applicant disclaims the words "Emphasis" and "Excellence" apart from the mark as shown.
For Providing College Educational Courses (Int. Cl. 41).
First use Sept. 15, 1966.

SN 286,765. Marine Studios, Incorporated, St. Augustine, Fla. Filed Dec. 12, 1967.

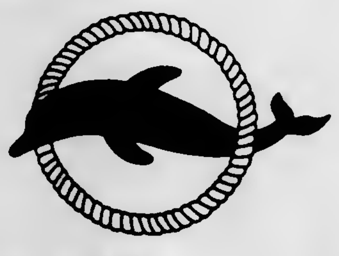
MARINE STUDIOS

The word "Marine" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 382,018 and 382,019.

For Providing the Public With Opportunities Both To View Various Forms of Aquatic Life in an Environment That Closely Simulates Their Native Habitat, and To View Trained Performances by Aquatic Creatures (Int. Cl. 41).

First use August 1938.

SN 286,766. Marine Studios, Incorporated, St. Augustine, Fla. Filed Dec. 12, 1967.



Owner of Reg. No. 381,399.

For Providing the Public With Opportunities Both To View Various Forms of Aquatic Life in an Environment That Closely Simulates Their Native Habitat, and To View Trained Performances by Aquatic Creatures (Int. Cl. 41).

First use August 1938.

SN 292,657. Marine Exhibition Corporation, Miami, Fla. Filed Mar. 7, 1968.

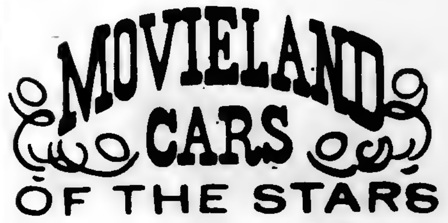
SEAQUARIUM

Owner of Reg. No. 767,329, and others.

For Marine Life Exhibition Services (Int. Cl. 41).

First use during 1955.

SN 296,376. James F. Brucker, Oxnard, Calif. Filed Apr. 24, 1968.



No claim is made to the words "Cars of the Stars" apart from the mark as shown.

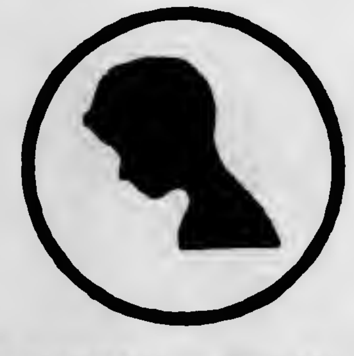
For Museum Services—Namely, the Display of Cars of Famous Movie Stars, Cars of Royalty, Cars of Famous Personalities, Cars That Made News Headlines, Classic Cars, Rare Cars, Antique Cars, and Cars of History (Int. Cl. 41).

First use Dec. 8, 1967.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 263,657. California Association for Neurologically Handicapped Children, Los Angeles, Calif. Filed Jan. 31, 1967.



For indicating Membership in Applicant Organization.

First use 1959.

SN 278,147. National Ski Patrol System, Inc., Denver, Colo. Filed July 21, 1967.

NATIONAL SKI PATROL

Owner of Reg. No. 720,145, and others.

For Indicating Membership in Applicant.

First use September 1938.

SN 287,623. Alpha Tau Omega Fraternity, Inc., Champaign, Ill. Filed Dec. 27, 1967.

A T Ω

For Indicating Membership in Applicant.

First use September 1965.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 – Raw or Partly Prepared Materials

856,276. VYNATHENE. National Distillers and Chemical Corporation. SN 260,357. Pub. 11–14–67. Filed 12–8–66.

856,277. LET'S GET GROWING. Thomas J. Tobin, Jr., and John P. Tobin (joint owners). MULTIPLE CLASS (Classes 1 and 10). SN 261,415. Pub. 6–25–68. Filed 12–27–66.

856,278. GLH HYBRIDS AND DESIGN. Great Lakes Hybrids Cooperative, Inc. SN 270,129. Pub. 6–25–68. Filed 4–27–67.

856,279. SECURI-TEE. Scott Paper Company. SN 275,696. Pub. 6–25–68. Filed 7–10–67.

856,280. U-FOAM. Allied Chemical Corporation. SN 276,402. Pub. 6–25–68. Filed 7–20–67.

856,281. MOLYCORP AND DESIGN. Molybdenum Corporation of America. SN 281,344. Pub. 6–25–68. Filed 9–28–67.

856,282. CAL/SO BOND. International Minerals & Chemical Corporation. SN 288,743. Pub. 6–25–68. Filed 1–15–68.

856,283. GRAN-GATOR COWHIDE. H. Schwarz Leather Co. Inc. SN 293,995. Pub. 6–25–68. Filed 3–25–68.

Class 2 – Receptacles

856,284. PP AND DESIGN. Nibot Corporation. SN 220,540. Pub. 8–2–66. Filed 6–7–65.

856,285. UML AND DESIGN. United Medical Laboratories, Inc. SN 260,691. Pub. 6–25–68. Filed 12–13–66.

856,286. BURRO. Jay J. Busey. SN 278,663. Pub. 6–18–68. Filed 8–21–67.

856,287. COPLASTIC. Cope Allman International Limited. SN 279,172. Pub. 6–25–68. Filed 8–28–67.

856,288. FRESHGARD. Crown Zellerbach Corporation. SN 279,175. Pub. 6–25–68. Filed 8–28–67.

856,289. DALLA. Dallas A. Prosser. SN 281,114. Pub. 6–25–68. Filed 9–25–67.

856,290. QUIK DIP. Riegel Paper Corporation. SN 281,490. Pub. 6–25–68. Filed 9–29–67.

856,291. RONTHOR. Ronthor Reiss Corporation. SN 281,822. Pub. 6–25–68. Filed 10–4–67.

856,292. ACU RITE AND DESIGN. Gilbert Schlichting. SN 286,724. Pub. 6–25–68. Filed 12–11–67.

856,293. BAKESTER. Phillips Petroleum Company. SN 287,575. Pub. 6–25–68. Filed 12–26–67.

856,294. TRAF-LITE LITTERBAG. Seal Bag Co., Inc. SN 292,060. Pub. 6–25–68. Filed 2–28–68.

Class 3 – Baggage, Animal Equipments, Portfolios, and Pocketbooks

856,295. JOHN ROMAIN AND DESIGN. John Romain, Inc. SN 265,734. Pub. 6–25–68. Filed 3–1–67.

856,296. MAJELLI. Majelli, Inc. SN 275,279. Pub. 6–25–68. Filed 7–3–67.

856,297. I AM LOVED AND DESIGN. Helsberg's Diamond Shops, Inc. SN 294,994. Pub. 6–25–68. Filed 4–5–68.

Class 5 – Adhesives

856,298. ENDWELL. Endicott Johnson Corporation. SN 271,038. Pub. 6–25–68. Filed 5–9–67.

Class 6 – Chemicals and Chemical Compositions

856,299. SUN SPRAY. Standard International Corporation. SN 252,290. Pub. 10–31–67. Filed 8–12–66.

856,300. RED TOP AND DESIGN. Red Top Maintenance Service, Inc. SN 252,417. Pub. 6–25–68. Filed 8–15–66.

856,301. W WHATMAN AND DESIGN. W. & R. Balston, Limited. SN 253,380. Pub. 6–25–68. Filed 8–29–66.

856,302. CORAK. Coral Chemical Company. SN 267,130. Pub. 6–25–68. Filed 3–20–67.

856,303. DREWTAIN. Drew Chemical Corporation. SN 273,267. Pub. 6–25–68. Filed 6–7–67.

856,304. KFC. Kay-Fries Chemicals, Inc. SN 275,272. Pub. 6–25–68. Filed 7–3–67.

856,305. DRUB. Merck & Co., Inc. SN 277,060. Pub. 6–25–68. Filed 7–28–67.

856,306. JIFFY STARCH AND DESIGN. Heekin, Inc. SN 277,556. Pub. 6–25–68. Filed 8–4–67.

856,307. ACID FLEX. The Cambridge Tile Manufacturing Company. SN 280,552. Pub. 6–25–68. Filed 9–18–67.

856,308. ACTION. Colgate-Palmolive Company. SN 281,684. Pub. 6–25–68. Filed 10–3–67.

856,309. SPREE. Colgate-Palmolive Company. SN 281,685. Pub. 6–25–68. Filed 10–3–67.

856,310. GALAXY. Colgate-Palmolive Company. SN 281,686. Pub. 6–25–68. Filed 10–3–67.

856,311. D-MIRE. Fairmount Chemical Co., Inc. SN 281,695. Pub. 6–25–68. Filed 10–3–67.

856,312. K.R.O. Nott Manufacturing Co., Inc. SN 281,812. Pub. 6–25–68. Filed 10–4–67.

856,313. MAGNOX. Hercules Incorporated. SN 282,086. Pub. 6–25–68. Filed 10–9–67.

856,314. TRAC. American Fluoride Corporation. SN 282,166. Pub. 6–25–68. Filed 10–10–67.

856,315. IRON-EX. Patek & Co. SN 282,622. Pub. 6–25–68. Filed 10–16–67.

856,316. SOC. American Home Products Corporation. SN 283,213. Pub. 6–25–68. Filed 10–24–67.

856,317. PARR. Parr Instrument Co. MULTIPLE CLASS (Classes 6 and 26). SN 286,300. Pub. 6–25–68. Filed 12–6–67.

856,318. PARR AND DESIGN. Parr Instrument Co. MULTIPLE CLASS (Classes 6 and 26). SN 286,301. Pub. 6–25–68. Filed 12–6–67.

856,319. JADU. Albert Verley & Company. SN 287,612. Pub. 6–25–68. Filed 12–27–67.

856,320. PREDICTOR. Organon Inc. SN 290,560. Pub. 6–25–68. Filed 2–8–68.

Class 7 – Cordage

856,321. NORSELAY. Peter P. Riggs. SN 246,486. Pub. 6–4–68. Filed 5–24–66.

856,322. LOK-STRESS. CF & I Steel Corporation. SN 278,188. Pub. 6–25–68. Filed 8–14–67.

856,323. CARDINAL. Ponit Trading Company. SN 281,819. Pub. 6–25–68. Filed 10–4–67.

Class 8—Smokers' Articles, Not Including Tobacco Products

856,324. MEDICO APOLLO AND DESIGN. S. M. Frank & Co., Inc. SN 287,814. Pub. 6–25–68. Filed 12–29–67.

Class 9—Explosives, Firearms, Equipments, and Projectiles

856,325. RG AND DESIGN. Rohm-Gesellschaft mbH. Werkzeug- und Maschinenfabrik. SN 278,910. Pub. 6–25–68. Filed 8–23–67.

856,326. FLINCH-X. Fred Wesemann. SN 288,567. Pub. 6–25–68. Filed 1–10–68.

Class 10—Fertilizers

856,277. (See Class 1 for this trademark.)

Class 12—Construction Materials

856,327. DECO REZ. General Polymers Corporation. SN 272,828. Pub. 6–25–68. Filed 6–1–67.

856,328. GUARDMASTER. Worldsbest Industries, Inc. SN 274,802. Pub. 6–25–68. Filed 6–26–67.

856,329. I LINE. American Metal Climax, Inc. SN 276,913. Pub. 6–25–68. Filed 7–27–67.

856,330. TOPEX S. Dresser Industries, Inc., assignee of Harbison-Walker Refractories Company. SN 284,660. Pub. 6–25–68. Filed 11–13–67.

856,331. X-ACT. Home Comfort Products Co. SN 285,739. Pub. 6–25–68. Filed 11–28–67.

856,332. PYROCAL. PPG Industries, Inc., by change of name from Pittsburgh Plate Glass Company. SN 293,093. Pub. 6–18–68. Filed 3–13–68.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

856,333. SUPREMETAL AND DESIGN. Supreme Metal Fabricators, Inc. SN 263,707. Pub. 6–25–68. Filed 1–31–67.

856,334. PEWTERTONE OLDE TANKARDWARE. Seymour Mann, d.b.a. Seymour Mann Imports. SN 266,672. Pub. 6–25–68. Filed 3–14–67.

856,335. AIR-E-TAINER. Flint & Walling Manufacturing Co., Inc. SN 268,592. Pub. 6–25–68. Filed 4–7–67.

856,336. MAGNITE. International Catalytic Corporation. SN 272,610. Pub. 6–25–68. Filed 5–29–67.

856,337. CENTRI-FORGED. Wisconsin Centrifugal, Inc. SN 274,911. Pub. 6–25–68. Filed 6–27–67.

856,338. OLY TAP. Olympia Brewing Company. SN 275,460. Pub. 6–25–68. Filed 7–6–67.

856,339. VELVET TOUCH. Beneke Corporation. SN 276,088. Pub. 6–25–68. Filed 7–17–67.

856,340. SAMARITAN. Beneke Corporation. SN 276,089. Pub. 6–25–68. Filed 7–17–67.

856,341. TUFFY. Beneke Corporation. SN 276,090. Pub. 6–25–68. Filed 7–17–67.

856,342. SHELTERING ARMS ETC. AND DESIGN. Beneke Corporation. SN 276,091. Pub. 6–25–68. Filed 7–17–67.

856,343. SHELTERING ARMS. Beneke Corporation. SN 276,092. Pub. 6–25–68. Filed 7–17–67.

856,344. TOWN & COUNTRY. Beneke Corporation. SN 276,093. Pub. 6–25–68. Filed 7–17–67.

856,345. COMAFCO. Continental Manufacturing Company. SN 278,875. Pub. 6–25–68. Filed 8–23–67.

856,346. JETS SEAL. Johnson Enterprises, Inc. SN 279,398. Pub. 6–25–68. Filed 8–30–67.

856,347. AERO-HEAD. Nordskog Company, Inc. SN 279,407. Pub. 6–25–68. Filed 8–30–67.

856,348. DOUBLER. Associated Spring Corporation. SN 279,448. Pub. 6–25–68. Filed 8–31–67.

856,349. TRI-FLO. Ladish Co. SN 279,561. Pub. 6–25–68. Filed 9–1–67.

856,350. NEET LOK. Reddi Car Corp. SN 280,330. Pub. 6–25–68. Filed 9–14–67.

856,351. EMPIRE. Empire Slip-On Hook Co., Inc. SN 290,220. Pub. 6–25–68. Filed 2–5–68.

Class 14—Metals and Metal Castings and Forgings

856,352. SNOW-GRIP. Fuji Seitetsu Kabushiki Kaisha (Fuji Iron & Steel Co., Ltd.). SN 281,283. Pub. 6–25–68. Filed 9–27–67.

Class 15—Oils and Greases

856,353. PLASTI-KOTE. Plastic-Kote Corp., assignee of The New England Industries Incorporated. MULTIPLE CLASS (Classes 15, 16, and 52). SN 261,394. Pub. 5–14–68. Filed 12–23–66.

856,354. OLYMPIAN AND DESIGN. Prepo Corporation. MULTIPLE CLASS (Classes 15 and 34). SN 268,911. Pub. 6–25–68. Filed 4–12–67.

856,355. SUPERSLICK. James A. Biddlecome, d.b.a. Burress Enterprises. SN 269,279. Pub. 6–25–68. Filed 4–17–67.

856,356. POWER LUBE. Power Lube Company. SN 281,621. Pub. 6–25–68. Filed 10–2–67.

Class 16—Protective and Decorative Coatings

856,353. (See Class 15 for this trademark.)

856,357. M·A·B ANTIQ-KIT. M. A. Bruder and Sons, Incorporated. SN 251,994. Pub. 6–25–68. Filed 8–9–66.

856,358. CERAMITATION. Tivian Laboratories Inc. SN 262,821. Pub. 6–25–68. Filed 1–18–67.

856,359. VAREX. McCloskey Varnish Co. SN 266,900. Pub. 6–25–68. Filed 3–16–67.

856,360. FLAME SHIELD. M. A. Bruder & Sons, Inc. SN 272,256. Pub. 6–25–68. Filed 5–24–67.

856,361. D·O·F AND DESIGN. Pratt & Lambert, Incorporated. SN 277,933. Pub. 6–25–68. Filed 8–9–67.

856,362. SEALBRITE. London Chemical Company, Inc. SN 279,150. Pub. 6–25–68. Filed 8–28–67.

856,363. AQUANEO. PPG Industries, Inc., by change of name from Pittsburgh Plate Glass Company. SN 286,885. Pub. 5–28–68. Filed 12–14–67.

Class 17—Tobacco Products

856,364. MONTECRUZ. Compania Insular Tabacalera, S.A. SN 201,521. Pub. 12–7–65. Filed 9–9–64.

856,365. VISANT. Villaamil Tobacco Products, Inc. SN 220,430. Pub. 2–15–66. Filed 6–4–65.

856,366. BARBIC. Bartlett & Bickley Limited. SN 257,156. Pub. 6–25–68. Filed 10–25–66.

856,367. THREE POINTS. Douwe Egberts Koninklijke Tabaksfabriek - Koffiebranderijen - Theehandel N.V. SN 266,015. Pub. 6–25–68. Filed 3–6–67.

856,368. GREYHOUND ETC. AND DESIGN. John Chapman Limited. SN 271,044. Pub. 6–25–68. Filed 5–9–67.

856,369. K AND DESIGN. Camacho Cigars, Inc. SN 282,514. Pub. 6–25–68. Filed 10–16–67.

856,370. BREEF. R. J. Reynolds Tobacco Company. SN 283,360. Pub. 6–25–68. Filed 10–25–67.

856,371. KRISTINUS PEER EXPORT FILTER AND DESIGN. Kristinus Kommanditgesellschaft. SN 283,531. Pub. 6–25–68. Filed 10–27–67.

856,372. PEER. Kristinus Kommanditgesellschaft. SN 283,673. Pub. 6–25–68. Filed 10–30–67.

856,373. CROMWELL. John Sinclair Limited. SN 289,900. Pub. 6–25–68. Filed 1–30–68.

856,374. FLOR DE MEXICO. Samuel B. Jacobs. SN 290,172. Pub. 6–25–68. Filed 2–2–68.

Class 18—Medicines and Pharmaceutical Preparations

856,375. PRENOMISER FORTE. Fisons Pharmaceuticals Limited. SN 255,609. Pub. 6–25–68. Filed 10–3–66.

856,376. PRENOMISER PLUS. Fisons Pharmaceuticals Limited. SN 255,610. Pub. 6–25–68. Filed 10–3–66.

856,377. PLANIT. Imperial Chemical Industries Limited. SN 264,932. Pub. 6–25–68. Filed 2–17–67.

856,378. ZANIL. Imperial Chemical Industries Limited. SN 264,933. Pub. 6–25–68. Filed 2–17–67.

856,379. ENNADE. Palmedico, Inc. SN 266,073. Pub. 6–25–68. Filed 3–6–67.

856,380. APC AND DESIGN. American Pharmaceutical Company. SN 273,460. Pub. 6–25–68. Filed 6–9–67.

856,381. BRADOPHEN. Ciba Limited. SN 276,222. Pub. 6–25–68. Filed 7–18–67.

856,382. CONTEND. Bristol-Myers Company. SN 276,810. Pub. 6–25–68. Filed 7–26–67.

856,383. POLYTEG. Bristol-Myers Company. SN 278,273. Pub. 6–25–68. Filed 8–15–67.

856,384. EQUILOID. American Home Products Corporation. SN 278,862. Pub. 6–25–68. Filed 8–23–67.

856,385. DELACAINE. Sterling Drug Inc. SN 279,112. Pub. 6–25–68. Filed 8–25–67.

856,386. SPANDECON. USV Pharmaceutical Corporation. SN 279,339. Pub. 6–25–68. Filed 8–29–67.

856,387. BREAKTHRU. Bristol-Myers Company. SN 279,620. Pub. 6–25–68. Filed 9–5–67.

856,388. OVER AND OUT. Bristol-Myers Company. SN 279,621. Pub. 6–25–68. Filed 9–5–67.

856,389. ST. MARTIN. Carlos G. Villarreal, d.b.a. St. Martin Pharmacal Co. SN 282,844. Pub. 6–25–68. Filed 10–18–67.

856,390. MKP AND DESIGN. Masti-Kure Products Company, Inc. SN 290,802. Pub. 6–25–68. Filed 2–12–68.

Class 19—Vehicles

856,391. YAK. Vodon Industries, Inc. SN 270,988. Pub. 4–23–68. Filed 5–8–67.

856,392. GEM SPORT. Gem-Top Mfg., Inc. SN 279,471. Pub. 6–25–68. Filed 8–31–67.

856,393. BIKE TOTER. Bike Toter Inc. SN 279,617. Pub. 6–25–68. Filed 9–5–67.

856,394. AMPHICAT. Mobility Unlimited, Inc. SN 281,606. Pub. 6–25–68. Filed 10–2–67.

856,395. BIG BEAVER. Steed-Pollak Manufacturing Company, Inc. SN 285,355. Pub. 6–25–68. Filed 11–21–67.

Class 20—Linoleum and Oiled Cloth

856,396. ULTRAFLOR. Robbins Products, Inc. SN 272,636. Pub. 6–25–68. Filed 5–29–67.

Class 21—Electrical Apparatus, Machines, and Supplies

856,397. COLOR GUARD. Technical Appliance Corporation. SN 216,632. Pub. 4–26–66. Filed 4–15–65.

856,398. POW-R-LOK AND DESIGN. Battery Power Incorporated. SN 253,272. Pub. 6–25–68. Filed 8–29–66.

856,399. ELECTRO-GUARD AND DESIGN. Gerald Products, Inc. SN 254,999. Pub. 4–23–68. Filed 9–23–66.

856,400. WJ WATKINS-JOHNSON AND DESIGN. Watkins-Johnson Company. MULTIPLE CLASS (Classes 21, 26, and 34). SN 259,872. Pub. 6–25–68. Filed 12–2–66.

856,401. WJ AND DESIGN. Watkins-Johnson Company. MULTIPLE CLASS (Classes 21, 26, and 34). SN 259,873. Pub. 6–25–68. Filed 12–2–66.

856,402. RUNA. Ormat Turbines (1965) Ltd. SN 261,750. Pub. 6–25–68. Filed 12–30–66.

856,403. PITRAN. Stow Laboratories, Inc. SN 263,411. Pub. 6–25–68. Filed 1–26–67.

856,404. VECO-VAMP. Victory Engineering Corporation. SN 264,865. Pub. 6–25–68. Filed 2–16–67.

856,405. THINISTOR. Victory Engineering Corporation. SN 264,866. Pub. 6–25–68. Filed 2–16–67.

856,406. ISOTHERM. Victory Engineering Corporation. SN 264,868. Pub. 6–25–68. Filed 2–16–67.

856,407. ALERT-LINE. Viking Instruments, Inc. SN 265,574. Pub. 6–25–68. Filed 2–27–67.

856,408. GLASPON AND DESIGN. Industrial Engravers, Inc. SN 265,631. Pub. 6–25–68. Filed 2–28–67.

856,409. TOP VALET. Eastern Electronics. SN 266,412. Pub. 6–25–68. Filed 3–10–67.

856,410. CHRONDEK AND DESIGN. Chrondek Electronics, Inc. SN 267,729. Pub. 6–25–68. Filed 3–28–67.

856,411. PLAYBOY. HMH Publishing Co., Inc. SN 268,311. Pub. 6–25–68. Filed 4–4–67.

856,412. MISCELLANEOUS DESIGN. Mech-Tronics Nuclear Corporation. SN 268,510. Pub. 6–25–68. Filed 4–6–67.

856,413. POWR-CENTER. Carol Wire & Cable Corp. SN 269,855. Pub. 6–25–68. Filed 4–24–67.

856,414. PINLITE. Pinlites Inc. SN 272,943. Pub. 6–25–68. Filed 6–2–67.

856,415. BATMAN. National Periodical Publications, Inc. SN 273,406. Pub. 6–25–68. Filed 6–8–67.

856,416. HOLYOKE AND DESIGN. Holyoke Wire and Cable Corporation. SN 274,322. Pub. 6–25–68. Filed 6–20–67.

856,417. ANDEFT. General Dynamics Corporation. SN 275,136. Pub. 6–25–68. Filed 6–30–67.

856,418. MULTI-PAK. Fluid Power Accessories, Inc. SN 275,520. Pub. 6–25–68. Filed 7–7–67.

856,419. METER MATE AND DESIGN. M-R-S, Inc. SN 275,543. Pub. 6–25–68. Filed 7–7–67.

856,420. METER MATE. M-R-S, Inc. SN 275,544. Pub. 6–25–68. Filed 7–7–67.

856,421. AGENA AND DESIGN. Trans-American Electronics International Co., Inc. SN 276,770. Pub. 6–25–68. Filed 7–25–67.

856,422. MAXLUMINA. Tideland Signal Corporation. SN 277,088. Pub. 6–25–68. Filed 7–28–67.

856,423. SOUNDMATE. Alan Industries, Inc. SN 279,444. Pub. 6–25–68. Filed 8–31–67.

856,424. XP-6B. Fisher Radio Corporation. SN 279,468. Pub. 6–25–68. Filed 8–31–67.

856,425. ACOUSTIGLAS. Fisher Radio Corporation. SN 279,546. Pub. 6-25-68. Filed 9-1-67.

856,426. SPANWAY. Anaconda Wire and Cable Company. SN 279,913. Pub. 6-25-68. Filed 9-8-67.

856,427. PERMALINE. Carol Wire & Cable Corp. SN 281,964. Pub. 6-25-68. Filed 10-6-67.

856,428. CLEARFLEX. Carol Wire & Cable Corp. SN 281,967. Pub. 6-25-68. Filed 10-6-67.

856,429. ILLUMINOMETER. Naturalite, Inc. SN 284,714. Pub. 6-25-68. Filed 11-13-67.

856,430. MECHANALYSIS. International Research and Development Corporation. MULTIPLE CLASS (Classes 21, 26, and 100). SN 286,055. Pub. 6-25-68. Filed 12-4-67.

Class 22 — Games, Toys, and Sporting Goods

856,431. PICKETNIK. Warren D. J. Hoppe, d.b.a. Hoppe Doll Co. SN 235,669. Pub. 10-25-66. Filed 1-3-66.

856,432. RATRACE. House of Games Corporation Limited. SN 266,042. Pub. 6-25-68. Filed 3-6-67.

856,433. INDESTRUCTO. Wilson Sporting Goods Co., assignee of Wilson Sporting Goods Co. SN 267,368. Pub. 6-25-68. Filed 3-22-67.

856,434. WALKER CUP. Wilson Sporting Goods Co., assignee of Wilson Sporting Goods Co. SN 267,371. Pub. 6-25-68. Filed 3-22-67.

856,435. SWING A WAY. Brunswick Corporation. SN 268,694. Pub. 6-25-68. Filed 4-10-67.

856,436. CORRECTA. Northwestern Golf Company. SN 268,758. Pub. 6-25-68. Filed 4-10-67.

856,437. DI-VI-DO. Wilson Sporting Goods Co., assignee of Wilson Sporting Goods Co. SN 269,367. Pub. 6-25-68. Filed 4-17-67.

856,438. TRY-GUIDE. Beverly T. Strout, d.b.a. Quality School Products. SN 273,213. Pub. 6-25-68. Filed 6-6-67.

856,439. HARRY SMITH AND DESIGN. Columbia Industries, Inc. SN 277,440. Pub. 6-25-68. Filed 8-3-67.

856,440. RAICHLE. Raichle Sportschuh AG (Raichle Chaussures de Sport SA) (Raichle Boot Co. Ltd). SN 279,329. Pub. 6-25-68. Filed 8-29-67.

856,441. SGT. RAY. Bantamlite, Inc. SN 279,356. Pub. 6-25-68. Filed 8-30-67.

856,442. GOOFY GOGGLES. Topps Chewing Gum, Incorporated. SN 279,875. Pub. 6-25-68. Filed 9-7-67.

856,443. EL DIABLO THE DEVIL AND DESIGN. Cypress Gardens Skis, Inc. SN 288,009. Pub. 6-25-68. Filed 1-3-68.

856,444. STAMPEDE AND DESIGN. G. R. Mertz. SN 289,158. Pub. 6-25-68. Filed 1-19-68.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

856,445. VIBRO-PLUS. Vibro-Plus Products, Inc. SN 216,762. Pub. 4-19-66. Filed 4-16-65.

856,446. MSE AND DESIGN. Machine Shop Equipment Limited. SN 219,891. Pub. 2-21-67. Filed 5-27-65.

856,447. BEE LINE. Bee Line Razor, Inc. SN 224,504. Pub. 10-11-66. Filed 7-29-65.

856,448. SHERATON. The Huffman Manufacturing Company. SN 238,874. Pub. 9-20-66. Filed 2-15-66.

856,449. MF AND DESIGN. Mannheimer Maschinenfabrik Mohr & Federhaff AG. SN 241,911. Pub. 4-9-68. Filed 3-25-66.

856,450. APPAR-ALL. McGraw-Edison Company. SN 245,004. Pub. 6-25-68. Filed 5-5-66.

856,451. ATSA AND DESIGN. Southern Saw Service, Inc., d.b.a. ATSA Mfgrs. SN 252,983. Pub. 6-25-68. Filed 8-24-66.

856,452. DUO-MAT. B. Thies K.G. Spezialmaschinenfabrik. SN 255,657. Pub. 3-26-68. Filed 10-3-66.

856,453. DUO-MAT AND DESIGN. B. Thies K.G. Spezialmaschinenfabrik. SN 255,658. Pub. 3-26-68. Filed 10-3-66.

856,454. UNIPAX. Doughboy Industries, Inc. SN 258,076. Pub. 7-4-67. Filed 11-7-66.

856,455. TBC AND DESIGN. United States Tabulating Binder Corporation. MULTIPLE CLASS (Classes 23 and 37). SN 258,336. Pub. 6-25-68. Filed 11-9-66.

856,456. REDI-FLO. Hess Oil & Chemical Corporation. SN 234,420. Pub. 5-7-68. Filed 12-13-65.

856,457. 2Z. Alvin E. Coles, d.b.a. Coles Pattern Shop. SN 267,099. Pub. 6-25-68. Filed 3-20-67.

856,458. VERSA-FOLD. Miehle-Goss-Dexter, Incorporated SN 267,172. Pub. 6-25-68. Filed 3-20-67.

856,459. REX AND DESIGN. Rex Chainbelt Inc. SN 268,527. Pub. 6-25-68. Filed 4-6-67.

856,460. ELECTRI-ROLL. R. M. Wade & Co. SN 269,710. Pub. 6-25-68. Filed 4-20-67.

856,461. MECO VARITROUGH. The Mining Engineering Company (Meco) Limited. SN 270,595. Pub. 6-25-68. Filed 5-3-67.

856,462. MECO VARITROUGH AND DESIGN. The Mining Engineering Company (Meco) Limited. SN 270,596. Pub. 6-25-68. Filed 5-3-67.

856,463. COOKIE CUTTER. Hughes Tool Company. SN 272,930. Pub. 6-25-68. Filed 6-2-67.

856,464. AMP-FIT. AMP Incorporated. SN 274,695. Pub. 6-25-68. Filed 6-26-67.

856,465. G (DESIGN). Dresser Industries, Inc. SN 277,032. Pub. 6-25-68. Filed 7-28-67.

856,466. FLEXIRING. Koch Engineering Company, Inc. SN 277,288. Pub. 6-25-68. Filed 8-1-67.

856,467. CARPENTER'S PRIDE. Vaughan & Bushnell Mfg. Co. SN 277,740. Pub. 6-25-68. Filed 8-7-67.

856,468. MIRACLE. Edward L. von Hofen. SN 278,144. Pub. 6-25-68. Filed 8-11-67.

856,469. HOMELITE. Textron, Inc. SN 278,831. Pub. 6-25-68. Filed 8-22-67.

856,470. STIRWAY. Sukup Manufacturing Company. SN 279,115. Pub. 6-25-68. Filed 8-25-67.

856,471. MAJESTIC. Standard Sewing Equipment Corp. SN 279,964. Pub. 6-25-68. Filed 9-8-67.

856,472. FANTASY. Oneida Ltd. SN 280,248. Pub. 6-25-68. Filed 9-13-67.

856,473. TURBO-FLITE. Gilreath Hydraulics, Inc. SN 280,313. Pub. 6-25-68. Filed 9-14-67.

856,474. MANSION STAINLESS U.S.A. Oneida Ltd. SN 280,725. Pub. 6-25-68. Filed 9-19-67.

856,475. VENETIA. Oneida Ltd. SN 280,883. Pub. 6-25-68. Filed 9-21-67.

856,476. MILLER. K. J. Miller Corporation. SN 281,098. Pub. 6-25-68. Filed 9-25-67.

856,477. SERVIS. Servis Equipment Company, Inc. SN 281,125. Pub. 6-25-68. Filed 9-25-67.

856,478. POW-R-QUIK AND DESIGN. Olin Mathieson Chemical Corporation. SN 287,701. Pub. 6-25-68. Filed 12-28-67.

856,479. KACARB. Kaman Corporation. SN 293,089. Pub. 6-25-68. Filed 3-13-68.

856,480. SPHERILUBE. Merriman Inc. SN 294,144. Pub. 6-25-68. Filed 3-26-68.

856,481. SPURICAL. Merriman Inc. SN 294,231. Pub. 6-25-68. Filed 3-27-68.

Class 24 — Laundry Appliances and Machines

856,482. TUCK-A-WAY. Proctor-Silex Incorporated. SN 287,671. Pub. 6-25-68. Filed 12-27-67.

856,483. FLIP-TOP. Proctor-Silex Incorporated. SN 287,762. Pub. 6-25-68. Filed 12-28-67.

Class 26 — Measuring and Scientific Appliances

856,317. (See Class 6 for this trademark.)

856,318. (See Class 6 for this trademark.)

856,400. (See Class 21 for this trademark.)

856,401. (See Class 21 for this trademark.)

856,430. (See Class 21 for this trademark.)

856,484. NANOCOUNTER. Chronetics, Inc. SN 193,535. Pub. 6-25-68. Filed 5-15-64.

856,485. TRUELINE AND DESIGN. Trueline Instruments, Inc. SN 246,404. Pub. 6-25-68. Filed 5-23-66.

856,486. LINEMASTER. Andrew Engineering Company. SN 263,507. Pub. 9-19-67. Filed 1-30-67.

856,487. DU-A-TROL. W. R. Grace & Co. SN 269,986. Pub. 1-2-68. Filed 4-25-67.

856,488. CLARY AND DESIGN. Clary Corporation. SN 272,167. Pub. 3-5-68. Filed 5-23-67.

856,489. STOW. Pneumo Dynamics Corporation. SN 274,985. Pub. 6-25-68. Filed 6-28-67.

856,490. CMC QUIK CHEK AND DESIGN. Communication Mfg. Co. SN 276,511. Pub. 1-16-68. Filed 7-21-67.

856,491. CALMEC AND DESIGN. Ametek, Inc. SN 277,606. Pub. 6-25-68. Filed 8-7-67.

856,492. ANAPFET. Century Projector Corporation. SN 281,767. Pub. 6-25-68. Filed 10-4-67.

856,493. TRANS-LUX. Trans-Lux Corporation. MULTIPLE CLASS (Classes 26, 104, and 107). SN 281,845. Pub. 6-25-68. Filed 10-5-67.

856,494. ISO-FORK. Philamon Laboratories, Inc. SN 290,642. Pub. 6-25-68. Filed 2-8-68.

856,495. OPSCAN. Optical Scanning Corporation. SN 293,439. Pub. 6-25-68. Filed 3-18-68.

Class 27 — Horological Instruments

856,496. SEMAG. Semag. SN 271,635. Pub. 6-25-68. Filed 5-16-67.

856,497. STRADA. Endura Time Corporation. SN 277,642. Pub. 6-25-68. Filed 8-7-67.

856,498. 866. Baumgartner Frères S.A. SN 283,185. Pub. 6-25-68. Filed 9-25-67.

856,499. CABIRIAN. Jenny & Cie S.A. Fabrique d'Horlogerie, Lengnau Près Bienne. SN 287,653. Pub. 6-25-68. Filed 12-27-67.

Class 28 — Jewelry and Precious-Metal Ware

856,500. M IN DIAMOND DESIGN. Mastagem Jewelry Co. SN 283,450. Pub. 6-25-68. Filed 10-26-67.

Class 31 — Filters and Refrigerators

856,501. SEQUESTRATOR. Sequestrator Products Corporation. SN 272,410. Pub. 6-25-68. Filed 5-25-67.

856,502. TYDEAN. Dean Products, Inc. SN 279,282. Pub. 6-25-68. Filed 8-29-67.

856,503. BI-FLO. Barnard Enterprises, Inc. SN 279,612. Pub. 6-25-68. Filed 9-5-67.

Class 32 — Furniture and Upholstery

856,504. BABY SITTER. Infanseat Company. SN 172,746. Pub. 10-19-65. Filed 7-10-63.

856,505. LADY FAIR KITCHENS AND DESIGN. Lady Fair Kitchens, Inc. SN 236,274. Pub. 7-26-66. Filed 1-12-66.

856,506. RUBBERTHANE. Hickory Springs Manufacturing Company of Arkansas, Inc. SN 267,525. Pub. 6-25-68. Filed 3-24-67.

856,507. TRI-CRAFT ARCHITECTED CABINETRY AND DESIGN. Atlantic Alloy Industries, Inc. SN 271,008. Pub. 6-25-68. Filed 5-8-67.

856,508. THOMAS. Thomas Industries Inc. SN 274,263. Pub. 6-25-68. Filed 6-19-67.

856,509. LEVITTMARK. Levittmark Incorporated. SN 275,150. Pub. 6-25-68. Filed 6-30-67.

856,510. LOMA. Vistron Corporation. SN 281,334. Pub. 6-25-68. Filed 9-27-67.

856,511. MICRO/FINDER. Business Efficiency Aids, Inc. SN 282,051. Pub. 6-25-68. Filed 10-9-67.

856,512. CERCO. Cerco Corporation, assignee of C. E. Robinson Company. SN 292,136. Pub. 6-25-68. Filed 2-28-68.

Class 34 — Heating, Lighting, and Ventilating Apparatus

856,354. (See Class 15 for this trademark.)

856,400. (See Class 21 for this trademark.)

856,401. (See Class 21 for this trademark.)

856,513. CLEAR-AIR. Clear Air Waste Reduction, Inc. SN 258,069. Pub. 6-25-68. Filed 11-7-66.

856,514. STEAMETTE. The Bahnson Company. SN 273,159. Pub. 4-23-68. Filed 6-6-67.

856,515. UCAR. Union Carbide Corporation. SN 278,327. Pub. 6-25-68. Filed 8-15-67.

856,516. TYDEAN. Dean Products, Inc. SN 279,286. Pub. 6-25-68. Filed 8-29-67.

856,517. HUSTLER. Western Engineering & Mfg. Co. SN 280,659. Pub. 6-25-68. Filed 9-18-67.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

856,518. MISCELLANEOUS DESIGN. Uniroyal, Inc. SN 273,217. Pub. 6-25-68. Filed 6-6-67.

856,519. REV-O-SLIDE. C. E. Conover & Co., Inc. SN 284,804. Pub. 6-25-68. Filed 11-14-67.

856,520. REV-O-CAP. C. E. Conover & Co., Inc. SN 284,805. Pub. 6-25-68. Filed 11-14-67.

856,521. CON-O-SCRAPE. C. E. Conover & Co., Inc. SN 284,806. Pub. 6-25-68. Filed 11-14-67.

856,522. DUKE AND DESIGN. Kelly-Springfield Tire Company. SN 284,921. Pub. 6-25-68. Filed 11-15-67.

856,523. PANTHER. The Hercules Tire & Rubber Company. SN 285,229. Pub. 6-25-68. Filed 11-20-67.

856,524. MINI-MAZE. Sealol, Inc. SN 285,769. Pub. 6-25-68. Filed 11-28-67.

Class 36 — Musical Instruments and Supplies

856,525. CAMERON AND DESIGN. Perfect Photo, Inc. SN 243,165. Pub. 6-25-68. Filed 4-11-66.

856,526. FLAME (DESIGN). Autometronics, Inc. SN 282,876. Pub. 6-25-68. Filed 10-19-67.

856,527. CONTINENTAL. C. G. Conn Ltd. SN 283,429. Pub. 6–25–68. Filed 10–26–67.

856,528. SUPRAPHON AND DESIGN. National Gramophon Works Corporation. SN 283,452. Pub. 6–25–68. Filed 10–26–67.

856,529. UA INTERNATIONAL. United Artists Records, Inc. SN 283,475. Pub. 6–25–68. Filed 10–26–67.

Class 37—Paper and Stationery

856,455. (See Class 23 for this trademark.)

856,530. UTILITY SHORTY. Lindy Pen Co., Inc. SN 92,476. Pub. 4–23–68. Filed 3–9–60.

856,531. UTILITY. Lindy Pen Co., Inc. SN 92,477. Pub. 4–23–68. Filed 3–9–60.

856,532. UTILITY. Lindy Pen Company Incorporated. SN 203,776. Pub. 4–23–68. Filed 10–12–64.

856,533. FABRICON . . . THE ABLE ONES!! AND DESIGN. The Eagle-Picher Company, d.b.a. Fabricon Products Division. SN 265,501. Pub. 6–25–68. Filed 2–27–67.

856,534. CAMEO. Dalomark Corporation. SN 267,616. Pub. 6–25–68. Filed 3–27–67.

856,535. SARATOGA TABLET. International Paper Company. SN 279,075. Pub. 6–25–68. Filed 8–25–67.

856,536. DOMINO. American Sugar Company. SN 281,667. Pub. 6–25–68. Filed 10–3–67.

856,537. SINGLEX. Eberhard Faber Inc. SN 282,792. Pub. 6–25–68. Filed 10–18–67.

856,538. PARKRAFT. Quality Park Envelope Company. SN 283,278. Pub. 6–25–68. Filed 10–24–67.

856,539. TARGET. Target Stores, Inc. SN 287,967. Pub. 6–25–68. Filed 1–2–68.

Class 38—Prints and Publications

856,540. BY AL BURRELL AND DESIGN. Alfred Augustus Burrell, d.b.a. Al Burrell. SN 251,701. Pub. 6–25–68. Filed 8–4–66.

856,541. AH. Service Publications, Inc. SN 261,881. Pub. 6–25–68. Filed 1–3–67.

856,542. AMERICAN HAIRDRESSER. Service Publications, Inc. SN 261,882. Pub. 6–25–68. Filed 1–3–67.

856,543. BALL. Ball Brothers Company Incorporated. SN 263,345. Pub. 6–25–68. Filed 1–26–67.

856,544. LADYBIRD. Wills & Hepworth Limited. SN 268,115. Pub. 6–25–68. Filed 3–1–67.

856,545. FRIZ QUADRATA. Visual Graphics Corporation. SN 268,805. Pub. 6–25–68. Filed 4–10–67.

856,546. ANDRICH MINERVA ITALIC. Visual Graphics Corporation. SN 268,806. Pub. 6–25–68. Filed 4–10–67.

856,547. ARROW. Visual Graphics Corporation. SN 268,807. Pub. 6–25–68. Filed 4–10–67.

856,548. GIORGIO. Visual Graphics Corporation. SN 268,808. Pub. 6–25–68. Filed 4–10–67.

856,549. JANA. Visual Graphics Corporation. SN 268,809. Pub. 6–25–68. Filed 4–10–67.

856,550. JAY GOTHIC BOLD. Visual Graphics Corporation. SN 268,810. Pub. 6–25–68. Filed 4–10–67.

856,551. LINCOLN GOTHIC. Visual Graphics Corporation. SN 268,811. Pub. 6–25–68. Filed 4–10–67.

856,552. NEVISON CASUAL SCRIPT. Visual Graphics Corporation. SN 268,812. Pub. 6–25–68. Filed 4–10–67.

856,553. YORK. Visual Graphics Corporation. SN 268,815. Pub. 6–25–68. Filed 4–10–67.

856,554. WOLF ANTIQUA. Visual Graphics Corporation. SN 268,816. Pub. 6–25–68. Filed 4–10–67.

856,555. EMPHASIS. Visual Graphics Corporation. SN 268,817. Pub. 6–25–68. Filed 4–10–67.

856,556. EGYPTIAN 505. Visual Graphics Corporation. SN 268,818. Pub. 6–25–68. Filed 4–10–67.

856,557. DOMNING ANTIQUA. Visual Graphics Corporation. SN 268,819. Pub. 6–25–68. Filed 4–10–67.

856,558. DAVIDA BOLD. Visual Graphics Corporation. SN 268,821. Pub. 6–25–68. Filed 4–10–67.

856,559. BAKER SIGNET. Visual Graphics Corporation. SN 268,823. Pub. 6–25–68. Filed 4–10–67.

856,560. VISA. Visual Graphics Corporation. SN 268,824. Pub. 6–25–68. Filed 4–10–67.

856,561. JAY GOTHIC. Visual Graphics Corporation. SN 268,825. Pub. 6–25–68. Filed 4–10–67.

856,562. STETTLER. Visual Graphics Corporation. SN 268,826. Pub. 6–25–68. Filed 4–10–67.

856,563. SOLITAIRE. Visual Graphics Corporation. SN 268,827. Pub. 6–25–68. Filed 4–10–67.

856,564. ARNHOLM SANS MEDIUM. Visual Graphics Corporation. SN 268,828. Pub. 6–25–68. Filed 4–10–67.

856,565. EXEMPLA. Visual Graphics Corporation. SN 268,829. Pub. 6–25–68. Filed 4–10–67.

856,566. NEIL BOLD. Visual Graphics Corporation. SN 268,830. Pub. 6–25–68. Filed 4–10–67.

856,567. VIVALDI. Visual Graphics Corporation. SN 268,831. Pub. 6–25–68. Filed 4–10–67.

856,568. AMELIA. Visual Graphics Corporation. SN 268,832. Pub. 6–25–68. Filed 4–10–67.

856,569. ANTIKVA MARGARET AND DESIGN. Visual Graphics Corporation. SN 268,833. Pub. 6–25–68. Filed 4–10–67.

856,570. ANDRICH MINERVA. Visual Graphics Corporation. SN 268,834. Pub. 6–25–68. Filed 4–10–67.

856,571. PRACTIBOOK. North American Philips Company, Inc. SN 270,263. Pub. 6–25–68. Filed 4–28–67.

856,572. PRACTRONICS. North American Philips Company, Inc. SN 270,264. Pub. 6–25–68. Filed 4–28–67.

856,573. NORELCO. North American Philips Company, Inc. SN 270,265. Pub. 6–25–68. Filed 4–28–67.

856,574. LITTLE THEATER SERIES. McGraw-Hill, Inc. SN 271,503. Pub. 6–25–68. Filed 5–15–67.

856,575. DIAL-A-FISH. F. J. McGettigan. SN 273,094. Pub. 6–25–68. Filed 6–5–67.

856,576. RAPID-RATER. Insurance Publishing House, Inc. SN 275,143. Pub. 6–25–68. Filed 6–30–67.

856,577. MISCELLANEOUS DESIGN. The C. M. Paula Company. SN 275,393. Pub. 6–25–68. Filed 7–5–67.

856,578. KNIGHT GUIDE. Sheldon R. Songstad, d.b.a. Knight of the Month Club. SN 275,408. Pub. 6–25–68. Filed 6–30–67.

856,579. PIONEER GIRLS PERSPECTIVE. Pioneer Girls. SN 276,685. Pub. 6–25–68. Filed 7–24–67.

856,580. NIFTY NICKEL. Silver State Merchandisers, Inc. SN 276,956. Pub. 6–25–68. Filed 7–27–67.

856,581. IAN AND DESIGN. Chilton Company. SN 277,261. Pub. 6–25–68. Filed 8–1–67.

856,582. FLOWER-OF-THE-MONTH CLUB GARDEN NEWS. Flower of the Month, Inc. SN 278,204. Pub. 6–18–68. Filed 8–14–67.

856,583. PROFILE. National Association of Evangelicals. SN 278,627. Pub. 6–25–68. Filed 8–8–67.

856,584. THE HOLLYWOOD REPORTER. The Hollywood Reporter Corporation. SN 283,063. Pub. 6–25–68. Filed 10–23–67.

856,585. SCIP. Harper & Row, Publishers, Incorporated. SN 288,574. Pub. 6–25–68. Filed 1–11–68.

Class 39—Clothing

856,586. COMANCHE MOCS. Melville Shoe Corporation. SN 245,600. Pub. 1–3–67. Filed 5–13–66.

856,587. PERMA-STITCH. Handcraft Manufacturing Corp. SN 263,829. Pub. 6–25–68. Filed 2–2–67.

856,588. LANSEA. Lansea Knitwear Limited, assignee of Robert R. Boronow, Limited. SN 269,851. Pub. 6–25–68. Filed 4–24–67.

856,589. SIR BATES AND DESIGN. Bates Manufacturing Company, Incorporated. SN 271,430. Pub. 6–25–68. Filed 5–15–67.

856,590. EV AND DESIGN. Boris Smoler and Sons. SN 275,618. Pub. 6–25–68. Filed 7–10–67.

856,591. IGA. Independent Grocers' Alliance Distributing Co. SN 278,301. Pub. 6–25–68. Filed 8–15–67.

856,592. PRETTY TRIM. Glamorise Foundations, Inc. SN 279,472. Pub. 6–25–68. Filed 8–31–67.

856,593. POLLIWOGS. Barrow Manufacturing Company. SN 280,383. Pub. 6–25–68. Filed 9–15–67.

856,594. KENROBES. Kenrose Manufacturing Co., Inc. SN 280,425. Pub. 6–25–68. Filed 9–15–67.

856,595. SUTTON EAST. The Mayer Company, Inc. SN 280,617. Pub. 6–25–68. Filed 9–18–67.

856,596. ST. ARCH. Curlee Clothing Company. SN 280,769. Pub. 6–25–68. Filed 9–20–67.

856,597. PENNETTE. Cotton Club Frocks, Inc. SN 281,177. Pub. 6–25–68. Filed 9–26–67.

856,598. FRESHABYES. Facelle Company Limited. SN 281,184. Pub. 6–25–68. Filed 9–26–67.

856,599. COLORMETRICS. Glensder Corporation. SN 281,189. Pub. 6–25–68. Filed 9–26–67.

856,600. FORCE 9. McGregor-Doniger Inc. SN 281,806. Pub. 6–25–68. Filed 10–4–67.

856,601. GREAT DANE AND DESIGN. Cosmopolitan Manufacturing Company. SN 281,870. Pub. 6–25–68. Filed 10–5–67.

856,602. MAGIC MISS. Exquisite Form Industries, Inc. SN 281,878. Pub. 6–25–68. Filed 10–5–67.

856,603. NATTINET. Elvetta Products Co. Inc. SN 282,066. Pub. 6–25–68. Filed 10–9–67.

856,604. SKI KING. R. C. King Company, Incorporated. SN 282,099. Pub. 6–25–68. Filed 10–9–67.

856,605. SKI QUEEN. R. C. King Company, Incorporated. SN 282,100. Pub. 6–25–68. Filed 10–9–67.

856,606. MISS FOREWYN. Howard Stores Corporation. SN 282,190. Pub. 6–25–68. Filed 10–10–67.

856,607. JORJI. Irving M. Schuyler. SN 282,301. Pub. 6–25–68. Filed 10–11–67.

856,608. POWDER HORN. Blue Bell, Inc. SN 282,318. Pub. 6–25–68. Filed 10–12–67.

856,609. LITTLE SECRETS. Cannon Mills Company. SN 283,220. Pub. 6–25–68. Filed 10–24–67.

856,610. 417. Phillips-Van Heusen Corporation. SN 283,560. Pub. 6–25–68. Filed 10–27–67.

856,611. PORT COAT. Cape Ann Manufacturing Co. SN 283,981. Pub. 6–25–68. Filed 11–2–67.

856,612. HART EV-R-PREST AND DESIGN. C. Hart Manufacturing Company. SN 286,427. Pub. 6–25–68. Filed 12–7–67.

856,613. TROPI-TEX VIBRA. House of Worsted-Tex, Inc. SN 287,016. Pub. 6–25–68. Filed 12–15–67.

856,614. HEADSTRONG. Wolverine World Wide, Inc. SN 287,195. Pub. 6–25–68. Filed 12–18–67.

856,615. PHILADELPHIA 76ER AND DESIGN. Riko Enterprises, Inc. SN 287,212. Pub. 6–25–68. Filed 12–19–67.

856,616. ONE MAN SHOW. William B. Kessler, Inc. SN 287,560. Pub. 6–25–68. Filed 12–26–67.

856,617. ZIN-ZIN. Robert Miles Sherman, d.b.a. De Martel, Dressmaker. SN 288,479. Pub. 6–25–68. Filed 1–10–68.

856,618. ZAZZETTE. Robert Miles Sherman, d.b.a. De Martel, Dressmaker. SN 288,480. Pub. 6–25–68. Filed 1–10–68.

856,619. EXHIBIT A. Bo-Peep Manufacturing Company, Inc. SN 288,935. Pub. 6–25–68. Filed 1–16–68.

856,620. SWINGAWAY. Puritan Fashions Corporation. SN 290,016. Pub. 6–25–68. Filed 1–31–68.

856,621. JUDY GIBBS. Puritan Fashions Corporation. SN 290,017. Pub. 6–25–68. Filed 1–31–68.

856,622. TRAVEL KING. Top Form-Yolande, Inc. SN 290,985. Pub. 6–25–68. Filed 2–13–68.

856,623. MR. BROOMSTICKS. Glen Oaks Sales Co., Inc. SN 291,150. Pub. 6–25–68. Filed 2–15–68.

856,624. JOY FOREVER. Kops Bros., Inc. SN 291,670. Pub. 6–25–68. Filed 2–23–68.

856,625. BOY PROOF. Blue Bell, Inc. SN 294,347. Pub. 6–25–68. Filed 3–28–68.

856,626. I AM LOVED AND DESIGN. Helzberg's Diamond Shops, Inc. SN 294,997. Pub. 6–25–68. Filed 4–5–68.

Class 40—Fancy Goods, Furnishings, and Notions

856,627. "LIFE SPANGLES." Union Novelty Co., Inc. SN 279,016. Pub. 6–25–68. Filed 8–9–67.

856,628. ALEXANDRIA WIGS AND DESIGN. Alexandria Wigs Corp. SN 279,159. Pub. 6–25–68. Filed 8–28–67.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

856,629. SUPER DESCIPLINED. Bates Manufacturing Company, Incorporated. SN 268,860. Pub. 6–25–68. Filed 4–11–67.

856,630. LAURENTIAN. Kimberly-Clark Corporation. SN 275,275. Pub. 6–25–68. Filed 7–3–67.

856,631. BONDAFLEX. Pellon Corporation. SN 284,724. Pub. 6–25–68. Filed 11–13–67.

856,632. PEARCE CAPRI. Pearce Woolen Mills. SN 285,456. Pub. 6–25–68. Filed 11–22–67.

856,633. K AND DESIGN. Knoll Associates, Inc. SN 285,556. Pub. 6–25–68. Filed 11–24–67.

856,634. CUPRASHAN. Thompson of California, Inc. SN 292,061. Pub. 6–25–68. Filed 2–28–68.

Class 43—Thread and Yarn

856,635. TALON. Talon, Inc. SN 279,230. Pub. 4–9–68. Filed 8–28–67.

856,636. LINRON. Kirkpatrick Brothers Limited. SN 285,334. Pub. 6–25–68. Filed 11–21–67.

Class 44—Dental, Medical, and Surgical Appliances

856,637. LEVY. United States Catheter & Instrument Corporation (Delaware corporation), assignee of United States Catheter & Instrument Corporation (New York corporation). SN 220,593. Pub. 6–25–68. Filed 6–7–65.

856,638. DENTAL HYDRO BRUSH. Dynamic Classics, Ltd. SN 266,021. Pub. 6–25–68. Filed 3–6–67.

856,639. SANI-CUP. Ritter Pfaudler Corporation. SN 284,733. Pub. 6–25–68. Filed 11–13–67.

856,640. FRIODUR. J. A. Henckels Zwillingswerk AG. SN 285,835. Pub. 6–25–68. Filed 11–29–67.

856,641. ETHISTRIP. Ethicon, Inc. SN 293,000. Pub. 6–25–68. Filed 3–12–68.

Class 45—Soft Drinks and Carbonated Waters

856,642. FOLK LORE AND DESIGN. J. F. Lazier Manufacturing Co. SN 280,788. Pub. 6–25–68. Filed 9–20–67.

856,643. THE HAPPIEST TASTE IN TOWN. The Frostie Company. SN 280,866. Pub. 6–25–68. Filed 9–21–67.

856,644. SIMBA. The Coca-Cola Company. SN 289,942. Pub. 6–25–68. Filed 1–31–68.

Class 46—Foods and Ingredients of Foods

856,645. SOURDOUGH JACK'S KITCHEN AND DESIGN. Sourdough Jack's Inc. SN 148,089. Pub. 6–29–65. Filed 6–29–62.

856,646. SOURDOUGH JACK'S. Sourdough Jack's Inc. SN 148,090. Pub. 6–29–65. Filed 6–29–62.

856,647. SOURDOUGH JACK'S KITCHEN AND DESIGN. Sourdough Jack's Inc. SN 148,091. Pub. 6–29–65. Filed 6–29–62.

856,648. AUNT MARTHA'S. American Bakeries Company. SN 229,481. Pub. 4–19–66. Filed 10–7–65.

856,649. EXTRA LIGHTS. The Pillsbury Company. SN 230,691. Pub. 6–25–68. Filed 10–20–65.

856,650. GROTESQUE HUMAN MALE AND CHICKEN (DESIGN). Deacon Jones, Inc. SN 240,229. Pub. 6–25–68. Filed 2–28–66.

856,651. SAUCE EASY. Kadison Laboratories, Inc. SN 250,667. Pub. 6–25–68. Filed 7–20–66.

856,652. FROZAM AND DESIGN. Frutas Refrigeradas, S.A. SN 251,909. Pub. 6–25–68. Filed 8–8–66.

856,653. CHEWSIES. General Mills, Inc. SN 257,611. Pub. 6–25–68. Filed 10–31–66.

856,654. DE SALES. Betty T. Pinckney, d.b.a De Sales Industries. SN 266,782. Pub. 6–25–68. Filed 3–15–67.

856,655. CAPITOL FARMS BRAND AND DESIGN. Hartford Provision Co., Inc. SN 267,751. Pub. 6–25–68. Filed 3–28–67.

856,656. VEGAS BRAND CONEY ISLAND AND DESIGN. Hoffman Bros. Packing Co., Inc. SN 268,410. Pub. 6–25–68. Filed 4–5–67.

856,657. EDI-PRO AND DESIGN. Ralston Purina Company. SN 272,308. Pub. 6–25–68. Filed 5–24–67.

856,658. GRAINVERT 12. Standard Brands Incorporated, d.b.a. Clinton Corn Processing Company. SN 273,322. Pub. 6–25–68. Filed 6–7–67.

856,659. DESIGN OF CHEF'S HEAD. Pronto Food Corporation. SN 274,460. Pub. 6–25–68. Filed 6–21–67.

856,660. HONEY SUCKLE AND DESIGN. Ralston Purina Company. SN 274,462. Pub. 6–25–68. Filed 6–21–67.

856,661. PEANUT HILL. Candymasters Incorporated, assignee of F & F Laboratories, Inc. SN 275,128. Pub. 6–25–68. Filed 6–30–67.

856,662. FLIRT. Desserts, Inc. SN 276,824. Pub. 6–25–68. Filed 7–26–67.

856,663. FONTINELLA. Universal Foods Corporation. SN 277,091. Pub. 6–25–68. Filed 7–28–67.

856,664. CASINO PUP. Western Packers, d.b.a. Golden West Meat Products. SN 277,093. Pub. 6–25–68. Filed 7–28–67.

856,665. DUBUQUE FLEUR DE LIS AND DESIGN. Dubuque Packing Company. SN 280,219. Pub. 6–25–68. Filed 9–13–67.

856,666. PARTY-PRETTI. Mildred Yeager. SN 280,505. Pub. 6–25–68. Filed 9–15–67.

856,667. . . . ONE TOUCH OF CRYSTAL SWEET MAKES ANY DISH COMPLETE AND DESIGN. American Crystal Sugar Company. SN 281,020. Pub. 6–25–68. Filed 9–25–67.

856,668. GERMAN VILLAGE NOODLES AND DESIGN. German Village Foods, Inc. SN 282,071. Pub. 6–25–68. Filed 10–9–67.

856,669. CRITTLE. The Wander Company, d.b.a. Poppycock Candies. SN 283,477. Pub. 6–25–68. Filed 10–26–67.

856,670. DRIVE. General Mills, Inc. SN 284,425. Pub. 6–25–68. Filed 11–9–67.

856,671. PATHMARK. Louket Markets Inc. SN 289,058. Pub. 6–25–68. Filed 1–18–68.

856,672. KERNAL KRISPS. General Mills, Inc. SN 291,938. Pub. 6–25–68. Filed 2–27–68.

856,673. I AM LOVED AND DESIGN. Helzberg's Diamond Shops, Inc. SN 294,998. Pub. 6–25–68. Filed 4–5–68.

Class 47—Wines

856,674. SANTA COMBA AND DESIGN. Ribeiro & Irmao. SN 255,022. Pub. 6–25–68. Filed 9–23–66.

Class 48—Malt Beverages and Liquors

856,675. PARTY BOTTLES. The F. & M. Schaefer Brewing Co. SN 273,209. Pub. 6–25–68. Filed 6–6–67.

Class 49—Distilled Alcoholic Liquors

856,676. OLD POT STILL. The R. L. Buse Company. SN 256,642. Pub. 6–25–68. Filed 10–18–66.

856,677. LIQUORE GALLIANO AND DESIGN. Foremost-McKesson, Inc., by merger and change of name from McKesson & Robbins, Incorporated. SN 263,770. Pub. 6–25–68. Filed 2–1–67.

856,678. JOHN PETER. Palomino & Vergara, S.L. SN 288,978. Pub. 6–25–68. Filed 1–16–68.

Class 50—Merchandise Not Otherwise Classified

856,679. BALL AND DESIGN. Ball Brothers Company Incorporated. SN 263,247. Pub. 6–25–68. Filed 1–25–67.

856,680. SPOT AWARDS AND DESIGN. The Program Aids Company, Inc. SN 277,068. Pub. 6–25–68. Filed 7–28–67.

856,681. A (DESIGN). American Dockbridge, Inc. SN 282,037. Pub. 6–25–68. Filed 10–9–67.

856,682. TRI-SAFE. Tri-Lite Incorporated. SN 283,472. Pub. 6–25–68. Filed 10–26–67.

856,683. FLORAL MATES. Rexall Drug and Chemical Company, d.b.a. Syroco. SN 283,929. Pub. 6–25–68. Filed 11–1–67.

856,684. JORDOMAT. Outside Carpets, Inc. SN 284,027. Pub. 6–25–68. Filed 11–2–67.

856,685. FLASH SEAL. Polytop Corporation. SN 287,337. Pub. 6–25–68. Filed 12–21–67.

856,686. ORCOGARD. Eagle-Picher Industries, Inc. SN 290,833. Pub. 6–25–68. Filed 2–12–68.

856,687. GARD'N AID. Germain's, Inc. SN 291,062. Pub. 6–25–68. Filed 2–14–68.

856,688. AK. Polychrome Corporation. SN 292,009. Pub. 6–25–68. Filed 2–27–68.

856,689. DK. Polychrome Corporation. SN 292,010. Pub. 6–25–68. Filed 2–27–68.

856,690. SK. Polychrome Corporation. SN 292,011. Pub. 6–25–68. Filed 2–27–68.

Class 51—Cosmetics and Toilet Preparations

856,691. BLEU DE MER. Cosmia Laboratories d'Etudes Scientifiques, Inc., assignee of Cosmia Laboratories. SN 154,566. Pub. 12–8–64. Filed 10–5–62.

856,692. SLOW CHANGE. Clairol Incorporated. SN 262,315. Pub. 6–25–68. Filed 1–11–67.

856,693. DARKER THAN FAIR. Posner Laboratories, Inc., assignee of I. Posner, Inc. SN 266,360. Pub. 6–18–68. Filed 3–9–67.

856,694. CURB. Posner Laboratories, Inc., assignee of I. Posner, Inc. SN 267,355. Pub. 2–20–68. Filed 3–22–67.

856,695. THE SURFERS. Clairol Incorporated. SN 270,556. Pub. 6–25–68. Filed 5–3–67.

856,696. ELITE. K. L. Cosmetics, Ltd. SN 271,045. Pub. 6–25–68. Filed 5–9–67.

856,697. MLLE GHE. Nettie Rosenstein, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 276,869. Pub. 6–25–68. Filed 7–26–67.

856,698. VOLARE. The Upjohn Company. SN 276,892. Pub. 6–25–68. Filed 7–26–67.

856,699. LARGO. Avon Products, Inc. SN 277,617. Pub. 6–25–68. Filed 8–7–67.

856,700. HEADLONG. Avon Products, Inc. SN 277,781. Pub. 6–25–68. Filed 8–8–67.

856,701. CHENANGO. Frances Denney, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 277,958. Pub. 6–25–68. Filed 8–10–67.

856,702. ODAMOUR. Haviland Laboratories, Inc., d.b.a. Ann Haviland. SN 278,101. Pub. 6–25–68. Filed 8–11–67.

856,703. ERASURE. American Home Products Corporation. SN 278,758. Pub. 1–2–68. Filed 8–22–67.

856,704. VIERNES SOCIAL. Perfumes of Puerto Rico Inc., d.b.a. Perfumes of Puerto Rico. SN 280,174. Pub. 6–25–68. Filed 9–12–67.

856,705. DETOUR. Richard Hudnut. SN 281,193. Pub. 6–25–68. Filed 9–26–67.

856,706. LAPINAL. Lapinal, Inc. SN 292,850. Pub. 6–25–68. Filed 3–11–68.

856,707. BLAZE. Alberto-Culver Company. SN 294,120. Pub. 6–25–68. Filed 3–26–68.

856,708. S.P.A.D. Alberto-Culver Company. SN 294,127. Pub. 6–25–68. Filed 3–26–68.

856,709. MICRO NET. Skyline Ind., Inc. SN 294,562. Pub. 6–25–68. Filed 4–1–68.

Class 52—Detergents and Soaps

856,353. (See Class 15 for this trademark.)

856,697. (See Class 51 for this trademark.)

856,701. (See Class 51 for this trademark.)

856,710. RED DEVIL. Pennsalt Chemicals Corporation, assignee of B. T. Babbitt, Inc. SN 236,452. Pub. 6–25–68. Filed 1–14–66.

856,711. TOWER OF POWER. General Foods Corporation. SN 262,782. Pub. 10–10–67. Filed 1–18–67.

856,712. LARGO. Avon Products, Inc. SN 277,616. Pub. 6–25–68. Filed 8–7–67.

856,713. HEADLONG. Avon Products, Inc. SN 277,782. Pub. 6–25–68. Filed 8–8–67.

856,714. SEASCAPE. Avon Products, Inc. SN 278,362. Pub. 6–25–68. Filed 8–16–67.

856,715. DIRECT LINE. Avon Products, Inc. SN 278,365. Pub. 6–25–68. Filed 8–16–67.

856,716. AGENDA. Avon Products, Inc. SN 278,367. Pub. 6–25–68. Filed 8–16–67.

856,717. DP (DESIGN). Lan-O-Sheen, Inc. SN 281,377. Pub. 6–25–68. Filed 9–28–67.

856,718. KNUCKLES AND KNEES. Bristol-Myers Company. SN 282,048. Pub. 6–25–68. Filed 10–9–67.

856,719. CAR-GLO. St. Louis Janitor Supply Co., d.b.a. Navy Brand Manufacturing Company. SN 283,718. Pub. 6–25–68. Filed 10–30–67.

Service Marks

Class 100—Miscellaneous

856,430. (See Class 21 for this trademark.)

856,720. PWP. Parents Without Partners, Inc. SN 253,549. Pub. 6–25–68. Filed 8–31–66.

856,721. LIGHTING THE WAY AND DESIGN. C & H Electric Company. SN 264,796. Pub. 6–25–68. Filed 2–16–67.

856,722. INTERCON. Intercon Research, Incorporated. SN 269,318. Pub. 6–25–68. Filed 4–17–67.

856,723. WESTMINSTER CHAPELS. Kirschenbaum Bros. Inc. SN 270,925. Pub. 6–25–68. Filed 5–8–67.

856,724. ICA INTERNATIONAL COLLECTORS ASSOCIATION AND DESIGN. International Collectors Association. SN 271,798. Pub. 6–25–68. Filed 5–18–67.

856,725. FRIARS AND DESIGN. Friars. SN 275,251. Pub. 6–25–68. Filed 7–3–67.

856,726. BIG DADDY'S. Big Daddy's Enterprises, Inc., assignee of Robert M. Napp and Murray L. Handwerker (joint owners), d.b.a. Big Daddy's Drive In Restaurants. SN 275,805. Pub. 6–25–68. Filed 8–23–67.

856,727. SIR KNIGHT. John R. Jacobson, d.b.a. Sir Knight. SN 280,953. Pub. 6–25–68. Filed 9–22–67.

856,728. TRACOR. Tracor, Inc. SN 281,136. Pub. 6–25–68. Filed 9–25–67.

856,729. AFTMA AND DESIGN. American Fishing Tackle Manufacturers Association. SN 289,233. Pub. 6–25–68. Filed 1–22–68.

856,730. OAKITE. Oakite Products, Inc. SN 293,991. Pub. 6–25–68. Filed 3–25–68.

Class 101—Advertising and Business

856,731. CHAUFFEUR POWER. Chauffeurs Unlimited, Inc. SN 248,589. Pub. 5–9–67. Filed 6–21–66.

856,732. UNISHOPS. Unishops, Inc. SN 266,814. Pub. 6–25–68. Filed 3–15–67.

856,733. RMS. Vernon J. Rossi, d.b.a. Retail Merchandising Service. SN 269,350. Pub. 6–25–68. Filed 4–17–67.

856,734. IWECO AND DESIGN. Industrial Welding Equipment Company. SN 269,895. Pub. 6–25–68. Filed 4–24–67.

856,735. THE TRADE FAIR FORUM. The Trade Fair Forum, Inc. SN 274,359. Pub. 6–25–68. Filed 6–20–67.

856,736. AGS AND DESIGN. American Girl Service, Inc. SN 284,340. Pub. 6–25–68. Filed 11–8–67.

856,737. DESIGN OF THEATER SEATS. Ticket Reservation Systems, Inc. SN 289,063. Pub. 6–25–68. Filed 1–18–68.

Class 102—Insurance and Financial

856,738. UNI-SERV. Uni-Serv Corporation. SN 272,321. Pub. 6–25–68. Filed 5–24–67.

856,739. THRIFTLINER AND DESIGN. Indiana Lumbermans Mutual Insurance Company. SN 275,668. Pub. 6–25–68. Filed 7–10–67.

856,740. IBS INTEGRITY BUDGET SERVICE AND DESIGN. Integrity Budget Service, Inc. SN 279,074. Pub. 6–25–68. Filed 8–25–67.

Class 103—Construction and Repair

856,741. SOLAR TURBINE SERVICE AND DESIGN. International Harvester Company (Delaware corporation), assignee of International Harvester Company (New Jersey corporation). SN 239,189. Pub. 7–11–67. Filed 2–10–66.

856,742. ZONETROL. The Dow Chemical Company. SN 282,786. Pub. 6–25–68. Filed 10–18–67.

856,743. REMCON. Robert E. McKee General Contractor, Inc. SN 284,023. Pub. 6–25–68. Filed 11–2–67.

Class 104 — Communication

856,493. (See Class 26 for this trademark.)

Class 105 — Transportation and Storage

856,744. SUPER SHOCK CONTROL. The Atchison, Topeka and Santa Fe Railway Company. SN 168,058. Pub. 6–25–68. Filed 5–3–63.

856,745. SUPER SHOCK CONTROL. The Atchison, Topeka and Santa Fe Railway Company. SN 168,061. Pub. 6–25–68. Filed 5–3–63.

856,746. SHOCK CONTROL. The Atchison, Topeka and Santa Fe Railway Company. SN 256,264. Pub. 6–25–68. Filed 10–12–66.

856,747. WORLD'S NO. 1 MOVER AND DESIGN. Allied Van Lines, Inc. SN 260,809. Pub. 6–25–68. Filed 12–15–66.

Class 106 — Material Treatment

856,748. WEB PLASTICS AND DESIGN. Web Plastics Company. SN 257,220. Pub. 6–25–68. Filed 10–25–66.

856,749. BRAD-CLEAN ETC. AND DESIGN. Bradford Dyeing Association (U.S.A.) Inc. SN 272,801. Pub. 6–25–68. Filed 6–1–67.

Class 107 — Education and Entertainment

856,493. (See Class 26 for this trademark.)

856,750. FOREIGN INTERN MATCHING PROGRAM AND FIMP. Harold Charles Franklin, M.D. SN 254,267. Pub. 6–25–68. Filed 9–12–66.

856,751. TWO MINUTES TO GO. The Washington Post Company. SN 261,175. Pub. 6–25–68. Filed 12–20–66.

856,752. LAYMAN'S LEADERSHIP INSTITUTE. Christian Men, Inc. SN 274,045. Pub. 6–25–68. Filed 6–16–67.

856,753. TEDDY AND THE PANDAS. Teddy and the Pandas, Inc., assignee of William E. Dewart. SN 275,436. Pub. 6–25–68. Filed 7–6–67.

856,754. D TORNADO AND DESIGN. Dallas Tornado Soccer Club. SN 279,056. Pub. 6–25–68. Filed 8–25–67.

856,755. THE DONUTS. Frank Scinlaro. SN 281,227. Pub. 6–25–68. Filed 9–26–67.

856,756. CALTECH. California Institute of Technology. SN 293,431. Pub. 6–25–68. Filed 3–18–68.

Collective Membership Marks

Class 200

856,757. PHYSICIANS EPICURE SOCIETY. Physicians Epicure Society, Inc. SN 274,888. Pub. 6–25–68. Filed 6–27–67.

856,758. CLUB CARIBBEAN. Club Caribbean, Inc. SN 275,232. Pub. 6–25–68. Filed 7–3–67.

856,759. BEEFMASTERS. Beefmasters Breeders Universal. SN 293,338. Pub. 6–25–68. Filed 3–15–68.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

856,761. Kolberg Manufacturing Corporation, Yankton, S. Dak. SN 246,083. Filed P.R. 5–19–66 ; Am. S.R. 12–1–67.

KOLBERG

Class 21—Electrical Apparatus, Machines, and Supplies

For Portable Lighting Equipment (Int. Cl. 11).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

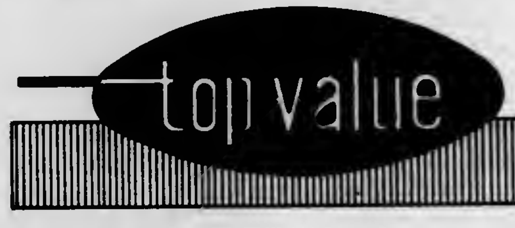
For Construction and Material Handling Equipment, Comprising, Belt Idlers, Vibrating Screens, Portable Conveyors and Stackers (Int. Cl. 7).

First use Jan. 25, 1965.

SECTION 2

Class 18 — Medicines and Pharmaceutical Preparations

856,760. Modern Products, Inc., Kansas City, Mo. SN 277,684. Filed P.R. 8–7–67 ; Am. S.R. 6–6–68.



The drawing is lined for the color red.
For Vitamins (Int. Cl. 5).

Class 21 — Electrical Apparatus, Machines, and Supplies

856,761. See Section 1 (Combined Certificate).

856,762. Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden. SN 255,274. Filed P.R. 9–28–66 ; Am. S.R. 6–21–68.

CELDRIVE

Owner of Swedish Reg. No. 113,997, dated Sept. 17, 1965. For Fuel Cells, Batteries of Two or More Fuel Cells, Systems of Two or More Fuel Batteries, Each Comprising Two or More Fuel Cells, Electrical Batteries, Accumulators and Systems Comprising Two or More Accumulators (Int. Cl. 9).
First use Mar. 10, 1967.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

856,761. See Section 1 (Combined Certificate).

856,763. Oliver Corporation, Chicago, Ill. SN 275,459. Filed P.R. 7–6–67 ; Am. S.R. 6–4–68.

MIGHTY·HOE

For Integrated Loader-Tractor-Backhoe (Int. Cl. 7).
First use Mar. 13, 1967.

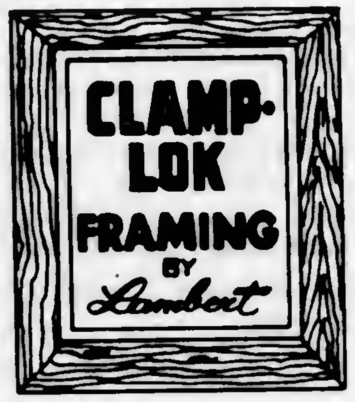
Class 32 — Furniture and Upholstery

856,764. Guest Beds of America-Kansas, Inc., Mission, Kans. SN 272,049. Filed P.R. 5–22–67 ; Am. S.R. 7–17–68.

GUEST BEDS OF AMERICA

For Furniture—Namely, Couches, Davenports, Pillows, Tables, Convertible Sofas and Love Seats (Int. Cl. 20).
First use Apr. 25, 1967.

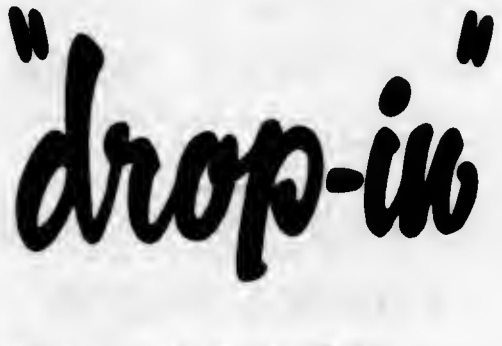
856,765. Lambert Frame & Picture Company, Inc., Brooklyn, N.Y. SN 281,085. Filed P.R. 9–25–67 ; Am. S.R. 6–28–68.



For Knocked Down Picture Frames Made of Raw Wood, or Walnut Finish With Gold Line or Custom Gold Frames (Int. Cl. 20).
First use September 1965.

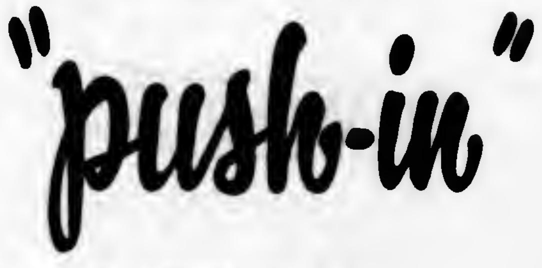
Class 34 — Heating, Lighting, and Ventilating Apparatus

856,766. Arvin Industries, Inc., Columbus, Ind. SN 254,498. Filed P.R. 9–15–66 ; Am. S.R. 7–5–68.



For Electric Floor Heaters (Int. Cl. 11).
First use June 29, 1966.

856,767. Arvin Industries, Inc., Columbus, Ind. SN 254,499. Filed P.R. 9–15–66 ; Am. S.R. 7–5–68.



For Electric Wall Heaters (Int. Cl. 11).
First use June 29, 1966.

Class 38 — Prints and Publications

856,768. Piper, Jaffray & Hopwood, Minneapolis, Minn. SN 281,108. Filed P.R. 9–25–67 ; Am. S.R. 7–5–68.

PUBLIC UTILITY REVIEW

For Periodic Investor-Business Reports (Int. Cl. 16).
First use June 30, 1967.

856,769. Piper, Jaffray & Hopwood, Minneapolis, Minn. SN 281,109. Filed P.R. 9–25–67 ; Am. S.R. 7–5–68.

UPPER MIDWEST REVIEW

For Periodic Investor-Business Reports (Int. Cl. 16).
First use October 1966.

Class 40 — Fancy Goods, Furnishings, and Notions

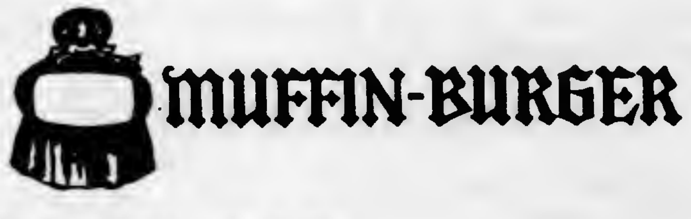
856,770. Exquisite Form Industries, Inc., New York, N.Y. SN 273,054. Filed P.R. 6–5–67 ; Am. S.R. 7–3–68.

NATURAL CURVES

For Bust Pads (Int. Cl. 25).
First use May 24, 1967.

Class 46 — Foods and Ingredients of Foods

856,771. Bickford's Inc., Long Island City, N.Y. SN 237,527. Filed P.R. 1–28–66 ; Am. S.R. 7–3–68.



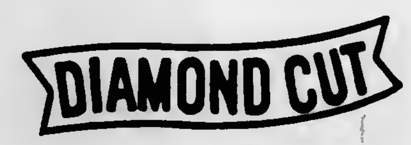
For Sandwiches (Int. Cl. 29).
First use Dec. 16, 1965.

856,772. G. B. Ollivant Limited, Manchester, England. SN 252,884. Filed P.R. 8–22–66 ; Am. S.R. 6–13–68.

OLLIVANT
OF MANCHESTER

For Candy (Int. Cl. 30).
First use May 11, 1966 ; in commerce May 11, 1966.

856,773. Eugene Fruit Growers Association, Eugene, Oreg. SN 257,476. Filed P.R. 10-28-66; Am. S.R. 6-17-68.



For Canned String Beans (Int. Cl. 29).
First use Sept. 23, 1966.

856,774. Baker Canning Company, Theresa, Wis. SN 268,922. Filed P.R. 4-12-67; Am. S.R. 5-8-68.

KREAM'D·KERNEL

For Canned Corn (Int. Cl. 29).
First use on or before Nov. 15, 1949.

856,775. Daniel Bassi & Compania, Sociedad Anonima Comercial e Industrial, Buenos Aires, Argentina. SN 272,344.

GODET

Filed P.R. 5-25-67; Am. S.R. 11-28-67.
Owner of Argentine Reg. No. 540,627, dated Oct. 21, 1964.
For Chocolate Candy, Cookies, and Coffee (Int. Cl. 30).

856,776. Horace W. Longacre, Inc., Franconia, Pa. SN 274,075. Filed P.R. 6-16-67; Am. S.R. 7-11-68.

REDDI-SLICE

For Cooked Turkey Meat (Int. Cl. 29).
First use Apr. 13, 1967.

856,777. Pet Incorporated, St. Louis, Mo. SN 288,229. Filed P.R. 1-5-68; Am. S.R. 6-19-68.

DENTLERS

For Potato Chips, Corn Chips, Cheese Flips, Mayonnaise, Salad Dressing, French Dressing, Relish Spread, Pickles, Olives, Sweet Relish, Mustard, Catsup, Horseradish, Vinegar and Worcestershire Sauce (Int. Cls. 29 and 30).
First use June 7, 1966.

856,778. Hartz Mountain Products Corp., New York, N.Y. SN 295,732. Filed 4-16-68.

POLLY PUFFS

For Bird Food (Int. Cl. 31).
First use Apr. 10, 1967.

Class 49 — Distilled Alcoholic Liquors

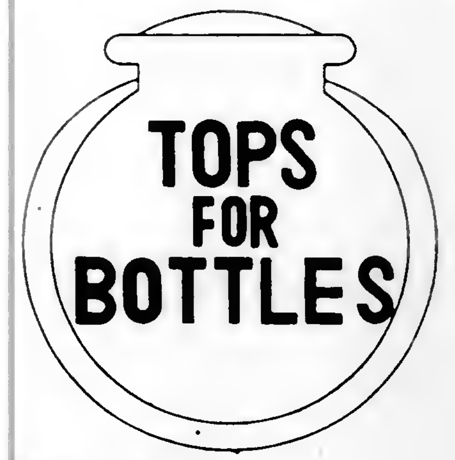
856,779. E. J. Campbell, d.b.a. International Purveyors, Denver, Colo. SN 260,016. Filed P.R. 12-5-66; Am. S.R. 7-10-68.

SELECTED CLUB

For Rum, Bourbon and Scotch Whiskey, Vodka, Gin and Cognac (Int. Cl. 33).
First use on or about Nov. 1, 1965.

Class 50 — Merchandise Not Otherwise Classified

856,780. Swedish Crucible Steel Company, Detroit, Mich. SN 230,718. Filed P.R. 10-20-65; Am. S.R. 7-5-68.



For Bottle Caps (Int. Cl. 20).
First use Sept. 19, 1964.

Class 51 — Cosmetics and Toilet Preparations

856,781. Revlon, Inc., New York, N.Y. SN 268,080. Filed P.R. 3-31-67; Am. S.R. 5-21-68.

PINK VIBRATO

For Lipstick and Nail Enamel (Int. Cl. 3).
First use Dec. 30, 1966.

856,782. Revlon, Inc., New York, N.Y. SN 268,083. Filed P.R. 3-31-67; Am. S.R. 6-27-68.

ZANZIBERRY

For Lipstick and Nail Enamel (Int. Cl. 3).
First use Dec. 30, 1966.

856,783. Revlon, Inc., New York, N.Y. SN 268,085. Filed P.R. 3-31-67; Am. S.R. 6-27-68.

PEACH ALMONDINE

For Lipstick and Nail Enamel (Int. Cl. 3).
First use Dec. 30, 1966.

856,784. Revlon, Inc., New York, N.Y. SN 268,087. Filed P.R. 3-31-67; Am. S.R. 6-27-68.

SNOW VIOLETS

For Nail Enamel and Lipstick (Int. Cl. 3).
First use Dec. 30, 1966.

856,785. Revlon, Inc., New York, N.Y. SN 268,088. Filed P.R. 3-31-67; Am. S.R. 6-27-68.

BARBERRY ROSE

For Lipstick and Nail Enamel (Int. Cl. 3).
First use Dec. 30, 1966.

856,786. Revlon, Inc., New York, N.Y. SN 268,090. Filed P.R. 3-31-67; Am. S.R. 6-27-68.

PARMA PLUM

For Lipstick and Nail Enamel (Int. Cl. 3).
First use Dec. 30, 1966.

856,787. Revlon, Inc., New York, N.Y. SN 268,096. Filed P.R. 3-31-67; Am. S.R. 6-27-68.

ORANGE PEKOE

For Lipstick and Nail Enamel (Int. Cl. 3).
First use Jan. 30, 1967.

856,788. Revlon, Inc., New York N.Y. SN 268,100. Filed P.R. 3-31-67; Am. S.R. 6-27-68.

LIMOGES PINK

For Lipstick and Nail Enamel (Int. Cl. 3).
First use Jan. 30, 1967.

856,789. Revlon, Inc., New York, N.Y. SN 268,103. Filed P.R. 3-31-67; Am. S.R. 6-27-68.

PORTILLO PINK

For Lipstick and Nail Enamel (Int. Cl. 3).
First use Jan. 30, 1967.

856,790. Revlon, Inc., New York, N.Y. SN 271,837. Filed P.R. 5-18-67; Am. S.R. 7-8-68.

'AQUALILY'

For Eye Shadow (Int. Cl. 3).
First use Mar. 31, 1967.

856,791. Cetylite Industries, Inc., Long Island City, N.Y. SN 274,308. Filed P.R. 6-20-67; Am. S.R. 6-21-68.

SKIN SCREEN

For Hand Lotion (Int. Cl. 3).
First use June 14, 1967.

856,792. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 275,063. Filed P.R. 6-29-67; Am. S.R. 7-5-68.

NECTAR GLACE

For Lipstick (Int. Cl. 3).
First use June 9, 1967.

856,793. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 275,065. Filed P.R. 6-29-67; Am. S.R. 7-5-68.

TAFFY GLACE

For Lipstick (Int. Cl. 3).
First use June 9, 1967.

856,794. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 277,694. Filed P.R. 8-7-67; Am. S.R. 7-5-68.

FANCY PANTS

For Nail Enamel (Int. Cl. 3).
First use June 9, 1967.

856,795. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 277,695. Filed P.R. 8-7-67; Am. S.R. 7-5-68.

PICKLED TINK

For Nail Enamel (Int. Cl. 3).
First use June 9, 1967.

856,796. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 277,697. Filed P.R. 8-7-67; Am. S.R. 7-5-68.

PETITE BEIGE

For Face Powder (Int. Cl. 3).
First use May 29, 1967.

856,797. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 277,700. Filed P.R. 8-7-67; Am. S.R. 7-5-68.

CANDY MAN

For Nail Enamel (Int. Cl. 3).
First use June 9, 1967.

856,798. Revlon, Inc., New York, N.Y. SN 278,032. Filed P.R. 8-10-67; Am. S.R. 7-8-68.

DUSKY BLONDE

For Preparation for the Hair (Int. Cl. 3).
First use July 3, 1967.

Class 52 — Detergents and Soaps

856,799. Andrea Raab Corporation, Brooklyn, N.Y. SN 253,555. Filed P.R. 8-31-66; Am. S.R. 6-13-68.

LASH-KLEEN

For False Eyelash Cleansers (Int. Cl. 3).
First use Aug. 26, 1965.

856,800. L.B. Laboratories, Inc., Glendale, Calif. SN 266,337. Filed P.R. 3-9-67; Am. S.R. 7-5-68.

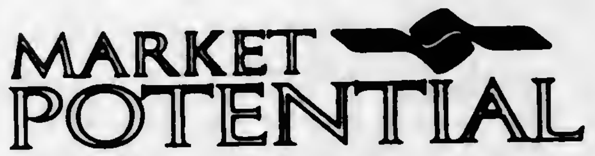
MAN CLEAN

For Medicated Shampoo for Dandruff Control (Int. Cl. 3).
First use Feb. 22, 1967.

Service Marks

Class 100 — Miscellaneous

856,801. Market Potential Corporation, New York, N.Y. SN 248,818. Filed P.R. 6-23-66; Am. S.R. 7-5-68.



For Research and Development Consulting Services—Namely, Locating and Evaluating New Products and Inventions, and Offering Corporate Planning Advice (Int. Cl. 42).
First use July 28, 1965.

Class 107 — Education and Entertainment

856,802. Kilgore Junior College District, Kilgore, Tex. SN 271,812. Filed 5-18-67.

EMPHASIS EXCELLENCE

For Providing College Educational Services (Int. Cl. 41).
First use Apr. 1, 1966.

TRADEMARK REGISTRATIONS RENEWED

31,689. "GRAPE-NUTS" ETC. AND DESIGN. Cl. 46 (Int. Cl. 30). 6–14–1898.
67,918. CRYOGENINE. Cl. 18 (Int. Cl. 5). 2–25–08.
68,429. SEVEN DAY. Cl. 46 (Int. Cl. 30). 4–7–08.
68,788. XANTHIA. Cl. 17 (Int. Cl. 34). 4–28–08.
71,552. "VERITABLE BENEDICTINE" ETC. AND DESIGN. Cl. 49 (Int. Cl. 33). 12–1–08.
71,553. "VERITABLE BENEDICTINE" ETC. AND DESIGN. Cl. 49 (Int. Cl. 33). 12–1–08.
71,554. "LA BENEDICTINE" ETC. Cl. 49 (Int. Cl. 33). 12–1–08.
72,061. "STEELCRETE" AND DESIGN. Cl. 14 (Int. Cl. 6). 12–29–08.
141,772. MARION. Cl. 23 (Int. Cl. 7). 4–26–21.
233,209. SUN QUEEN. Cl. 46 (Int. Cl. 29). 9–27–27.
240,802. MULSOID-SULFUR. Cl. 6 (Int. Cl. 5). 4–10–28.
241,079. BARBASOL. Cl. 51 (Int. Cl. 3). 4–17–28.
241,918. VIOLAMINE. Cl. 6 (Int. Cl. 2). 5–8–28.
242,471. GINGHAM GIRL. Cl. 46 (Int. Cl. 30). 5–22–28.
242,805. ROMAC. Cl. 35 (Int. Cls. 7, 12, and 17). 6–5–28.
244,391. TERNSTEDT. Cl. 25 (Int. Cl. 12). 7–17–28.
244,392. TERNSTEDT. Cl. 13 (Int. Cls. 6 and 12). 7–17–28.
244,393. TERNSTEDT. Cl. 19 (Int. Cl. 12). 7–17–28.
244,455. "PRIMP" AND DESIGN. Cl. 51 (Int. Cl. 3). 7–17–28.
244,555. TERNSTEDT. Cl. 14 (Int. Cl. 12). 7–24–28.
244,556. TERNSTEDT. Cl. 21 (Int. Cl. 11). 7–24–28.
244,653. VANCORAM. Cl. 6 (Int. Cl. 1). 7–24–28.
244,654. VANCORAM. Cl. 14 (Int. Cl. 6). 7–24–28.
244,892. CREME DE FROMENT. Cl. 46 (Int. Cl. 30). 7–31–28.
245,505. CREME DE BLE. Cl. 46 (Int. Cl. 30). 8–14–28.
245,782. TRIVECTOR. Cl. 26 (Int. Cl. 9). 8–21–28.
246,056. "VANCORAM" ETC. AND DESIGN. Cl. 14 (Int. Cl. 6). 8–28–28.
246,412. "VANCORAM BRAND" AND DESIGN. Cl. 6 (Int. Cl. 1). 9–4–28.
246,727. TORNADO. Cl. 21 (Int. Cl. 7). 9–11–28.
247,283. REPRESENTATION OF GREEN CROSS WITHIN A CIRCLE. Cl. 44 (Int. Cls. 5, 9, 10, 21, 24, and 25). 9–25–28.
248,526. HEALTH BUILDER. Cl. 44 (Int. Cl. 10). 10–23–28.
248,863. Z.B. Cl. 43 (Int. Cl. 23). 10–30–28.
249,294. "JOHN COTTON'S SMOKING TOBACCO" ETC. AND DESIGN. Cl. 17 (Int. Cl. 34). 11–13–28.
249,322. "HIME." Cl. 46 (Int. Cl. 29). 11–13–28.
249,843. "U.S.D." AND DESIGN. Cl. 39 (Int. Cl. 25). 11–20–28.
250,005. MUSKILL. Cl. 22 (Int. Cl. 28). 11–27–28.
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503,855. AMBROSIA AND DESIGN. Cl. 46 (Int. Cl. 30). 11–16–48.
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734,742. B-W, MARBON CHEMICAL BORG-WARNER AND DESIGN. Cl. 1.
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734,901. CUSTOM SCIENCE. Cl. 32.
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734,932. MICON. Cl. 37.
734,944. NAVY HISTORY AND TRADITION AND DESIGN. Cl. 38.
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734,949. THE "REP." Cl. 38.
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735,053. THE PLACE WHERE LOUIE DWELLS. Cl. 100.
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735,060. COSMO. Cl. 102.
735,063. ALITALIA AND WINGED ARROW DESIGN. Cl. 105.
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735,066. BLUE FAIRY. Cl. 107.
735,073. FILMCARD. Cl. 21.
735,075. HEATALL. Cl. 23.
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735,090. SWISS BOY WAFERS AND DESIGN. Cl. 46.
735,091. OLIFYUS ETC. AND DESIGN. Cl. 46.
735,095. SLIDE-AWAY. Cl. 50.
735,097. NATIONAL CARSHOPPERS SERVICE. Cl. 101.

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255,631. SENTRY. Cl. 35. 4–30–29. The B. F. Goodrich Company. Western Auto Supply Company, Kansas City, Mo. Amended to appear :

SENTRY

438,919. APPLAUSE. Cl. 51. 5–18–48. Walter Florell, Incorporated. Colgate-Palmolive Company, New York, N.Y. Amended to appear :

APPLAUSE

503,454. ORTHO. Cl. 10. 10–26–48. California Spray-Chemical Corporation. Chevron Chemical Company, San Francisco, Calif. Amended : In the statement, column 1, lines 21 and 22 are deleted, and the drawing is amended to appear :

ORTHO

504,340. ALPENOPAKE. Cl. 37. 11–30–48. Fletcher Paper Company, Alpena, Mich. Amended : In the statement, column 1, lines 20 and 21 are deleted, and the drawing is amended to appear :

ALPENOPAKE

709,358. CHEMBOND. Cl. 35. 1–3–61. H. B. Egan Manufacturing Company, Muskogee, Okla. Corrected : In the statement, column 1, line 1, "Oklahoma" should be deleted and *Delaware* should be inserted.

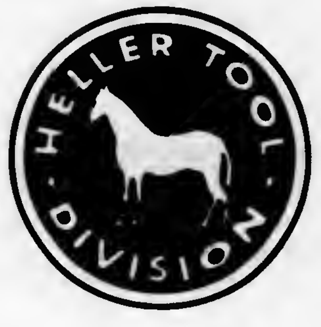
733,153. TV POPS AND DESIGN. Cl. 46. 6–19–62. Four Star Candy Co. Inc., Newark, N.J. Corrected : In the statement, column 1, line 1, "New York" should be deleted and *New Jersey* should be inserted.

740,483. WOODHILL PLASTIC AND DESIGN. Cl. 14. 11–13–62. Woodhill Chemical Sales Corporation, Cleveland, Ohio. Corrected : In the statement, column 1, line 1, "The" should be deleted.

755,824. X POSE AND DESIGN. Cl. 18. 9–3–63. Sumter S. Arnim, doing business as D. Brownlee & Company. Amurol Products Company, Naperville, Ill. Amended : In the statement, column 2, line 5, is deleted, and the drawing is amended to appear :

XPOSE

800,945. HELLER TOOL DIVISION. Cl. 23. 12–28–65. Heller Tool Co. Wallace-Murray Corporation, New York, N.Y. Amended to appear :



813,462. DECATHELON. Cl. 35. 8–23–66. The Goodyear Tire & Rubber Company, Akron, Ohio. Amended to appear:

DECATHLON

851,005. DIAMONDSTONE RG AND DESIGN. Cl. 30. 6–18–68. Società Ceramica Italiana Richard-Ginori S.p.A. Corrected: In the statement, column 1, line 1, "Societa Ceramic" should be deleted and *Società Ceramica* should be inserted.

852,671. NOVOPRINT. Cl. 23. 7–16–68. Mathias Bauerle Gesellschaft mit beschrankter Haftung, St. Georgen, Black Forest, Germany. Corrected: In the statement, column 1, line 1, "Mathis" should be deleted and *Mathias* should be inserted.

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  O'Malley-Abeling Co.
Abex Corp.: *See*—
  American Brake Shoe Co.
Aktiebolaget Astra, Apotekarnes Kemiska Fabriker, Sodertalje, Sweden. 734,809, canc. Cl. 18.
Alan Industries, Inc., Doylestown, Pa. 856,423, pub. 6–25–68. Cl. 21.
Alberto-Culver Co., Melrose Park, Ill. 856,707–8, pub. 6–25–68. Cl. 51.
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Allen, David H., d.b.a. National Hog Medicine Co., to National Hog Medicine Co., Inc., Raleigh, N.C. 503,132, ren. 9–10–68. Cl. 18.
Allied Chemical Corp., New York, N.Y. 734,778, canc. Cl. 12.
Allied Chemical Corp., New York, N.Y. 856,280, pub. 6–25–68. Cl. 1.
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American Crystal Sugar Co., Denver, Colo. 856,667, pub. 6–25–68. Cl. 46.
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California Institute of Technology, Pasadena, Calif. 856,756, pub. 6–25–68. Cl. 107.
California Spray-Chemical Corp., to Chevron Chemical Co., San Francisco, Calif. 503,454. Am. 7(d). Cl. 10.
Camacho Cigars, Inc., Miami, Fla. 856,369, pub. 6–25–68. Cl. 17.
Cambridge Tile Mfg. Co., The, Cincinnati, Ohio. 856,307, pub. 6–25–68. Cl. 6.
Campbell, E. J., d.b.a. International Purveyors, Denver, Colo. 856,779. Cl. 49.
Candymasters Inc., from F & F Laboratories, Inc., Chicago, Ill. 856,661, pub. 6–25–68. Cl. 46.
Cannon Mills Co., Kannapolis, N.C. 856,609, pub. 6–25–68. Cl. 39.
Cape Ann Mfg. Co., Gloucester, Mass. 856,611, pub. 6–25–68. Cl. 39.
Capri Creations, Philadelphia, Pa. 734,895, canc. Cl. 30.
Carol Wire & Cable Corp., Pawtucket, R.I. 856,413, pub. 6–25–68. Cl. 21.
Carol Wire & Cable Corp., Pawtucket, R.I. 856,427–8, pub. 6–25–68. Cl. 21.
Carpinteria Mutual Citrus Assn., to Santa Barbara Lemon Assn., Carpinteria, Calif. 250,578, ren. 9–10–68. Cl. 46.
Carriere, Ernest, Inc., Montreal, Quebec, Canada. 735,013, canc. Cl. 46.
Century Projector Corp., New York, N.Y. 856,492, pub. 6–25–68. Cl. 26.
Cerco Corp., from C. E. Robinson Co., Joliet, Ill. 856,512, pub. 6–25–68. Cl. 32.
Cetylite Industries, Inc., Long Island City, N.Y. 856,791. Cl. 51.
Chapman, John, Ltd., Johannesburg, Republic of South Africa. 856,368, pub. 6–25–68. Cl. 17.
Chauffeurs Unlimited, Inc., New York, N.Y. 856,731, pub. 5–9–67. Cl. 101.
Chess Brothers, The Central Expanded Metal Co., Pittsburgh, Pa., to Wheeling Steel Corp., Wheeling, W. Va. 72,061, ren. 9–10–68. Cl. 14.
Chicago Bridge & Iron Co., Oakbrook, Ill. 504,294, ren. 9–10–68. Cl. 2.
Chilton Co., Philadelphia, Pa. 856,581, pub. 6–25–68. Cl. 38.
Christian Men, Inc., San Antonio, Tex. 856,752, pub. 6–25–68. Cl. 107.
Chrondek Electronics, Inc., Costa Mesa, Calif. 856,410, pub. 6–25–68. Cl. 21.
Chronetics, Inc., Yonkers, N.Y. 856,484, pub. 6–25–68. Cl. 26.
Church & Dwight Co., Inc., New York, N.Y. 500,817, ren. 9–10–68. Cl. 6.
Church & Dwight Co., Inc., New York, N.Y. 500,960, ren. 9–10–68. Cl. 6.
Ciba Ltd., Basle, Switzerland. 856,381, pub. 6–25–68. Cl. 18.
Clairol Inc., New York, N.Y. 856,692, pub. 6–25–68. Cl. 51.
Clairol Inc., New York, N.Y. 856,695, pub. 6–25–68. Cl. 51.
Clary Corp., San Gabriel, Calif. 856,488, pub. 3–5–68. Cl. 26.
Clear Air Waste Reduction, Inc., Stone Park, Ill. 856,513, pub. 6–25–68. Cl. 34.
Clinton Corn Processing Co.: *See—*
Standard Brands Inc.
Club Caribbean, Inc., Houston, Tex. 856,758, pub. 6–25–68. Cl. 200.
Coca Cola Co., The: *See—*
Duncan Coffee Co.
Coca-Cola Co., The, Atlanta, Ga. 856,644, pub. 6–25–68. Cl. 45.
Cole Vending Industries, Inc., Chicago, Ill. 734,879, canc. Cl. 23.
Coleman Co., Inc., The, Wichita, Kans. 734,916, canc. Cl. 34.
Coles, Alvin E., d.b.a. Coles Pattern Shop, Fresno, Calif. 856,457, pub. 6–25–68. Cl. 23.
Coles Pattern Shop: *See—*
Coles, Alvin E.
Colgate-Palmolive Co.: *See—*
Par Beverage Corp.
Colgate-Palmolive Co., New York, N.Y. 856,308–10, pub. 6–25–68. Cl. 6.
Colonial Tanning Co., Inc., Boston, Mass. 734,733, canc. Cl. 1.
Columbia Industries, Inc., San Antonio, Tex. 856,439, pub. 6–25–68. Cl. 22.
Communication Mfg. Co., Huntington Park, Calif. 856,490, pub. 1–16–68. Cl. 26.
Compagnie Generale Des Gaz Liquefies Cogegal, Paris, France. 734,797, canc. Cl. 13.
Compania Insular Tabacalera, S.A., Las Palmas, Canary Islands. 856,364, pub. 12–7–65. Cl. 17.
Conde Nast Publications Inc., The, New York, N.Y. 504,006, ren. 9–10–68. Cl. 38.
Conde Nast Publications Inc., The, New York, N.Y. 504,456, ren. 9–10–68. Cl. 38.
Conn, C. G., Ltd., Elkhart, Ind. 856,527, pub. 6–25–68. Cl. 36.
Conover, C. E., & Co., Inc., Fairfield, N.J. 856,519–21, pub. 6–25–68. Cl. 35.
Consolidated Cigar Corp.: *See—*
Lorillard, P., Co.
Consolidated Grocers Corp., Chicago, Ill., to Michigan Fruit Canners, Inc., Benton Harbor, Mich. 440,918, ren. 9–10–68. Cl. 46.
Contactisol Inc., Lindenhurst, N.Y. 734,827, canc. Cl. 18.
Continental Mfg. Co., Cincinnati, Ohio. 856,345, pub. 6–25–68. Cl. 13.
Coral Chemical Co., Waukegan, Ill. 856,302, pub. 6–25–68. Cl. 6.
Cosmia Laboratories: *See—*
Cosmia Laboratoires d'Etudes Scientifiques, Inc.
Cosmia Laboratoires d'Etudes Scientifiques, Inc., from Cosmia Laboratories, New York, N.Y. 856,691, pub. 12–8–64. Cl. 51.
Cosmopolitan Insurance Co., Chicago, Ill. 735,060, canc. Cl. 102.
Cosmopolitan Mfg. Co., Boston, Mass. 856,601, pub. 6–25–68. Cl. 39.
Cotton Club Frocks, Inc., New York, N.Y. 856,597, pub. 6–25–68. Cl. 39.
Cotton, John, Ltd., Edinburgh, Scotland. 249,294, ren. 9–10–68. Cl. 17.
Cream of Wheat Co., Minneapolis, Minn., to National Biscuit Co., New York, N.Y. 244,892, ren. 9–10–68. Cl. 46.
Cream of Wheat Co., Minneapolis, Minn., to National Biscuit Co., New York, N.Y. 245,505, ren. 9–10–68. Cl. 46.
Creative Plastics Engineering Co., Chicago, Ill. 734,838, canc. Cl. 20.
Crookes-Barnes Laboratories, Inc., Wayne, N.J. 734,828, canc. Cl. 18.
Crown Zellerbach Corp., San Francisco, Calif. 856,288, pub. 6–25–68. Cl. 2.
Culligan, Inc., Northbrook, Ill., from National Marketing Service, Inc., Fullerton, Calif. 734,898, canc. Cl. 31.
Curlee Clothing Co., St. Louis, Mo. 856,596, pub. 6–25–68. Cl. 39.
Cypress Gardens Skis, Inc., Cypress Gardens, Fla. 856,443, pub. 6–25–68. Cl. 22.
D.M. Distillery Co., S.A., Juarez, Mexico. 504,537, ren. 9–10–68. Cl. 49.
Dallas Tornado Soccer Club, Dallas, Tex. 856,754, pub. 6–25–68. Cl. 107.
Dalomark Corp., Englewood, N.J. 856,534, pub. 6–25–68. Cl. 37.
Danielle, Vincent, Inc., Brooklyn, N.Y. 734,749, canc. Cl. 2.
Dartmore Corp., Brooklyn, N.Y. 734,861, canc. Cl. 22.
Deacon Jones, Inc., Portland, Oreg. 856,650, pub. 6–25–68. Cl. 46.
Dean Products, Inc., Brooklyn, N.Y. 856,502, pub. 6–25–68. Cl. 31.
Dean Products, Inc., Brooklyn, N.Y. 856,516, pub. 6–25–68. Cl. 34.
De-Luxe Specialty Co., Jersey City, N.J. 244,455, ren. 9–10–68. Cl. 51.
De Martel Dressmaker: *See—*
Sherman, Robert M.
Denney, Frances, Inc., Philadelphia, Pa. 856,701, pub. 6–25–68. Multiple Class (Classes 51 and 52).
Derry Products, Inc., Brooklyn, N.Y. 735,089, canc. Cl. 46.
De Sales Industries: *See—*
Pinckney, Betty T.
Desserts, Inc., Medford, Oreg. 856,662, pub. 6–25–68. Cl. 46.
Dewart, William E.: *See—*
Teddy & the Pandas, Inc.
Dixie-Portland Flour Mills, Inc.: *See—*
Plant Flour Mills Co.
Doughboy Industries, Inc., New Richmond, Wis. 856,454, pub. 7–4–67. Cl. 23.
Douwe Egberts Koninklijke Tabaksfabriek-Koffiebranderijen-Theehandel N.V., Joure, Netherlands. 856,367, pub. 6–25–68. Cl. 17.
Dow Chemical Co., The, Midland, Mich. 856,742, pub. 6–25–68. Cl. 103.
Dresser Industries, Inc., Dallas, Tex., from Harbison-Walker Refractories Co., Pittsburgh, Pa. 856,330, pub. 6–25–68. Cl. 12.
Dresser Industries, Inc., Dallas, Tex. 856,465, pub. 6–25–68. Cl. 23.
Drew Chemical Corp., New York, N.Y. 856,303, pub. 6–25–68. Cl. 6.
Drive-Patch, Inc., Gettysburg, Pa. 734,782, canc. Cl. 12.
Drugs for Veterinary Medicine, Inc., Yonkers, N.Y. 734,816, canc. Cl. 18.
Dubuque Packing Co., Dubuque, Iowa. 856,665, pub. 6–25–68. Cl. 46.
Ducoy, Inc., Mound, Minn. 734,867, canc. Cl. 22.
Duncan Coffee Co., Houston, Tex., to The Coca Cola Co., Atlanta, Ga. 502,232, ren. 9–10–68. Cl. 46.
Duncan, Flockhart & Co. Ltd., Edinburgh, Scotland. 734,829, canc. Cl. 18.
Dunn, Richard T., d.b.a. The Smile Remedy Co., to J. G. Dunn, d.b.a. The Smile Remedy Co., St. Louis, Mo. 505,263, ren. 9–10–68. Cl. 18.
Dura Steel Products Co., Los Angeles, Calif. 734,753, canc. Cl. 2.
Dustric Corp., to R. R. Cook, to Small Motors, Inc., Chicago, Ill. 438,827, ren. 9–10–68. Cl. 21.
Dyna Mfg. Co., Los Angeles, Calif. 734,911, canc. Cl. 34.
Dynamatic Corp., Kenosha, Wis., to Eaton Yale & Towne, Inc., Cleveland, Ohio. 503,874, ren. 9–10–68. Cl. 21.
Dynamic Classics, Ltd., New York, N.Y. 856,638, pub. 6–25–68. Cl. 44.

Eagle-Picher Co., The, d.b.a. Fabricon Products Division, River Rouge, Mich. 856,533, pub. 6–25–68. Cl. 37.
Eagle-Picher Industries, Inc., Cincinnati, Ohio. 856,686, pub. 6–25–68. Cl. 50.
Eastern Electronics, Albany, N.Y. 856,409, pub. 6–25–68. Cl. 21.
Eaton Yale & Towne, Inc.: *See—*
Dynamatic Corp.
Eberhard Faber Inc., Wilkes-Barre, Pa. 856,537, pub. 6–25–68. Cl. 37.
Egan, H. B., Mfg. Co., Muskogee, Okla. 709,358, cor. Cl. 35.
Elder, Paul B., Co., Bryan, Ohio. 734,815, canc. Cl. 18.
Elvetta Products Co. Inc., New York, N.Y. 856,603, pub. 6–25–68. Cl. 39.
Empire Slip-On Hook Co., Inc., Dorado, Puerto Rico. 856,351, pub. 6–25–68. Cl. 13.
Endicott Johnson Corp., Endicott, N.Y. 856,298, pub. 6–25–68. Cl. 5.
Endo Laboratories Inc., Richmond Hill, N.Y. 734,833, canc. Cl. 18.
Endura Time Corp., New York, N.Y. 856,497, pub. 6–25–68. Cl. 27.
Engle Farm Dairies: *See—*
Sunbury Milk Products Co.
Enterprise Mfg. Co., The, Akron, Ohio. 250,005, ren. 9–10–68. Cl. 22.
Eprad Inc., Toledo, Ohio. 735,095, canc. Cl. 50.
Essex Wire Corp., Fort Wayne, Ind. 734,846, canc. Cl. 21.
Ethicon, Inc., Somerville, N.J. 856,641, pub. 6–25–68. Cl. 44.
Eugene Fruit Growers Association, Eugene, Oreg. 856,773. Cl. 46.
Exquisite Form Industries, Inc., New York, N.Y. 856,602, pub. 6–25–68. Cl. 39.
Exquisite Form Industries, Inc., New York, N.Y. 856,770. Cl. 40.
F & F Laboratories, Inc.: *See—*
Candymasters Inc.
Fabricon Products Division: *See—*
Eagle-Picher Co., The.
Fabry Associates, Inc., New York, N.Y. 734,902, canc. Cl. 32.
Facelle Co. Ltd., Toronto, Ontario, Canada. 856,598, pub. 6–25–68. Cl. 39.
Faibish Corp., New York, N.Y. 734,982, canc. Cl. 42.
Fairmount Chemical Co., Inc., Newark, N.J. 856,311, pub. 6–25–68. Cl. 6.
Fairway Foods, Inc.: *See—*
Twin City Wholesale Grocer Co.
Fieldcrest Mills, Inc.: *See—*
Marshall Field & Co.
Filmohm Corp., New York, N.Y. 735,073, canc. Cl. 21.
Fisher Radio Corp., Long Island City, N.Y. 856,424–5, pub. 6–25–68. Cl. 21.
Fisons Pharmaceuticals Ltd., Loughborough, England. 856,375–6, pub. 6–25–68. Cl. 18.
Fletcher Paper Co., Alpena, Mich. 504,340. Am. 7(d). Cl. 37.
Flint & Walling Mfg. Co., Inc., Kendallville, Ind. 856,335, pub. 6–25–68. Cl. 13.
Florell, Walter, Inc., to Colgate-Palmolive Co., New York, N.Y. 438,919. Am. 7(d). Cl. 51.
Flower of the Month, Inc., Grand Rapids, Mich. 856,582, pub. 6–18–68. Cl. 38.
Fluid Power Accessories, Inc. ,Wheeling, Ill. 856,418, pub. 6–25–68. Cl. 21.
Foote Mineral Co.: *See—*
Vanadium Corp. of America.
Foremost-McKesson, Inc., from McKesson & Robbins, Inc., New York, N.Y. 856,677, pub. 6–25–68. Cl. 49.
Four Star Candy Co. Inc., Newark, N.J. 733,153, cor. Cl. 46.
Frank, S. M., & Co., Inc., New York, N.Y. 856,324, pub. 6–25–68. Cl. 8.
Franklin, Harold C., M.D., Madrid, Spain. 856,750, pub. 6–25–68. Cl. 107.
Friars, Santa Monica, Calif. 856,725, pub. 6–25–68. Cl. 100.
Frostie Co., The, Camden, N.J. 856,643, pub. 6–25–68. Cl. 45.
Frutas Refrigeradas, S.A., Michoacan, Mexico. 856,652, pub. 6–25–68. Cl. 46.
Fuji Seitetsu Kabushiki Kaisha (Fuji Iron & Steel Co., Ltd.), Tokyo, Japan. 856,352, pub. 6–25–68. Cl. 14.
Fuline Corp., The, Kansas City, Kansas. 734,885, canc. Cl. 23.
Fuline Corp., The, Kansas City, Kans. 735,022, canc. Cl. 46.
GAF Corp.: *See—*
General Dyestuff Corp.
Gaddy, R. L., Pharmacist: *See—*
Gaddy, Robert L.
Gaddy, Robert L., d.b.a. R. L. Gaddy Pharmacist, Tallahassee, Fla. 504,866, ren. 9–10–68. Cl. 18.
Geigy Chemical Corp., Ardsley, N.Y. 734,767, canc. Cl. 6.
Gem-Top Mfg., Inc., Clackamas, Oreg. 856,392, pub. 6–25–68. Cl. 19.
General Dyestuff Corp., to GAF Corp., New York, N.Y. 241,918, ren. 9–10–68. Cl. 6.
General Dyestuff Corp., to GAF Corp., New York, N.Y. 500,799, ren. 9–10–68. Cl. 6.
General Dynamics Corp., Rochester, N.Y. 856,417, pub. 6–25–68. Cl. 21.
General Foods Corp.: *See—*
Postum Cereal Co., Ltd.
General Foods Corp.: *See—*
Seven Day Coffee Co.
General Foods Corp., White Plains, N.Y. 856,711, pub. 10–10–67. Cl. 52.
General Grid Corp., Army Chemical Center, Md. 734,731, canc. Cl. 1.
General Mills, Inc., Minneapolis, Minn. 856,653, pub. 6–25–68. Cl. 46.
General Mills, Inc., Inc., Minneapolis, Minn. 856,670, pub. 6–25–68. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 856,672, pub. 6–25–68. Cl. 46.
General Motors Corp.: *See—*
Ternstedt Mfg. Co.
General Polymers Corp., Cincinnati, Ohio. 856,327, pub. 6–25–68. Cl. 12.
Gerald Products, Inc., Philadelphia, Pa. 856,399, pub. 4–23–68. Cl. 21.
Germain's, Inc., Los Angeles, Calif. 856,687, pub. 6–25–68. Cl. 50.
German Village Foods, Inc., Columbus, Ohio. 856,668, pub. 6–25–68. Cl. 46.
Gilreath Hydraulics, Inc., Houston, Tex. 856,473, pub. 6–25–68. Cl. 23.
Glamorise Foundations, Inc., New York, N.Y. 856,592, pub. 6–25–68. Cl. 39.
Glen Oaks Sales Co., Inc., New York, N.Y. 856,623, pub. 6–25–68. Cl. 39.
Glensder Corp., New York, N.Y. 856,599, pub. 6–25–68. Cl. 39.
Golden Nugget Sweets Ltd., San Francisco, Calif., to Reed Candy Co., Chicago, Ill. 503,592, ren. 9–10–68. Cl. 46.
Golden West Meat Products: *See—*
Western Packers.
Goodrich, B. F., Co., The, to Western Auto Supply Co., Kansas City, Mo. 255,631. Am. 7(d). Cl. 35.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 813,462. Am. 7(d). Cl. 35.
Grace, W. R., & Co., New York, N.Y. 856,487, pub. 1–2–68. Cl. 26.
Great Lakes Hybrids Cooperative, Inc., Lansing, Mich. 856,278, pub. 6–25–68. Cl. 1.
Great Lakes Paint & Varnish Co., Chicago, Ill. 734,801, canc. Cl. 16.
Guest Beds of America-Kansas, Inc., Mission, Kans. 856,764. Cl. 32.
Guittard Chocolate Co., Burlingame, Calif. 250,673, ren. 9–10–68. Cl. 46.
HMH Publishing Co., Inc., Chicago, Ill. 856,411, pub. 6–25–68. Cl. 21.
Handcraft Mfg. Corp., New York, N.Y. 856,587, pub. 6–25–68. Cl. 39.
Harbison-Walker Refractories Co.: *See—*
Dresser Industries, Inc.
Harper & Row Publishers, Inc., New York, N.Y. 856,585, pub. 6–25–68. Cl. 38.
Harrell International, Inc.: *See—*
Soil-Off Mfg. Co.
Hart, C., Mfg. Co., Columbus, Ohio. 856,612, pub. 6–25–68. Cl. 39.
Hartford Provision Co., Inc., Stamford, Conn. 856,655, pub. 6–25–68. Cl. 46.
Hartz Mountain Products Corp., New York, N.Y. 856,778. Cl. 46.
Haviland, Ann: *See—*
Haviland Laboratories, Inc.
Haviland Laboratories, Inc., d.b.a. Ann Haviland, New York, N.Y. 856,702, pub. 6–25–68. Cl. 51.
Hawkins, Allen G., d.b.a. The Bristex Co., Oklahoma City, Okla. 734,741, canc. Cl. 1.
Heekin, Inc., Cincinnati, Ohio. 856,306, pub. 6–25–68. Cl. 6.
Heller Tool Co., to Wallace-Murray Corp., New York, N.Y. 800,945. Am. 7(d). Cl. 23.
Helzberg's Diamond Shops, Inc., Kansas City, Mo. 856,297, pub. 6–25–68. Cl. 3.
Helzberg's Diamond Shops, Inc., Kansas City, Mo. 856,626, pub. 6–25–68. Cl. 39.
Helzberg's Diamond Shops, Inc., Kansas City, Mo. 856,673, pub. 6–25–68. Cl. 46.
Henckels, J. A., Zwillingswerk AG, Solingen, Germany. 856,640, pub. 6–25–68. Cl. 44.
Hercules Inc., Wilmington, Del. 856,313, pub. 6–25–68. Cl. 6.
Hercules Tire & Rubber Co., The, Findlay, Ohio. 856,523, pub. 6–25–68. Cl. 35.
Hess Oil & Chemical Corp., Perth Amboy, N.J. 856,456, pub. 5–7–68. Cl. 23.
Hickory Springs Mfg. Co. of Arkansas, Inc., Fort Smith, Ark. 856,506, pub. 6–25–68. Cl. 32.
Hoffman Bros. Packing Co., Inc., Los Angeles, Calif. 856,656, pub. 6–25–68. Cl. 46.
Hollywood Reporter Corp., The, Los Angeles, Calif. 856,584, pub. 6–25–68. Cl. 38.
Holyoke Wire & Cable Corp., Holyoke, Mass. 856,416, pub. 6–25–68. Cl. 21.
Home Comfort Products Co., Princeville, Ill. 856,331, pub. 6–25–68. Cl. 12.
Home Makers Savings Corp., Pittsburgh, Pa. 734,830, canc. Cl. 18.
Hoppe Doll Co.: *See—*
Hoppe, Warren D. J.
Hoppe, Warren D. J., d.b.a. Hoppe Doll Co., Reading, Mass. 856,431, pub. 10–25–66. Cl. 22.
House of Bauer, The, d.b.a. Bauer's, Lincoln, Nebr., to C. J. Patterson Co., Kansas City, Mo. 500,858, ren. 9–10–68. Cl. 46.
House of Games Corp. Ltd., Scarborough, Ontario, Canada. 856,432, pub. 6–25–68. Cl. 22.
House of Worsted-Tex, Inc., Philadelphia, Pa. 856,613, pub. 6–25–68. Cl. 39.
Howard Stores Corp., Brooklyn, N.Y. 856,606, pub. 6–25–68. Cl. 39.
Hudnut, Richard, Morris Plains, N.J. 856,705, pub. 6–25–68. Cl. 51.
Huffman Mfg. Co., The, Miamisburg, Ohio. 856,448, pub. 9–20–66. Cl. 23.
Hughes Tool Co., Houston, Tex. 856,463, pub. 6–25–68. Cl. 23.

Hyman, Harry A., d.b.a. United Shirt Distributors, to United Shirt Distributors, Inc., Detroit, Mich. 249,843, ren. 9–10–68. Cl. 39.
Imperial Chemical Industries Ltd., London, England. 856,377–8, pub. 6–25–68. Cl. 18.
Independendent Grocers' Alliance Distributing Co., Chicago, Ill. 856,591, pub. 6–25–68. Cl. 39.
Indiana Lumbermens Mutual Insurance Co., Indianapolis, Ind. 856,739, pub. 6–25–68. Cl. 102.
Industrial Engravers, Inc., Jamaica, N.Y. 856,408, pub. 6–25–68. Cl. 21.
Industrial Welding Equipment Co., Houston, Tex. 856,734, pub. 6–25–68. Cl. 101.
Infanseat Co., Eldora, Iowa. 856,504, pub. 10–19–65. Cl. 32.
Insurance Publishing House, Inc., Dallas, Tex. 856,576, pub. 6–25–68. Cl. 38.
Integrity Budget Service, Inc., Schofield, Wis. 856,740, pub. 6–25–68. Cl. 102.
Intercon Research, Inc., Indianapolis, Ind. 856,722, pub. 6–25–68. Cl. 100.
International Catalytic Corp., Hurst, Tex. 856,336, pub. 6–25–68. Cl. 13.
International Collectors Association, Minneapolis, Minn. 856,724, pub. 6–25–68. Cl. 100.
International Harvester Co., Chicago, Ill., from International Harvester Co., San Diego, Calif. 856,741, pub. 7–11–67. Cl. 103.
International Minerals & Chemical Corp., Skokie, Ill. 856,282, pub. 6–25–68. Cl. 1.
International Paper Co., New York, N.Y. 856,535, pub. 6–25–68. Cl. 37.
International Purveyors: *See*—
Campbell, E. J.
International Research & Development Corp., Worthington, Ohio. 856,430, pub. 6–25–68. Multiple Class (Classes 21, 26, and 100).
International Silver Co., The, Meriden, Conn. 503,060–1, ren. 9–10–68. Cl. 28.
Jacobs, Samuel B., Hoboken, N.J. 856,374, pub. 6–25–68. Cl. 17.
Jacobson, John R., d.b.a. Sir Knight, Kansas City, Mo. 856,727, pub. 6–25–68. Cl. 100.
Japan Food Corp.: *See*—
Pacific Trading Co., Inc.
Jenny & Cie S.A. Fabrique d'Horlogerie, Lengnau Pres Bienne, Lengnau, Switzerland. 856,499, pub. 6–25–68. Cl. 27.
Johnson Enterprises, Inc., Rockford, Ill. 856,346, pub. 6–25–68. Cl. 13.
K.L. Cosmetics, Ltd., Brooklyn, N.Y. 856,696, pub. 6–25–68. Cl. 51.
Kadison Laboratories, Inc., Chicago, Ill. 856,651, pub. 6–25–68. Cl. 46.
Kaman Corp., Bloomfield, Conn. 856,479, pub. 6–25–68. Cl. 23.
Kay-Fries Chemicals, Inc., West Haverstraw, N.Y. 856,304, pub. 6–25–68. Cl. 6.
Kellett, R. C., Inc., Caldwell, Idaho. 735,012, canc. Cl. 46.
Kelly-Springfield Tire Co., Cumberland, Md. 856,522, pub. 6–25–68. Cl. 35.
Kenrose Mfg. Co., Inc., New York, N.Y. 856,594, pub. 6–25–68. Cl. 39.
Kessler, William B., Inc., Hammonton, N.J. 856,616, pub. 6–25–68. Cl. 39.
Kestner Evaporator & Engineering Co. Ltd., London, England. 734,736, canc. Cl. 1.
Keuffel & Esser Co., Hoboken, N.J. 440,031, ren. 9–10–68. Cl. 11.
Keuffel & Esser Co., Hoboken, N.J. 440,033, ren. 9–10–68. Cl. 11.
Keuffel & Esser Co., Hoboken, N.J. 440,510, ren. 9–10–68. Cl. 37.
Kilgore Junior College District, Kilgore, Tex. 856,802. Cl. 107.
Kimberly-Clark Corp., Neenah, Wis. 856,630, pub. 6–25–68. Cl. 42.
King, R. C., Co., Inc., Seattle, Wash. 856,604–5, pub. 6–25–68. Cl. 39.
Kirkpatrick Brothers Ltd., Manchester, England. 856,636, pub. 6–25–68. Cl. 43.
Kirschenbaum Bros. Inc., Brooklyn, N.Y. 856,723, pub. 6–25–68. Cl. 100.
Knight of the Month Club: *See*—
Songstad, Sheldon R.
Knoll Associates, Inc., New York, N.Y. 856,633, pub. 6–25–68. Cl. 42.
Koch Engineering Co., Inc., Wichita, Kans. 856,466, pub. 6–25–68. Cl. 23.
Kolberg Mfg. Corp., Yankton, S. Dak. 856,761. Multiple Class (Classes 21 and 23).
Kops Bros., Inc., New York, N.Y. 856,624, pub. 6–25–68. Cl. 39.
Kristinus Kommanditgesellschaft, Munich, Germany. 856,371–2, pub. 6–25–68. Cl. 17.
L.B. Laboratories, Inc., Glendale, Calif. 856,800. Cl. 52.
Laboratoires Lumiere: *See*—
Societe Anonyme des Produits Chimiques Speciaux.
Ladish Co., Cudahy, Wis. 856,349, pub. 6–25–68. Cl. 13.
Lady Fair Kitchens, Inc., Salt Lake City, Utah. 856,505, pub. 7–26–66. Cl. 32.
Lambert Frame & Picture Co., Inc., Brooklyn, N.Y. 856,765. Cl. 32.
Landis & Gyr, A.G., Zug, Switzerland. 245,782, ren. 9–10–68. Cl. 26.
Lanman & Kemp, Inc., New York, N.Y., to Lanman & Kemp-Barclay & Co. Inc., Palisades Park, N.J. 250,966, ren. 9–10–68. Cl. 51.
Lanman & Kemp-Barclay & Co. Inc.: *See*—
Lanman & Kemp, Inc.
Lan-O-Sheen, Inc., St. Paul, Minn. 856,717, pub. 6–25–68. Cl. 52.
Lansea Knitwear Ltd., from Robert R. Boronow, Ltd., Montreal, Quebec, Canada. 856,588, pub. 6–25–68. Cl. 39.
Lapinal, Inc., Los Angeles, Calif. 856,706, pub. 6–25–68. Cl. 51.
Lazier, J. F., Mfg. Co., St. Louis, Mo. 856,642, pub. 6–25–68. Cl. 45.
Les Parfums de Dana, Inc., New York, N.Y. 504,424, ren. 9–10–68. Cl. 52.
Levittmark Inc., Lake Success, N.Y. 856,509, pub. 6–25–68. Cl. 32.
Lewis, William, & Son, Chicago, Ill. 734,918, canc. Cl. 36.
Lifeguard Corp., Philadelphia, Pa. 734,991, canc. Cl. 44.
Linberg, Paul E.: *See*—
Miller, Edward J.
Lindy Pen Co., Inc., Culver City, Calif. 856,530–1, pub. 4–23–68. Cl. 37.
Lindy Pen Co., Inc., North Hollywood, Calif. 856,532, pub. 4–23–68. Cl. 37.
Lion Burashi Kabushiki Kaisha, Tokyo, Japan. 734,894, canc. Cl. 29.
Lloyd Brothers, Inc., Cincinnati, Ohio. 734,813, canc. Cl. 18.
London Chemical Co., Inc., Melrose Park, Ill. 856,362, pub. 6–25–68. Cl. 16.
Longacre, Horace W., Inc., Franconia, Pa. 856,776. Cl. 46.
Lord & Lady Windsor Inc., New York, N.Y. 734,975–6, canc. Cl. 40.
Lorillard, P., Co., to Consolidated Cigar Corp., New York, N.Y. 503,932, ren. 9–10–68. Cl. 17.
Louket Markets Inc., Jersey City, N.J. 856,671, pub. 6–25–68. Cl. 46.
M-R-S, Inc., Oklahoma City, Okla. 856,419–20, pub. 6–25–68. Cl. 21.
Machine Shop Equipment Ltd., London, England. 856,446, pub. 2–21–67. Cl. 23.
MacLean-Fogg Lock Nut Co., Chicago, to MacLean-Fogg Nut Co., Mundelein, Ill. 504,579, ren. 9–10–68. Cl. 13.
MacLean-Fogg Nut Co.: *See*—
MacLean-Fogg Lock Nut Co.
Mahady, E. F., Co., Boston, to Will Ross, Inc. of Massachusetts, Cambridge, Mass. 247,283, ren. 9–10–68. Cl. 44.
Malmon, J., & Sons, Inc., Philadelphia, Pa. 734,951, canc. Cl. 39.
Majelli, Inc., East Meadow, N.Y. 856,296, pub. 6–25–68. Cl. 3.
Mann, Seymour, d.b.a. Seymour Mann Imports, New York, N.Y. 856,334, pub. 6–25–68. Cl. 13.
Mann, Seymour, Imports: *See*—
Mann, Seymour.
Mannheimer Maschinenfabrik, Mohr & Federhaff AG, Mannheim-Rheinau, Germany. 856,449, pub. 4–9–68. Cl. 23.
Marion Power Shovel Co.: *See*—
Marion Steam Shovel Co., The.
Marion Steam Shovel Co., The, to Marion Power Shovel Co., Marion, Ohio. 141,772, ren. 9–10–68. Cl. 23.
Market Potential Corp., New York, N.Y. 856,801. Cl. 100.
Marshall Field & Co., Chicago, Ill., to Fieldcrest Mills, Inc., Eden, N.C. 500,882, ren. 9–10–68. Cl. 42.
Mastagem Jewelry Co., New York, N.Y. 856,500, pub. 6–25–68. Cl. 28.
Masti-Kure Products Co., Inc., Norwich, Conn. 856,390, pub. 6–25–68. Cl. 18.
Mathias Bauerle Gesellschaft mit beschrankter Haftung, St. Georgen, Black Forest, Germany. 852,671, cor. Cl. 23.
Matson, H. P., Co.: *See*—
Matson, Harry P.
Matson, Harry P., d.b.a. H. P. Matson Co., Akron, Ohio. 735,035, canc. Cl. 50.
May & Baker Ltd., Dagenham, Essex, England. 734,745, canc. Cl. 1.
Mayer Co., Inc., The, New York, N.Y. 856,595, pub. 6–25–68. Cl. 39.
Mech-Tronics Nuclear Corp., Melrose Park, Ill. 856,412, pub. 6–25–68. Cl. 21.
Medical Products Co., Inc., Miami, Fla. 735,043, canc. Cl. 52.
Melville Shoe Corp., New York, N.Y. 734,962, canc. Cl. 39.
Melville Shoe Corp., New York, N.Y. 856,586, pub. 1–3–67. Cl. 39.
Merck & Co., Inc., Rahway, N.J. 856,305, pub. 6–25–68. Cl. 6.
Merory Flavors, Inc., Boonton, N.J. 734,997, canc. Cl. 46.
Merriman Inc., Hingham, Mass. 856,480–1, pub. 6–25–68. Cl. 23.
Mertz, G. R., Bellingham, Wash. 856,444, pub. 6–25–68. Cl. 22.
Michigan Fruit Canners, Inc.: *See*—
Consolidated Grocers Corp.
Mid-Continent Mfg. Corp., Chicago, Ill. 734,932, canc. Cl. 37.
Middlemiss, Grace, Bayshore, N.Y. 734,969, canc. Cl. 39.
Miehle-Goss-Dexter, Inc., Chicago, Ill. 856,458, pub. 6–25–68. Cl. 23.
Miller, Edward J., d.b.a. Perma-Stone Co., to P. E. Linberg, d.b.a. Perma-Stone Co., Columbus, Ohio. 439,000, ren. 9–10–68. Cl. 12.
Miller, K. J., Corp., Brookfield, Ill. 856,476, pub. 6–25–68. Cl. 23.
Milsan Mills, Inc., Lebanon, Pa. 734,967, canc. Cl. 39.
Mining Engineering Co. (Meco) Ltd., The, Worcester, England. 856,461–2, pub. 6–25–68. Cl. 23.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 734,930, canc. Cl. 37.
Mobility Unlimited, Inc., Royal Oak, Mich. 856,394, pub. 6–25–68. Cl. 19.
Modern Products, Inc., Kansas City, Mo. 856,760. Cl. 18.
Molybdenum Corp. of America, New York, N.Y. 856,281, pub. 6–25–68. Cl. 1.
Monsanto Chemical Co., to Monsanto Co., St. Louis, Mo. 503,712, ren. 9–10–68. Cl. 1.

Monsanto Co.: *See*—
Monsanto Chemical Co.
Moore Business Forms, Inc.: *See*—
American Sales Book Co., Ltd.
Moore's Sea Food Co., Inc., Biloxi, Miss. 735,008, canc. Cl. 46.
Morson, Popper, Corp., New York, N.Y. 735,028, canc. Cl. 49.
McCarthy, Patrick B., Van Nuys, Calif. 734,915, canc. Cl. 34.
McCloskey Varnish Co., Philadelphia, Pa. 856,359, pub. 6–25–68. Cl. 16.
McGettigan, F. J., Wynnewood, Pa. 856,575, pub. 6–25–68. Cl. 38.
McGraw-Edison Co., Elgin, Ill. 856,450, pub. 6–25–68. Cl. 23.
McGraw-Hill, Inc., New York, N.Y. 856,574, pub. 6–25–68. Cl. 38.
McGregor-Doniger Inc., New York, N.Y. 856,600, pub. 6–25–68. Cl. 39.
McKee, Robert E., General Contractor, Inc., El Paso, Tex. 856,743, pub. 6–25–68. Cl. 103.
McKesson & Robbins, Inc.: *See*—
Foremost-McKesson, Inc.
Napp, Robert M., and Murray L. Handwerker: *See*—
Big Daddy's Enterprises, Inc.
Narrow Fabric Co., The, West Reading, to Wyomissing Corp., Reading, Pa. 504,355, ren. 9–10–68. Cl. 40.
National Association of Evangelicals, Wheaton, Ill. 856,583, pub. 6–25–68. Cl. 38.
National Biscuit Co.: *See*—
Cream of Wheat Co.
National Distillers & Chemical Corp., New York, N.Y. 856,276, pub. 11–14–67. Cl. 1.
National Gramophon Works Corp., Mount Kisco, N.Y. 856,528, pub. 6–25–68. Cl. 36.
National Hog Medicine Co.: *See*—
Allen, David H.
National Hog Medicine Co., Inc.: *See*—
Allen, David H.
National Marketing Service, Inc.: *See*—
Culligan, Inc.
National Periodical Publications, Inc., New York, N.Y. 856,415, pub. 6–25–68. Cl. 21.
National Retail Dry Goods Association, to National Retail Merchants Association, New York, N.Y. 502,195, ren. 9–10–68. Cl. 38.
National Retail Merchants Association: *See*—
National Retail Dry Goods Association.
Nationwide Tabulating Corp., Hempstead, N.Y. 735,054, canc. Cl. 100.
Naturalite, Inc., Garland, Tex. 856,429, pub. 6–25–68. Cl. 21.
Navy Brand Mfg. Co.: *See*—
St. Louis Janitor Supply Co.
New England Industries Inc., The: *See*—
Plastic-Kote Corp.
New York & Pennsylvania Co., Inc., New York, N.Y. 734,931, canc. Cl. 37.
Nibot Corp., Chicago, Ill. 856,284, pub. 8–2–66. Cl. 2.
Nord Photocopy & Electronics Corp., New Hyde Park, N.Y. 734,886, canc. Cl. 26.
Nordskog Co., Inc., Van Nuys, Calif. 856,347, pub. 6–25–68. Cl. 13.
Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 856,792–7. Cl. 51.
North American Philips Co., Inc., New York, N.Y. 856,571–3, pub. 6–25–68. Cl. 38.
Northrup, King & Co., Minneapolis, Minn. 504,918, ren. 9–10–68. Cl. 1.
Northwestern Golf Co., Chicago, Ill. 856,436, pub. 6–25–68. Cl. 22.
Nott Mfg. Co., Inc., Pleasant Valley, N.Y. 856,312, pub. 6–25–68. Cl. 6.
O.P.I.S. (Organizacion Puertorriquena de Inversiones y Servicio, Inc.), Santurce, Puerto Rico. 735 052, canc. Cl. 100.
Oakite Products, Inc., Berkeley Heights, N.J. 856,730, pub. 6–25–68. Cl. 100.
Olin Mathieson Chemical Corp., New York, N.Y. 856,478, pub. 6–25–68. Cl. 23.
Oliver Corp., Chicago, Ill. 856,763. Cl. 23.
Ollivant, G. B., Manchester, England. 856,772. Cl. 46.
Olympia Brewing Co., Olympia, Wash. 856,338, pub. 6–25–68. Cl. 13.
O'Malley-Abeling Co., to Abeling-Vohryzek Co., San Francisco, Calif. 233,209, ren. 9–10–68. Cl. 46.
Oneida Ltd., Oneida, N.Y. 856,472, pub. 6–25–68. Cl. 23.
Oneida Ltd., Oneida, N.Y. 856,474–5, pub. 6–25–68. Cl. 23.
Optical Scanning Corp., Newton, Pa. 856,495, 6–25–68. Cl. 26.
Organon Inc., West Orange, N.J. 856,320, pub. 6–25–68. Cl. 6.
Ormat Turbines (1965) Ltd., Yavne, Israel. 856,402, pub. 6–25–68. Cl. 21.
Ort Bros. Bakery, Inc., Cumberland, Md. 735,009, canc. Cl. 46.
Osborn Mfg. Co., The, Cleveland, Ohio. 504,276, ren. 9–10–68. Cl. 23.
Outside Carpets, Inc., Rome, Ga. 856,684, pub. 6–25–68. Cl. 50.
Ovaltine Food Products: *See*—
Wander Co., The.
P.D.P. Co., Inc., Newtonville, Mass. 735,003, canc. Cl. 46.
PPG Industries, Inc., from Pittsburgh Plate Glass Co., Pittsburgh, Pa. 856,332, pub. 6–18–68. Cl. 12.
PPG Industries, Inc., from Pittsburgh Plate Glass Co., Pittsburgh, Pa. 856,363, pub. 5–28–68. Cl. 16.
Pacific Trading Co., Inc., to Japan Food Corp., San Francisco, Calif. 249,322, ren. 9–10–68. Cl. 46.
Palmedico, Inc., Columbia, S.C. 856,379, pub. 6–25–68. Cl. 18.
Palomino & Vergara, S.L., Cadiz, Spain. 856,678, pub. 6–25–68. Cl. 49.
Par Beverage Corp., Cincinnati, Ohio, to Colgate-Palmolive Co., New York, N.Y. 439,560, ren. 9–10–68. Cl. 4.
Parents Without Partners, Inc., New York, N.Y. 856,720, pub. 6–25–68. Cl. 100.
Parr Instrument Co., Moline, Ill. 856,317–18, pub. 6–25–68. Multiple Class (Classes 6 and 26).
Patek & Co., San Francisco, Calif. 856,315, pub. 6–25–68. Cl. 6.
Patterson, C. J., Co.: *See*—
House of Bauer, The.
Paula, C. M., Co., The, Cincinnati, Ohio. 856,577, pub. 6–25–68. Cl. 38.
Pearce Woolen Mills, Woolrich, Pa. 856,632, pub. 6–25–68. Cl. 42.
Pellon Corp., New York, N.Y. 856,631, pub. 6–25–68. Cl. 42.
Penick & Ford, Ltd., to R. J. Reynolds Foods, Inc., New York, N.Y. 250,080, ren. 9–10–68. Cl. 46.
Penick & Ford, Ltd., to R. J. Reynolds Foods, Inc., New York, N.Y. 250,465, ren. 9–10–68. Cl. 46.
Pennsalt Chemicals Corp., Philadelphia, Pa., from B. T. Babbitt, Inc., Albany, N.Y. 856,710, pub. 6–25–68. Cl. 52.
Perfect Photo, Inc., Philadelphia, Pa. 856,525, pub. 6–25–68. Cl. 36.
Perfumes of Puerto Rico: *See*—
Perfumes of Puerto Rico Inc.
Perfumes of Puerto Rico Inc., d.b.a. Perfumes of Puerto Rico, Hato Rey, Puerto Rico. 856,704, pub. 6–25–68. Cl. 51.
Perma-Stone Co.: *See*—
Miller, Edward J.
Pet Inc., St. Louis, Mo. 856,777. Cl. 46.
Pfizer, Chas., & Co., Inc.: *See*—
Barbasol Co., The.
Philadelphia Quartz Co., Philadelphia, Pa. 502,408, ren. 9–10–68. Cl. 6.
Philamon Laboratories, Inc., Westbury, N.Y. 856,494, pub. 6–25–68. Cl. 26.
Phillips Petroleum Co., Bartlesville, Okla. 856,293, pub. 6–25–68. Cl. 2.
Phillips-Van Heusen Corp., New York, N.Y. 856,610, pub. 6–25–68. Cl. 39.
Physicians Epicure Society, Inc., Stroudsburg, Pa. 856,757, pub. 6–25–68. Cl. 200.
Piedmont Shirt Co., Greenville, S.C. 734,956, canc. Cl. 39.
Pillsbury Co., The, Minneapolis, Minn. 735,051, canc. Cl. 52.
Pillsbury Co., The, Minneapolis, Minn. 856,649, pub. 6–25–68. Cl. 46.
Pin, Carri, Inc., North Massapequa, N.Y. 734,971, canc. Cl. 40.
Pinckney, Betty T., d.b.a. De Sales Industries, Savannah, Ga. 856,654, pub. 6–25–68. Cl. 46.
Pinlites Inc., Fairfield, N.J. 856,414, pub. 6–25–68. Cl. 21.
Pioneer Girls, Wheaton, Ill. 856,579, pub. 6–25–68. Cl. 38.
Piper, Jaffray & Hopwood, Minneapolis, Minn. 856,768–9. Cl. 38.
Pittsburgh Corning Corp., Pittsburgh, Pa. 440,389, ren. 9–10–68. Cl. 12.
Pittsburgh Plate Glass Co.: *See*—
PPG Industries, Inc.
Plant Flour Mills Co., St. Louis, Mo., to Dixie-Portland Flour Mills, Inc., Memphis, Tenn. 242,471, ren. 9–10–68. Cl. 46.
Plastic-Kote Corp., from The New England Industries Inc., Medina, Ohio. 856,353, pub. 5–14–68. Multiple Class (Classes 15, 16, and 52).
Pneumo Dynamics Corp., Cleveland, Ohio. 856,489, pub. 6–25–68. Cl. 26.
Polychrome Corp., Yonkers, N.Y. 856,688–90, pub. 6–25–68. Cl. 50.
Polytop Corp., Slatersville, R.I. 856,685, pub. 6–25–68. Cl. 50.
Ponit Trading Co., St. Louis, Mo. 856,323, pub. 6–25–68. Cl. 7.
Poppycock Candles: *See*—
Wander Co., The.
Posner, I., Inc.: *See*—
Posner Laboratories, Inc.
Posner Laboratories, Inc., from I. Posner, Inc., Corona, N.Y. 856,693–4, pub. 6–18–68. Cl. 51.
Postum Cereal Co., Ltd., Battle Creek, Mich., to General Foods Corp., White Plains, N.Y. 31,689, ren. 9–10–68. Cl. 46.
Power Lube Co., San Diego, Calif. 856,356, pub. 6–25–68. Cl. 15.
Pratt & Lambert, Inc., Buffalo, N.Y. 856,361, pub. 6–25–68. Cl. 16.
Prepo Corp., Edgerton, Wis. 856,354, pub. 6–25–68. Multiple Class (Classes 15 and 34).
Proctor-Silex Inc., Philadelphia, Pa. 856,482–3, pub. 6–25–68. Cl. 24.
Product Research & Development Corp., Blue Bell, Pa. 734,762, canc. Cl. 6.
Program Aids Co., Inc., The, Mount Vernon, N.Y. 856,680, pub. 6–25–68. Cl. 50.
Pronto Food Corp., Chicago, Ill. 856,659, pub. 6–25–68. Cl. 46.
Pro-Phy-Lac-Tic Brush Co., Northampton, Mass., to Vistron Corp., Cleveland, Ohio. 439,461, ren. 9–10–68. Cl. 6.
Prosser, Dallas A., Milwaukee, Wis. 856,289, pub. 6–25–68. Cl. 2.
Puritan Fashions Corp., New York, N.Y. 856,620–1, pub. 6–25–68. Cl. 39.
Quality Park Envelope Co., St. Paul, Minn. 856,538, pub. 6–25–68. Cl. 37.
Quality School Products: *See*—
Strout, Beverly T.
Raab, Andrea, Corp., Brooklyn, N.Y. 856,799. Cl. 52.
Raichle Sportschuh AG (Raichle Chaussures de Sport SA) (Raichle Boot Co. Ltd.), Kreuzlingen, Switzerland. 856,440, pub. 6–25–68. Cl. 22.

Ralston Purina Co., St. Louis, Mo. 856,657, pub. 6–25–68. Cl. 46.
Ralston Purina Co., St. Louis, Mo. 856,660, pub. 6–25–68. Cl. 46.
Rapid Products Co. : *See—*
  Stern, Idisor.
Raybestos-Manhattan, Inc., Passaic, N.J. 504,349, ren. 9–10–68. Cl. 35.
Raybestos-Manhattan, Inc., Passaic, N.J. 504,446, ren. 9–10–68. Cl. 35.
Real Estate Pictorial, Inc., The, Memphis, Tenn. 734,949, canc. Cl. 38.
Red Top Maintenance Service, Inc., Denver, Colo. 856,300, pub. 6–25–68. Cl. 6.
Reddi Car Corp., Sayville, N.Y. 856,350, pub. 6–25–68. Cl. 13.
Reed Candy Co. : *See—*
  Golden Nugget Sweets Ltd.
Reiss, Ronthor, Corp., New York, N.Y. 856,291, pub. 6–25–68. Cl. 2.
Retail Merchandising Service : *See—*
  Rossi, Bernon J.
Revlon, Inc., New York, N.Y. 856,781–90. Cl. 51.
Revlon, Inc., New York, N.Y. 856,798. Cl. 51.
Rex Chainbelt Inc., Milwaukee, Wis. 856,459, pub. 6–25–68. Cl. 23.
Rexall Drug & Chemical Co., d.b.a. Syroco, Los Angeles, Calif. 856,683, pub. 6–25–68. Cl. 50.
Reynolds, R. J., Foods, Inc. : *See—*
  Penick & Ford, Ltd.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 856,370, pub. 6–25–68. Cl. 17.
Ribeiro & Irmao, Oporto, Portugal. 856,674, pub. 6–25–68. Cl. 47.
Riegel Paper Corp., New York, N.Y. 856,290, pub. 6–25–68. Cl. 2.
Riggs, Peter P., Essex, England. 856,321, pub. 6–4–68. Cl. 7.
Riko Enterprises, Inc., Philadelphia, Pa. 856,615, pub. 6–25–68. Cl. 39.
Ritter Pfaudler Corp., Rochester, N.Y. 856,639, pub. 6–25–68. Cl. 44.
Robbins Products, Inc., Tuscumbia, Ala. 856,396, pub. 6–25–68. Cl. 20.
Robinson, C. E., Co. : *See—*
  Cero Corp.
Rockwell Mfg. Co., Pittsburgh, Pa. 500,899, ren. 9–10–68. Cl. 5.
Rodriguez, Heramanos, de Cordoba S.A., Cordoba, Spain. 735,091, canc. Cl. 46.
Rohm-Gesellschaft m.b.H. Werkzeug- und Maschinenfabrik, Sontheim (Brenz), Germany. 856,325, pub. 6–25–68. Cl. 9.
Romac Industries Ltd. : *See—*
  Romac Motor Accessories, Ltd.
Romac Motor Accessories, Ltd., to Romac Industries Ltd., London, England. 242,805, ren. 9–10–68. Cl. 35.
Romain, John, Inc., Long Island City, N.Y. 856,295, pub. 6–25–68. Cl. 3.
Rosenau Bros., Inc., Philadelphia, Pa. 502,149, ren. 9–10–68. Cl. 39.
Rosenstein, Nettie, Inc., New York, N.Y. 856,697, pub. 6–25–68. Multiple Class (Classes 51 and 52).
Ross, Will, Inc., of Massachusetts : *See—*
  Mahady, E. F., Co.
Rossi, Bernon J., d.b.a. Retail Merchandising Service, Riverside, Calif. 856,733, pub. 6–25–68. Cl. 101.
St. Louis Janitor Supply Co., d.b.a. Navy Brand Mfg. Co., St. Louis, Mo. 856,719, pub. 6–25–68. Cl. 52.
St. Martin Pharmacal Co. : *See—*
  Villarreal, Carlos G.
Sanitarium Equipment Co., to Battle Creek Equipment Co., Battle Creek, Mich. 248.526, ren. 9–10–68. Cl. 44.
Santa Barbara Lemon Association : *See—*
  Carpinteria Mutual Citrus Association.
Schaefer, F. & M., Brewing Co., The, Brooklyn, N.Y. 856,675, pub. 6–25–68. Cl. 48.
Schell Leather Goods Co., Inc., Cincinnati, Ohio. 441,082, ren. 9–10–68. Cl. 3.
Scherer, Werner J., Seattle, Wash. 734.945, canc. Cl. 38.
Schlichting, Gilbert, Sparks, Nev. 856,292, pub. 6–25–68. Cl. 2.
Schuyler, Irving M., New York, N.Y. 856,607, pub. 6–25–68. Cl. 39.
Schwarz, H., Leather Co. Inc., Edgewater, N.J. 856,283, pub. 6–25–68. Cl. 1.
Scinlaro, Frank, New York, N.Y. 856,755, pub. 6–25–68. Cl. 107.
Scott Paper Co., Delaware County, Pa. 856,279, pub. 6–25–68. Cl. 1.
Scoville, Thomas N., d.b.a. Standard Foundry Products, Reading, Pa. 734,901, canc. Cl. 32.
Seal Bag Co., Inc., Rochester, N.Y. 856,294, pub. 6–25–68. Cl. 2.
Sealol, Inc., Warwick, R.I. 856,524, pub. 6–25–68. Cl. 35.
Semag, Grenchen, Switzerland. 856,496, pub. 6–25–68. Cl. 27.
Sequestrator Products Corp., Wrightsville, Pa. 856,501, pub. 6–25–68. Cl. 31.
Service Publications, Inc., New York, N.Y. 856,541–2, pub. 6–25–68. Cl. 38.
Servis Equipment Co., Inc., Dallas, Tex. 856,477, pub. 6–25–68. Cl. 23.
Seven Day Coffee Co., New York, to General Foods Corp., White Plains, N.Y. 68,429, ren. 9–10–68. Cl. 46.
Shaeffer, W. A., Pen Co., Fort Madison, Iowa, to Textron Inc., Providence, R.I. 501,128, ren. 9–10–68. Cl. 37.
Sherman, Robert M., d.b.a. De Martel Dressmaker, New York, N.Y. 856,617–18, pub. 6–25–68. Cl. 39.
Sherwin-Williams Co., The, Cleveland, Ohio. 240,802, ren. 9–10–68. Cl. 6.
Shoecraft, Inc. : *See—*
  Shoecraft Shop Inc.
Shoecraft Shop Inc., to Shoecraft, Inc., New York, N.Y. 250,196, ren. 9–10–68. Cl. 50.
Silver State Merchandisers, Inc., Las Vegas, Nev. 856,580, pub. 6–25–68. Cl. 38.
Sinclair, John, Ltd., Newcastle-Upon-Tyne, England. 856,373, pub. 6–25–68. Cl. 17.
Singhap Corp., Washington, D.C. 735,053, canc. Cl. 100.
Sir Knight : *See—*
  Jacobson, John R.
Skylark Records Inc., Los Angeles, Calif. 734,920, canc. Cl. 36.
Skyline Ind., Inc., Charlottesville, Va. 856,709, pub. 6–25–68. Cl. 51.
Small Motors, Inc. : *See—*
  Dustric Corp.
Smile Remedy Co., The : *See—*
  Dunn, Richard T.
Smoler, Boris, & Sons, Chicago, Ill. 856,590, pub. 6–25–68. Cl. 39.
Societa Ceramica Italiana Richard-Ginori S.p.A., Milan, Italy. 851,005, cor. Cl. 30.
Societe Anonyme Belgo-Canadienne Continental Pharma, Brussels, Belgium. 734,824, canc. Cl. 18.
Societe Anonyme de la Distillerie de la Liqueur Benedictine de l'Abbaye de Fecamp, to Benedictine Distillerie la Liqueur de l'Ancienne, Abbaye de Fecamp, Fecamp, France. 71,552–4, ren. 9–10–68. Cl. 49.
Societe Anonyme des Produits Chimiques Speciaux, Lyon-Monplaisir, to Laboratoires Lumiere, Lyon (Rhone), France. 67,918, ren. 9–10–68. Cl. 18.
Societe Anonyme Ed. Laurens "Le Khedive" Extension Suisse : *See—*
  Societe Anonyme Le Khedive.
Societe Anonyme Le Khedive, Brussels, Belgium, and Paris, France, to Societe Anonyme Ed. Laurens "Le Khedive" Extension Suisse, Geneva, Switzerland. 68,788, ren. 9–10–68. Cl. 17.
Soil-Off Mfg. Co., Glendale, Calif., to Harrell International, Inc., Westport, Conn. 501,345, ren. 9–10–68. Cl. 52.
Songstad, Sheldon R., d.b.a. Knight of the Month Club, Sioux Falls, S. Dak. 856,578, pub. 6–25–68. Cl. 38.
Sourdough Jack's Inc., San Francisco, Calif. 856,645–7, pub. 6–29–65. Cl. 46.
Southern Saw Service, Inc., d.b.a. Atsa Mfgrs., Atlanta, Ga. 856,451, pub. 6–25–68. Cl. 23.
Standard Brands Inc., d.b.a. Clinton Corn Processing Co., New York, N.Y. 856,658, pub. 6–25–68. Cl. 46.
Standard Foundry Products : *See—*
  Scoville, Thomas N.
Standard International Corp., Andover, Mass. 856,299, pub. 10–31–67. Cl. 6.
Standard Sewing Equipment Corp., New York, N.Y. 856,471, pub. 6–25–68. Cl. 23.
Steed-Pollak Mfg. Co., Inc., Fitzgerald, Ga. 856,395, pub. 6–25–68. Cl. 19.
Sterling Drug Inc., New York, N.Y. 856,385, pub. 6–25–68. Cl. 18.
Stern, Isidor, d.b.a. Rapid Products Co., Brooklyn, N.Y. 734,794, canc. Cl. 13.
Stokes Walesby, Washington, D.C. 734,944, canc. Cl. 38.
Stow Laboratories, Inc., Stow, Mass. 856,403, pub. 6–25–68. Cl. 21.
Strasberg, Virginia L., Chicago, Ill. 735,037, canc. Cl. 51.
Strout, Beverly T., d.b.a. Quality School Products, Springfield, Mass. 856,438, pub. 6–25–68. Cl. 22.
Sukup Mfg. Co., Sheffield, Iowa. 856,470, pub. 6–25–68. Cl. 23.
Sulco Sales Corp., to Automotive Industries, Inc., Chicago, Ill. 439,994, ren. 9–10–68. Cl. 35.
Sunbury Milk Products Co., d.b.a. Engle Farm Dairies, Sunbury, Pa. 734,998, canc. Cl. 46.
Supreme Metal Fabricators, Inc., Westbury, N.Y. 856,333, pub. 6–25–68. Cl. 13.
Swedish Crucible Steel Co., Detroit, Mich. 856,780. Cl. 50.
Synchromatic Corp., Watertown, Wis. 734,896, canc. Cl. 31.
Syroco : *See—*
  Rexall Drug & Chemical Co.
Talon, Inc., Meadville, Pa. 505,370–1, ren. 9–10–68. Cl. 3.
Talon, Inc., Meadville, Pa. 856,635, pub. 4–9–68. Cl. 43.
Target Stores, Inc., Minneapolis, Minn. 856,539, pub. 6–25–68. Cl. 37.
Technical Appliance Corp., Sherburne, N.Y. 856,397, pub. 4–26–66. Cl. 21.
Teddy and the Pandas, Inc., Boston, from W. E. Dewart, Prides Crossing, Mass. 856,753, pub. 6–25–68. Cl. 107.
Ternstedt Mfg. Co., to General Motors Corp., Detroit, Mich. 244,391–3, ren. 9–10–68. Cl. 25.
Ternstedt Mfg. Co., to General Motors Corp., Detroit, Mich 244,555–6, ren. 9–10–68. Cl. 14.
Texas Instruments Inc., Dallas, Tex. 734,841–2, canc. Cl. 21.
Texas Star Flour Mills, Galveston, to Burrus Mills, Inc., Dallas, Tex. 503,855, ren. 9–10–68. Cl. 46.
Texas Star Flour Mills, Galveston, to Burrus Mills, Inc., Dallas, Tex. 504,058, ren. 9–10–68. Cl. 46.
Tex-O-Kan Flour Mills Co., d.b.a. Burrus Mill & Elevator Co., Dallas and Fort Worth, Tex., to Burrus Mills, Inc., Dallas, Tex. 502,439, ren. 9–10–68. Cl. 46.
Textile Corp. of America, Los Angeles, Calif. 734,984, canc. Cl. 42.
Textron Inc. : *See—*
  Shaeffer, W. A., Pen co.
Textron, Inc., Providence, R.I. 856,469, pub. 6–25–68. Cl. 23.
Thies, B., K.G. Spezialmaschinenfabrik, Westphalia, Germany. 856,452–3, pub. 3–26–68. Cl. 23.

Thomas Industries Inc., Louisville, Ky. 856,508, pub. 6–25–68. Cl. 32.
Thompson of California, Inc., Hermosa Beach, Calif. 856,634, pub. 6–25–68. Cl. 42.
Ticket Reservation Systems, Inc., New York, N.Y. 856,737, pub. 6–25–68. Cl. 101.
Tideland Signal Corp., Houston, Tex. 856,422, pub. 6–25–68. Cl. 21.
Titanic Records : *See—*
  Wolf, Gordon S.
Tivian Laboratories Inc., Providence, R.I. 856,358, pub. 6–25–68. Cl. 16.
Tobin, Thomas J., Jr., and John P. Tobin, Kansas City, Mo. 856,277, pub. 6–25–68. Multiple Class (Classes 1 and 10).
Top Form-Yolande, Inc., New York, N.Y. 856,622, pub. 6–25–68. Cl. 39.
Topps Chewing Gum, Inc., Brooklyn, N.Y. 856,442, pub. 6–25–68. Cl. 22.
Tracor, Inc., Travis, Tex. 856,728, pub. 6–25–68. Cl. 100.
Trade Fair Forum, Inc., The, New York, N.Y. 856,735, pub. 6–25–68. Cl. 101.
Trans-American Electronics International Co., Inc., Chicago, Ill. 856,421, pub. 6–25–68. Cl. 21.
Trans-Lux Corp., New York, N.Y. 856,493, pub. 6–25–68. Multiple Class (Classes 26, 104, and 107).
Tri-Lite Inc., Skokie, Ill. 856,682, pub. 6–25–68. Cl. 50.
Trueline Instruments, Inc., Englewood, Colo. 856,485, pub. 6–25–68. Cl. 26.
Twin City Wholesale Grocer Co., to Fairway Foods, Inc., St. Paul, Minn. 439,812, ren. 9–10–68. Cl. 46.
USV Pharmaceutical Corp., New York, N.Y. 856,386, pub. 6–25–68. Cl. 18.
Union Carbide Corp., New York, N.Y. 856,515, pub. 6–25–68. Cl. 34.
Union Novelty Co., Inc., New York, N.Y. 856,627, pub. 6–25–68. Cl. 40.
Uniroyal, Inc., New York, N.Y. 856,518, pub. 6–25–68. Cl. 35.
Uni-Serv Corp., Great Neck, N.Y. 856,738, pub. 6–25–68. Cl. 102.
Unishops, Inc., Jersey City, N.J. 856,732, pub. 6–25–68. Cl. 101.
United Artists Records, Inc., New York, N.Y. 856,529, pub. 6–25–68. Cl. 36.
United Medical Laboratories, Inc., Portland, Oreg. 856,285, pub. 6–25–68. Cl. 2.
United Shirt Distributors : *See—*
  Hyman, Harry A.
United Shirt Distributors, Inc. : *See—*
  Hyman, Harry A.
United States Catheter & Instrument Corp., from United States Catheter & Instrument Corp., Glens Falls, N.Y. 856,637, pub. 6–25–68. Cl. 44.
U.S. Tabulating Binder Corp., Niles, Ill. 856,455, pub. 6–25–68. Multiple Class (Classes 23 and 37).
Universal Foods Corp., Milwaukee, Wis. 856,663, pub. 6–25–68. Cl. 46.
Upjohn Co., The, Kalamazoo, Mich. 856,698, pub. 6–25–68. Cl. 51.
Vanadium Corp. of America, Bridgeville, to Foote Mineral Co., Exton, Pa. 244,653–4, ren. 9–10–68. Cl. 6.
Vanadium Corp. of America, Bridgeville, to Foote Mineral Co., Exton, Pa. 246,056, ren. 9–10–68. Cl. 14.
Vanadium Corp. of America, Bridgeville, to Foote Mineral Co., Exton, Pa. 246,412, ren. 9–10–68. Cl. 6.
Vaughan & Bushnell Mfg. Co., Chicago, Ill. 856,467, pub. 6–25–68. Cl. 23.
Vendo Co., The, Kansas City, Mo. 734,875, canc. Cl. 23.
Verley, Albert, & Co., South Plainfield, N.J. 856,319, pub. 6–25–68. Cl. 6.
Vibro-Plus Products, Inc., Stanhope, N.J. 856,445, pub. 4–19–66. Cl. 23.
Victor Wood Products Co., Grand Rapids, Mich. 734,908, canc. Cl. 32.
Victory Engineering Corp., Springfield, N.J. 856,404–6, pub. 6–25–68. Cl. 21.
Viking Instruments, Inc., East Haddam, Conn. 856,407, pub. 6–25–68. Cl. 21.
Villaamil Tobacco Products, Inc., Miami, Fla. 856,365, pub. 2–15–66. Cl. 17.
Villarreal, Carlos G., d.b.a. St. Martin Pharmacal Co., Los Angeles, Calif. 856,389, pub. 6–25–68. Cl. 18.
Vistron Corp. : *See—*
  Pro-Phy-Lac-Tic Brush Co.
Vistron Corp., Cleveland, Ohio. 856,510, pub. 6–25–68. Cl. 32.
Visual Graphics Corp., New York, N.Y. 856,545–70, pub. 6–25–68. Cl. 38.
Vodon Industries, Inc., New York, N.Y. 856,391, pub. 4–23–68. Cl. 19.
Von Hofen, Edward L., Avon Lake, Ohio. 856,468, pub. 6–25–68. Cl. 23.
WGN, Inc., Chicago, Ill. 735,066, canc. Cl. 107.
Wade, R. M., & Co., Portland, Oreg. 856,460, pub. 6–25–68. Cl. 23.
Wander Co., The, d.b.a. Ovaltine Food Products, Chicago, Ill. 734,996, canc. Cl. 46.
Wander Co., The, d.b.a. Poppycock Candies, Chicago, Ill. 856,669, pub. 6–25–68. Cl. 46.
Washington Post Co., The, Washington, D.C. 856,751, pub. 6–25–68. Cl. 107.
Watkins-Johnson Co., Palo Alto, Calif. 856,400–1, pub. 6–25–68. Multiple Class (Classes 21, 26, and 34).
Web Plastics Co., Richwood, Ohio. 856,748, pub. 6–25–68. Cl. 106.
Welch, William E., Roseburg, Oreg. 734,866, canc. Cl. 22.
Wernli, Gebr., Biscuitsfabrik Trimbach-Olten, Trimbach, Switzerland. 735,090, canc. Cl. 46.
Wesemann, Fred, Sterling, Colo. 856,326, pub. 6–25–68. Cl. 9.
Western Engineering & Mfg. Co., Venice, Calif. 856,517, pub. 6–25–68. Cl. 34.
Western Packers, d.b.a. Golden West Meat Products, Los Angeles, Calif. 856,664, pub. 6–25–68. Cl. 46.
Western Wool Processors, Inc., Colorado Springs, Colo. 735,065, canc. Cl. 106.
Westinghouse Electric Corp., Pittsburgh, Pa. 734,761, canc. Cl. 6.
Weyerhaeuser Co., Tacoma, Wash. 734,781, canc. Cl. 12.
Wheeling Steel Corp. : *See—*
  Chess Brothers, The Central Expanded Metal Co.
Wills & Hepworth Ltd., Loughborough, England. 856,544, pub. 6–25–68. Cl. 38.
Wilson Sporting Goods Co., from Wilson Sporting Goods Co., River Grove, Ill. 856,433–4, pub. 6–25–68. Cl. 22.
Wilson Sporting Goods Co., from Wilson Sporting Goods Co., River Grove, Ill. 856,437, pub. 6–25–68. Cl. 22.
Wisconsin Centrifugal, Inc., Waukesha, Wis. 856,337, pub. 6–25–68. Cl. 13.
Wolf, Gordon S., d.b.a. Titanic Records, Los Angeles, Calif. 734,923, canc. Cl. 36.
Wolverine World Wide, Inc., Rockford, Mich. 856,614, pub. 6–25–68. Cl. 39.
Woodhill Chemical Sales Corp., Cleveland, Ohio. 740,483, cor. Cl. 14.
Worldsbest Industries, Inc., Cudahy, Wis. 856,328, pub. 6–25–68. Cl. 12.
Wyomissing Corp. : *See—*
  Narrow Fabric Co., The.
Yeager, Mildred, Dallas, Tex. 856,666, pub. 6–25–68. Cl. 46.
Z.B. Yarn Mills, Union City, to Z.B. Yarns Mills, Inc., West New York, N.J. 248,863, ren. 9–10–68. Cl. 43.
Z.B. Yarn Mills, Inc. : *See—*
  Z.B. Yarn Mills.
Zenith-Godley Co., Inc., New York, N.Y. 504,102, ren. 9–10–68. Cl. 46.

U.S. GOVERNMENT PRINTING OFFICE: O—1968

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
September 17, 1968 Volume 854 Number 3

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of June 1968

Examiner affirmed	121
Examiner affirmed in part	14
Examiner reversed	30
Total	165

Chains of Continuing Applications

In view of the decision of the Court of Customs and Patent Appeals in *In re* Henriksen (158 USPQ 224) the application of 35 U.S.C. 120 will no longer be limited to a chain of three successively filed continuing cases.

Accordingly, Change Notice 12–8 is rescinded.

RICHARD A. WAHL,
Aug. 9, 1968. *Assistant Commissioner of Patents.*

Dedications

2,577,822.—*William J. Sparks* and *Robert M. Thomas,* Westfield, N.J. CYCLODIENE ISOBUTYLENE COPOLYMERS. Patent dated Dec. 11, 1951. Dedication filed July 16, 1968, by the assignee, *Jasco, Incorporated.*

Hereby dedicates to the Public the remaining term of said patent.

2,585,867.—*William J. Sparks,* Westfield, N.J., and *Robert M. Thomas,* Baton Rouge, La. PROCESS FOR POLYMERIZING ISOOLEFINS USING METHYL CHLORIDE SOLUTION OF BF_3 AS CATALYST. Patent dated Feb. 12, 1952. Dedication filed July 16, 1968, by the assignee, *Jasco, Incorporated.*

Hereby dedicates to the Public the remaining term of said patent.

2,661,339.—*William J. Sparks, Anthony H. Gleason,* and *Per K. Frolich,* Westfield, N.J. BLENDS OF RESINOUS STYRENE-CONJUGATED DIENE COPOLYMERS AND RUBBERY MATERIALS. Patent dated Dec. 1, 1953. Dedication filed July 16, 1968, by the assignee, *Jasco, Incorporated.*

Hereby dedicates to the Public the remaining term of said patent.

Disclaimer

3,160,599.—*James P. Scullin,* Pompton Lakes, N.J. STAIN-RESISTANT VINYL CHLORIDE COMPOSITION CONTAINING A MONOISOBUTYRATE MONOBENZOATE ESTER OF 2,2,4-TRIMETHYLPENTANEDIOL-1,3 AS PLASTICIZER. Patent dated Dec. 8, 1964. Disclaimer filed June 20, 1968, by the assignee, *Tenneco Chemicals, Inc.*

Hereby enters this disclaimer to claims 1, 2 and 3 of said patent.

Adjudicated Patents

(D.C.N.Y.) Glass and Barlow Patent No. 3,298,692 (273—134), for GAME WITH ACTION PRODUCING COMPONENTS, *Held* not infringed. *Marvin Glass and Associates* v. *DeLuxe Topper Corp.,* 284 F. Supp. 558; 155 USPQ 531.

President's Commission's Recommendation Concerning Design Patents

Request for Comments

The President's Commission on the Patent System, established on April 8, 1965, by Executive Order No. 11125, submitted its final report to the President on December 2, 1966. Included among the recommendations is the following concerning design patents:

The classes of patentable subject matter shall continue as at present, except * * * all provisions in the patent statute for design patents shall be deleted, and another form of protection provided.

The present patent statute, to which the recommendation is directed, provides:

Whoever invents any new, original, and ornamental design for an article of manufacture may obtain a patent therefor, subject to the conditions and requirements of this title.

The provisions of this title relating to patents for inventions shall apply to patents for designs, except as otherwise provided. (35 U.S.C. 171)

Patents for designs may be granted for the term of 3 years and 6 months, or for 7 years, or for 14 years, as the applicant, in his application, elects. (35 U.S.C. 173)

There have been proposals in the past directed to the protection of ornamental designs for useful articles, in ways other than by the protection afforded by the present patent law. To this end, a number of bills have been introduced in this and previous Congresses. Four bills relating to the protection of ornamental designs are presently pending before the House of Representatives; H.R. 2886, H.R. 6124, H.R. 7870, all identical, and H.R. 3542, differing slightly from the other three.

The views and comments of all interested parties are solicited on the recommendation of the Commission and other related matters which may be useful in evaluating the Commission's recommendation. These views should be submitted in writing to the Commissioner of Patents, Washington, D.C. 20231, by November 15, 1968.

EDWARD J. BRENNER,
Commissioner of Patents.

[F.R. Doc. 68–10119; Filed, Aug. 21, 1968; 8:49 a.m.]

Pub. in vol. 33 F.R. 11942, Aug. 22, 1968

New Applications Received During June 1968

Patents	7469
Designs	383
Plant Patents	5
Reissues	9
Total	7866

Issue—September 17, 1968

Patents	1000	—No. 3,401,406 to No. 3,402,405, incl.
Designs	69	—No. 212,205 to No. 212,273, incl.
Plant Patents	1	—No. 2,884
Reissues	6	—No. 26,456 to No. 26,461, incl.
Total	1076	

Examination

Pursuant to the provisions of Rule 341(c), an examination for persons seeking registration before the United States Patent Office as patent attorneys or agents will be held on Tuesday, Nov. 19, 1968.

This examination will be given under the supervision of the Civil Service Commission, and may be taken in any of the cities in which the Civil Service Commission regularly conducts examinations. Applications to take the examination must be filed in the Patent Office together with a $15 fee not later than Oct. 18, 1968.

Application blanks may be obtained from the Clerk of the Patent Office Committee on Enrollment, Bldg. 3, 11th Floor, Room C16, Crystal Plaza or by mail directed to the attention of the Clerk of the Committee on Enrollment, U.S. Patent Office, Washington, D.C. 20231.

EDWIN L. REYNOLDS,
Chairman, Committee on Enrollment.

Aug. 26, 1968.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF AUGUST 26, 1968

PATENT EXAMINING OPERATIONS AND GROUPS * Denotes date of oldest application for each Operation.	Actual Filing Date of Oldest Case Awaiting Action New	Amended
CHEMICAL EXAMINING OPERATION		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	5-04-66	1-16-64
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	5-02-66	*5-24-63
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	6-06-66	1-29-64
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*11-01-65	5-27-63
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	3-28-66	3-12-64
ELECTRICAL EXAMINING OPERATION		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	6-22-66	3-04-64
SECURITY, GROUP 220—S. BOYD, Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	4-10-67	2-11-65
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*8-10-65	*10-10-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	10-11-65	10-15-62
PHYSICS, GROUP 280—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	7-21-66	4-01-65
DESIGNS, GROUP 290—S. BOYD, Director Industrial Arts; Household, Personal and Fine Arts.	11-15-67	3-06-67
MECHANICAL EXAMINING OPERATION		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	3-06-67	9-02-65
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	10-03-66	1-06-65
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	9-15-66	5-25-64
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	7-17-67	7-27-66
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	4-06-67	1-18-65
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	*5-31-66	*5-29-63

Total number of pending applications (excluding Designs)	189.927
Total number of Design applications pending	2,982

Expiration of patents: The patents within the range of numbers indicated below expire during September 1968, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions of 35 U.S.C. 253.

Patents	Numbers 2,566.295 to 2,569,435, inclusive
Plant Patents	Numbers 1,035 to 1,041, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE HOWARD A. FULTON, LAIRD I. KERR, AND CLAYTON DUANE OBRECHT

No. 7813. Decided November 2, 1967

[55 CCPA —; 384 F.2d 1014; 155 USPQ 460]

1. PATENTABILITY—OBVIOUSNESS—SOLUTION TO PROBLEM.

It may well be, as appellants contend, that the location, accessibility and convenience of the indicia means poses a solution to an actual problem; yet it does not necessarily follow that the solution is unobvious. *In re Gonser*, 51 CCPA 1026, 327 F.2d 400, 140 USPQ 415.

2. SAME—PARTICULAR SUBJECT MATTER—RELIEF VALVE WITH INDICIA-BEARING LEVER.

The refusal of certain claims to a relief valve with an indicia-bearing lever, as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 251,905.

AFFIRMED.

Watts & Fisher, *B. D. Watts*, *Lowell L. Heinke* for appellants.

Joseph Schimmel (*Jere Sears*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, and ALMOND, *Associate Judges*, and WILLIAM H. KIRKPATRICK [1]

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Board of Appeals affirming the rejection on prior art of appellants' claims 16, 17, 18, 19 and 21 in their application [2] for relief valve with indicia-bearing lever.

Appellants' invention resides broadly in the novel relationship of an indicia plate in combination with a relief valve. The indicia plate is mounted on a handle which is rotatable about the body of the relief valve in such a manner that the plate can be moved to a position where it is readily visible regardless of the position in which the valve is installed. The indicia plate may carry information pertaining to the operating characteristics of the valve, including its inlet and outlet sizes, the pressure and temperature release settings of the valve, and the like.

The reference relied on by the Board of Appeals is the patent to Banner, No. 2,497,201, issued February 14, 1950, which relates to valves designed to effect fluid relief when predetermined limits of temperature and pressure are exceeded.

Appellants admit that "[t]he claimed structure of the relief valve apart from the relation of the information indicia plate is old." The Examiner found that "[t]aking claim 16 as illustrative, same reads verbatim on Banner except for the printed matter or indicia * * * on the lever * * *." The Board observed that "[t]here is no controversy that the valve structure defined in the claims at bar is present in the Banner patent." We deem it unnecessary, therefore, to consider the details of appellants' valve or those of Banner.

We do not consider it necessary to reproduce any of the appealed claims in extenso as we are concerned only with those limitations therein which relate to the indicia means. Claim 18 is illustrative:

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Serial No. 251,905, filed January 16, 1963.

> 18. A relief valve comprising:
>
> * * * * * * *
>
> (*f*) an indicia plate carried by said other end of the elongated lever member, said plate extending beyond the sides of said lever member and being substantially wider than said lever member, said plate having a surface bearing indicia pertaining to the operating and condition responsive characteristics of the valve; and,
>
> (*g*) a swivel connection between at least two connected members whereby said indicia plate is rotatable about the longitudinal axis of the valve body to position its indicia bearing surface in any one of a plurality of easy viewing positions around the valve body.

Appellants assert that they are unable to determine from the language employed by the Examiner and the Board whether the rejection of the appealed claims was predicated on 35 U.S.C. 101 or 35 U.S.C. 103. The Examiner stated that all of the claims "stand rejected on the patent to Banner." Taking claim 16 as illustrative, he found "nothing inventive" in disposing a lever plate on the Banner lever, deeming it to be "entirely obvious to mount or place indicia wherever convenient." As to claim 17 which calls for a detachable plate, he deemed it to be drawn to subject matter which is obvious. He applied the same rationale to the remaining claims, concluding that "the differences over the art relied on are clearly obvious * * *."

In its affirmance the Board stated:

> Placing information indicia on the downwardly extending arm of Banner's lever, whether directly thereon or by means of a plate attached thereto is not seen to involve anything more than an obvious convenient adaptation of the everyday practice of providing information where it is readily visible. We deem it obvious also to provide sufficient surface for the amount of information desired. * * *

Upon reconsideration, the Board stated that it did not consider the indicia means per se "but in their claimed relationship, which we did not find unobvious or patentable."

In view of the foregoing, it seems clear that the rejection of the appealed claims was predicated on section 103, and properly so. This conclusion as to the basis of the rejection was shared by appellants. In their request for reconsideration, appellants stated: "It is the question of obviousness which is the basis for the Examiner's final rejection and the decision by the Board of Appeals."

[1] It may well be, as appellants contend, that the location, accessibility and convenience of the indicia means poses a solution to an actual problem; yet it does not necessarily follow that the solution is unobvious. *In re Gonser*, 51 CCPA 1026, 327 F.2d 500, 140 USPQ 415.

[2] Our review of the record and consideration of the cited cases and the argument of counsel are not persuasive of reversible error in the decision of the Board of Appeals, which is accordingly affirmed.

AFFIRMED.

SMITH, *J.*, concurs in the result.

U.S. Court of Customs and Patent Appeals

IN RE GUIDE DOG FOUNDATION FOR THE BLIND, INC.

No. 7816. Decided Nov. 2, 1967

[55 CCPA —; 384 F.2d 1016; 155 USPQ 462]

1. TRADEMARK—INTERFERENCE—ABANDONMENT—BURDEN ON JUNIOR PARTY.

In an interference proceeding between applicants seeking to register substantially similar service marks, *Held* that "Appellant, as the junior party, had the burden of proving appellee's abandonment of the mark."

2. SAME—SAME—SAME—15 U.S.C. 1127.

"The record as a whole does not show that appellee's 'course of conduct' had *caused* the mark 'to lose its significance as an indication of origin.' This defect in the record is not cured by appellant's reliance on the equitable principles of laches, estoppel and acquiescence under 15 U.S.C. 1069. Under 15 U.S.C. 1127 it is necessary to establish that the conduct of appellee was such as to cause a loss in significance of its mark as an indication of origin. The present record fails to do so."

APPEAL from the Patent Office. Interference No. 6090.

AFFIRMED.

Raphael Semmes (*G. Mallet Prevost*, of counsel) for appellant.

Joseph Y. Houghton, Hall & Houghton for appellee.

Before WORLEY, *Chief Judge*, RICH, SMITH, and ALMOND, *Associate Judges*, and WILLIAM H. KIRKPATRICK [1]

SMITH, *J.*, delivered the opinion of the court.

The single issue here is whether appellant has established its right to registration of the service mark "GUIDING EYES" as against appellee's right to register the same mark. The issue was determined and decided against appellant by the Trademark Trial and Appeal Board in an interference proceeding, pursuant to 15 U.S.C. 1067 [2] and Rule 2.96 of the Trademark Rules of Practice.[3]

Appellant (referred to below as "Guiding Eyes"), and appellee (referred to below as "Guide Dog"), have used the mark in issue in connection with their respective activities relating to the training and use of guide dogs for the blind.[4] Testimony was taken by both parties and the Trademark Trial and Appeal Board awarded the right to register the mark to appellee, 146 USPQ 611 (TTAB 1965). Appellant appeals.

Appellant concedes that appellee was the first to use the mark, but argues:

> * * * However, as the record will show the question of first use is not, of itself, the primary issue in this case. Rather, the sole issue to be determined is whether or not appellee, who was admittedly the first user of this term, forfeited its rights in the mark by its failure over a period of years to use the mark in a manner calculated to identify appellee as the source of the services offered.

The Board held that appellee had not abandoned the mark.

The Trademark Act of 1946, as amended, provides, in pertinent part, that a mark shall be deemed to be "abandoned":

> (*a*) When its use has been discontinued with intent not to resume. Intent not to resume may be inferred from circumstances. Nonuse for two consecutive years shall be prima facie abandonment (15 U.S.C. 1127).

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] § 1067. *Interference, opposition, and proceedings for concurrent use registration or for cancellation; notice; Trademark Trial and Appeal Board.*—In every case of interference, opposition to registration, application to register as a lawful concurrent user, or application to cancel the registration of a mark, the Commissioner shall give notice to all parties and shall direct a Trademark Trial and Appeal Board to determine and decide the respective rights of registration.

[3] 2.96 *Issue; burden of proof.*—The issue in an interference between applications shall be the respective rights of the parties to registration. The issue in an interference between an application and a registration shall be the same, but in the event the final decision is adverse to the registrant, a registration to the applicant will not be authorized so long as the interfering registration remains on the register. The party whose application or registration involved in the interference has the latest filing date (the junior party) will be regarded as having the burden of proof.

[4] The application of the appellee (senior party), Serial No. 119,125, was filed May 2, 1961 for "Guiding Eyes," and asserts use since on or about July 4, 1949. The application of the appellant (junior party), Serial No. 143,228, was filed April 27, 1962 for the service mark "Guiding Eyes for the Blind, Inc." and design and asserts use since November 1956. While there is a variation in the precise wording of the applications as to the nature of the services rendered, each of the parties is involved in rendering the same types of services, i.e., training guide dogs for the blind and in training blind persons in the use of such dogs. No issue has been raised by the parties concerning differences in the marks, the parties apparently conceding that "Guiding Eyes" is the dominant feature of both marks. Each party is a charitable non-profit organization whose principal income is derived from tax-exempt charitable gifts.

No issue is raised as to appellee's exclusive and prior use of the mark for the period extending from on or about July 4, 1949 to September 1955. During this period, the record establishes that appellee used the mark "GUIDING EYES" and the design of a dog's head on its letterheads and promotional material, as well as on its guide dog harnesses. The mark also was shown on a sign on its training center property and on signs in its offices. The mark was being used in 1952 when a documentary film entitled "SECOND SIGHT," was produced in cooperation with appellee. This picture was shown in RKO Theaters throughout the country to publicize the training and use of guide dogs for the blind. Appellee purchased six of these films for its own use in soliciting contributions from the general public. Later, a second film having the same title and showing the services of appellee was produced by Gains Dog Research Center and this film was being shown before groups of persons throughout the country as late as 1964. Both films include pictures of the sign at appellee's training center.

The success of the films caused appellee to consider adoption of the mark "SECOND SIGHT" for its services. Appellee's executive committee in a meeting in September 1955 discussed this matter, for the minutes of that meeting show:

> The use of "Second Sight" was discussed, and it was agreed that "Guiding Eyes" be continued with "Second Sight" interjected wherever feasible in publicity.

It is appellant's position that, following this executive committee action in September 1955, appellee abandoned the mark in issue by replacing it with the mark "SECOND SIGHT." Thus, it is appellant's contention that when it adopted and began use of the mark "GUIDING EYES" in November 1956, it was free to do so.

[1] Appellant, as the junior party, had the burden of proving appellee's abandonment of the mark. Appellant's evidence consists of the testimony of various witnesses, together with some documentary materials. In summary, this evidence is that one witness, who had voluntarily performed public relations services for appellee in connection with the mark "SECOND SIGHT" for several years in the late 1950's, stated that he had never seen the mark "GUIDING EYES" on any of appellee's literature and had no knowledge of its use of such term. Another of appellant's witnesses was a blind person who testified in effect that she was presently using one of appellee's guide dogs, and at some undisclosed time in the past, had used guide dogs procured from appellant. She then stated that she only knew of appellee by the name "SECOND SIGHT."

Appellant also offered documentary evidence of appellee's use of the mark "SECOND SIGHT" on its letterheads, news releases, newsletters, advertisements, book marks and membership cards.

Appellee's evidence establishes that during the period from 1946–1949, it maintained a training center for guide dogs at Woodside, New York, on which it placed a conspicuous sign with the wording "GUIDING EYES" above the representation of a dog's head. In 1950, it moved its training center to Smithtown, Long Island, and this sign was moved to a location adjacent to the new training center. The sign remained in this location until the middle of 1955 when it was moved to the interior of appellee's property where the sign has remained from that time until the present. This sign is shown in the two documentary films which were being shown in 1964. In addition, appellee's testimony establishes that door placques or plastic signs showing the mark "GUIDING EYES" have been used continuously on appellee's administrative offices in Forest Hills, New York, since the middle 1950's.

Appellee also took the testimony of several blind persons who have, at one time or another, used its services. These persons testified in effect that to them "GUIDING EYES," "SECOND SIGHT," and "Guide Dog Foundation for the Blind" are all terms by which appellee had been and was, at the time of the testimony, being identified. All were familiar with the mark "GUIDING EYES" because they had been made aware that this mark was embossed on the harnesses and used on the identification tags for their guide dogs. Throughout the entire period, the mark "GUIDING EYES" also was used on the identification cards supplied to blind persons using appellee's guide dogs. When Mrs. Stephens' testimony was taken in June 1964, she produced the same dog harness which had been given to her by appellee in 1955 with her guide dog "Duchess." "Duchess" had died about a year prior to her testimony (apparently sometime in 1963) but the harness which Mrs. Stephens produced and which had been in use until the death of "Duchess" had the legend "Guiding Eyes, Forest Hills, N.Y." embossed on the handle.

The Board found that the appellee had presented a prima facie showing it was the first user of the mark "GUIDING EYES" and that the mark had been used continuously to identify its services. It found that appellee never had intended to abandon the mark although it had used "SECOND SIGHT" on its letterheads and other written material since 1956. The Board particularly pointed out that *no period of actual non-use* by appellee had been proved.

We have considered the facts of record in the light of the foregoing portion of the statutory definition of abandonment and agree with the Board that an abandonment arising from appellee's alleged *discontinuance* of the mark "GUIDING EYES" has not been proved.

The Trademark Act of 1946, as amended, also recognizes that "abandonment" may arise:

> (*b*) When any course of conduct of the registrant, including acts of omission as well as commission, causes the mark to lose its significance as an indication of origin (15 U.S.C. 1127).

As the issue is here framed, appellee's conduct is relevant to that issue only as it bears on the question of its abandonment of the mark. The Board found that appellee's use of "GUIDING EYES" over the years had been sufficient in nature to maintain this term as an identifying mark of the appellee.

[2] The record as a whole does not show that appellee's "course of conduct" had *caused* the mark "to lose its significance as an indication of origin." This defect in the record is not cured by appellant's reliance on the equitable principles of laches, estoppel and acquiescence under 15 U.S.C. 1069. Under 15 U.S.C. 1127 it is necessary to establish that the conduct of appellee was such as to cause a loss in significance of its mark as an indication of origin. The present record fails to do so.

Under these circumstances, we agree with the decision of the Board that appellant failed to establish abandonment of the mark by appellee, and thus failed to discharge its burden of proving priority of its right to register the mark.

For the foregoing reasons and to the extent indicated, the decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE ROBERT DUVA

No. 7833. Decided December 14, 1967

[55 CCPA —; 387 F.2d 402; 156 USPQ 90]

1. PATENTABILITY—OBVIOUSNESS—BASIC FACTUAL INQUIRIES—35 U.S.C. 103.

"* * * we are required to focus attention in such a rejection [on obviousness under 35 U.S.C. 103] first on the scope and content of the prior art, then on the factual differences between the invention disclosed in the prior art and the invention of the claims in issue, and then on the level of ordinary skill in the art before determining whether the invention as a whole is obvious."

2. CLAIM—PARTICULARITY—CLAIM FORM AND LANGUAGE.

"The breadth of the language employed in section 112 suggests that Congress intended that applicants be given a considerable range of choice in claim form and claim language so long as the form chosen and the language employed meet the requirement expressly stated therein that the claims particularly point out and distinctly claim the subject matter which the applicant regards as his invention."

3. PATENTABILITY—OBVIOUSNESS—ELECTROPLATING AND ELECTROLESS PROCESSES.

"We cannot agree with the Solicitor's contentions as to the asserted obviousness of the claimed invention. Appellant has satisfactorily pointed out, we think, the factual differences between the requirements of a bath for electroless processes and the requirements of the plating solution which forms an electrolyte used for electroplating processes. In the absence of a showing to the contrary, we do not agree that the compositions of a solution used as an electrolyte, whose ability to function is predicated upon the passage of a stated electrical current through the bath, would render it obvious that appellant's result could be achieved without the passage of such current."

4. SAME—SAME—SAME.

"It is also significant, we think, that the prior art reference proposes to electroplate an alloy of gold and palladium by use of a palladium anode in the electrolyte and the establishment of a potential of a stated magnitude between the anode and the cathode. Appellant deposits *gold*, not an *alloy* of gold and palladium as the prior art teaches. To achieve the desired results, the prior art process deposits palladium along with gold, preferably by sacrificing a palladium anode. Appellant has no anode and proposes, not to sacrifice, but rather to recover or preserve the palladium present in the bath composition. There are no facts of record here from which we would be warranted in finding that such differences in purposes and *modus operandi* would have been obvious to one of ordinary skill in the art. *Graham* v. *John Deere*, supra."

5. CLAIM—CONSTRUCTION OF CLAIMS—PREAMBLE—ALL FACTUAL DIFFERENCES OVER ART CONSIDERED—35 U.S.C. 103 AND 112.

"As to the Solicitor's second contention regarding 'intended field of use' limitations, this court in *In re Van Lint*, 53 CCPA 844, 851, 354 F.2d 674, 680, 148 USPQ 285, 289 (1966), noted that the significance of the preamble of a claim is something to be determined on the basis of the *facts* of each case. See *Kropa* v. *Robie*, 38 CCPA 858, 861–62, 187 F.2d 150, 151–52, 88 USPQ 478, 480–81 (1951) and *In re Walles*, 54 CCPA 710, 716–717, 366 F.2d 786, 790, 151 USPQ 185, 189–90 (1966). Thus, all *factual* differences which may be properly noted in any portion of a claim must be included within the basis for comparison with the prior art if we are to properly evaluate the *differences* between the invention defined in a claim and the teachings of a reference. The command of 35 U.S.C. 103 is to compare the invention *as a whole* with the prior art. Absent a failure of the applicant to comply with 35 U.S.C. 112, we think every portion of the appealed claims must be considered in determining the invention as a whole in arriving at our decision as to obviousness required by a rejection under section 103."

6. SAME—SAME—NEGATIVE LIMITATIONS.

Upon considering composition and process claims involving an aqueous solution of soluble gold cyanide and a palladous salt, also reciting "absent sufficient CN ions to prevent deposition induced by said palladous salt," and with reference to the statement by the Board of Appeals that the negative limitation regarding cyanide content "at the point of novelty would not be favorably considered * * * for the purpose of defining a patentable distinction over the reference since a positive expression defining operable proportions can be employed," *Held* that "the claims do not appear to us to be objectionable since they affirmatively specify the constitution of the bath and the positive steps required for the claimed process."

7. PATENTABILITY—PARTICULAR SUBJECT MATTER—"CHEMICAL GOLD PLATING."

The refusal of certain claims in an application entitled "Chemical Gold Plating," as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office Board of Appeals. Serial No. 134,106.

REVERSED.

Greene, Callmann & Durr, Frank L. Durr, Stanley H. Lieberstein for appellant.

Joseph Schimmel (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, and ALMOND, *Associate Judges*, and WILLIAM H. KIRKPATRICK [1]

SMITH, *J.*, delivered the opinion of the court.

The sole issue to be determined in this appeal is whether the invention as a whole as claimed in the appealed claims of appellant's application [2] would have been obvious at the time it was made. The Examiner based the rejection on 35 U.S.C. 103 and this rejection was affirmed by the Patent Office Board of Appeals.[3]

While the appealed claims are couched in terms of "composition" and "process," it is appellant's basic position that all of the appealed claims relate to a single invention, i.e., the chemical, as distinguished from the electrolytic, deposition of gold plate on what the art terms the "basis" metal.

The decision of the Board, adhered to on reconsideration, affirmed the Examiner's rejection of the claims on appeal as relating only to obvious differences over the composition of the bath and the process of a single reference.[4]

Appellant's invention

Appellant's claimed bath composition and process for the deposition of gold upon a basis metal are asserted to be patentable improvements in what is known as the "electroless" deposition of gold. The invention, like the known electroless processes, does not require or utilize the techniques of electroplating baths and processes. Appellant's invention differs therefrom in that no electrical current is required; hence no anode or cathode is used, and appellant's bath is not used as an electrolyte. Appellant achieves the deposition of gold solely by a chemical reduction process.

By way of background information, appellant's brief here describes three general processes for depositing gold from an aqueous bath, namely (1) the electroplating method, generally described in the single reference patent before us, (2) the electroless process, with which the application here on appeal is primarily concerned, and (3) the immersion or replacement process. In his specification, appellant asserts that, in the immersion process, it is possible to obtain deposit thicknesses of no more than 1/8 to 1/4 of a micron, but only on basis metals less noble than the metal being plated out from the bath.

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Serial No. 134,106, filed August 28, 1961, entitled "Chemical Gold Plating." Claims 1, 2, 4, 5 and 7 through 10 are the appealed claims. One claim has been allowed.

[3] Consisting of Messrs. Asp and Magil, Examiners-in-Chief and Vertiz, Acting Examiner-in-Chief, who wrote the opinion of the Board.

[4] U.S. Patent No. 2,719,821, to Charles R. Campana, issued October 4, 1955 entitled "Gold Alloy Plating Bath."

As to the known prior chemical reduction, or electroless, processes, appellant's specification notes that the metal will be continually deposited by chemical reduction to substantial thicknesses, although deposition generally is limited to certain "catalytic" basis metals which effectively accept the deposit.

Appellant's invention is based on his asserted discovery that gold will deposit from a gold-containing solution in the presence of palladium ions. According to appellant's specification, an advantage of the invention resides in the deposit of gold at the rate of 2 to 2½ microns per hour at a temperature substantially below that ordinarily used for either immersion or electroless gold plating. Appellant's invention is also predicated on his observation that unless the excess of free cyanide (CN) ions is controlled in the bath composition below stated limits, no electroless deposition of gold will occur.[5] Appellant theorizes that this is due to the formation of a very stable palladium complex with cyanide ions which does not provide the palladium (Pd^{++}) ions upon whose action appellant depends to secure the plating out of the gold. Thus, appellant's specification states:

> * * * The ratio of the Pd salt to free CN^- ions should therefore be maintained high enough to provide Pd^{++} ions which are necessary for the deposition of the gold. An exact measurement of the working ratio of Pd salt/CN— is not possible but it is very simple to test a given solution to see if gold deposits therefrom. It is understood that the palladium of the "P" salt and of disodium palladium tetrachloride provides Pd^{++} ions in the gold cyanide bath.[6]

Appellant's brief summarizes, as the essence of appellant's invention, his discovery that:

> * * * multilayers of gold could be deposited by the electroless process provided (1) the bath contained a small but effective amount of palladous salt and (2) the bath contained insufficient $(CN)^-$ ions to poison the effect produced by the presence of said palladous salt. * * *

The appealed claims

We agree with the Board that appealed claims 1 and 10 are representative of the claims on appeal. They are:

> 1. As a composition for chemically depositing gold an aqueous solution consisting essentially of 0.5–30 g./l. of a soluble gold cyanide, 0.01 to 30 g./l. of a soluble palladous salt, absent sufficient CN ions to prevent deposition induced by said palladous salt, and sufficient alkali to provide a pH of 8–11.
>
> 10. A process for depositing gold on a workpiece having a conducting surface comprising immersing the workpiece in an aqueous solution consisting essentially of 0.5–30 g./l. of a soluble gold cyanide, sufficient alkali to provide a pH of 8–11, in the presence of 0.01 to 30 g./l. of a soluble palladous salt, and in the absence of sufficient CN ions to prevent deposition induced by said palladous salt whereupon gold is deposited on said conducting surface by the chemical reduction process.

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[5] Appellant's brief points out that the limitation in the claims setting forth the CN ion concentration in addition to the composition of the bath is necessary for the reason that, although appellant's process would "work better" if no CN ions at all were present, and although appellant prefers to start with a solution which contains no free CN ions, this condition is not maintained because immediately upon deposition of the first atoms of gold, CN ions are released from the potassium gold cyanide complex.

[6] Appellant's specification explains that the bath is made up of potassium gold cyanide to which is added 0.01–30 g./l. of a soluble palladous salt calculated as Pd. Suitable soluble palladium salts disclosed include palladium "P" salt, $(NH_3)_2Pd(NO_2)_2$, disodium palladium tetrachloride, Na_2PdCl_4, palladous chloride and sulfate.

Claims 1, 2, 4 and 5 on appeal, which are directed to the composition of the bath according to the invention, differ in certain particulars. Independent claim 2 further calls for an alkali salt of certain weak acids and a certain weak acid per se, which, appellant explains, improve the stability of the bath. Claims 4 and 5 are dependent upon claim 2, but are directed to specific palladous salts. Process claims 7 through 9 refer to and include independent claim 10 and define a particular source of the palladous ions.

Reference relied upon

The sole reference upon which the rejection is predicated discloses a process and bath for *electrodepositing* a *codeposit* of gold and palladium in the form of a gold-palladium alloy. This reference discloses an electroplating process and bath which contains, in solution, salts of the various metals which are simultaneously deposited to provide the desired gold alloy plate. It preferably employs a palladium anode and a potential must be established between it and the cathode to be plated. The plating solution disclosed includes salts of gold, palladium and one or more of the metals nickel, copper and cadmium. The reference specifically states that gold and palladium are compatible, precious, acid-resistant metals which may be *coelectrodeposited* from an electrolyte under suitable conditions. The electrolyte or plating bath disclosed as preferable includes, in solution, specific amounts of gold cyanide; palladium chloride; cyanides of nickel, cadium, copper, and potassium; sodium chloride and potassium hydroxide.[7] In electrodepositing a coating of a gold-palladium alloy using this bath, the reference process uses an electrical current passing through the electrolyte at a potential of from four to six volts at a bath temperature of 140° F. The reference further discloses that the plating bath preferably has a pH of between 10 and 10.5 and the metals plated out of solution preferably are periodically replaced by their respective salts in the proportions to which the bath has been depleted.

The rejection

The Examiner, after noting that the claimed proportions of gold cyanide and palladium salt in the claims on appeal "overlapped" those of the reference, assumed that the hard, lustrous, acid-resistant and tarnish-proof nature of the prior art gold alloy plate embodied characteristics which are considered desirable in the art and concluded that there was no "patentable merit" in omitting one or more of the alloying compounds as well as their functions. The Examiner considered claim 10 to be "unpatentable over" any of the conventional procedures now employed in electroplating, since the claim "lacks any significant method limitations" and is "drawn to an obvious and conventional method of coating by immersing the article to be coated in the coating composition."

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[7] The reference discloses a single specific example of a bath, having the following composition:

Water	gallons	1
Gold cyanide	ounces	0.5
Palladium chloride	do	0.166
Nickel cyanide	do	0.5
Cadmium cyanide	do	0.053
Copper cyanide	do	0.5
Sodium chloride	do	0.5
Potassium cyanide	do	2.0
Potassium hydroxide	do	1.0

The reference further discloses that the concentrations of the example may be increased up to 3 times the quantities recited in the example.

The Board affirmed, finding "no reversible error in the rejection of the claims," stating:

> Appellant states that a basic feature of his invention is in the limitation on the amount of cyanide in the bath which must be restricted in order to permit electroless deposition. He avers that the bath of Campana is "loaded with cyanide" and is incapable of depositing gold chemically as shown by the affidavit of January 28, 1964 (Paper No. 5). We are not impressed with this argument for the reason that Campana optionally uses base metal cyanides to control the color of the gold plate and he states that one or more base metals may be omitted. The affidavit has no showing of test results using a bath having no base metal cyanide in accordance with patentee's teaching. Furthermore, the said affidavit indicates that some degree of gold deposition occurred in tests 1 and 3 following Campana's disclosure. We do not, therefore, accord patentable distinction to the limitations in the claims as to the cyanide content. In any event the negative limitation in claims 1 and 7 to 10 at the point of novelty would not be favorably considered by this Board for the purpose of defining a patentable distinction over the reference since a positive expression defining operable proportions can be employed. The intended use in the composition claims "for chemically depositing gold" has no patentable significance. The process claims do not set forth a positive step of depositing gold in accordance with the disclosure and do not distinguish over the reference in the "whereupon" step. Since the claims do not patentably distinguish over the reference, the rejection will be sustained (35 U.S.C. 103).

The statutory mandate of 35 U.S.C. 103 has been interpreted by the Supreme Court since the decision of the Board. In *Graham* v. *John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), the court states:

> * * * the § 103 condition, which is but one of three conditions, each of which must be satisfied, lends itself to several basic factual inquiries. Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. * * *

[1] Thus, we are required to focus attention in such a rejection first on the scope and content of the prior art, then on the factual differences between the invention disclosed in the prior art and the invention of the claims in issue, and then on the level of ordinary skill in the art before determining whether the invention as a whole is obvious.

A statement of the purpose of the claimed invention is set forth in each of the independent composition claims 1 and 2, i.e., the composition is "for chemically depositing gold." Similarly, the independent process claim 10 refers to gold deposited on a conducting surface "by the chemical reduction process." A similar statement of purpose taken from the prior art reference would be that it relates to the *electrodeposition* of an *alloy* of gold and palladium.

The Solicitor argues that claim 1 is not restricted to a bath to be used only in the chemical or electroless process, urging that a chemical action or change "in a broad sense is what takes place" in an electroplating process. The Solicitor further urges that the term "chemical deposition" lacks "patentable significance" for the additional reason that it is no more than an indication of the use contemplated. In this, the Solicitor is but carrying forward the positions of the Board and the Examiner which seem to us to be directed more to the *form* than to the *substance* of the appealed claims.

The only rejection before us is a rejection for obviousness under 35 U.S.C. 103 and despite the criticisms of the claim language found in the Examiner's answer and the Board's opinion, there appears to be no question but that the claims considered below meet the requirements of 35 U.S.C. 112. Certainly, it cannot be said that they do not particularly point out and distinctly claim the subject matter which appellant regards as his invention. **[2]** The breadth of the language employed in section 12 suggests that Congress intended that applicants be given a considerable range of choice in claim form and claim language so long as the form chosen and the language employed meet the requirement expressly stated therein that the claims particularly point out and distinctly claim the subject matter which the applicant regards as his invention. On the present record the appealed claims meet this broad statutory test and we regard the criticisms as to the form of the claims and the nature of the recitals therein which were voiced both by the Examiner and the Board as immaterial to the resolution of the present issue.

[3] We cannot agree with the Solicitor's contentions as to the asserted obviousness of the claimed invention. Appellant has satisfactorily pointed out, we think, the factual differences between the requirements of a bath for electroless processes and the requirements of the plating solution which forms an electrolyte used for electroplating processes. In the absence of a showing to the contrary, we do not agree that the compositions of a solution used as an electrolyte, whose ability to function is predicated upon the passage of a stated electrical current through the bath, would render it obvious that appellant's result could be achieved without the passage of such current.

[4] It is also significant, we think, that the prior art reference proposes to electroplate an alloy of gold and palladium by use of a palladium anode in the electrolyte and the establishment of a potential of a stated magnitude between the anode and the cathode. Appellant deposits *gold*, not an *alloy* of gold and palladium as the prior art teaches. To achieve the desired results, the prior art process deposits palladium along with gold, preferably by sacrificing a palladium anode. Appellant has no anode and proposes, not to sacrifice, but rather to recover or preserve the palladium present in the bath composition. There are no facts of record here from which we would be warranted in finding that such differences in purpose and *modus operandi* would have been obvious to one of ordinary skill in the art. *Graham* v. *John Deere*, supra.

[5] As to the Solicitor's second contention regarding "intended field of use" limitations, this court in *In re Van Lint*, 53 CCPA 844, 851, 354 F.2d 674, 680, 148 USPQ 285, 289 (1966), noted that the significance of the preamble of a claim is something to be determined on the basis of the *facts* of each case. See *Kropa* v. *Robie*, 38 CCPA 858, 861–62, 187 F.2d 150, 151–52, 88 USPQ 478, 480–81 (1951) and *In re Walles*, 54 CCPA 710, 716–717, 366 F.2d 786, 790, 151 USPQ 185, 189–90 (1966). Thus, all *factual* differences which may be properly noted in any portion of a claim must be included within the basis for comparison with the prior art if we are to properly evaluate the *differences* between the invention defined in a claim and the teachings of a reference. The command of 35 U.S.C. 103 is to compare the invention *as a whole* with the prior art. Absent a failure of the applicant to comply with 35 U.S.C. 112, we think every portion of the appealed claims must be considered in determining the invention as a whole in arriving at our decision as to obviousness required by a rejection under section 103.

On this basis we continue our evaluation of the differences between the invention defined by the claims on appeal and the prior art. Both appellant and the prior art use an aqueous solution containing a soluble gold cyanide. However, the purpose of the prior art use of this solution is to secure the electrodeposition of a gold-palladium alloy while appellant deposits only gold.

Both appellant and the reference use palladium in their respective processes, but for quite different purposes. Thus the prior art, as previously discussed, uses it to secure the *coelectrodeposition* of gold and palladium in the *form* of a gold palladium *alloy*. The prior art reference evinces no criticality about the concentration of the cyanide ions whereas appellant's invention depends upon using "a soluble palladous salt, absent sufficient CN ions to prevent deposition induced" by the palladous salt.

Appellant asserts there is a critical aspect to his invention concerning the concentration of cyanide ions in the bath composition. The Solicitor, however, urges that the amount of potassium cyanide used in the prior art reference satisfies the "broad language" of the claims before the court. We do not agree with this position. When fairly considered for what it teaches one of ordinary skill in the art, the prior art patent does not make obvious the cyanide limitations present in the appealed claims.

Thus, appellant points out that the bath of the prior art reference contains fourteen times as much cyanide as is necessary to complex gold cyanide to make it soluble. He urges that it is not obvious to omit this essential salt or reduce its concentration in view of the fact that the reference discloses that two ounces of potassium cyanide per gallon is the *minimum* allowable. Thus, it would appear to be more likely to *increase* the concentrations of potassium cyanide in the bath composition of the prior art. In this respect, the prior art reference teaches away from the invention defined by appellant. We thus conclude that the limitation under discussion embraces a meaningful factual difference between the claims at issue and the reference.

[6] The Board, as previously set forth, considered the language "absent sufficient CN ions to prevent deposition induced by said palladous salt," set forth in claim 1, and similar language in claims 7–10, to be directed to "negative limitations" at the "point of novelty" which "would not be favorably considered by the Board for the purpose of defining a patentable distinction over the reference since a positive expression defining operable proportions can be employed." Appellant stated in his specification that it is not possible to make an exact measurement of the working ratio of the palladous salt to the cyanide ion. The Solicitor argues that since the Board held that "a positive expression defining operable proportions can be employed," it had effectively challenged the correctness of the appellant's specification. Conceding this to be true, we fail to see its relevance to the issue before us.

Contrary to the assertions of the Solicitor, we think that *In re Bankowski*, 50 CCPA 1548, 1554, 318 F.2d 778, 783, 138 USPQ 75, 79 (1963), aids appellant's position. Here, like *Bankowski*, the claims do not appear to us to be objectionable since they affirmatively specify the constitution of the bath and the positive steps required for the claimed process.

A further distinction is that the rejection here is for obviousness under 35 U.S.C. 103, while in *Bankowski*, the rejection was based on section 112. The issue thus presented here is not one of indefiniteness of the claims, but rather is whether the form here chosen by appellant for reciting the claimed limitations recite an unobvious difference over the prior art. We think they do.

Finally, appellant argues that in his claimed invention, palladium is used to *induce* deposition of gold, whereas the reference uses palladium to alloy with and codeposit with gold. At oral argument, counsel for appellant stated that the palladium used in appellant's invention is completely recoverable and constitutes the "driving force" for the deposition.

The prior art does not teach such a concept for, in the disclosed process, the palladium is *consumed*, not *recovered*. Since it forms a deposited alloy with gold, palladium must continually be added to the bath, preferably by sacrificing the palladium anode used. Moreover, in the prior art the applied electric current through the electrolyte bath is the "driving force" for the deposition of the gold-palladium alloy. There is no concept in the prior art that palladium may be used as a chemical agent to assure that gold alone will be plated out of a bath containing both palladium and gold.

On the basis of the foregoing differences between the appealed claims and the disclosures in the prior art reference, we think that the claimed subject matter *as a whole* would not have been obvious to a person having ordinary skill in the art.

[7] For the foregoing reasons, the decision of the Board is reversed.

REVERSED.

WORLEY, *Chief Judge*, did not participate.

U.S. Court of Customs and Patent Appeals

IN RE WILFRED TENNANT

No. 7840. Decided December 14, 1967

[— CCPA —; 386 F.2d 472; 156 USPQ 127]

1. PATENTABILITY—EVIDENCE—COMPARATIVE TESTS.

The Examiner and Board criticized the lack of factual details in the tests reported in the Trukewitsch affidavit, and we need not unduly lengthen this opinion by enumerating the deficiencies here. Suffice to say we agree with their observations, particularly that the affidavit does not appear to incorporate the cooling technique employed by Scholl [reference patent].

2. SAME—PARTICULAR SUBJECT MATTER—POROUS ADHESIVE MATERIAL.

The decision of the Board of Appeals, refusing certain claims in an application entitled "Porous Adhesive Material" as unpatentable over the prior art, is affirmed.

AFFIRMED.

APPEAL from the Patent Office. Serial No. 266,644.

Hill, Sherman, Meroni, Gross & Simpson, Carlton Hill (*Max R. Chambers*, of counsel) for appellant.

Joseph Schimmel (*Joseph F. Nakamura*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, and ALMOND, *Associate Judges*, and WILLIAM H. KIRKPATRICK [1]

WORLEY, *Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals affirming the Examiner's rejection of claims 8–10 in appellant's application [2] for "Porous Adhesive Material," as obvious under 35 U.S.C. 103 [3] in view of a patent to Scholl.[4]

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Serial No. 266,644, filed March 20, 1963.

[3] In view of our disposition of the case, it is unnecessary to consider other issues raised in the record.

[4] U.S. Patent No. 2,647,065, issued July 28, 1953.

The invention relates to a "breathable" adhesive tape comprising an adhesive-coated backing material having numerous perforations in both the adhesive and backing. The perforations are of such fine size that the tape is vapor porous but liquid impervious. The subject matter is more particularly reflected in claim 10:

> **10. Adhesive material comprising a normally water impervious backing sheet, an adhesive spread on one face of said backing sheet, both said spread and said backing sheet having numerous aligned perforations therein, the adhesive being cured sufficiently so that it will not flow and close the perforations in the adhesive and block the aligned perforations in the backing sheet, the perforations in the adhesive spread each having an area at least as large as the perforation in the backing sheet aligned therewith, the adhesive immediately adjacent each perforation being of a thickness not exceeding the thickness of the adhesive spread elsewhere on the backing sheet, and the perforations in the backing sheet being of such fine size as to afford strong resistance to passage of liquid therethrough, so that said material is vapor porous but substantially water impervious in normal use of the material.**

Claim 8 differs from claim 10 in omitting the limitation "the adhesive immediately adjacent each perforation being of a thickness not exceeding the thickness of the adhesive spread elsewhere on the backing sheet," while claim 9 omits the limitation "the perforations in the adhesive spread each having an area at least as large as the perforation in the backing sheet aligned therewith."

Scholl discloses a method and apparatus for making a porous adhesive tape designed "to provide adequate ventilation" when applied to the human body. The tape comprises a backing of thermoplastic or thermosetting plastic film and an adhesive spread on one face of the backing, porosity being provided by "myriad" apertures variously described as "relatively fine" or "relatively minute" perforations. The perforations are formed by passing the adhesive-coated backing over a drum provided with "very fine" needle points shortly after the liquid adhesive is spread thereon. Scholl states:

> *** * * Some compositions of adhesive mass may have a tendency to flow somewhat even after application to the tape, and would thus tend to close off the apertures through the mass, especially if those apertures were very fine. To overcome such difficulties with certain compositions of mass, a nozzle * * * is mounted so as to direct a blast of cold air against the adhesive mass contemporaneously with the perforation of the mass by the needle points, thus causing a sufficient setting of the mass to prevent a flow such as would close off the apertures * * *.**

As pointed out by the Solicitor, the claims specify three features not expressly described by Scholl, relating in general to (1) the size of the perforations in the backing, (2) the area of the perforations in the adhesive, and (3) the thickness of the adhesive around the perforations. It is those features which appellant relies upon here to impart patentability to the claims.

The Board succinctly summarized the Examiner's position:

> **Claims 8, 9, and 10 have been rejected under 35 U.S.C. 103 as obvious from the cited Scholl patent. * * * The Examiner finds nothing unobvious in the perforation size or in the two features quoted in the discussion of claims 8 and 9 following the copy of claim 10, supra.**

Appellant contents the Board erred in finding that Scholl suggests a tape in which the perforations in the backing are of such size as to be water impervious or repellant, observing that the terms "waterproof" or "water impervious" nowhere appear in the Scholl patent. Scholl discloses, however, that the size of the perforations in his tape may be varied, stating that it is desirable to provide "a greater number of finer openings" for the usual form of surgical and medical tape.

Moreover, appellant acknowledged below that "anyone skilled in this art is thoroughly appreciative of the size of pores that permit vapor to pass therethrough but not water or some similar liquid" and also that

> * * * In the aforesaid Fuzak patent [No. 3,024,786, entitled "Porous Waterproof Bandage"], vapor porous but liquid impermeable perforations are stated to be generally a few thousandths of an inch in diameter, which is indicative of the fact that the size of such perforations is known to those skilled in the art. [5]

We do not think one of ordinary skill in the art would be unaware of the desirability of avoiding wetting of the wound area under the adhesive tape or the fact that a greater number of fine openings in the apparently waterproof plastic tape backing of Scholl, as suggested by him, would provide greater resistance to the passage of liquids therethrough without materially affecting the vapor porosity of the material. We agree with the Board that there is nothing unobvious in the size of the perforations as functionally recited in the claims.

Appellant further contends that the method and apparatus described by Scholl cannot produce a tape having adhesive perforations at least as large in area as the backing perforations or a tape in which the adhesive surrounding the perforations is no thicker than the adhesive spread elsewhere on the backing. In his view, the perforating needles employed by Scholl would draw adhesive into the backing perforations, tending to close them and limit their vapor porosity. According to appellant, an affidavit of one Turkewitsch, either alone or as corroborated by the aforementioned Fuzak patent, clearly establishes that perforated, vapor porous, water impervious adhesive tape could not be manufactured by the machine of the Scholl reference, and the Board erred in according insufficient weight to that evidence.

The Board was of the opinion that operation of the Scholl process and apparatus "in a judicious manner" would obviously provide a tape in which the adhesive layer possesses the perforation area and thickness recited in the claims. As noted earlier, Scholl describes the use of cold air to set the adhesive after it is spread on the backing and penetrated by the needles for the express purpose of preventing it from flowing and closing the perforations formed upon subsequent withdrawal of the needles. Moreover, Scholl suggests that the perforating needles do not invariably draw adhesive into the apertures, stating:

> Also, *some* compositions of adhesive mass may have a tendency to adhere slightly to the needle points * * * and thus a gradual accumulation of adhesive especially on the trailing sides of the needle points might interfere with the proper puncturing of the tape by these needle points. In order to overcome this difficulty, *should it arise*, a rotary brush * * * is mounted adjacent the drum and driven from the motor * * * by a belt or the equivalent * * * to rotate in a direction opposite to that of the drum. * * * [Emphasis supplied.]

It seems to us that the above observations support the Board's position that the relative size of the perforations in the adhesive and backing may reasonably be said to be inherent in, or obvious from, the Scholl patent. With respect to the thickness of the adhesive around the perforations, the Board noted that complete penetration of the backing and adhesive by the needles of Scholl's apparatus takes place immediately after the adhesive is deposited on the backing and before any appreciable setting of the adhesive has an opportunity to occur. The Board thought it "not at all unlikely that the adhesive mass has leveled off to a uniform thickness" before setting and subsequent withdrawal of the needles. Appellant's arguments do not convince us of error in that position either.

[1] The Examiner and Board criticized the lack of factual details in the tests reported in the Turkewitsch affidavit, and we need not unduly lengthen this opinion by enumerating the deficiencies here. Suffice to say we agree with their observations, particularly that the affidavit does not appear to incorporate the cooling technique employed by Scholl. Similarly, the Fuzak patent, in stating that "air permeability cannot be obtained simply by perforating the plastic [backing] in the manner indicated [by needle perforation], either before or after providing the plastic with an adhesive surface, since the adhesive tends to flow into and close the perforations," evinces no apparent knowledge or application of the particular disclosure and techniques of Scholl to prevent closing of the perforations.

Our review of the record with due regard for appellant's arguments satisfies us that the Board committed no error in sustaining the rejection of the claims. [2] The decision is affirmed.

AFFIRMED.

KIRKPATRICK, *J.*, concurs in the result.

SMITH, *J.*, concurring in result.

The factual differences of record between appellant's invention claimed in claims 8–10, when evaluated in the light of appellant's specification, and the teachings of the Scholl reference, are such that I do not agree with the majority that the claimed invention, considered as a whole, would have been obvious within the meaning of 35 U.S.C. 103.

However, each of the appealed claims contains the following language:

> * * * the adhesive being cured sufficiently so that it will not flow and close the perforations * * *.

I note that claims 8–10 also were rejected by the Examiner on the grounds that appellant's disclosure was insufficient to support the quoted recitation. It appears from the record that appellant and the Examiner had tentatively agreed to changes in the terminology of the claims which would have overcome that rejection. Amendments proffered by the appellant which contained the changed terminology were not entered because they raised, in the Examiner's view, "new issues." A petition to the Commissioner to enter any one of the proffered amendments was denied.

The Board sustained the rejection of the claims on that ground, stating:

> * * * Inasmuch as appellant does not assert any error in the Examiner's position and the language in question remains unchanged, the indicated rejection will be sustained.

Appellant raises no issue here as to the legality of rejecting the claims on the ground of insufficient disclosure. I do not agree, on the present record, with the argument in appellant's brief that this rejection is now a moot question. As the record stands, appellant and the Examiner have not reached an agreement concerning the entry of an amendment which is required to avoid this ground of rejection.

Therefore, I would affirm the rejection of claims 8–10 solely for this reason.

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[5] Those acknowledgments were made in response to an earlier rejection by the Examiner under 35 U.S.C. 112 for failure of appellant's specification to describe the size dimension of backing perforation necessary to render the tape water impervious.

U.S. Court of Customs and Patent Appeals

IN RE GEORGE P. MORAN, FRANK A. FEDOSH AND CARL A. MAXWELL

No. 7851. Decided December 28, 1967

[55 CCPA—; — F.2d —; 156 USPQ 149]

1. PATENTABILITY—EVIDENCE—COMMERCIAL SUCCESS.

In reaching our conclusion, we have considered the affidavit relating to commercial success, which affidavit reports sales of fifteen units at prices totaling $1,453,196 in a two-year period. However, that affidavit is not persuasive of patentability when balanced against the weighty evidence of obviousness provided by the prior art.

2. SAME—PARTICULAR SUBJECT MATTER—"SHELL AND TUBE HEAT EXCHANGERS."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Shell and Tube Heat Exchangers" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 296,629.

AFFIRMED.

Richard H. Thomas, *John C. Smith, Jr.*, *Watson, Cole, Grindle & Watson* for appellants.

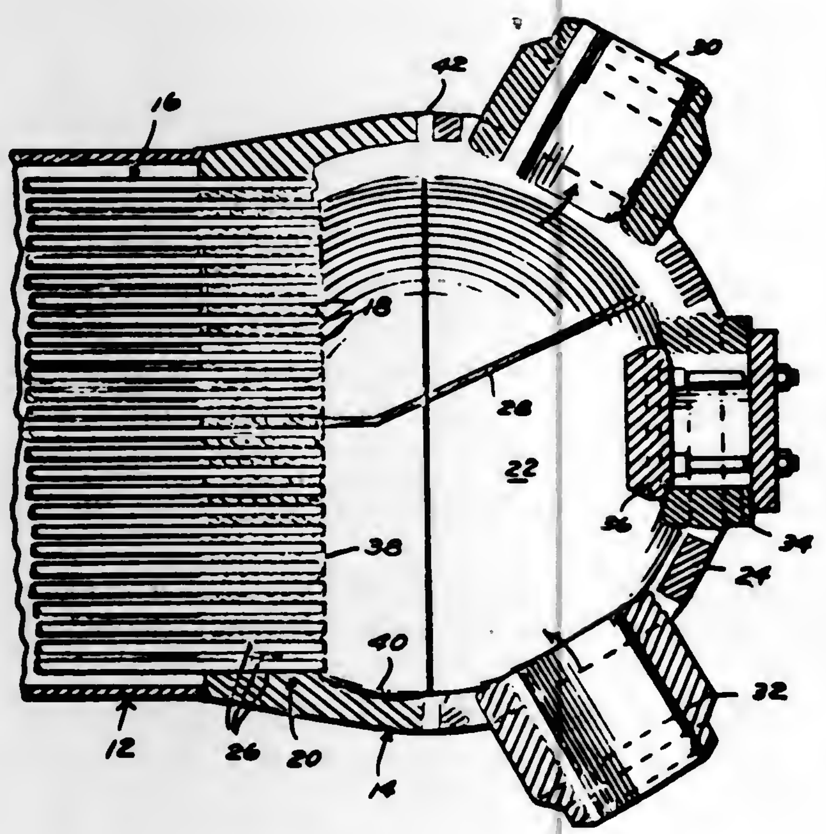
Joseph Schimmel (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, and ALMOND, *Associate Judges*, and WILLIAM H. KIRKPATRICK *

KIRKPATRICK, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals of the Patent Office affirming the rejection on prior art of claims 1 through 4 of application Serial No. 296,629, filed July 22, 1963, for "Shell and Tube Heat Exchangers." No claim is allowed.

The invention relates to a head portion of a heat exchanger for feedwater heaters. The structure is shown in the single figure of the application drawing:



The tube sheet 20 of the head is formed with a flat plate area through which heat exchanger tubes 18 extend and an annular upstanding shoulder 40 which flares upwardly and outwardly to define generally a segment of a sphere. Hemispherical channel member 24, which completes the head, is welded to the shoulder 40 of the plate by circular weld 42. The head is provided with a partition plate 28 separating portions communicating with outlet and inlet ducts 30 and 32, respectively. There is also an access opening 34 closed by manhole cover 36.

In operation, a high pressure fluid at high temperature is passed into the head through inlet 32, through the tubes, and out the outlet 30 so as to heat the feedwater which is passed through heat exchanger shell 12 in contact with the outer surface of the tubes.

Claim 1 is representative:

> **1. A heat exchanger including a head comprising a cup-shaped tube sheet and a hemispherical channel member welded to said tube sheet, said tube sheet including a flat circular plate area to which the tubes of the heat exchanger are connected and an annular upstanding shoulder portion integrally formed with the plate area flaring upwardly and outwardly away from the periphery of plate area, said hemispherical channel member having a free edge portion of approximately the same shape as the free edge portion of the upstanding shoulder portion, and a maximum diameter substantially greater than the diameter of the flat plate area, defining with said shoulder portion a head having a general spherical configuration.**

Claim 2 differs from claim 1 in defining the tube sheet as forged. Claim 3 refers to the heat-shield function of the shoulder portion of the tube sheet. In claim 4, the shoulder portion is described as flaring outwardly but limited in height so as to avoid its interfering with the installation of tubes in the tube sheet.

The references relied on by the Board are:

Haight, 2,919,906, Jan. 5, 1960.
Jackson, 2,391,244, Dec. 18, 1945.
French patent (herein called "French"), 946.944, Dec. 27, 1948.

Haight discloses a heat exchanger having a head and tube sheet shown as of the same substantially spherical shape and relative dimensions as appellants'. However, the tube sheet lacks appellants' outwardly extending shoulder and the remaining portion of the head is an integral member having the shape of appellants' hemispherical channel and shoulder section taken together. Thus the circular weld joining the tube sheet with the head is at the peripheral edge of the tube sheet instead of spaced therefrom.

Jackson discloses a heat exchanger head comprising a hemispherical tube sheet welded by a circular weld to a hemispherical head portion. The tube sheet lacks appellants' flat, thickened area.

French discloses a heat exchanger having a cylindrical head portion welded to the shoulder of a flat tube sheet. The inside of the shoulder on the tube sheet flares upwardly and outwardly but is not in the shape of a segment of a sphere.

The Examiner rejected the claims on Haight in view of French and Jackson "under the provisions of 35 U.S.C. 103." He noted the teaching in French of spacing the welded joint from the tube sheet by an integral upstanding flange and of the showing in Jackson of spacing the welded joint from the area where the tubes are joined to the tube sheet and using a hemispherical head portion. His view was that it was obvious from French and Jackson to space the welded joint in Haight from the tube sheet by moving the joint to the equatorial position on the head. The Board affirmed.

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* **Senior District Judge, Eastern District of Pennsylvania, sitting by designation.**

Appellants emphasize two advantages of their construction. As one advantage, they refer in their application to the added strength offered by a spherical configuration. Concerning that feature, they argue:

> What appellants are teaching is the cost advantage in forming a sphere having a diameter substantially greater than the tube sheet from a cup-shaped tube sheet and hemispherical head, or in essence, providing a spherical head without sacrificing either the advantage of a flat tube plate or the cost advantage of a hemispherical head. * * *

As another advantage, they cite action of the shoulder on the tube sheet as a barrier to welding heat. The application states:

> The plate shoulder or extension on the tube sheet is of sufficient length to provide a barrier to the heat resulting from welding the channel member to the rim and stress relieving the weld area, thus preventing the flow of heat to the tubed area of the tube sheet plate and damage to the tube to tube sheet joints. This permits the tubes to be installed within the tube sheet prior to welding the head to the tube sheet, thereby facilitating construction of the heat exchanger. A further important aspect of the invention is that the heat barrier provided avoids the setting-up of locked-in stresses in the tube plate created by a temperature gradient in the plate, to reduce the possibility of stress failure.

Concerning this asserted advantage, they state in their brief:

> * * * welding takes place rapidly, and subsequent to welding, it is quite possible that the temperature of the tubed area in the French patent from the heat retained in the members through welding is so high as to require stress relieving, despite the stub flange. In appellants' design, only the flange need be stress relieved. (Stress relieving is heating a part to a high temperature and cooling it at a controlled rate to relieve locked-in stresses.)

Appellants further argue:

> * * * the Board and the Examiner have only the appearances of the tube sheets shown by Jackson and the French patent on which to rely, and as such, it is submitted the rejection is based only on hindsight.

They additionally rely on an affidavit they submitted to show commercial success.

Our consideration of the record in the light of the arguments leaves us satisfied that the Board's decision is free from reversible error.

We think that one skilled in the art would be fully aware that the portion of the tube sheet extending away from the area to which the tubes are joined in French and Jackson, including particularly the shoulder in French, would function as a barrier tending to protect the said area from the welding heat. We think such person would find it obvious to provide such a barrier in Haight if heat from the weld there caused trouble with the attachment of tubes to the tube sheet. We also think the person of ordinary skill in the art would be aware of the obvious fabrication and assembly advantages of using a hemispherical channel member as in Jackson for completing the head. It would thus be ovious within the meaning of 35 U.S.C. 103 to modify Haight, which already embodies a spherical construction with its well known advantage of superior strength, in accordance with French and Jackson to provide its tube sheet with an integral flange for welded connection to a hemispherical channel member which completes the head. No unobvious advantage is seen in the construction as defined in any of the claims.

[1] In reaching our conclusion, we have considered the affidavit relating to commercial success, which affidavit reports sales of fifteen units at prices totaling $1,453,196 in a two-year period. However, that affidavit is not persuasive of patentability when balanced against the weighty evidence of obviousness provided by the prior art.

Since the modifications of Haight relied on in the rejection are clearly suggested by Jackson and French, appellants' argument that the rejection is "based only on hindsight" fails. The rejection is not contrary to *United States* v. *Adams et al.*, 383 U.S. 39, as urged by appellants. Also, *In re Shaffer*, 43 CCPA 758, 229 F.2d 476, 108 USPQ 326, additionally relied on by appellants, is not applicable since the secondary references here clearly suggest the modification in Haight which the Board considered obvious.

[2] The decision is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE CHESTER R. AUSTIN, JOHN MARSHALL BERTRAM,
EDWARD J. PRINCE AND JOSEPH K. STONE, JR.

No. 7889. Decided February 15, 1968

[— CCPA —; 390 F.2d 721; 156 USPQ 520]

1. PATENTABILITY—AFFIDAVIT—OBVIOUSNESS.

"During the course of prosecution, appellants filed an affidavit executed by Dr. Chipman, dealing with the differences between the processes of the references and the process of the appealed claims. We note that Dr. Chipman is highly qualified in the field of metallurgy. The Examiner appeared to have considered the affidavit as being directed to the legal conclusion of obviousness. The Board thought, properly in our view, that opinions set forth in the affidavit were not persuasive of error in the Examiner's holding."

2. SAME—SAME—SAME.

"We have given weight to Dr. Chipman's affidavit insofar as it reflects factual differences between appellants' invention and the prior art. It, of course, may not be considered dispositive of the legal conclusion to be derived from an evaluation of appellants' invention as a whole. *In re Weber*, 52 CCPA 1015, 341 F.2d 143, 144 USPQ 495 (1965). See *In re Chilowsky*, 50 CCPA 806, 306 F.2d 908, 134 USPQ 515 (1962)."

3. SAME—PARTICULAR SUBJECT MATTER-OXYGEN STEEL PROCESS.

The refusal of certain claims to an improvement in a process for producing steel, as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 366,682.

AFFIRMED.

Brown, Jackson, Boettcher & Dienner, James E. Tommey, Harold L. Jenkins (*Bruno J. Verbeck*, of counsel) for appellants.

Joseph Schimmel (*Joseph Nakamura*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, and ALMOND, *Associate Judges* and WILLIAM H. KIRKPATRICK [1]

SMITH, *J.*, delivered the opinion of the court.

The issues presented by this appeal are: (1) whether all of appellants' claims are "unpatentable over" the prior art of record, under 35 U.S.C. 103, and (2) whether certain of appellants' claims fail to "particularly point out and distinctly claim" the invention, as required by 35 U.S.C. 112.

The issues arise in an appeal from the decision of the Patent Office Board of Appeals [2] affirming the action of the Examiner in finally rejecting all of the claims of appellants' application for a patent. [3]

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] The board consisted of Messrs. Asp and Behrens, Examiners-in-Chief, and Vertiz, Acting Examiner-in-Chief. The latter wrote the opinion of the board.

[3] Serial No. 366,682, filed April 27, 1964 for "Method."

The invention

Appellants' invention relates to an improvement in the art of producing steel by what is termed "the top-blown oxygen steel refining process." According to the specification, the invention involves the melting and refining of ferrous metal by blowing with oxygen wherein the majority of the heat required for refining the ferrous metal is supplied by oxidation of elements, such as carbonaceous fuel material, present in the molten ferrous bath. The ferrous metal consists of a mixture of solid and molten ferrous metal, the solid portion representing from about 35% to 75% of the total weight of ferrous metal. The molten metal represents, conversely, from about 65% to 25% of the total ferrous metal.

Appellants' specification further points out that in most instances the carbonaceous material and solid ferrous metal should be charged first to the converter followed by the molten ferrous metal. The carbonaceous material is disposed within the converter so that it is substantially located below the surface of the ferrous charge. The carbonaceous material is present in an amount sufficient to provide heat to complete the melting of the solid ferrous metal in the charge.

Subsequent to adding the charge of carbonaceous material and ferrous metal, oxygen is blown upon the charge from above with the result that the increased amount of solid ferrous metal is efficiently melted and the resultant entire molten bath refined to produce steel.

As to the sequence of charging the materials into the converter, appellants' specification states:

> The carbonaceous fuel may be added to the converter in various ways, it being important as set out above that the fuel be located in such manner that substantially all of it, i.e., the effective part, is disposed below the surface of the ferrous charge. For example, the fuel may be added directly to the bottom of the converter after which the solid metal is added and finally the molten metal. Alternatively, the fuel and solid metal can be mixed together and charged following [sic] by pouring in the molten metal. Also, if desired, the fuel and solid metal can be arranged in alternate layers, with the uppermost or top layer being solid metal.

Appellants also disclose that the converter, at the time of charging, may contain some molten steel produced in a previous heat.

The claims

Claim 1, representative of the claims on appeal, is reproduced below:

> 1. In the oxygen steel process for producing steel in an upwardly facing, open mouthed converter from a charge of solid ferrous metal, molten ferrous metal and particulate solid carbonaceous fuel material by blowing oxygen onto said charge vertically from above through a lance extending through the mouth of said converter wherein most of the heat required for melting and refining the ferrous metal is supplied by oxidation of elements present in the metal in the charge, the improvement which comprises employing 35–75% of the ferrous metal, as solid metal and the rest of the ferrous metal as molten metal introducing substantially all of said solid carbonaceous material into the converter before all of the solid ferrous material, whereby the converter charge comprises solid carbonaceous material submerged in a bath of molten ferrous metal and dissolved therein to a large degree, the carbonaceous fuel material being present in an amount sufficient that upon combustion thereof sufficient heat is provided to complete the melting and refining of the solid ferrous metal, and blowing oxygen from above until all of the ferrous charge is melted and refined.

Claim 2, also in independent form, contains substantially the same introduction as claim 1. It, however, more specifically defines the improvement by the following charging sequence:

> * * * first introducing substantially all of the solid carbonaceous material, next introducing substantially all of the solid ferrous metal, then introducing the molten ferrous metal and blowing oxygen from above until all of said ferrous metal becomes molten and refined, said carbonaceous material being present in an amount sufficient that upon combustion thereof heat is provided to complete the melting and refining of said solid ferrous metal in said charge, whereby the converter charge comprises solid carbonaceous material submerged in and to a large degree dissolved in a bath of molten ferrous metal.

Claims 3 through 5 are dependent upon claim 1 and specify, respectively, that at least a portion of the molten ferrous metal is steel which was retained in the converter from the previous heat, that the particulate solid carbonaceous fuel material is coke, and that the carbonaceous fuel material is added in an amount of from about 2% to about 35% by weight of said solid ferrous charge.

The prior art

The references of record are:

Bessemer, 51,401, Dec. 5, 1865.
Suess et al., 2,800,631, July 23, 1957.
Miles (Great Britain), 642,084, Aug. 30, 1950.

The Bessemer patent discloses steel production by a process which involves air-blowing a mixture of carbonaceous fuel and metal. The metal to be converted may be heated while in the solid state or be wholly or in part melted. A solid fuel, such as coke, is placed in the bottom of the converting vessel and ignited. Bessemer desires to use no more fuel than will suffice by its combustion to heat the vessel and the metal sufficiently, while avoiding difficulty in removing unconsumed fuel which may float on the surface of the metal which is later charged into the converter.

Solid metal, such as pig-iron, is added on top of the fuel. Liquid metal is then added and refining is accomplished by bottom blowing with air forced upwardly through the charge from tuyeres in the bottom of the converter.

The Suess and Miles British patents were relied on by the Examiner to show that it was known to blow oxygen into a converter from above. Those patents were also relied on by the Examiner as disclosing the introduction into the converter of solid carbonaceous material which is burned by the oxygen introduced from above to generate additional heat for the purpose of melting more scrap than could be melted in the absence of the carbonaceous material.

The rejection of the appealed claims under 35 U.S.C. 103

We find the issue raised by the rejection of the claims under section 103 is dispositive of the appeal and thus do not reach the issue raised by the rejection of the claims for failure to comply with 35 U.S.C. 112.

We have considered appellants' arguments concerning the Bessemer disclosure but agree with the position of the Examiner, as stated in his answer:

> * * * Whatever else Bessemer may disclose, this patent does disclose first introducing solid carbonaceous material into a converter, next introducing solid ferrous metal and then molten ferrous metal and blowing an oxygen containing gas into the converter to refine the molten metal. In Bessemer the oxygen containing gas is blown in from the bottom of the converter. However, blowing oxygen into a converter from above is known and at present this manner of blowing is commonly used in the art as shown, for example, by the patents to Suess et al. and to Miles. These two last mentioned patents also disclose the introduction of solid carbonaceous material into the converter which is burned by the oxygen introduced from above to generate additional heat for the purpose

of melting more scrap than could be melted in the absence of the carbonaceous material. In view of the teaching of either Suess et al. or Miles, it would be obvious to practice the process of Bessemer in a converter of the type disclosed by either Suess et al. or Miles. * * *

Applicant objects to the Bessemer patent because this patent discloses steps not recited in the claims. However, the Examiner finds nothing in these claims which excludes the additional steps to which applicant objects.

We agree with the Board that there is "no reversible error" in that rejection and with the Board's further observation:

> * * * We see no need for considering Suess which is cumulative to Miles. * * * Only claim 2 of the instant claims clearly sets forth a charging sequence of first introducing solid carbonaceous material into the converter, next introducing the solid ferrous metal and then adding the molten ferrous metal. This same charging schedule is disclosed by Bessemer in the left-hand column of page 3 starting at the second full paragraph. We agree with the Examiner that it would be obvious to use oxygen in the Bessemer process in view of Miles who specifically refers to his oxygen steel making process as an improvement over the Bessemer process and especially in view of the fact that Miles, like appellants, turns to the use of oxygen for the purpose of increasing the scrap addition to the converter.

The essential differences between appealed claim 2 and the teachings of Bessemer reside in the claimed concept of top-blowing the charge with oxygen rather than bottom-blowing the charge with air. We agree that the Miles British patent is evidence that top-blowing with oxygen is known to the art. The explicit teachings of Miles are also directed to an improvement upon the Bessemer process to permit the use of a higher percentage of scrap, as desired by appellants. We also note the teachings of Miles which relate to top-blowing a bath of molten metal in which the carbon is submerged and dissolved. Miles expressly recognized that oxidation of the carbon supplies a part of the heat necessary to maintain the process.

[1] During the course of prosecution, appellants filed an affidavit executed by Dr. Chipman, dealing with the differences between the processes of the references and the process of the appealed claims. We note that Dr. Chipman is highly qualified in the field of metallurgy. The Examiner appeared to have considered the affidavit as being directed to the legal conclusion of obviousness. The Board thought, properly in our view, that opinions set forth in the affidavit were not persuasive of error in the Examiner's holding.

[2] We have given weight to Dr. Chipman's affidavit insofar as it reflects factual differences between appellants' invention and the prior art. It, of course, may not be considered dispositive of the legal conclusion to be derived from an evaluation of appellants' invention as a whole. *In re Weber*, 52 CCPA 1015, 341 F.2d 143, 144 USPQ 495 (1965). See *In re Chilowsky*, 50 CCPA 806, 306 F.2d 908, 134 USPQ 515 (1962).

[3] Our review of the record leads us to conclude that the decision of the Board should be affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,230,624, A. McLean, EXTRACTION OF PROTEIN FROM PEANUTS; **Re. 26,341**, D. Fisher, INSTRUMENTS OR APPARATUS, **filed** Feb. 12, 1968, D.C., N.D. W .Va. (Wheeling), Doc. C–68–6–W, *Denys Fisher (Spirograph) Ltd. et al.* v. *Louis Marx & Co. of W. Va., Inc.*

2,602,323, J. C. Leemhuis, FLOOR STRUCTURE, **filed** Mar. 22, 1966, D.C., W.D. Wis. (Madison), Doc. 66–C–41, *Airfloor Company of California, Inc.* v. *Air Radiant Conditioning Co. and John Gordon Strong.*

2,677,343, H. P. Shipley, ANCHOR, **filed** Apr. 24, 1968, D.C., N.D. Calif. (San Francisco), Doc. 49129, *Universal Marion Corporation* v. *West Coast Wire Rope and Rigging, Inc.*

2,724,720, Berger and Ludwig, DICARBAMATES OF SUBSTITUTED PROPANE DIOLS, **filed** May 2, 1968, D.C., S.D. Fla. (Miami), Doc. 68–516–JE, *Carter-Wallace, Inc.* v. *Barry-Martin Pharmaceuticals, Inc.*

2,742,462, G. Gever, NEW N-(5-NITRO-2-FURFURYLIDENE)-3-AMINO-2-OXAZOLIDONES, **filed** Aug. 9, 1967, D.C., W.D.N.C. (Charlotte), Doc. 2267, *The Norwich Pharmacal Company* v. *Haskell E. Willingham*. Defendant enjoined and restrained from infringement or contributing to infringement, Jan. 31, 1968.

2,784,132, E. N. Maisel, AIR PERMEABLE FIBROUS BATT, **filed** Sept. 27, 1965, D.C., W.D.N.C. (Charlotte), Doc. 2042, *Union Carbide Corporation* v. *Microtron Corporation*. Stipulation and order of dismissal under Rule 41(a) FRCP, May 3, 1968.

2,966,362, C. W. Mullis, Sr., ROTARY DEBARKER HAVING PIVOTABLE BARK-REMOVING TOOLS BIASED BY FLUID UNDER PRESSURE IN AN ANNULAR TANK, **filed** May 1, 1968, D.C., N.D. Ala. (Birmingham), Doc. CA68–233, *David Mullis and John Mullis* v. *Kockum Industries, Inc.*

2,940,495, G. S. Wing, LOCK NUT WITH FRANGIBLE DRIVING PORTION; **3,128,967**, same, FASTENERS, **filed** Apr. 29, 1968, D.C.N.J. (Newark), Doc. 408–68, *Standard Pressed Steel Company* v. *Hi-Shear Corporation.*

2,962,979, W. C. McCormick, METHOD OF CORRECTING EXISTING TRACK AND ALIGNMENTS AND MEANS FOR PRACTICING IT, **filed** Dec. 13, 1963, D.C., N.D. Ill. (Chicag), Doc. 63c2250 *Nordbert Manufacturing Company and William C. McCormick* v. *Jackson Vibrators, Inc.* Enter judgment order, certain claims of patent are valid, Mar. 1, 1967. Judgment and order withdrawn. Defendant has not infringed patent, complaint dismissed, May 10, 1968.

2,968,882, J. Ozeki, TRANSLUCENT PLATES FOR USE IN FILING COLOR FILM SLIDES, **filed** July 7, 1965, D.C.N.J. (Newark), Doc. C–716–65, *Jiro Ozeki* v. *Plastican Corp. and Training Films*. Stipulation and order of dismissal of action, May 7, 1968.

2,995,617, Just, Maximoff and Kalmar, SELF-LOCKING TERMINAL; **3,006,074**, Just, Maximoff and Krause, SELF-ORIENTATING TERMINAL CONNECTORS, **filed** Jan. 18, 1967, D.C., Ct. of App., 8th Cir., Mo. (St. Louis), Doc. 18705, *National Connector Corporation* v. *Malco Manufacturing Company et al.* (cross-appeal, No. 18706, reverse title). Judgment of District Court in No. 18705 as to the '617 patent is reversed and cause remanded to District Court with directions to dismiss. Judgment of District Court in case 18706 as to the '074 patent is affirmed, Apr. 11, 1968.

3,027,045, J. D. Wilson, MEAT LUG, **filed** Apr. 24, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–665–HP, *Banner Metals, Inc.* v. *Nestier Corporation.*

3,028,576, J. C. Gerard, METHOD AND APPARATUS FOR MAKING THIN PLASTIC GLOVES, **filed** Oct. 30, 1962, D.C., N.D. Calif. (San Francisco), Doc. 41846, *Ethicon, Inc.* v. *Plasticsmith, Inc.* Judgment finding patent invalid and void; dismissing the complaint; defendants counterclaim for declaratory judgment of invalidity sustained, Apr. 26, 1968.

3,030,957, F. J. Melges, DISPOSABLE OBSTETRICAL AND/OR SURGICAL COVER MEANS, **filed** Mar. 21, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c451, *Frederick J. Melges et al.* v. *Cenco Instruments Corporation*. On stipulation complaint and counterclaim dismissed, Feb. 12, 1968.

3,040,968, Long and Crane, WRAPPER FOR PACKAGED PRODUCE, **filed** Apr. 22, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–645–FW, *Germain's Inc.* v. *Shrink-Pack Equipment Company, Inc.*

3,006,074. (See 2,995,617.)

3,106,597, Moss and Browner, GENERATOR FOR ELECTRONIC MUSCLE STIMULATOR, **filed** Apr. 22, 1968, D.C. Kans. (Wichita), Doc. W–3989, *Relaxacizor, Inc.* v. *Dynatone Electronics Corporation.*

3,128,967. (See 2,940,495.)

Re. 26,341. (See 2,230,624.)

REISSUES

SEPTEMBER 17, 1968

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

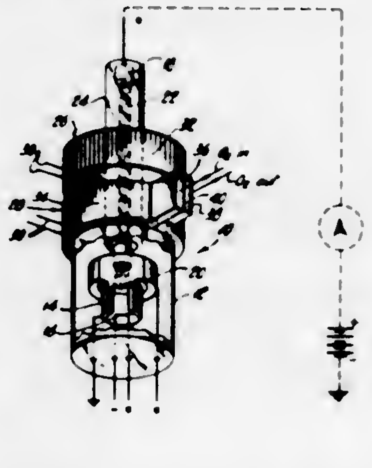
26,456

ELECTRONIC GAS ANALYZER USING PARAMAGNETIC PROPERTIES OF THE GAS TO CONTROL ELECTRON FLOW

John G. Gamble, Killingworth, Conn., assignor, by direct and mesne assignments, of thirty-three and one-third percent to Elton Industries, Inc., New York, N.Y., a corporation of New York

Original No. 3,234,456, dated Feb. 8, 1966, Ser. No. 88,196, Feb. 9, 1961. Application for reissue Oct. 12, 1966, Ser. No. 595,547

9 Claims. (Cl. 324—36)



An electron beam tube has a hollow toroidal control grid chamber about the tube between the electron gun and the anode of the tube. The grid chamber includes a passageway for the flow of paramagnetic fluids therethrough. A toroidal field winding about the chamber creates an electromotive force acting along the axis of electron flow within the tube in proportion to the partial pressure of the paramagnetic fluids in the passageway to thereby vary the electron flow proportional to the partial pressure.

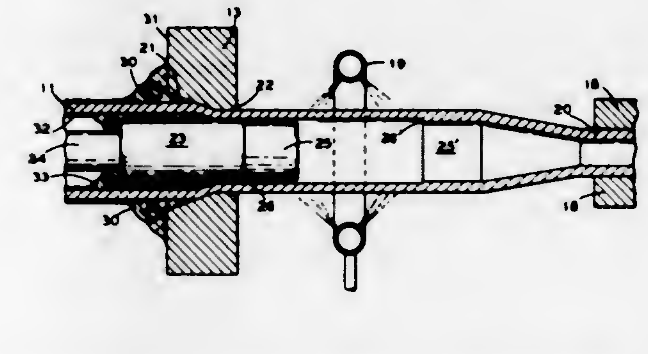
26,457

HOT DRAWING TUBES

David A. Edgecombe, Howard W. Marshall, and Sidley O. Evans, Beaver Falls, Pa., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

Original No. 3,293,894, dated Dec. 27, 1966, Ser. No. 370,851, May 28, 1964. Application for reissue Oct. 12, 1967, Ser. No. 682,694

6 Claims. (Cl. 72—42)



A method of drawing a metal tube through a die wherein the tube is heated to a temperature in the range of 1500° to 2200° F. and a layer of glass-like lubricant which is viscous at the heated temperature is applied to the tube to aid in drawing.

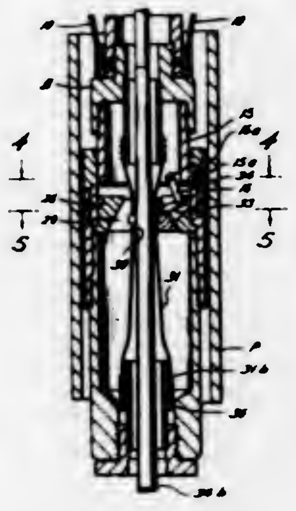
26,458

FREE POINT INDICATOR APPARATUS

Lawrence K. Moore, 3716 Ingold St.,
Houston, Tex. 77005

Original No. 3,331,243, dated July 18, 1967, Ser. No. 403,118, Oct. 12, 1964. Application for reissue Aug. 25, 1967, Ser. No. 669,343

10 Claims. (Cl. 73—151)



1. Free point indicator apparatus, comprising:

(a) a tubular body adapted to be lowered into the bore of a pipe which is stuck in a well,

(b) a flexible non-electrical line connected to said tubular body for lowering the body into the stuck pipe,

(c) said body having an upper body section and a lower body section with means for permitting limited relative longitudinal movement therebetween,

(d) an upper friction means on said upper body section for frictionally engaging the stuck pipe,

(e) a lower friction means on said lower body section for frictionally engaging the stuck pipe,

(f) sensing means operable in response to longitudinal movement of a free or partially free portion of the stuck pipe, and

(g) a control rod operably connected to the flexible non-electrical line for controlling the amount of movement of said line different distances depending upon the amount of movement in the pipe by coaction of the control rod with said sensing means to thereby obtain an indication on the amount of movement of the free or partially free portion of the stuck pipe.

26,459

RADIO TELEPHONE COMMUNICATION SYSTEM

Jerome H. Lemelson, 85 Rector St.,
Metuchen, N.J. 08840

Original No. 3,198,888, dated Aug. 3, 1965, Ser. No. 52,826, Aug. 30, 1960. Application for reissue Apr. 18, 1966, Ser. No. 547,087

22 Claims. (Cl. 179—41)

1. In an automatic communication system the combination of:

(a) an automatic telephone switching system having a plurality of terminal wire pairs connected thereto and connectable to each other by means of signals generated on any of said wire pairs,

(b) a telephone connected to one of said wire pairs having a unitary mouth-earpiece which is movable from a predetermined position on said telephone whereby it [opens] *closes* a switch and connects the output of the ear and mouth piece of said telephone with said automatic switching system,

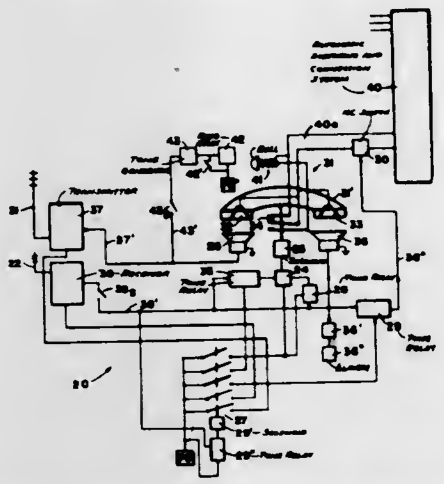
(c) a coupling device associated with said telephone having electro-mechanical means adapted, when operated, to close said switch of said telephone,

(d) a control means for operating said electro-mechanical means including a relay which is responsive to a predetermined signal received thereby which operates said electro-mechanical means,

(e) a short wave receiver having an output connected to said relay,

(f) portable control apparatus including a short-wave transmitter adapted for transmitting signals to the receiver of said coupling apparatus,

(g) a second short wave transmitter located in the general vicinity of said telephone and adapted to receive and transmit voice signals generated at the speaker of said mouthpiece of said telephone,



(h) a second short wave receiver at said portable control apparatus adapted to receive signals transmitted by said second short wave transmitter whereby to establish a communication link therewith,

(i) means at said control apparatus for generating a plurality of selection and connection signals when manually operated,

(j) means connected to the output of said receiver at said telephone for converting said selection and connection signals generated at said portable apparatus into signals generated on the output of said telephone in simulation of conventional selection and connection signals generated by conventional dial operated telephones,

(k) relay means including means for generating a signal at said portable apparatus and relay means responsive thereto at said telephone coupling apparatus for actuating said electro-mechanical means to open the switch of said telephone and break the circuit therewith and said automatic switching system under the control of the operator of said portable apparatus when it is desired to disconnect a communication link.

26,460

METHOD OF INHIBITING DISSOLUTION OF CALCIUM SULFATE

Bernard A. Axelrad, Raphael F. Matson, and Freddie J. Touro, by Calgon Corporation, Pittsburgh, Pa., a corporation of Pennsylvania, assignee, assignors, by mesne assignments, to Calgon Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Original No. 3,140,915, dated July 14, 1964, Ser. No. 216,591, Aug. 13, 1962. Application for reissue June 2, 1966, Ser. No. 569,766

8 Claims. (Cl. 23—89)

1. A method for inhibiting the dissolution of calcium sulphate into an aqueous slovent comprising dispersing into the aqueous solvent an inhibiting compound having at least one active group selected from the class consisting of [sulphonate, sulphate, carboxylate, phosphate,] phosphite, phosphonate and phosphonite radicals, said active group being attached to at least one hydrocarbon group containing from about 2 to 30 carbon atoms per active group, said compound combining with calcium to form a product that is less soluble than calcium sulphate.

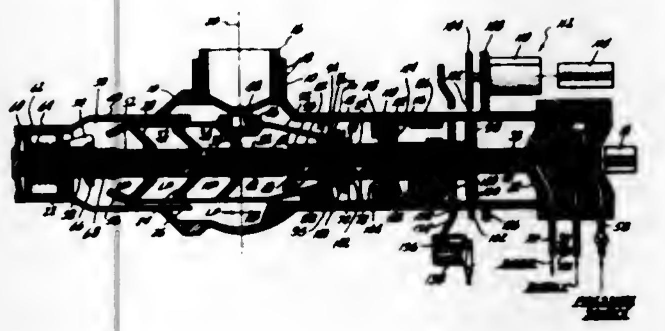
26,461

PITCH CONTROL SYSTEM

Philip E. Barnes, North Granby, and Raymond N. Quenneville, Suffield, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Original No. 3,212,586, dated Oct. 19, 1965, Ser. No. 386,254, July 30, 1964. Application for reissue Jan. 25, 1967, Ser. No. 620,551

26 Claims. (Cl. 170—160.32)



A hydraulic actuator is actuated by supplying fluid thereto and bleeding fluid therefrom by a valve operatively connected to a rod and nut in threaded engagement. The rod is rotatable relative to and translatable together with the nut and carries valve means for directing fluid to and from the actuator. Input mechanism rotates the rod to position the valve means for controlling the position of the actuator and feedback is effectuated by a direct connection to the actuator that translates the nut which, in turn, carries the rod to return the valve to its balanced or null position. Loss of hydraulic fluid locks the actuator in position by virtue of the threaded engagement between the rod and nut. The actuator can be moved rectilinearly by rotating one element relative to the other element or breaking either the nut or the rod, while the other element rotates.

PLANT PATENTS

GRANTED SEPTEMBER 17, 1968

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,834

ROSE PLANT

Ralph S. Moore, 2519 E. Noble Ave., Visalia, Calif. 93277

Filed Mar. 27, 1967, Ser. No. 626,348

1 Claim. (Cl. Plt.—10)

1. A new and distinct variety of miniature rose plant of hardy dwarf, rounded, much branched, bush type, as illustrated and described, characterized by buds and flowers resembling the Dian miniature rose (U.S. Plant Patent No. 1,808) in general form but with deeper red color, the general color effect of the freshly opened flower being an all over red of uniform shade with little tendency to fade; and further characterized by a plant which is vigorous and yet compact in growth, easy to propagate from cuttings; with small darker green foliage, more abundant and more mildew resistant than Dian rose, an abundance of bloom borne almost continuously throughout the growing season with flowers borne usually in loose clusters.

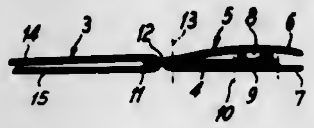
PATENTS

GRANTED SEPTEMBER 17, 1968

GENERAL AND MECHANICAL

3,401,406
GARTER

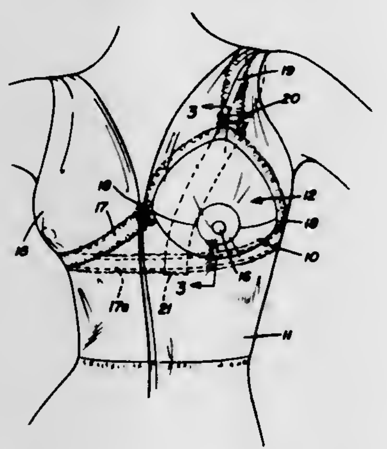
Bernhard Nysten, Aachen, Germany, assignor to William Prym-Werke K.G., Stolberg, Rhineland, Germany
Filed Jan. 14, 1966, Ser. No. 520,564
Claims priority, application Germany, Feb. 17, 1965, P 36,093
9 Claims. (Cl. 2—332)



A garter comprises a loop-shaped buckle formed with an opening having a wider portion and an adjoining narrower portion. A supporting strap is secured to the buckle and adapted to be attached to a garment. A single elongated cover strip is doubled back upon itself so as to provide two strip portions which overlie one another and have juxtaposed inner faces. The buckle is received between the strip portions and secured to the cover strip. One of the strip portions carries on the inner face thereof a stud which can be wedged into the narrower portion of the buckle.

3,401,407
PROSTHETIC BREAST

Mildred R. Pittman, 1800 Acker Drive, Albany, Ga. 31705
Filed May 18, 1966, Ser. No. 550,975
6 Claims. (Cl. 3—36)

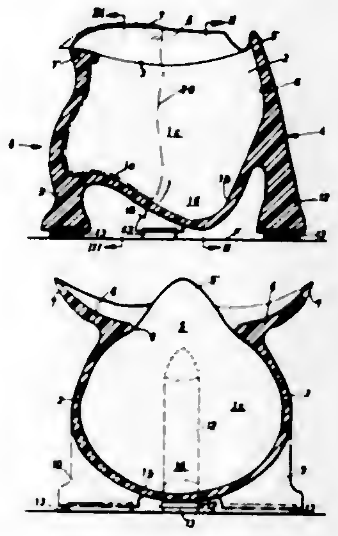


1. A prosthetic breast comprising in combination an artificial breast member being tapered at its upper end and having a depending bulbous portion conforming substantially to that of an unsupported natural breast and also having a substantially flat rear surface for engaging the chest wall of a wearer, a chest encircling strap having its ends connected respectively to opposite side edges of said breast member, and a shoulder strap having a front end connected to the upper edge of the breast member and a rear end connected to an intermediate portion of said chest strap.

3,401,408
CHAMBER POT

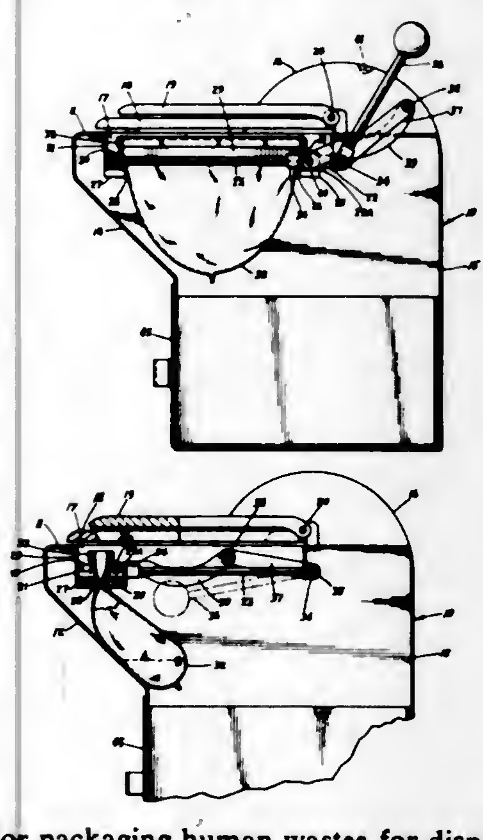
Immanuel Buck, Justinus-Kerner-Weg 9, Fellbach, near Stuttgart, Germany
Filed Oct. 9, 1963, Ser. No. 314,975
16 Claims. (Cl. 4—141)

A chamber pot which defines an internal cavity with an opening at the upper end. The bottom wall of the chamber pot is uneven and its front portion has a depression for reception of liquid matter. The rear portion of the bottom wall is located above the bottom zone of the depression and serves to intercept and support solid matter.



3,401,409
WASTE DISPOSAL UNIT

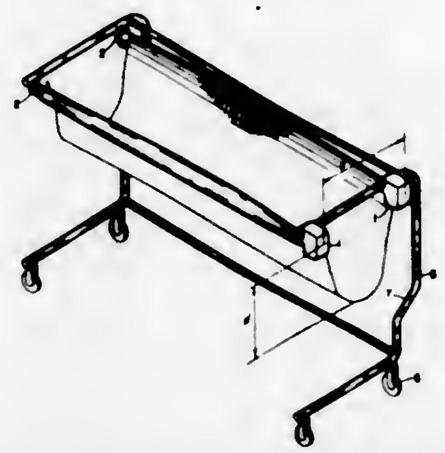
Hans G. Ekrut, 7939 Zane Ave., Brooklyn Park, Minn. 55007
Filed Apr. 8, 1966, Ser. No. 541,313
7 Claims. (Cl. 4—142)



A unit for packaging human wastes for disposal for use where access to sanitary sewer facilities is not available. The unit includes a frame for supporting a heat sealable plastic waste receiving bag in open mouth position for deposit of wastes. The unit also includes a pair of pressure bars, at least one of which is heatable and at least one of which is movable, which are brought together to squeeze the top edges of the waste containing bag to heat seal the bag for dry sanitary disposal.

3,401,410
PATIENT HANDLING DEVICE

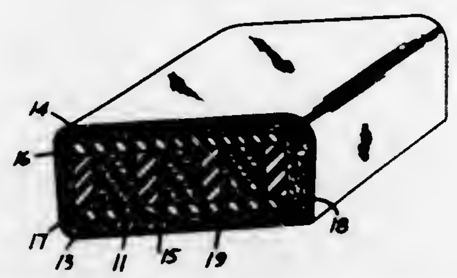
Orange M. Welborn, 208 E. Kings Road, and Kennard Coventon, 826 E. 5th St., both of Ada, Okla. 74820
Filed Feb. 6, 1967, Ser. No. 614,219
9 Claims. (Cl. 5—61)



A patient handling device for lifting, turning, holding and transporting a patient in hospitals, nursing homes and the like with controlled tumbling of the patient wherein a flexible porous fabric is controlled by rolling on a pair of driven side rails, said side rails comprising a plurality of angular projections arranged in generally transverse planes on the surface of said each of said side rails.

3,401,411
UPHOLSTERY CONSTRUCTION

Ben Morrison, 11124 Westwood Blvd., Culver City, Calif. 90230
Continuation-in-part of application Ser. No. 497,214, Oct. 18, 1965. This application Mar. 10, 1967, Ser. No. 622,151
6 Claims. (Cl. 5—353)

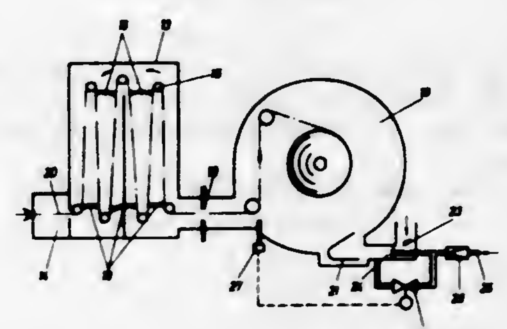


This invention consists of three layers of elastomeric foam material, the central core layer containing coil springs which are internally supported by cores cut from the parent central core material and two outer sheets which encase both sides of the central core sheet. Another variation of the invention provides for bonding the central core sheet to a sub-spring layer or structure which is fixed to the frame of an article of furniture; one sheet of foam material being bonded to the upper surface of the core sheet.

3,401,412
PROCESS FOR HEAT TREATING LENGTHS OF TEXTILE MATERIALS

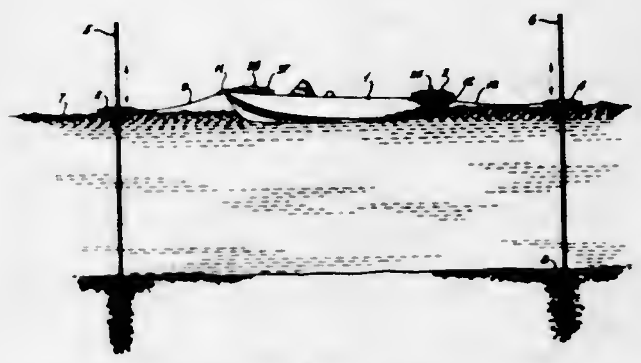
Christian August Meier-Windhorst, Hamburg, Germany, assignor to Artos Dr. Ing. Meier-Windhorst K.G., Hamburg, Germany, a corporation of Germany
Filed Feb. 4, 1966, Ser. No. 525,085
Claims priority, application Germany, Feb. 10, 1965, A 48,363
6 Claims. (Cl. 8—149.3)

Moving lengths of textile or textile-like materials which are subjected to a heat treatment and impregnation are additionally treated by a regulated specific steam-air-mixture for the purpose of maintaining uniform predetermined treating conditions, the additional treatment taking place in a zone located in front of the main treating chamber by the steam-air mixture which flows in a direction opposite to that of the movement of the material.



3,401,413
BUOY MOORING ANCHOR MARKER

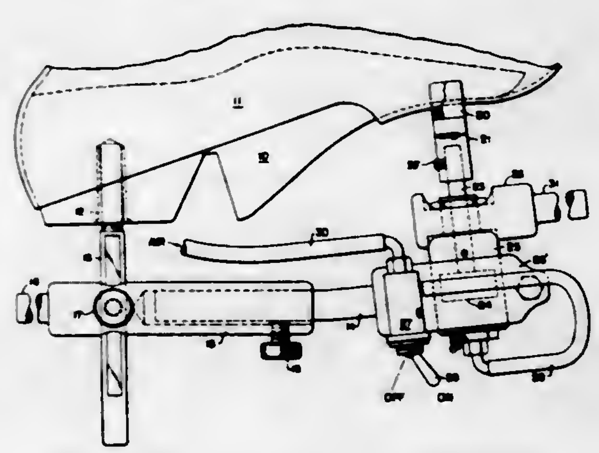
James V. Anselmi, 16 Essex St., Deep River, Conn. 06417
Filed Jan. 20, 1966, Ser. No. 521,839
4 Claims. (Cl. 9—9)



A marker buoy for locating sunken craft. A buoyant body is provided with a reel having wound thereon a cord. The free end of the cord is fixed to the craft. The reel is prevented from unwinding by means of a brake. When the craft is sunk the buoyancy of the body is sufficient to overcome the force of the brake to thereby allow the cord to unwind. The buoy is stored on a post mounted on the craft and will float free of the post as the craft sinks.

3,401,414
MOBILE POWER-OPERATED JACK

Verne L. Kneeland, 3 Smith Ave., Manchester, N.H. 03104
Filed Nov. 9, 1966, Ser. No. 593,081
4 Claims. (Cl. 12—127)



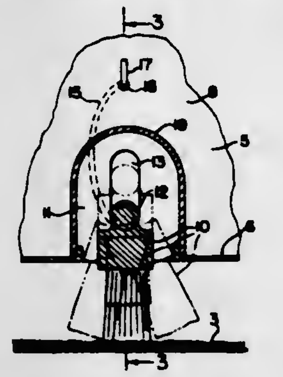
A mobile power-operated jack comprising an elongated body carrying near one end a projecting last spindle and near the other a movable forepart pad, the body of the jack carrying at each end a power-operated tool for engaging and holding an insole in position on the bottom of a spindled last.

3,401,415
CARPET SWEEPER WITH AUXILIARY BRUSH

Frederick B. Vanderveer, Grand Rapids, Mich., assignor to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan

Filed July 15, 1966, Ser. No. 565,566

3 Claims. (Cl. 15—42)



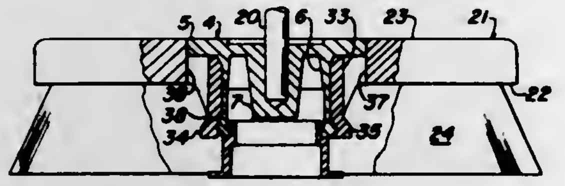
A carpet sweeper having a rotary brush with dust pans on each side. One of the pans has a slot which receives an auxiliary brush. The auxiliary brush is pivotally mounted within the pan and extends down through the slot. Stop means for the pivotal brush action are provided, and the brush is spring biased.

3,401,416
FLOOR POLISHER BRUSH ATTACHING AND DRIVE MEANS

Brandt F. Ziegler, North Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio

Filed Nov. 15, 1966, Ser. No. 594,623

10 Claims. (Cl. 15—49)



A floor polisher having motor driven vertical axis brush mounting shafts includes brush attaching and clutching means on the shaft ends. The brush attaching and clutching means includes a bottom portion having resilient fingers which snap through a hole in the brush back and an upper portion having downwardly facing teeth which cooperate with teeth on the rear of the brush to drive the brush. The bottom and upper portions of the brush attaching and clutching means may be rotatably and axially movable relative to one another so the brush is not driven when the polisher is lifted. The brush has driving teeth on its back portion arranged to provide a low silhouette with strength and stability.

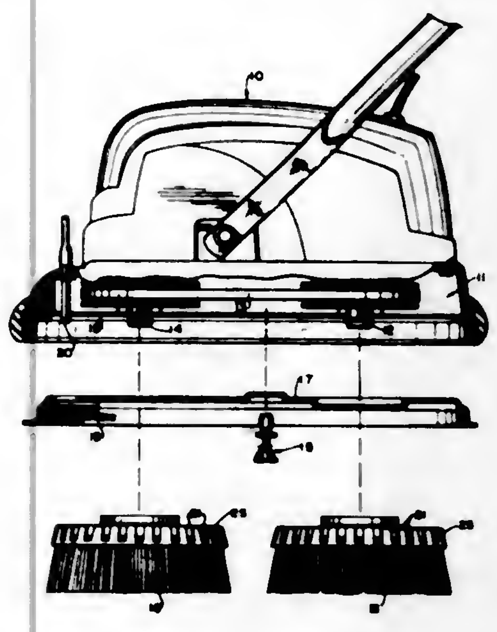
3,401,417
RUG WASHER ATTACHMENT FOR FLOOR POLISHER

John J. Moughty, Old Greenwich, Frederic S. Greene, Stamford, Oliver L. Allen, Riverside, and Robert C. Lampe, Stamford, Conn., assignors to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware

Filed Sept. 15, 1966, Ser. No. 579,706

6 Claims. (Cl. 15—50)

An attachment for converting a floor polisher for use as a rug shampooing machine. The attachment is removably secured to the base of the floor polisher and has one or more foam generator brushes which engage an undulating surface of a rotary shampoo brush driven by the floor polisher motor. The foam generator brush(es) whips the shampoo liquid into foam and also distributes the foam within the base of the floor polisher.



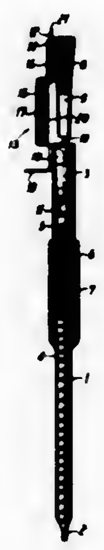
3,401,418
DEVICE FOR PAINTING AREAS WHICH TERMINATE IN SHARPLY DEFINED EDGES

Fritz Deck, Gellertstrasse 25, and Norbert Keim, Karl-Schurz-Strasse 40, both of Karlsruhe, Germany

Filed June 21, 1966, Ser. No. 559,232

Claims priority, application Germany, May 6, 1966, D 50,049

8 Claims. (Cl. 15—166)



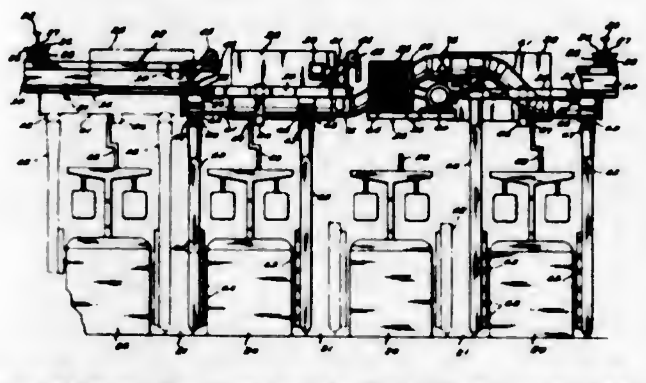
A flat paint brush carried by a sleeve slidably mounted on an elongated handle. A guide plate is situated closely adjacent the side face of the flat brush and is pivotal for turning movement relative to the carrier sleeve about an axis perpendicular to the plane of the guide plate. A spring yieldably maintains the plate in a rest position wherein its guide edge extends perpendicularly to the handle, and returns it to the rest position after the plate has been turned. A second spring in the hollow handle acts on the carrier sleeve for displacing it with respect to the handle to a rest position wherein the guide plate extends beyond the paint-applying end of the flat brush.

3,401,419
APPARATUS FOR REMOVING AND COLLECTING LINT OR THE LIKE

Loyd R. McEachern, Greenville, S.C., assignor to The American Monorail Co.

Filed Mar. 3, 1965, Ser. No. 436,900

13 Claims. (Cl. 15—312)



1. Apparatus for removing lint from spinning machines or the like arranged in rows with aisles between adjacent rows and collecting lint from near the floors of the aisles, said apparatus comprising:

(a) a runway extending lengthwise of said rows above said machines,

(b) crane means mounted for movement along said runway, said crane means extending transversely of a plurality of rows,

(c) carriage means movable along said crane means,

(d) blower means supported on said carriage means including tubes extending to the machines in at least two rows of said plurality of rows, said at least two rows being separated by at least one row of machines, and means to blow air through the tubes onto the machines,

(e) suction means supported on said carriage means including tubes extending to near the floor between a plurality of rows of machines and means for drawing up air and lint through the tubes, and,

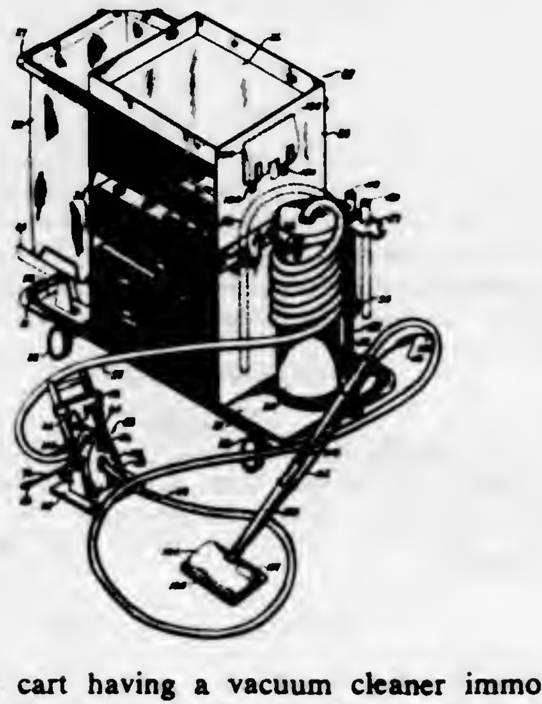
(f) drive means connected to said carriage means for moving it along said crane means to change the locations of said tubes.

3,401,420
VACUUM CLEANER DEVICE WITH HOSE AND CORD STORAGE

Gustaf E. Lofgren, Riverside, Conn., assignor to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware

Filed June 17, 1966, Ser. No. 564,464

7 Claims. (Cl. 15—323)



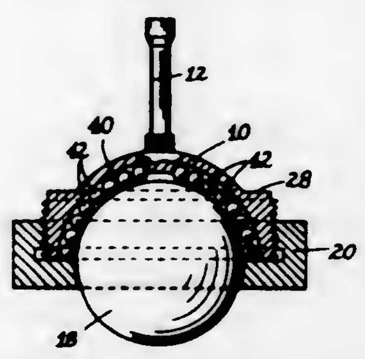
A maid's cart having a vacuum cleaner immovably mounted on the cart but rotatable about a vertical axis whereby a length of hose is wound and unwound about the body of the cleaner, and a portable unit housing an electric cord reel and provided with fittings for interconnecting the length of hose from the cleaner and a second length of hose extending from the portable unit to a floor cleaning tool. Thus, the portable unit is movable from place to place to facilitate cleaning while the vacuum cleaner remains on the maid's cart.

3,401,421
CASTER

John H. Aninger, 2031 S. Beverly Glen Blvd., Los Angeles, Calif. 90025

Filed Oct. 21, 1965, Ser. No. 499,767

2 Claims. (Cl. 16—25)



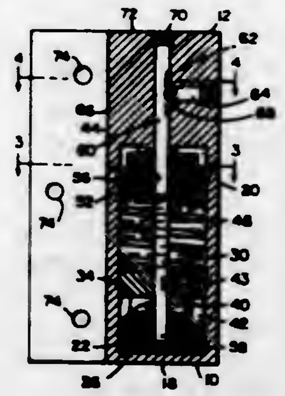
The subject of this invention is an improved caster for use with portable equipment, instruments and furniture and suitable for installation during and after the production of the aforementioned equipment, selectively.

3,401,422
HINGE

Joseph V. Ventura, 800 Main St., Malden, Mass. 02148

Filed Sept. 15, 1965, Ser. No. 487,526

10 Claims. (Cl. 16—54)



A door hinge having a lower barrel with a leaf secured to it for attachment to a door frame with the barrel housing a cam. A pin rotatable in the barrel carries a follower associated with the cam, and a second barrel is removably mounted on the pin and carries a leaf which may be secured to the door.

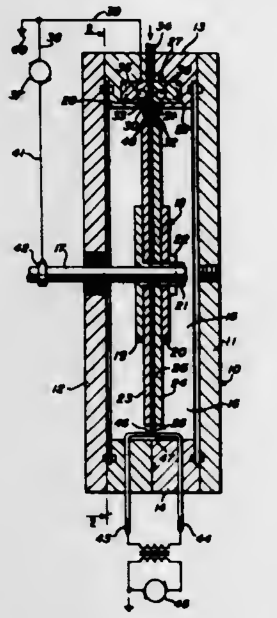
3,401,423
APPARATUS FOR THE CONTINUOUS FORMATION OF FILAMENTS

Ralph L. Hough, Springfield, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

Filed May 7, 1965, Ser. No. 454,225

1 Claim. (Cl. 18—8)

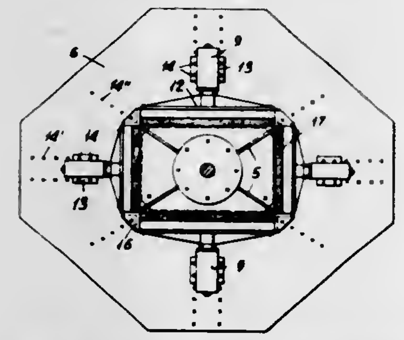
An apparatus for the formation of continuous pyrolytic refractory filaments utilizing a chamber housing, an ion laden plasma jet mechanism, a rotating disc deposition bed equipped with a pair of electrode gaps containing means for maintaining an arc discharge between said



electrode gaps for separating the continuous filament as formed.

3,401,424
PRESS FOR STAMPING SHAVING AGGLOMERATE CONTAINERS, PROCESS RELATED THERETO AND CONTAINERS THUS OBTAINED

Adriano Gionco, Arcade, Treviso, Italy
(Via Fonfa 10, Spresiano, Treviso, Italy)
Filed Nov. 2, 1965, Ser. No. 506,040
Claims priority, application Italy, Oct. 26, 1965, Patent 731,706
4 Claims. (Cl. 18—16)

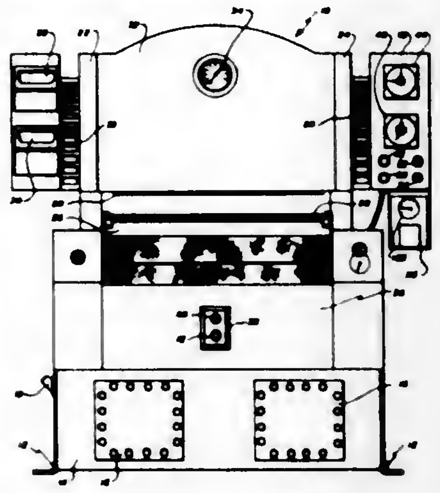


A molding press for molding containers from shaving agglomerate, the press comprising a work table on which a mandrel is mounted. A first cylinder assembly is supported above the mandrel for movement along a first axis toward and away from the mandrel. A plurality of second cylinder assemblies are selectively adjustably supported on the work table for movement along second axes perpendicular to the first axis. Each of the first and second cylinder assemblies includes a die on the end thereof adjacent said mandrel, each die including a conduit through which heating fluid may be directed. Angle bars are selectively adjustably supported at each corner of the mandrel whereby the second cylinder assemblies and the angle bars may be adjusted in the plane of the work table to facilitate formation of varying container sizes.

3,401,425
DIMENSIONAL CONTROL SYSTEM

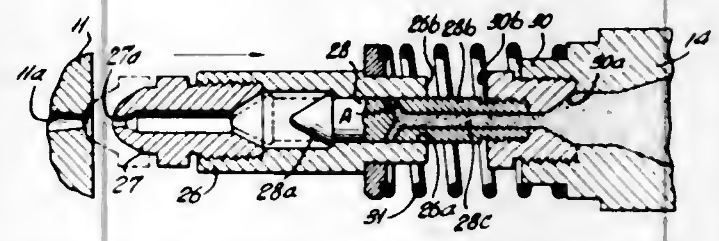
Robert C. Fink, Chicago, Ill., assignor to Ostrander-Seymour Co., Melrose Park, Ill., a corporation of Illinois
Filed Apr. 14, 1965, Ser. No. 448,148
18 Claims. (Cl. 18—17)

1. A dimensional control system for automatically applying pressure to an article, as required, during the forming of said article, to provide uniform and exact dimension to said article in the direction of the applied pressure comprising, in combination: a first member; a second member adapted to be adjustably positioned relative to said first member to vary the pressure exerted upon an article therebetween; orifice means formed in a surface which is operatively related to one of said first and second members and in mating relationship to a surface operatively related to the other one of said first and second members, said orifice means being formed so as to establish a varying pressure at the outlet thereof when said surfaces are moved relative to one another to vary the spacing therebetween; positioning means for adjustably positioning said second member relative to said first member; and control means responsive to the varying pressure at the outlet of said orifice means for controlling said positioning means to adjustably position said second member relative to said first member to establish and maintain a predetermined pressure at the outlet of said orifice means.



3,401,426
PLASTIC INJECTION MOLDING MACHINE

William B. Evans, New Britain, Conn., assignor to The New Britain Machine Company, a corporation of Connecticut
Filed May 31, 1966, Ser. No. 553,854
10 Claims. (Cl. 18—30)

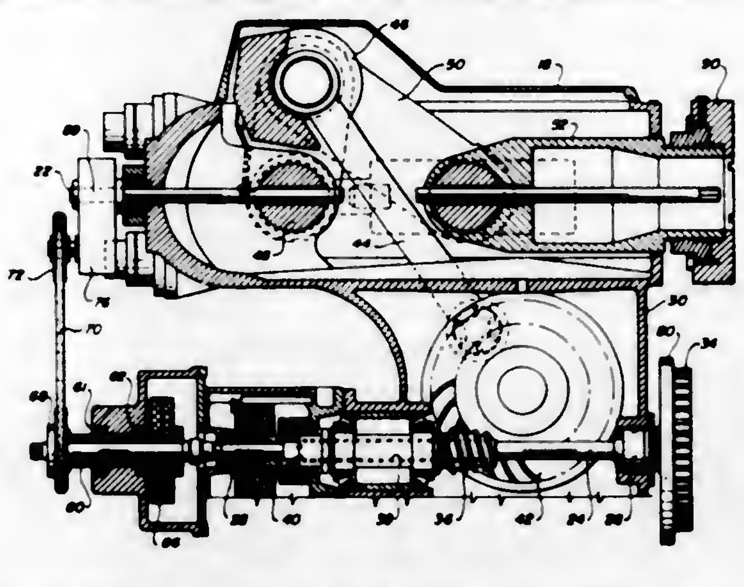


The invention provides a novel injection-nozzle system for plastics injection-molding machines, involving the operation of supply means for moldable fluent plastic material. The novel internal structure of the nozzle and its supply means is such as to overcome the problem of premature drool of plastic, occasioned by removal of pressure on the liquid plastic, between injection-shot cycles.

3,401,427
FLYWHEEL DRIVE FOR ROTATING MOLD

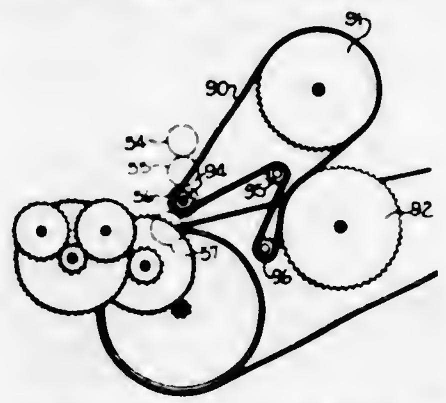
Kenneth J. Cleereman, Midland, and Edward R. Sederlund, Saginaw, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Aug. 10, 1966, Ser. No. 571,626
16 Claims. (Cl. 18—30)

1. Apparatus for the rotational molding of an article whereby multidirectional orientation is automatically imparted to the molecules of said article to effect strength in all directions comprising: a cavity mold formed of at least two elements, one of said elements being rotatable; means for opening and closing said mold; a source of stored rotational force having a torque of a substantially constant preset level; coupling means for coupling said source to said rotatable element to substantially instantaneously rotate said rotatable element at said preset torque level; and control means for operating said coupling means to rotate said rotatable element a predetermined number of revolutions for imparting said multidirectional orientation to the molecules of said article.



3,401,428
TEXTILE PICKER AND DRIVE ARRANGEMENT THEREFOR

Conrad B. Bookout, Charlotte, N.C., assignor, by mesne assignments, to G. W. Murphy Industries, Inc., Houston, Tex., a corporation of Texas
Filed May 16, 1966, Ser. No. 550,475
2 Claims. (Cl. 19—89)

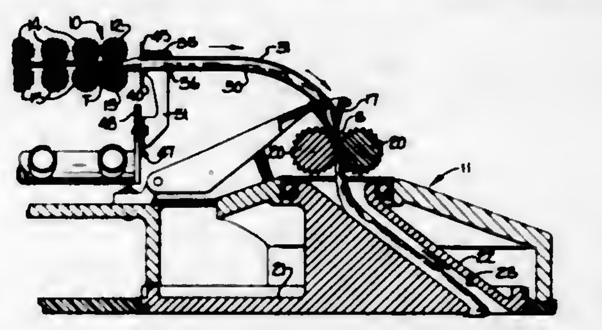


A textile picker wherein an endless chain and drive sprockets are utilized for drivingly connecting pairs of condenser screens and associated draw rolls in the breaker sections and wherein in the finisher's section an endless chain additionally drivingly connects a set of calender rolls with the associated pair of condenser screens and draw rolls to in all instances obtain smooth and closely coordinated rotational movement of the drivingly connected components for facilitating the formation of a more uniform continuous sheet of fibers.

3,401,429
APPARATUS FOR CONTROLLING SLIVER BETWEEN DRAFTING ROLLS AND A COILER HEAD

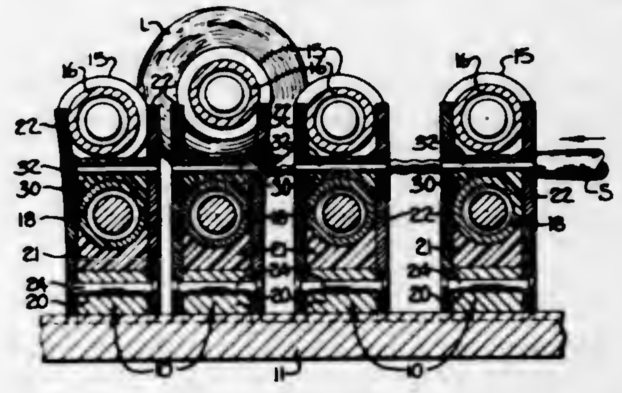
Joe R. Whitehurst, Bessemer City, N.C., assignor to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina
Filed May 9, 1966, Ser. No. 548,691
4 Claims. (Cl. 19—288)

Apparatus for controlling textile material during its travel from the delivery rolls of a drafting unit to a coiler to reduce the amount of nonuniformity heretofore occurring therein by guidingly confining the textile material in its path of travel in a guide tube of predetermined internal dimensions so as to maintain substantial cohesion and integrity of the fibers relative to each other.



3,401,430
DRAFTING ROLL SUPPORT FOR TEXTILE MACHINE

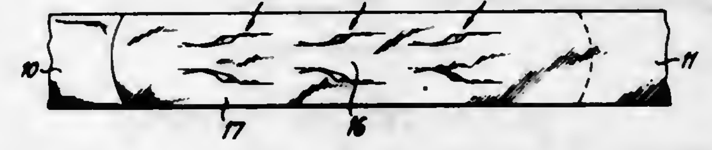
Joe R. Whitehurst, Bessemer City, N.C., assignor to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina
Filed Oct. 23, 1965, Ser. No. 503,737
6 Claims. (Cl. 19—294)



Slide block for supporting pairs of upper and lower drafting rolls wherein the legs of the slide blocks are formed of resilient material to permit outward deflection thereof during a malfunction such as a lap-up condition occurring on upper drafting rolls, and wherein the slide blocks containing vibration dampening material supporting the drafting rolls.

3,401,431
BALE TIES

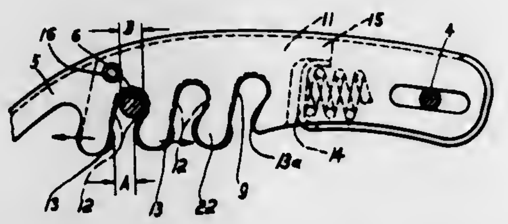
Heinz Heckmanns, Ennepetal-Milspe, Germany, assignor to Titan Eisenwarenfabrik G.m.b.H., Schwelm, Germany, a firm
Filed Mar. 27, 1967, Ser. No. 626,011
Claims priority, application Germany, Mar. 31, 1966, T 30,822
8 Claims. (Cl. 24—20)



Bale ties of the type having interengaging catches formed at opposite ends by bending out a web of material from between pairs of stepped incisions in each end of the tie in which the webs are so shaped so as to snap fit into the incisions in the other end of the tie.

3,401,432
FASTENING DEVICE FOR SHOES, PARTICULARLY FOR SKI AND MOUNTAINEERING SHOES

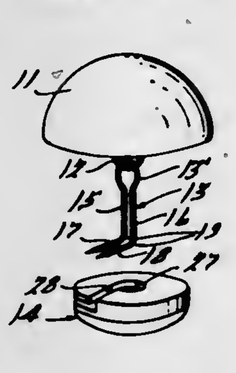
Manfred Tresenreiter, Augsburg, Germany, assignor to Loris Baso, Padova, Italy
Filed June 19, 1967, Ser. No. 647,073
Claims priority, application Germany, June 28, 1966,
T 31,466
9 Claims. (Cl. 24—70)



A fastening device for shoes, particularly ski and mountaineering shoes. The fastening device comprises a tensioning lever pivotally mounted to one instep portion of the shoe, the tensioning lever having several recesses in the sidewall thereof for receiving a clamping loop pivotally connected to the other instep portion. A safety mechanism is provided for preventing removal of the clamping loop from the recesses when the tensioning lever is open. The safety mechanism comprises a resilient insert having recesses therein, the insert being fixedly secured to the tensioning lever with the recesses in the tensioning lever and the insert being aligned with each other. The recesses in the insert are not as wide at the open end thereof as the cross section of the clamping loop whereby insertion of the loop into the recesses causes a resilient deformation of the insert. On the other hand, the closed end of the insert recesses are as wide as or wider than the closed end of the recesses in the tensioning lever.

3,401,433
REMOVABLE BUTTON FASTENING MEANS

Sue E. Marx, 19585 Roslyn, Detroit, Mich. 48221, and Mary M. Wartell, 28 Cambridge, Pleasant Ridge, Mich. 48069, and Montgomery Ferar, Huntington Woods, and Heinrich G. Langhjelm, Southfield, Mich.; said Ferar and said Langhjelm assignors to said Marx and said Wartell
Filed May 16, 1967, Ser. No. 638,793
5 Claims. (Cl. 24—104)

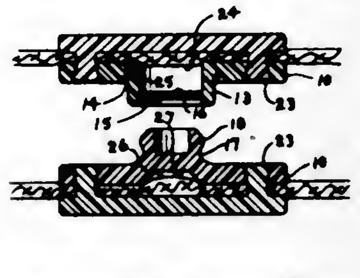


A retainer on the inside of a garment and a wire key holding a button outside the garment, passing through the garment and detachably held by the retainer.

3,401,434
SNAP FASTENER ASSEMBLY

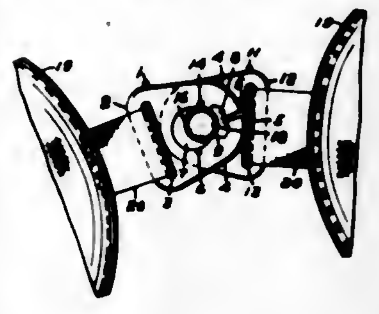
Domenic J. Daddona, Jr., Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed May 26, 1966, Ser. No. 553,181
2 Claims. (Cl. 24—208)

An improved snap fastener in which each fastener part consists of a single piece of molded plastic material, one piece having holes in the corners of a flat base, the other having pins projecting from its flat surface to fit into said holes, the pins being upset in assembly. The fastener is useful for knit fabrics because it grips the fabric between the flat surfaces of the parts at a plurality of areas spaced a substantial distance from the central snap fastener element.



3,401,435
PLACKET FASTENER

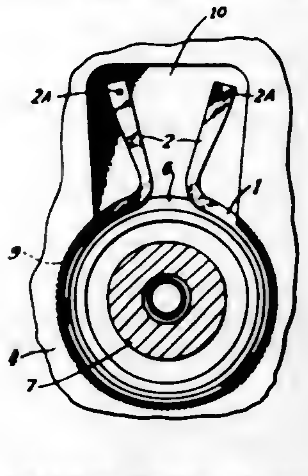
Stuart T. Shears, Belmont, Mass., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Apr. 26, 1966, Ser. No. 545,370
5 Claims. (Cl. 24—224)



In a snap fastener combination the male member has an upstanding, undercut stud having an axially extending notch formed in one face thereof and the female member includes a keeper portion having a pair of resilient arms which terminate in free opposed ends and are internally contoured to define an elongated stud receiving slot. A projection extending from the ends of the arms into the slot seats in the notch in the stud to inhibit accidental lateral separation of the arms when the stud is seated in the end of the slot adjacent the free ends of the arms.

3,401,436
INTERNAL SPRING RING CLIP

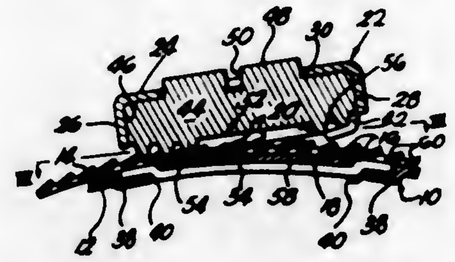
Norman F. Bradshaw, Rotherham, England, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed May 23, 1967, Ser. No. 640,681
Claims priority, application Great Britain, Aug. 23, 1966,
37,713/66
13 Claims. (Cl. 24—256)



A locating or holding device of circular or ring shape for use in an internal groove having relatively large external ears to facilitate placing and removing the device from the internal groove.

3,401,437
HOSE CLAMP

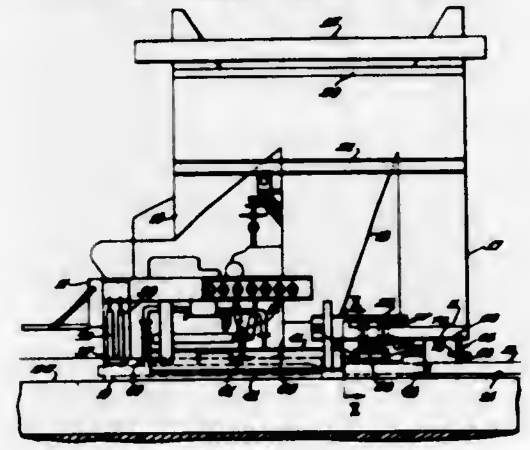
Clarence E. Christophersen, Los Angeles, Calif., assignor to Aeroquip Corporation, Jackson, Mich.
Filed May 10, 1967, Ser. No. 637,559
5 Claims. (Cl. 24—274)



A clamp of the circumferential type, such as commonly used with hose and flexible pipe, consisting of a flexible band having teeth formed therein, and scroll drive means mounted upon the band in engagement with the teeth to provide circumferential adjustment of the clamp.

3,401,438
APPARATUS FOR MANUFACTURING PRE-TENSIONED CONCRETE SLABS

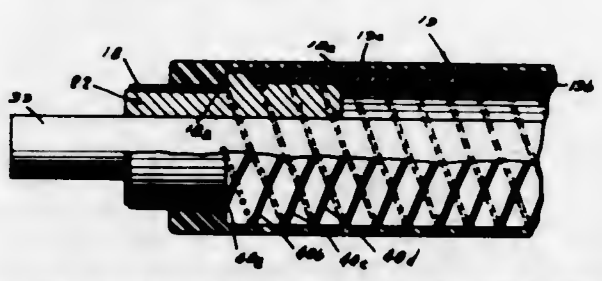
Howard L. Dennis, Fort Lauderdale, Fla., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of New York
Filed Sept. 30, 1963, Ser. No. 312,707
13 Claims. (Cl. 25—41)



3. An apparatus for manufacturing concrete slabs having spaced pre-tensioned reinforcing strands extending therealong, comprising a frame mounted for movement along the ground, a bin mounted on said frame for discharging a layer of concrete over previously pre-tensioned reinforcing strands, and a vibrator mounted on said frame in advance of said bin and having means associated therewith having vibratory engagement with the pre-tensioned strands.

3,401,439
LAMINATING APPARATUS

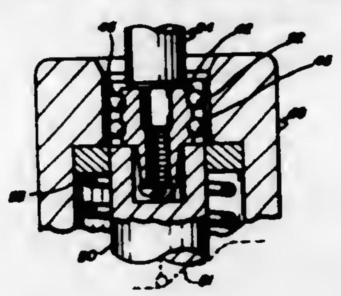
Henry N. Staats, Deerfield, Maurice D. Levitan, Wilmette, and Neal J. Morrissey, Chicago, Ill., assignors to General Binding Corporation, Northbrook, Ill., a corporation of Illinois
Filed May 19, 1965, Ser. No. 457,134
7 Claims. (Cl. 29—130)



A thin film laminating apparatus comprising a laminating roll having a resilient surface uniformly heated throughout by means of a helically-wound heating element therebeneath. The heating element is in close proximity to a highly heat conductive layer extending throughout the roll whereby the rapid dissipation of heat in a localized portion of the roll due to laminating procedures is substantially instantaneously accommodated and uniform heat is provided throughout the laminating surface at all times, and without hot spots.

3,401,440
APPARATUS FOR ASSEMBLING BALL BEARING DEVICES

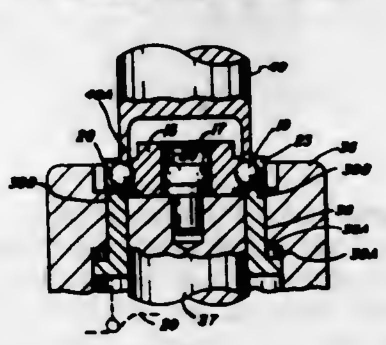
Walter S. Sutowski, 6976 Crestview Drive, Brecksville, Ohio 44141
Application Mar. 13, 1967, Ser. No. 622,720, now Patent No. 3,374,524, dated Mar. 26, 1968, which is a division of application Ser. No. 431,852, Feb. 11, 1965, now Patent No. 3,337,937, dated Aug. 29, 1967. Divided and this application Sept. 26, 1967, Ser. No. 670,698
5 Claims. (Cl. 29—201)



Apparatus for assembling a ball bearing device in which apparatus there are a nest structure having a central support for an inner race member, a shell concentrically mounted about the central support and having a funnel wall leading toward the central support for funneling the balls into a circle in the raceway of the inner race member on the central support, a collar concentrically mounted within the shell and about the central support, the collar being axially movable relative to the shell to be positionable about the balls in the raceway of the inner race member and to be withdrawn from about the balls, and a punch member for pressing the outer race member downwardly in axial alignment with the collar to replace the collar and to press the outer race member down and about the balls to expand the outer race member for clearing the balls until the raceway of the outer race member is opposite the raceway of the inner race member in which the balls are located and the outer race member contracts about the balls.

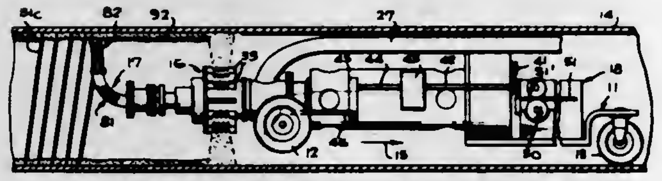
3,401,441
APPARATUS FOR ASSEMBLING BALL BEARING DEVICES

Walter S. Sutowski, 6976 Crestview Drive, Brecksville, Ohio 44141
Application Mar. 13, 1967, Ser. No. 622,720, now Patent No. 3,374,524, dated Mar. 26, 1968, which is a division of application Ser. No. 431,852, Feb. 11, 1965, now Patent No. 3,337,937, dated Aug. 29, 1967. Divided and this application Sept. 26, 1967, Ser. No. 670,697
5 Claims. (Cl. 29—201)



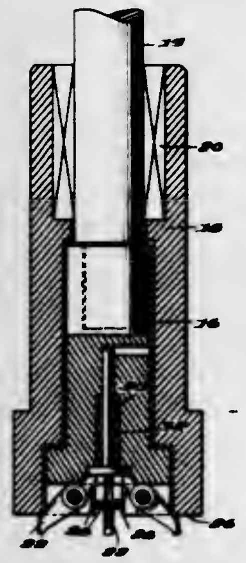
Apparatus for assembling a ball bearing device in which apparatus there is a support for supporting an inner race member and split outer race member concentrically in a horizontal plane, a collar carried on the support and movable axially thereof, the collar having a camming surface shaped to expand the outer race member upon insertion of the collar into the outer race member, the collar being movable axially to cause the collar to enter the outer race member, and a punch member having an annular flange dimensioned to engage balls arranged in a circle in a gap between concentric race members to press the balls in an axial direction into the opposed raceways of the concentric race members, the collar being movable to withdraw from the outer race member upon the balls being positioned in said opposed raceways and the outer race member contracting about the balls.

3,401,442
PIPELINE LINING AND REINFORCEMENT MACHINE
Francis M. Matheny, 5175 E. Elmwood Ave., Lynwood, Calif. 90262
Filed Oct. 21, 1965, Ser. No. 500,400
10 Claims. (Cl. 29—208)



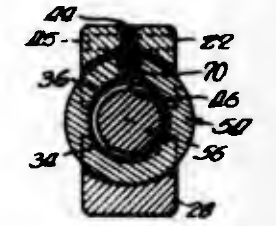
The application discloses a machine with a powered rotary head for dispensing mortar to line a pipeline and with powered means for feeding a wire reinforcement rod rearwardly through the machine to a dispensing head behind the mortar head which coils the wire rod inside the pipeline in the mortar coating.

3,401,443
CHUCK ASSEMBLY
Thomas Wayne March, Chattanooga, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 17, 1967, Ser. No. 631,450
2 Claims. (Cl. 29—234)



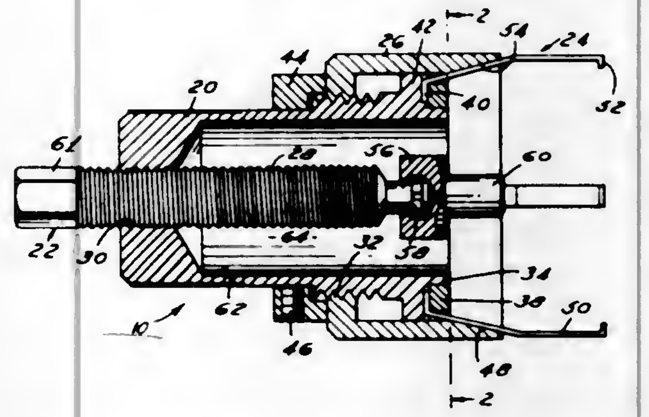
A chuck attached to the end of a press shaft is equipped with dogs which pivot outwardly into engagement with and force a metallic reinforcing core from within a bobbin tube, but not until the dogs have been freed by movement of a retaining sleeve after its engagement with an inturned edge or lip at one end of the bobbin tube.

3,401,444
TOOL FOR REMOVING DOWEL WASHERS FROM THE DOWEL
Karoly Kovacs, 3514 S. Laramie Ave., Cicero, Ill. 60650
Filed Oct. 31, 1966, Ser. No. 590,964
3 Claims. (Cl. 29—239)



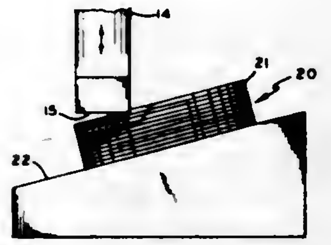
A tool for removing a split dowel washer from a dowel, which tool has a pair of members movable with respect to each other, with each member having a handle portion and a jaw member with the jaw shaped complementary to the dowel washer and with one of the jaw members having a rib to engage the split in the dowel washer to spread the washer for removal from the dowel.

3,401,445
GRAPPLING DEVICE
Junior L. Fritch, Edgerton, Ohio, assignor to Robinair Manufacturing Corporation, Montpelier, Ohio, a corporation of Ohio
Filed Apr. 10, 1967, Ser. No. 629,710
7 Claims. (Cl. 29—261)



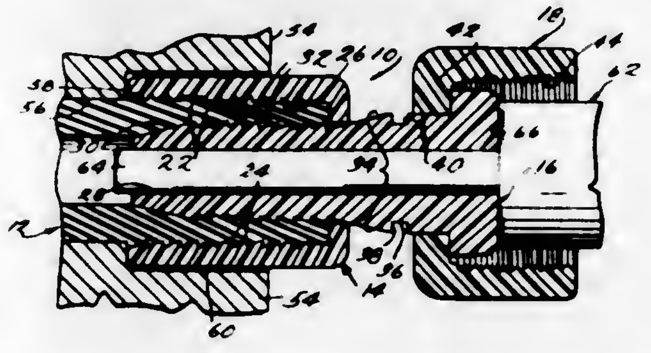
In general, the disclosure relates to a grappling device adapted to remove an annular seal from a shaft. The device has a body portion which threadably receives an axial stem, and a plurality of spring fingers which are retained to the body portion by a threaded nut. The hooked ends of the fingers are biased inwardly, behind the seal, by the nut, and the seal is removed from the shaft by threading the stem against the end of the shaft.

3,401,446
METHOD FOR DELAMINATING ARTICLES
Edward G. Obeda, Brookfield, and Robert L. Armstrong, New Milford, Conn., assignors to Branson Instruments, Inc., Stamford, Conn., a corporation of Delaware
Filed Apr. 7, 1966, Ser. No. 540,869
7 Claims. (Cl. 29—427)



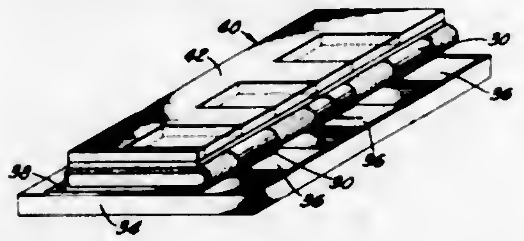
1. The method for delaminating elements which are bonded together along parallel sides in a stack comprising: contacting a selected element which is to be separated from the stack with an instrumentality vibrating at least at 1000 cycles per second, the peak acceleration of said vibrations applied to said selected element in a manner to develop a force having a shear component and being of sufficient magnitude to weaken and break the bond between said selected element and the other elements remaining in said stack.

3,401,447
SNAP ACTION METHOD OF SECURING A HOSE FITTING TO A HOSE END
James O. Knight, Peoria, Ill., assignor to L. R. Nelson Mfg. Co., Inc., Peoria, Ill., a corporation of Illinois
Original application May 1, 1964, Ser. No. 364,182, now Patent No. 3,262,721, dated July 26, 1966. Divided and this application May 20, 1966, Ser. No. 551,649
2 Claims. (Cl. 29—450)



1. A method of securing to the end of a hose a fitting of the type including an outer sleeve having an inwardly extending annular flange at one end and an inner tubular member having an exterior recess for receiving said flange which comprises the steps of engaging said sleeve over the hose end, effecting a relative rectilinear movement between the hose end with said sleeve engaged thereover and said member in a direction to engage said member within said hose end to expand the hose outwardly into pressure tight engagement with said sleeve until said flange is disposed in spaced relation to said recess, and then continuing said relative movement while progressively expanding said flange outwardly within the elastic limit thereof and then allowing said flange to contract into said recess.

3,401,448
PROCESS FOR MAKING PHOTOSENSITIVE SEMICONDUCTOR DEVICES
Peter Albert Iles, Arcadia, and Rafael Orlando Victoria, Los Angeles, Calif., assignors, by mesne assignments, to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware
Filed June 22, 1964, Ser. No. 377,013
5 Claims. (Cl. 29—572)



1. A process of forming an array of semiconductor devices, comprising:

forming a protective non-conducting coating on the surface of a wafer-like body of silicon of a first conductivity type;

masking the entire surface of said coated body except for a plurality of separated areas, each of said areas lying on the top of said body and extending down one edge thereof;

removing the coating from the unmasked areas to expose the silicon;

removing the mask;

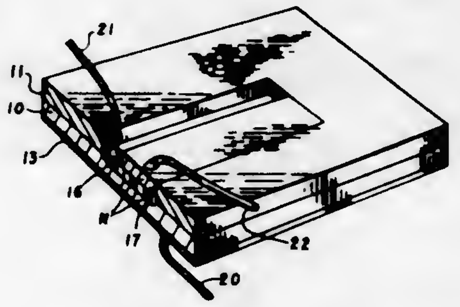
exposing said body to impurities of the opposite conductivity type whereby said impurities are diffused into said exposed areas of said body to form P-N junctions therein, and a layer of silicate glass is formed on said body;

masking substantially the entire top of the body;

removing the glass layer from the portions of said areas extending down the edge of said body to expose the diffused silicon thereunder; and

depositing a contact material on the areas of exposed silicon.

3,401,449
METHOD OF FABRICATING A METAL BASE TRANSISTOR
Don W. Shaw, Garland, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,448
4 Claims. (Cl. 29—577)



1. In a method of fabricating a semiconductor device the steps of:

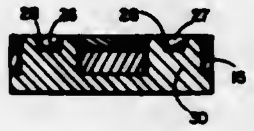
(a) forming a first layer of semiconductor material adjacent a second layer of semiconductor material, said first layer being of substantially higher electrical resistivity than said second layer,

(b) selectively removing a portion of said first layer to form a pocket and expose a surface of said second layer at the bottom of said pocket, the remaining portions of said pocket being of said higher electrical resistivity,

(c) electroplating a metal layer within said pocket upon the said exposed surface of said second layer, and

(d) epitaxially growing a third region of semiconductor material over said metal layer within said pocket, said epitaxial growth proceeding from the said remaining portions of said pocket and extending substantially laterally over said metal layer.

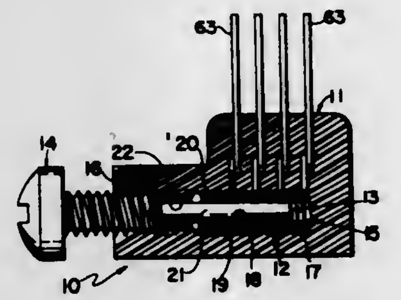
3,401,450
METHODS OF MAKING A SEMICONDUCTOR STRUCTURE INCLUDING OPPOSITE CONDUCTIVITY SEGMENTS
Gordon C. Godejahn, Jr., Santa Ana, Calif., assignor to North American Rockwell Corporation
Original application July 29, 1964, Ser. No. 385,890, now Patent No. 3,312,879, dated Apr. 4, 1967. Divided and this application July 21, 1966, Ser. No. 578,901
6 Claims. (Cl. 29—580)



1. A process for joining single-crystal semiconductor segments of opposite conductivity in a monolithic-like

crystalline structure comprising the steps of selecting two single-crystal semiconductor wafers of opposite conductivity types, producing an arbitrarily selected pattern of holes in the semiconductor wafer of one conductivity type and a corresponding array of mesas in the semiconductor wafer of the other conductivity type, placing said mesas in said holes, joining the opposite conductivity type semiconductor wafers by deposited isolating crystalline material around said mesas in said holes; removing a portion of semiconductor of the other conductivity type until the isolating material between the two types of semiconductors is exposed, whereby the mesas become isolated segments of the other conductivity type semiconductor, and, as a separate operation, isolating segments of the one conductivity type semiconductor in an arbitrarily selected pattern by producing isolating channels in said one conductivity type semiconductor in said desired pattern, depositing isolating material in said channels and removing a portion of the resulting structure on the opposite side of said channels until the isolating material in said channels is exposed on that side of the resulting structure.

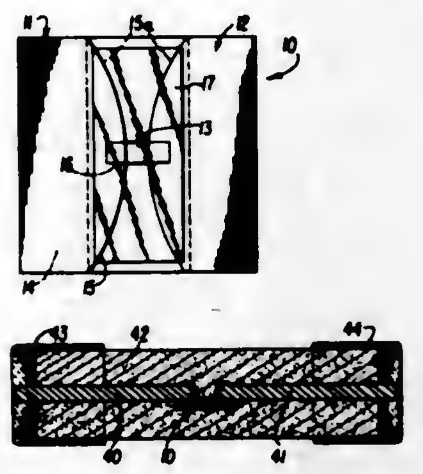
3,401,451
METHOD OF FABRICATING TUNABLE INDUCTORS
Stephen A. Slenker, Billerica, Mass., assignor to Piconics Incorporated, North Billerica, Mass., a corporation of Massachusetts
Filed Nov. 17, 1964, Ser. No. 411,917
6 Claims. (Cl. 29—605)



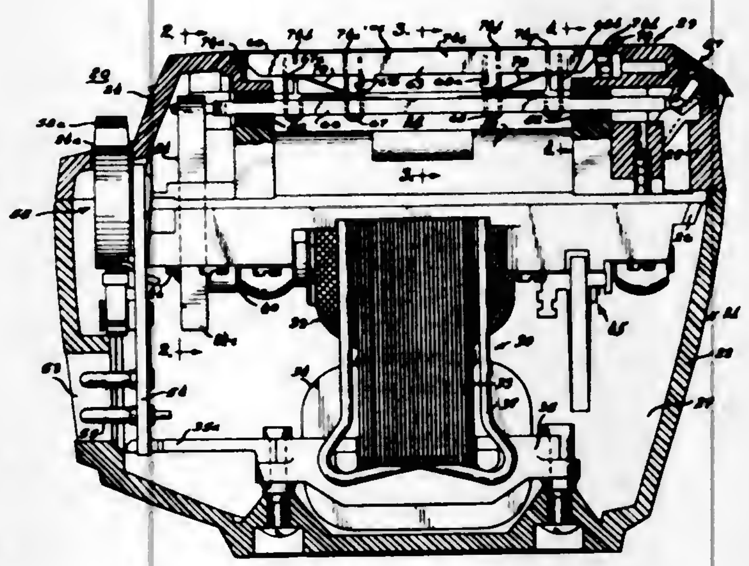
This invention relates to a method for encapsulating a coil in a matrix material using a threaded mandrel which can be unscrewed from the matrix material subsequent to encapsulation of the coil for the purpose of removing the mandrel from the encapsulated coil.

3,401,452
METHOD OF MAKING A PRECISION ELECTRIC FUSE
Randall C. Ragan, Tarzana, Calif., assignor to Electra Midland Corporation, Kansas City, Kans., a corporation of Missouri
Application Apr. 14, 1964, Ser. No. 359,569, now Patent No. 3,271,544, dated Sept. 6, 1966, which is a continuation-in-part of application Ser. No. 618,728, Oct. 29, 1956. Divided and this application Apr. 28, 1966, Ser. No. 563,315
5 Claims. (Cl. 29—623)

2. A method of producing a precision electrical fuse for protecting an electric circuit, said method comprising the steps of providing a glass substrate having low thermal conductivity and high surface and volume electrical resistivity, depositing a pair of spaced apart silver electrode films on the surface of said substrate in intimate contact therewith, depositing a pair of spaced apart gold terminal films on the opposed ends of said silver films, depositing a thin film of electrically conductive fuse metal selected from the group consisting of gold and platinum extending between and electrically connecting said gold terminal films on the surface of said substrate, said fuse metal being adapted to blow when the electrical current therethrough exceeds a predetermined level, covering said fuse metal with a coating of lead-boro-silicate glass for quenching and absorbing the fuse metal as it is blown whereby any arcs which tend to develop across the blown fuse metal are effectively suppressed, said lead-boro-silicate glass coating having a coefficient of thermal expansion corresponding with the coefficient of thermal expansion of said glass substrate, and providing a pair of electrical leads connected to said silver films for connecting the fuse into the electric circuit to be protected.

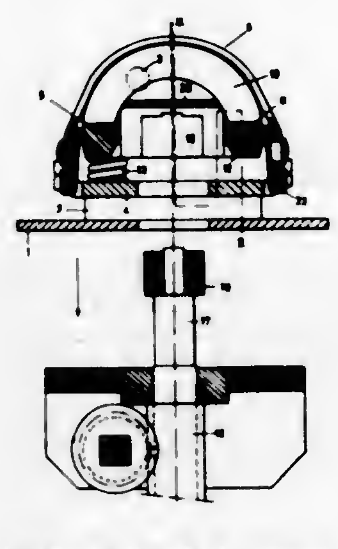


3,401,453
ELECTRIC DRY SHAVER
Charles L. Bauer, Carol Stream, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed May 27, 1966, Ser. No. 553,393
11 Claims. (Cl. 30—43.9)



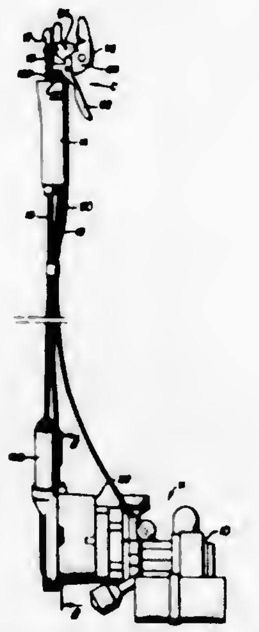
Electric shaver or other appliance having a pair of parallel oscillating shafts of rectangular cross section. Each of these shafts drives a separate cutter or other driven member. A power unit is provided having motor means with a drive projection movable toward and away from the parallel shafts. A unitary bifurcated connecting rod interconnects the projection and the two parallel shafts. This connecting rod is sufficiently resilient to permit flexing so that no binding occurs. Spring means in the shape of a short handled multi-tined fork having the handle portion secured to the rectangular shafts bias the cutters into shearing engagement with the perforated comb. The comb is defined by two joined arcuate perforated sections.

3,401,454
SHAVING HEAD FOR AN ELECTRIC SHAVER
Johan Godefroy, Overveen, Bloemendaal, Netherlands, assignor to Inventa Trust reg., Vaduz, Liechtenstein
Filed May 5, 1967, Ser. No. 636,383
Claims priority, application Netherlands, Oct. 27, 1966, 6615193
2 Claims. (Cl. 30—43.91)



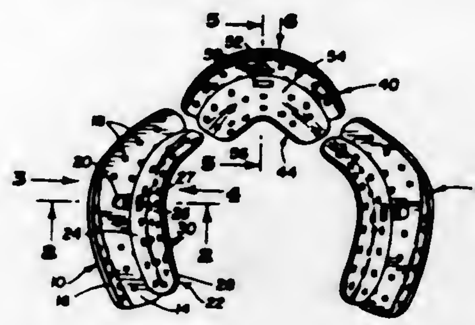
An electric shaver having a cutter head vibrational in its longitudinal direction and urged by springs against a shaving plate clamped on a frame which may perform a rocking movement about an axis extending parallel to the longitudinal axis of the cutter head, the frequency of the longitudinal movement of the cutter head being a multiple of the frequency of the rocking movement of the shaving plate, the cutter head participating in the rocking movement of the shaving plate; the coupling between the cutter head and the driving part coupled with the motor allowing a mutual movement of said parts transversely to the direction of the cutter head.

3,401,455
PORTABLE PRUNING EQUIPMENT
Albert W. Gebauer, Denver, Colo., assignor to Scientific Separators, Inc., Denver, Colo., a corporation of Colorado
Filed June 15, 1966, Ser. No. 557,722
15 Claims. (Cl. 30—228)



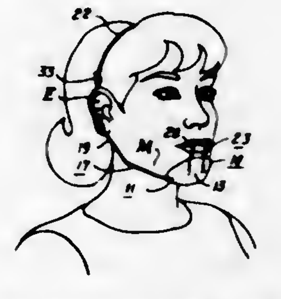
The disclosure concerns a pruning tool having a power source, a remote pruning head, and means including a trigger responsive to presentation of the head to a prunable stalk and to operation of a manual control to effect powered severing of the stalk.

3,401,456
DENTAL IMPRESSION TRAY ASSEMBLY
Marvin H. Goldfogel, 310 Leyden St. 80220, and Louis A. Labe, 3076 Magnolia St. 80207, both of Denver, Colo.
Filed Jan. 17, 1966, Ser. No. 521,011
5 Claims. (Cl. 32—17)



A dental impression tray assembly includes three units, each covering a sector or quadrant of a patient's mouth, and each including a base member with a planar portion in an arcuate upstanding wall. A movable member, having an arcuate upstanding wall, forms an opposed wall, of each unit, is connected to the adjacent base member by a single screw and nut assembly to permit a width adjustment between the upstanding walls and a pivotal adjustment of said movable member on said base member.

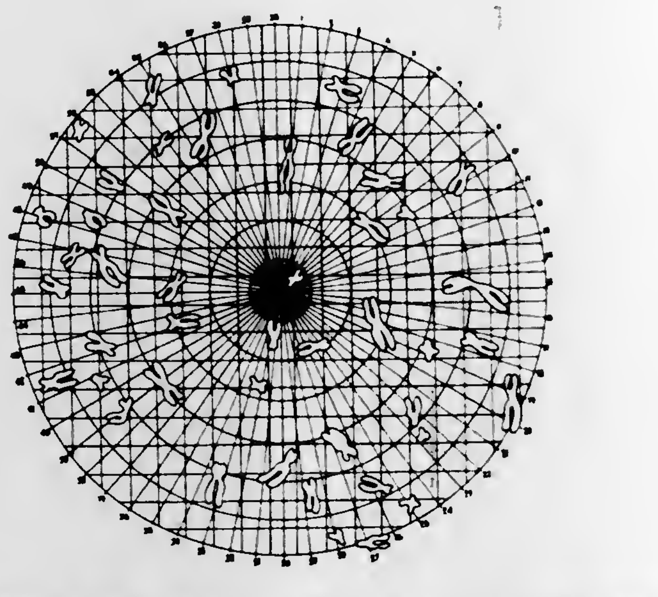
3,401,457
ORTHODONTIC ANTERIOR TRACTION APPLIANCE
John H. Hickham, 5933 Prospect, Dallas, Tex. 75206
Filed Mar. 14, 1966, Ser. No. 534,036
4 Claims. (Cl. 32—14)



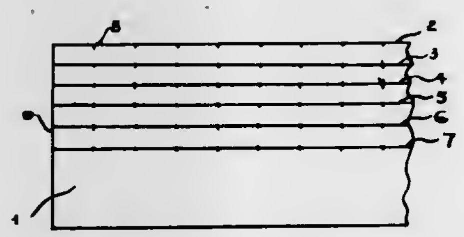
1. An orthodontic anterior traction appliance including a cup for engaging the chin of a patient, a pair of upright rigid arms upstanding from the chin cup and of a length sufficient to coincide substantially with the elevation of the lower lip of the patient, elastic means extending between and having connection with the upright arms and braces on the teeth of the patient for urging the teeth forwardly of the mouth of the patient, a pair of substantially horizontally rigid arms extending rearwardly of said chin cup and having rigid operative connection therewith, and means connected to the rear portions of the substantially horizontal arms for preventing downward movement of said rear portions whereby said substantially horizontal arms coact with said upright arms to provide a resultant vector of force for holding said cup against displacement, said rear portions of the substantially horizontal arms extend upwardly behind the mandible to the ears of the patient.

3,401,458
CHROMOSOME ANALYZER AND METHOD
Zoltan Paul Mora, 1917 G St. NW., Washington, D.C. 20006
Filed May 28, 1965, Ser. No. 459,693
9 Claims. (Cl. 33—1)

Chromosome analysis device and method in which a transparent surface having positioning markings thereon is used to dispose a representation of an average set of chromosomes each in proper shape and relative size and position as they would appear in a standard enlarged photomicrograph of a standard set of chromosomes for purpose of quick comparison with a set of chromosomes to be analyzed. A set of such surfaces may be provided which differ by each including an average representation of a particular type of abnormal chromosome.



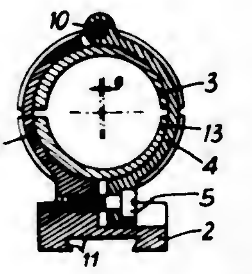
3,401,459
PATTERN LAY-OUT GUIDE OR INSTRUMENT
Margaret Burke Gomory, Bethesda, Md.
Filed July 27, 1965, Ser. No. 475,146
5 Claims. (Cl. 33—2)



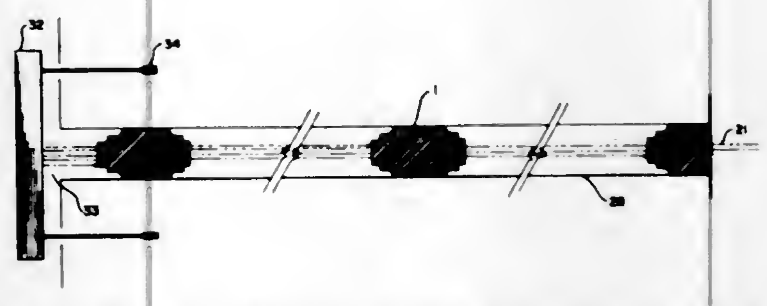
A guide having longitudinal markings corresponding to available or standard widths of material is provided. The method for using same to lay thereon a pattern and then measuring the length of the guide covered thereby. In one form the guide is provided with lateral markings in predetermined units of measurement from a fixed point at one end of the guide. In another form the guide can be of a flexible fabric or material marked so that the guide can be folded to provide a width corresponding to the width of an available or standard material. In a further form the guide can be composed of two sheets which slide over one another to give a desired width and the pattern pieces arranged thereon after it has been adjusted to a desired width.

3,401,460
ARRANGEMENT FOR ADJUSTING THE LINE OF SIGHT OF A SIGHTING TELESCOPE
Paul Tellié, Saint-Etienne, France, assignor to Etat Francais représenté par le Ministre des Armées (Délégation Ministérielle pour l'Armement, Direction Technique des Armements Terrestres, Manufacture Nationale d'Armes de Saint-Etienne)
Filed July 12, 1966, Ser. No. 564,671
Claims priority, application France, Sept. 21, 1965, 32,030
2 Claims. (Cl. 33—50)

A telescopic sight for firearms is adjustably mounted at each of two longitudinally-spaced points by means of a pair of eccentric half rings that are held together by a cylindrical spring split ring, this assembly being held in place on the firearm by means of a hinged annular collar that is closed by a clamping screw.

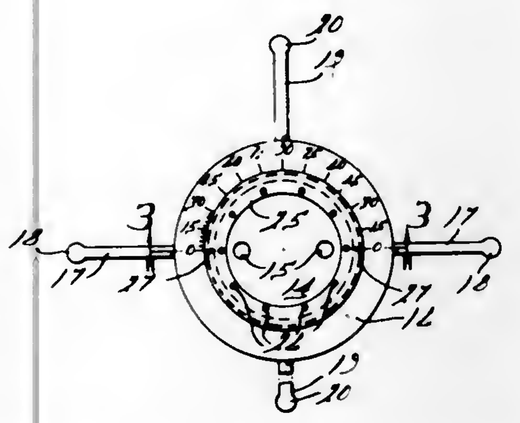


3,401,461
EXPLOSIVE CENTERHOLE ANCHOR
Edward W. Parsons and Lars Osen, Spokane, Wash., assignors to the United States of America as represented by the Secretary of the Interior
Filed May 2, 1966, Ser. No. 547,044
5 Claims. (Cl. 33—125)



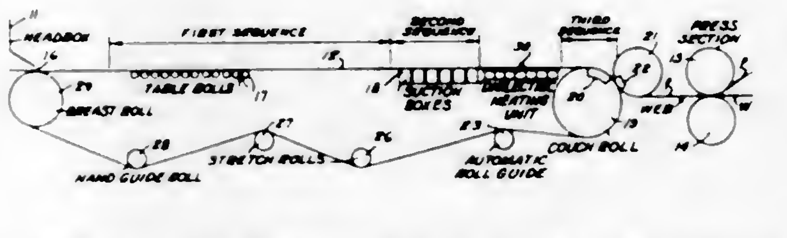
A system for measuring ground movements within a region surrounding a drillhole is disclosed. The system comprises one or more centerhole anchors which can be permanently set within the drillhole by remote detonation of an explosive charge. Each anchor has attached a tensioned wire which runs to a device adaptable to measure linear movement of the wire. The wires of deeper anchors pass unobstructed through the centerholes of shallower anchors.

3,401,462
ROTATABLE TOOL
George J. Korodan, St. Clair Shores, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Mar. 14, 1966, Ser. No. 534,060
9 Claims. (Cl. 33—180)



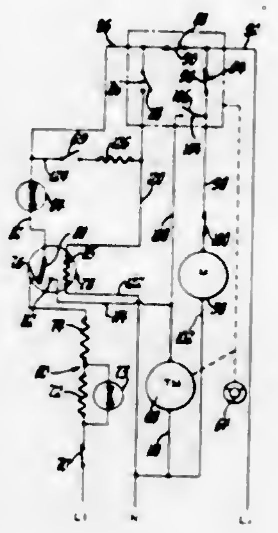
A compound sine bar for measuring angular relationships of a specific axis of an object comprises at least three gauge spheres fixed with respect to a rotatable element. Two of the gauge spheres are located on a first diameter through the axis of rotation of the element. The third gauge sphere is located on a second diameter crossing the first at the axis of rotation. The rotatable element is rotatably mounted on a body having means for attachment to the object with said axes in coaxial alignment.

3,401,463
HIGH-SPEED PAPER MAKING SYSTEM AND METHOD
Foster P. Doane, Jr., 501 E. Wisconsin Ave., Neenah, Wis. 54956
Filed Sept. 6, 1966, Ser. No. 577,348
6 Claims. (Cl. 34—1)



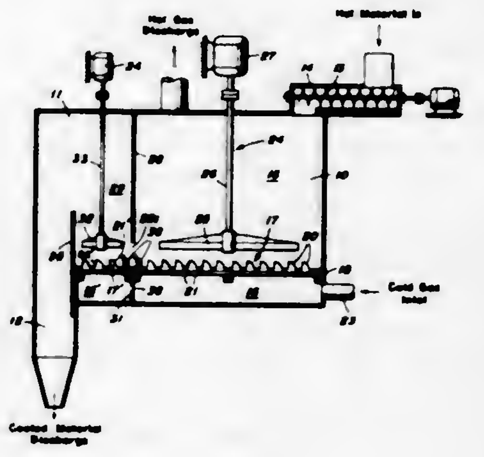
This invention is directed to a method of heating a paper stock or slurry formed by a paper making machine while the slurry is on a forming surface. The forming surface is constructed of dielectrically transparent material so as to be not effected by dielectric heating means. Dielectric heating means are positioned adjacent the paper web formed by the slurry to raise the temperature of the web before the web leaves the forming surface.

3,401,464
CLOTHES DRYER WITH SINGLE DIAL CONTROLLER
Thomas H. Fogt, West Carrollton, and Charles C. Whistler, Jr., Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 23, 1966, Ser. No. 581,481
10 Claims. (Cl. 34—45)



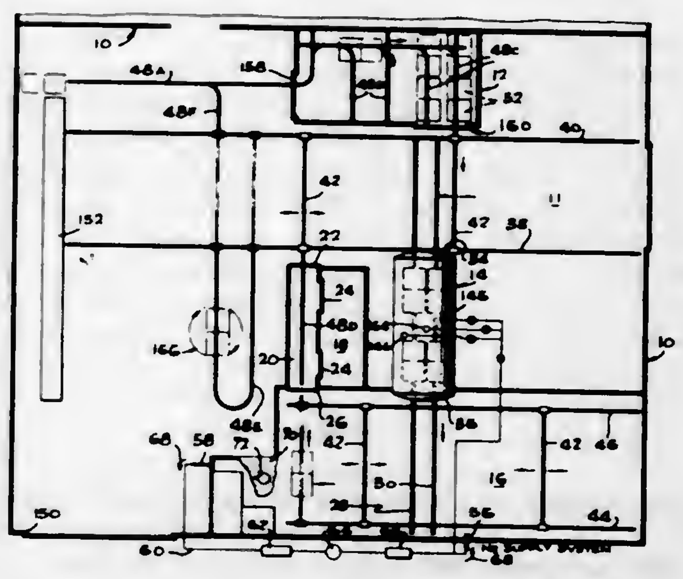
In preferred form a clothes dryer control system including a presettable knob positioning timer controlled switches to no heat, auto dry, or damp dry cycles. A pair of thermostats in the exhaust duct control heat input and timer advance. A bias heater on one of the thermostats is energized by the timer switches during damp dry to reduce heat input to the dryer. A more or less dryness switch connects a resistor in series with the bias heater during auto dry to reduce heat input and increase the moisture content of articles being dried at the end of the auto dry cycle.

3,401,465
MEANS FOR COOLING SOLID PARTICULATE MATERIALS WITH FLUIDS
Johart Larwill, Affton, Mo., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 23, 1966, Ser. No. 604,390
8 Claims. (Cl. 34—57)



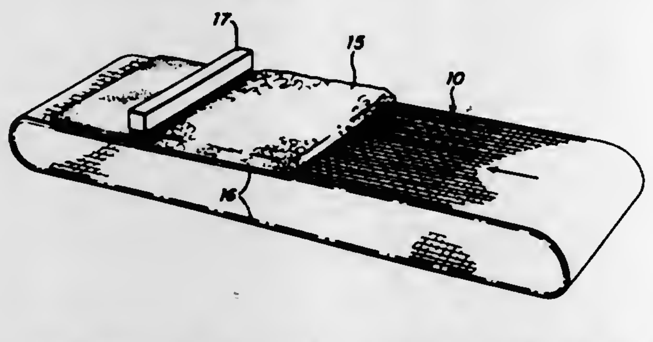
The present invention relates in general to heat exchangers and more especially to a means for cooling a hot, finely divided particulate material, by fluidizing the same with a relatively cold gas.

3,401,466
FREEZE DRYING SYSTEM AND APPARATUS THEREFOR
Marshall L. Brewster, Los Angeles, Calif. (7121 Canby Ave., Reseda, Calif. 91335)
Filed Mar. 9, 1967, Ser. No. 621,806
10 Claims. (Cl. 34—92)



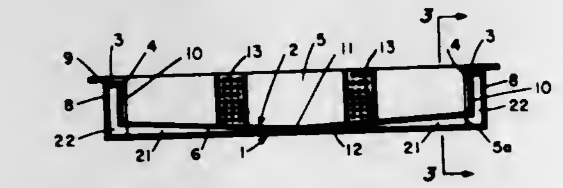
A freeze drying system employing an inert atmosphere dry room in direct receiving communication with a double-doored vacuum drying chamber whereby the dried product passes directly from the chamber into the dry room. The inert atmosphere supply system is also coupled to the vacuum drying chamber for breaking the vacuum and saturating the dried product with inert gas. A novel vacuum drying chamber apparatus with separately or jointly operable freeze-out condenser sections within the same structure but shielded against radiant heat transmission and provided with separately or jointly operable vacuum lines.

3,401,467
PAPER MAKERS' FELT
John P. Koester, Piqua, Ohio, assignor to The Orr Felt & Blanket Company, Piqua, Ohio, a corporation of Ohio
Continuation of application Ser. No. 416,273, Dec. 7, 1964. This application June 5, 1967, Ser. No. 643,527
4 Claims. (Cl. 34—95)



A papermakers' felt and method of making the same is disclosed in which a woven base material is woven with soluble filler yarns formed of calcium alginate and which are removed after battings have been needled into the base material to form a finished felt substantially free of crosswise structure.

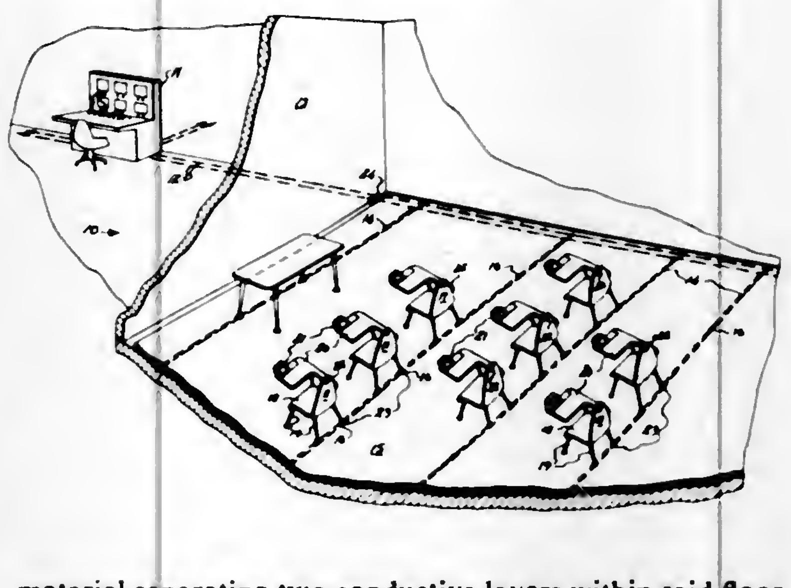
3,401,468
PRODUCT CONTAINER FOR FREEZE DRYING
Hans Eilenberg, Rosrath, and Franz-Josef Schmitz, Weiden, Germany, assignors to Leybold-Anlagen Holding A.G., Zug, Switzerland, a corporation of Switzerland
Filed Mar. 1, 1967, Ser. No. 619,689
Claims priority, application Germany, Mar. 8, 1966, L 53,037
10 Claims. (Cl. 34—237)



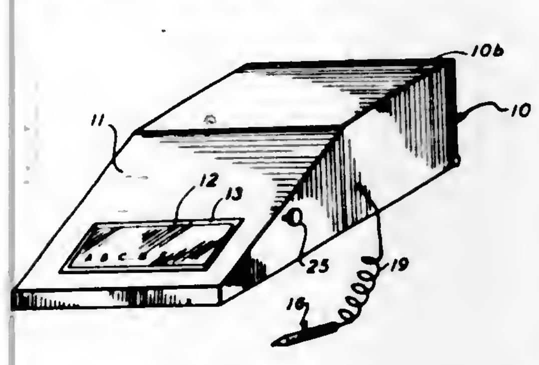
An open-topped tray-like container for a granulated product, including a tray member which is fabricated from a metal for the purpose of conducting heat to the product, and which may have partitions to form compartments. Vapor permeable metallic liners are provided adjacent to certain of the container walls, permitting the passage of vapor from the product, and are supported in spaced relation to the walls surfaces to define vent passages for passing the vapor from the container. The liners have sufficient intimate contact with the walls of the tray member so that heat may be conducted through the liners to the product.

3,401,469
EDUCATIONAL SYSTEM WITH MOBILE STUDENT LEARNING STATIONS
John A. Shaver, 405 E. Park Lane, Salina, Kans. 67401; Edwin K. Dole, 3505 Kersey Lane, Sacramento, Calif. 95825; Robert S. Osmond, 909 E. Minneapolis St., Salina, Kans. 67401; and Thomas G. Morrissey, 5700 W. 28th Ave., Denver, Colo. 80214
Continuation-in-part of application Ser. No. 493,345, Oct. 6, 1965. This application Apr. 21, 1966, Ser. No. 549,758
16 Claims. (Cl. 35—8)

A system for disseminating information, as in a school, from a central source to a plurality of receiving or learning stations. A central control station transmits one or more channels of audio and visual information signals to a room located remotely from the control station, a transmission means interconnecting the central control station and the remote room. In the room is a laminated floor covering having signal distribution means within the floor covering for carrying the information signals and also power and having input coupling means for conveying the information signals and power to the signal distribution means. A plurality of receiving stations are supported by and freely movable on the floor covering of the room, each receiving station having means for random coupling with the distribution means within the floor covering to receive information signals and power therefrom. On each receiving station is means for amplifying the information signals and for providing either audio or video reproduction thereof and also means of sending return signals back to the central office station, as, for example, to select the information signals desired to be received by the learning station. The signal distribution means may comprise a wave signal propagating layer of dielectric material separating two conductive layers within said floor covering; each receiving station then having a coupler probe for penetrating the floor covering and receiving signal energy within the dielectric layer. The transmission means may be a bundle of glasslike fibers; the floor covering then having a plurality of bundles of glasslike fibers and the learning stations each having an optical transformer-coupler for extracting and reproducing the audio and visual information from the distribution network and for transmitting selector signals back to the central control station. In such a system, the central control station may include means for generating a beam of high frequency coherent light waves and have a modulator for imposing both audio and visual signals on the beam being transmitted; each learning station having means for demodulating the signals on a received beam.

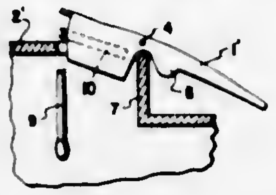


3,401,470
EDUCATIONAL APPARATUS
Thomas J. Gaven, Livingston, N.J., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed May 4, 1966, Ser. No. 547,489
15 Claims. (Cl. 35—9)



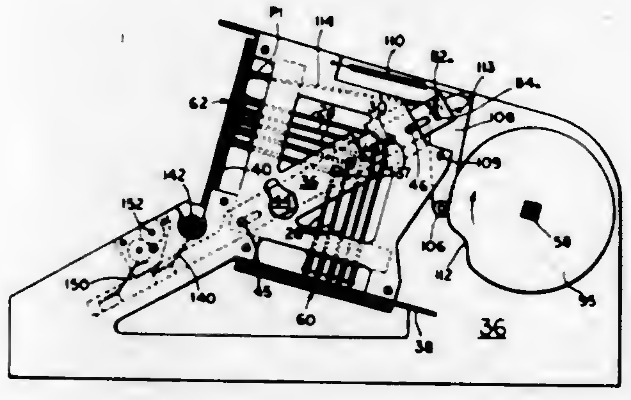
1. In a teaching machine: the combination of a window having a cover glass, means for exhibiting items of information through said window, transparent conductive surface areas on said cover glass predeterminately located relative to the items to be exhibited, a manual selector device of a pencil-like form having a conductive tip and adapted to be held in the hand by the pupil and to be pointed to said respective items in touching contact with said respective conductive areas to select the respective items of information, means in said machine for responding to selection of said successive items, and circuit means including said manual selector device and respective conductive surface areas for causing said responding means to be successively operated as said items are successively selected.

3,401,471
DEVICE FOR TRAINING CLOSED CHEST HEART MASSAGE
Holger Hesse, Skovtoftebakken 19, Copenhagen-Virum, Denmark
Filed July 8, 1965, Ser. No. 470,458
Claims priority, application Great Britain, July 10, 1964, 28,631/64
2 Claims. (Cl. 35—17)



A device for teaching persons how properly to perform closed heart massages. An element simulating the body of the human sternum has movably connected to it another element which simulates the xiphoid process of the sternum, and means are provided for indicating when a predetermined excess pressure has been applied to the element simulating the xiphoid process. The indicating means include an elongated frangible member which is capable of breaking with an abrupt snap so that when excess pressure is applied on the xiphoid process, this member will snap and thus give the trainee a naturalistic demonstration of the effect of applying excessive pressure on the wrong place.

3,401,472
INFORMATION COMPARING AND SUMMARIZING MACHINE
John G. Lord, Swarthmore, Pa.
(14 W. Winona Ave., Norwood, Pa. 19074)
Filed July 21, 1966, Ser. No. 566,787
11 Claims. (Cl. 35—48)



1. A machine for comparing the presence, or absence, of a hole in a predetermined area in a Master card prepared by one person, with the presence, or absence, of a hole on a corresponding predetermined area in a Subject card prepared by another person, said machine including:

an elongated gate having a longitudinal opening and lateral openings on opposite sides of said longitudinal opening and communicating therewith intermediate the ends thereof,

means mounting said gate for longitudinal reciprocal movement,

a pair of probes,

means mounting said probes for movement in angularly related planes,

a pin connecting corresponding ends of said probes and selectively engageable with said longitudinal opening and with either of said lateral openings,

said longitudinal opening receiving said pin and permitting appreciable longitudinal movement of said gate relative to said pin,

said lateral openings receiving said pin to permit movement of said pin out of alignment with said longitudinal opening and preventing appreciable longitudinal movement of said gate when said pin is out of alignment with said longitudinal opening,

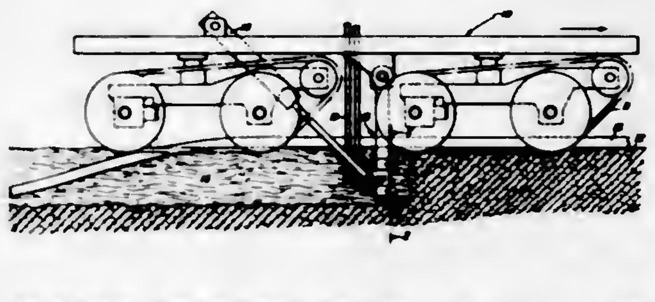
means for presenting said Master card to one of said probes, and

means for presenting said Subject card to the other of said probes,

whereby the identical presence, or absence, of a hole in both of said predetermined areas locates said pin in alignment with said longitudinal opening and permits longitudinal movement of said gate, and

whereby the presence of a hole in the predetermined area in only one of said cards moves said pin out of alignment with said longitudinal opening and into either of said lateral openings to prevent longitudinal movement of said gate.

3,401,473
APPARATUS FOR MARINE EXCAVATION
Edward C. Schrom, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 29, 1966, Ser. No. 546,431
1 Claim. (Cl. 37—54)



An apparatus is disclosed for burying pipe or cable in marine floors or ocean bottoms. The apparatus comprises a carrier structure which is movable along the surface of the marine floor and carries a plurality of electrohydraulic discharge heads each comprising a pair of electrodes defining discharge gaps positioned under the elongated body to be buried. Successive electrical discharges across the discharge gaps cause the marine floor under the elongated body to become fluidized to a point where it cannot support the elongated body which then sinks into the floor where it subsequently becomes buried therein.

3,401,474
EXCAVATING WHEEL ARRANGEMENT
Ladislav Sova, Unicov, Czechoslovakia, assignor to Uničovské strojírny, národní podnik, Unicov, Czechoslovakia
Filed Mar. 28, 1966, Ser. No. 537,754
Claims priority, application Czechoslovakia, June 16, 1965, 3,883/65
6 Claims. (Cl. 37—189)

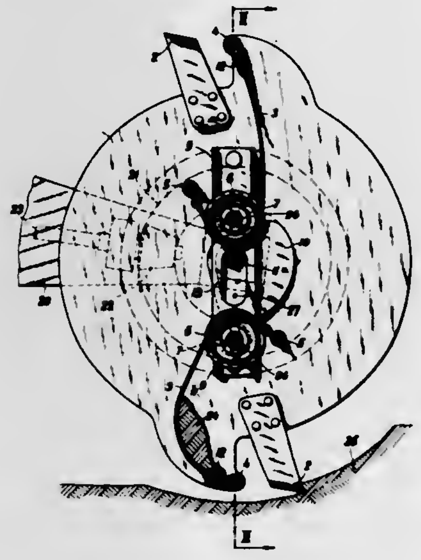
1. An excavating wheel arrangement comprising, in combination:

(a) a support;

(b) two wall members mounted on said support for rotation about a common axis, said members being axially spaced from each other, each wall member having a circumferential rim portion spaced from said axis;

(c) two circumferentially spaced pairs of spacer bars axially connecting said wall members, one spacer bar of each pair extending between the respective rim portions of said wall members, and the other member of the pair being spaced from said rim portions toward said axis;

(d) two bucket members at least partly consisting of pliable sheet material, each bucket member having two terminal portions respectively fastened to the two spacer bars of an associated pair, the length of the bucket member between said terminal portions thereof being substantially greater than the spacing of the associated spacer bars from each other, whereby said bucket member defines a bucket;



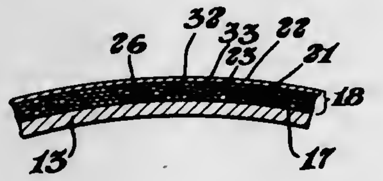
(e) drive means for rotating said wall members about said axis;

(f) tensioning means for cyclically tensioning and slackening each bucket member in response to rotation of said wall members, said tensioning means including
  (1) a tension roll received in each bucket,
  (2) guide means for guiding said roll in a radially extending path, and
  (3) actuating means for reciprocating said roll in said path in response to the rotation of said wall members in such a manner that the roll moves radially outward when the other roll moves radially inward; and

(g) an excavating tool on said rim portions associated with each bucket member.

3,401,475
LABEL AND LABELLED CONTAINER

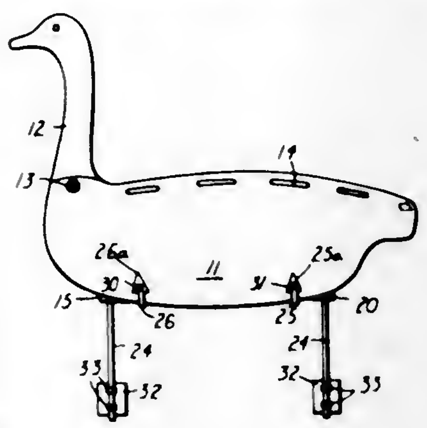
Donald S. Morehouse and James L. Kneese, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed July 18, 1966, Ser. No. 566,122
10 Claims. (Cl. 40—306)



Containers such as metal cans are labelled with a label consisting of an outer layer such as paper and a second layer adjacent the can wall of expandable hollow microspheres adhered to the label. The combination of the two layers provides insulation particularly suited for machine-dispensed containers.

3,401,476
DECOY CONSTRUCTION

George L. Trumbo, Box 2292,
Idaho Falls, Idaho 83401
Filed June 13, 1966, Ser. No. 557,031
8 Claims. (Cl. 43—3)



1. A decoy for birds comprising two stiff side sheets conforming generally to the body shape of the bird, said side sheets being pivotally secured together at the top thereof so their lower edges may swing toward and away from each other:

a head and neck member secured to said sheets to project above them;

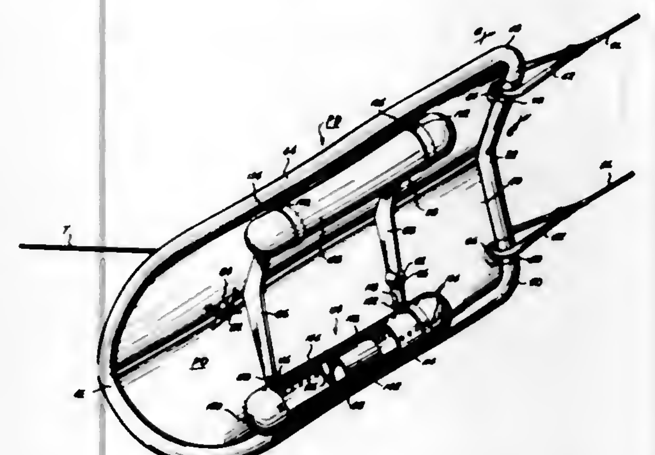
a base float member pivotally secured to one of said sheets adjacent the lower edge thereof and movable between a position substantially parallel to the sheet to which it is secured and a horizontal position transverse to that sheet;

means carried by said base float member engageable with the other side sheet operable to position the base float member in the said transverse position in engagement with both side sheets; and

releasable means to secure the base float member and said other sheet in said position.

3,401,477
ATTITUDE CONTROL OF TRAWL DOORS

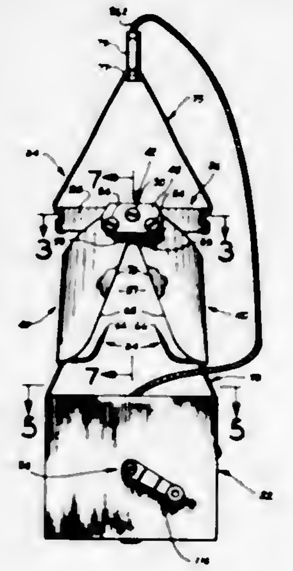
Frank J. Luketa, Seattle, Wash., assignor to Felix Robins & Robbins, Seattle, Wash.
Continuation of application Ser. No. 409,219, Nov. 5, 1964, which is a division of application Ser. No. 269,454, Apr. 1, 1963, now Patent No. 3,231,998, dated Feb. 1, 1966. This application Mar. 29, 1967, Ser. No. 641,403
24 Claims. (Cl. 43—4.5)



A trawl door comprising a thin metallic panel and a protective edging of an elastomeric or rubber-like material, and symmetrically constructed about a horizontal center line, rendering it invertible, and including a towing bridle having selectively usable towing wrap connections symmetrically located on opposite sides of its vertical center, and connections at or near its rear edge for sweep lines, and interchangeable buoyancy and ballast units, each selectively securable to the door immediately inwardly of the edging at both the upper and lower edges of the door; a buoyancy unit in the form of an elongated canister; a ballast unit comprising a canister of the same size and shape as the buoyancy canister, and including an interior weight that is longitudinally shiftable in position within such canister, and nut and bolt assemblies selectably insertable through selected diametrically opposed pairs of openings spaced longitudinally of the canister, for securing the weight in position.

3,401,478
FISH GAFFING, GRAPPLING, AND LANDING APPARATUS

Ulysses L. Lambert, 4258½ Normal Ave.,
Los Angeles, Calif. 90029
Continuation-in-part of application Ser. No. 494,664, Oct. 11, 1965. This application Dec. 29, 1966, Ser. No. 605,926
10 Claims. (Cl. 43—5)

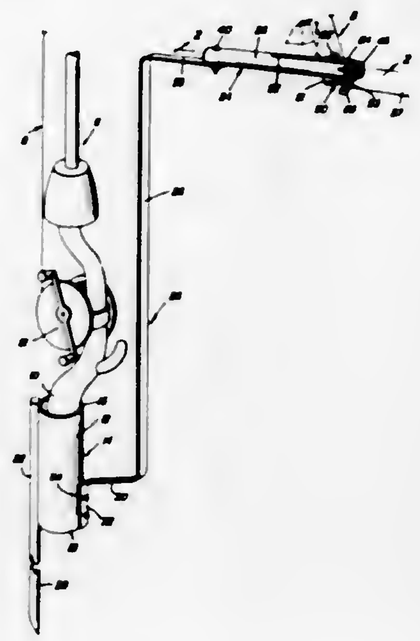


A fish gaffing, grappling, and landing apparatus comprising a base in the form of a centrally open ring member having a fishing line entry slot passing through a portion thereof and provided with a pair of opposed arcuate, inwardly concave, pivotally mounted jaw members depending therefrom and having inwardly and upwardly directed penetrating hooks for grappling, gaffing, and holding a head portion of a fish. The jaw members are normally, when not in use, removably carried and stored within a container which is provided with a rotatably mounted cord supply spool which carries a desired length of cord having an inner end fastened thereto and having an outer free end extendable therefrom and fastenable to the upper apex portion of an upstanding bail handle which is fastened to the base.

3,401,479
UNATTENDED SIGNAL-EQUIPPED FISHING DEVICE

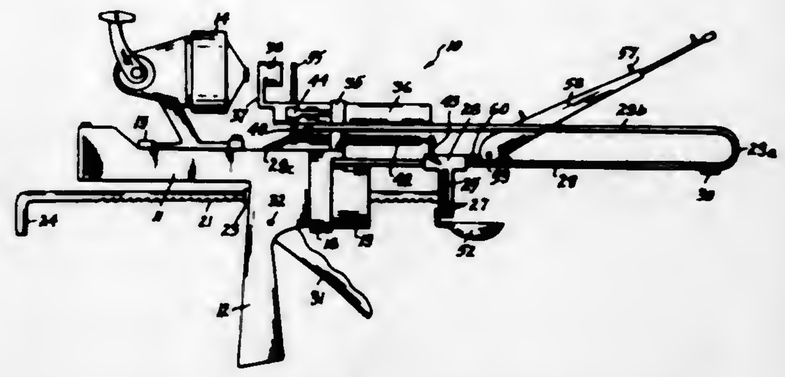
William J. Keyes, 3622 S. Lake Park Ave.,
Chicago, Ill. 60653
Filed Oct. 12, 1965, Ser. No. 495,243
3 Claims. (Cl. 43—16)

This unattended automatic hook-setting, fish-catching device is characterized by several component parts, namely a rod support embodying a socket for temporary retention of the insertable and removable handle of the fishing rod, one piece bracket means and a bite controlled automatic fish-catching device. The bracket means embodies an elongated strap member having a lower end affixed to one side of the socket. The upper end is bent laterally at an elevation well above the upper end of the socket. The automatic fish-catching device comprises a cylinder having one end bolted to the upper end of the bracket. The cylinder is provided with a spring-loaded, line-yanking hook to which a portion of the fishing line is connected. The hook embodies fishhook setting and releasing pin means which are slidably mounted in the cylinder. The pin setting and releasing means embodies a trigger latch pivotally mounted on the cylinder and provided with a catch which is releasably engageable with the pin. A bite actuated trip finger is actuated by a coacting portion of the fishing line which is trippably engaged therewith.



3,401,480
FISHING DEVICE

William M. Halstead, P.O. Box 195,
Linthicum Heights, Md. 21090
Filed June 29, 1966, Ser. No. 561,423
9 Claims. (Cl. 43—19)

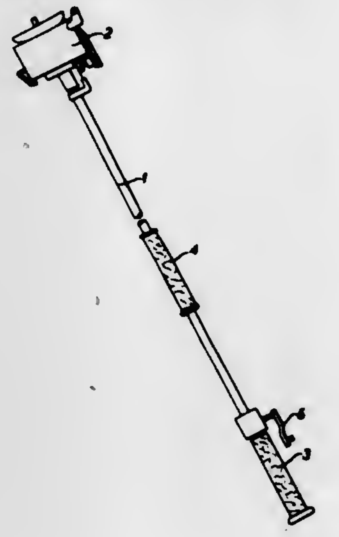


1. A fishing device of the character described, comprising in combination, a hand-held support having a seat thereon for a reel, and a mechanical line projecting mechanism provided on said support adjacent said reel seat, said mechanism including a barrel adapted to receive therein a line-attached sinker, a projector member slidable in said barrel from a set position to a sinker projecting position, trigger means releasably retaining said projector member in its set position, means for releasably securing a line-attached float on said support, means for projecting said line-attached float, and resilient means connected to said

projector member for sliding the same to the sinker projecting position when said trigger means is released.

3,401,481
FISHING RODS

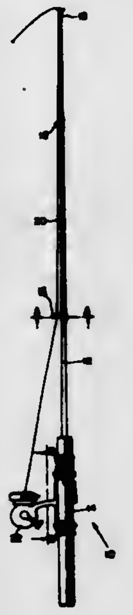
Benjamin Bocking, 109 Corton Road S., and Roy Gerald Catchpole, 13 Lorne Park Road, both of Lowestoft, England
Filed June 1, 1965, Ser. No. 460,427
Claims priority, application Great Britain, June 1, 1964, 22,550/64
6 Claims. (Cl. 43—20)



A line-throwing rod having a spool mounted at the free end thereof remote from the handle. The spool contains a bail arm for guiding the line thereon during rewinding. Coacting stop members automatically move the bail arm from a casting position into the rewinding position at the commencement of the rewinding operation.

3,401,482
FISHING ROD

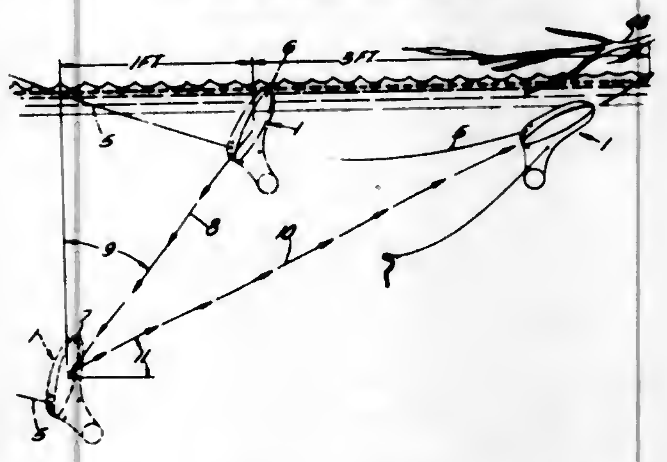
William E. Burns, 18641 Oak Drive, Monte Sereno, Calif. 95030
Filed Oct. 21, 1965, Ser. No. 499,965
4 Claims. (Cl. 43—22)



A fishing rod having different flexural characteristics and a plurality of axes of symmetry, and whose line guides are symmetrically shaped to provide inwardly curved sections between line guide portions, the guide portions being positioned symmetrically with the axes of symmetry of the fishing rod. In addition the reel seat is selectively rotatable circumferentially about the handle to allow adjustment of the reel to the desired symmetrical axis of the rod.

3,401,483
BUOYANT TRAVELING DEVICE

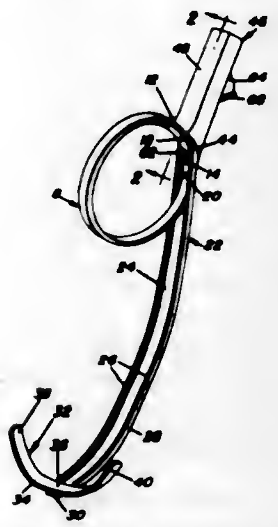
Lester R. Bellah, North Hollywood, and William H. Bellah, Los Angeles, Calif., assignors to Travelure, Inc., Los Angeles, Calif., a corporation of California
Filed Oct. 8, 1965, Ser. No. 494,076
7 Claims. (Cl. 43—42.39)



The invention relates to buoyant traveling devices useful as a bobber or as a lure, the device including a planing surface and a weight distribution directly beneath a line attachment means. In both forms, the device makes a steep dive in the water in a direction toward the fisherman when the fishing line is pulled or tugged, the device gliding upwardly and in the opposite direction away from the fisherman when the line is released, retreating to a greater distance beyond its initial position than the distance it was moved to cause it to dive.

3,401,484
HOOP AND SUPPORTING HANDLE AND RELEASABLE STARTER THEREFOR

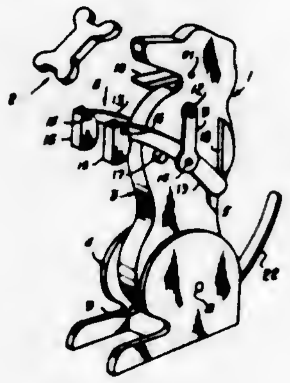
Joseph A. Anslover, 895 9th St. NE., Massillon, Ohio 44646
Filed Oct. 23, 1965, Ser. No. 502,869
8 Claims. (Cl. 46—220)



An innovation for use in launching a slotted hoop characterized by a handle channel-shaped in cross-section, provided at a rearward end with a handgrip and at its forward end with a crosshead to trundle and maneuver the hoop. The handgrip is hollow and provides a chamber which serves as a housing for releasably actuatable mechanism embodying a latch finger. The latch finger terminates in a detent. A trigger is pivotally mounted in the handgrip and a spring finger has one end operatively engageable with the trigger.

3,401,485
MAGNETICALLY ACTIVATED TOY DOG

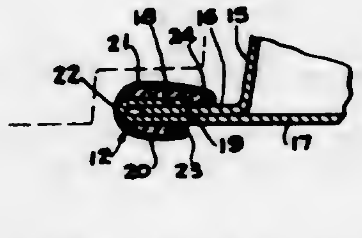
Leo Allen Goodrum, Jr., 4717 Birchman, Fort Worth, Tex. 76107
Filed June 20, 1966, Ser. No. 558,936
7 Claims. (Cl. 46—237)



1. A child's toy comprising, in combination, a simulated dog having an elongated, one-piece body portion and having a supporting base simulating the hind legs, the base consisting of a four sided shell loosely encircling the lower end of the body and having two opposite sides pivotally connected thereto, and the base having abutments forwardly and rearwardly thereof for selective engagement by the body to limit its pivotal movement in either direction about a horizontal axis corresponding to its pivotal connection with the base, the body having a magnet in its nose and having a pair of articulated fore legs pivotally connected to opposite sides thereof, and a separate piece simulating a bone having a magnet therein acting on said first mentioned magnet whereby the dog is caused to sit up and beg in response to the action of the bone, upon advancing and retracting the bone relative to the dog, as in teasing the dog by first offering the bone and then withdrawing it.

3,401,486
ORNAMENTAL AND PROTECTIVE MOLDING FOR MOTOR VEHICLE DOORS

Robert Adell, Birmingham, Mich., assignor to U.S. Products Development, Detroit, Mich., a Michigan partnership
Filed May 16, 1966, Ser. No. 550,469
7 Claims. (Cl. 49—462)

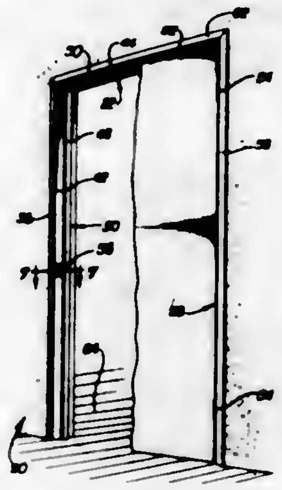


A U-shaped molding having a longitudinal form corresponding to that of the trailing door edge extends thereover to ornament the edge and protect the finish on the trailing edge from being damaged when the door edge strikes an object when the door is opened.

3,401,487
DOOR FRAME AND MOLDING CONSTRUCTION

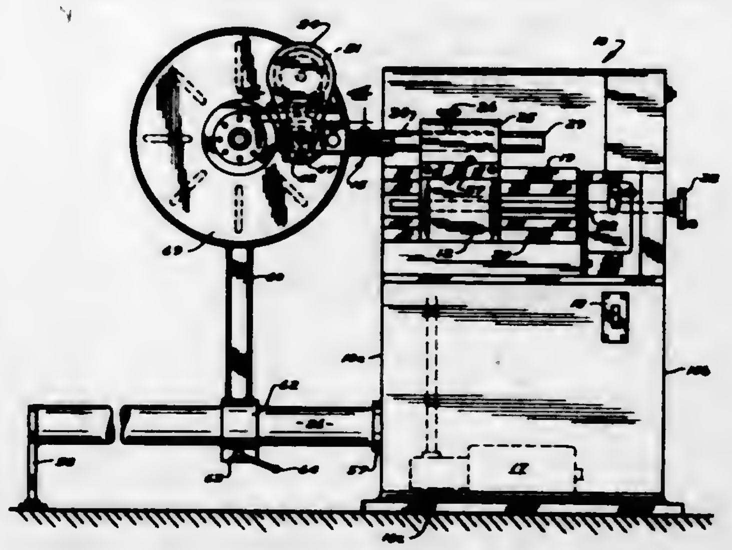
Frank H. Brandt, West Covina, David Aguirre, Azusa, and Kenneth K. Kellems, Costa Mesa, Calif., assignors to Acme Appliance Manufacturing Company, Monrovia, Calif., a corporation of California
Filed Nov. 28, 1966, Ser. No. 597,307
4 Claims. (Cl. 49—504)

A door frame comprising generally channel-shaped jambs respectively embracing the edges of and framing a door opening and each having opposed flanges respectively engaging opposite sides of the wall adjacent the corresponding edge of the opening. Each flange has parallel, continuous, opposed, inner and outer molding-retaining lips which extend the full lengths thereof. Flexible moldings respectively overlie the flanges and each has parallel, continuous, hook-like inner and outer retaining edges extending the full lengths thereof and respectively hooked behind the inner and outer molding-retaining lips of the corresponding flange.



3,401,488
REFACING APPARATUS

Frank J. Groschel and Harris Van Someren, Minneapolis, Minn., assignors to Star Machine & Tool Co., Minneapolis, Minn., a corporation of Minnesota
Filed June 28, 1965, Ser. No. 467,501
4 Claims. (Cl. 51—5)

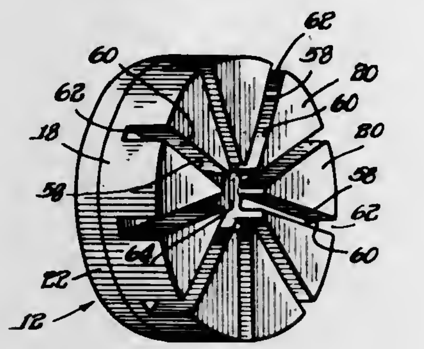


An apparatus for refacing fly wheels and the like adapted for mounting onto a conventional brake drum lathe consisting of a rail extending outwardly from one side of the housing of the brake drum lathe in a direction parallel to the direction of the movement of the carriage of said lathe, a pedestal swingably upstanding on said rail supporting a work holding member adapted to reorient work 90 degrees with respect to the work otherwise handled by said lathe and an attachment mounted on the carriage of said lathe carrying a bar disposed axially of said carriage and supporting a grinding wheel, and means for driving the same in a direction at right angles to itself whereby said grinding wheel is adapted to engage the face of a work piece held by said pedestal and said carriage moves said grinding wheel across the face of a work piece.

3,401,489

APPARATUS FOR AIRLESS BLAST FINISHING

Evert H. Wern, 20516 S. Kedzie,
Olympia Fields, Ill. 60461
Filed Feb. 28, 1966, Ser. No. 530,450
4 Claims. (Cl. 51—9)

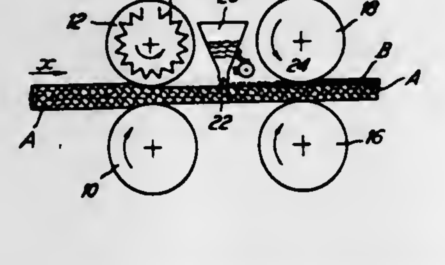


Blast finishing apparatus comprising a rotatable wheel of a one-piece, polymeric construction having a base portion and a plurality of wedge or sector shaped vanes extending from one surface of the base portion. The vanes are of a moderately flexible material and are angularly spaced about the wheel and have radially inwardly converging side walls to define therebetween substantially parallel walled abradant chutes. Abrasive material is provided at the center of the wheel by means of a rotating auger and, as the wheel is rotated, is delivered therefrom through the chutes and outwardly from the wheel.

3,401,490

PROCESS FOR MANUFACTURING RESILIENTLY YIELDING BASES PROVIDED WITH ABRASIVE SURFACES AND PRODUCT THUS OBTAINED

Alcide Mora, Via Genova 5,
Varedo, Milan, Italy
Filed Mar. 24, 1965, Ser. No. 442,445
5 Claims. (Cl. 51—295)



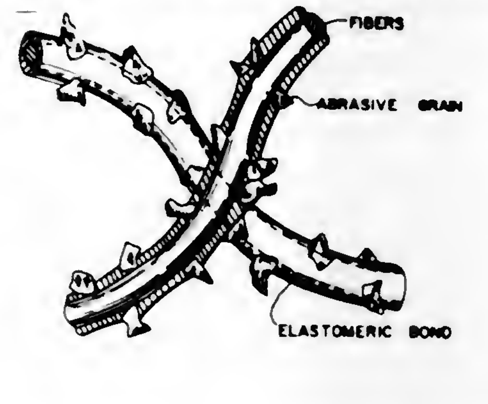
A method for forming an abrasive article wherein a resiliently yielding open cellular meltable base is passed under a heated roll to melt the surface of the base to a desired depth, and then abrasive particles are distributed over the melted surface and partially embedded therein, so that upon cooling the particles are held in said surface.

3,401,491

BINDER OF AN EPOXY RESIN, POLYAMIDE RESIN AND POLYESTER FOR FIBROUS ABRASIVE ARTICLES

Herbert W. Schnabel and Vernon C. Sickle, Alliance, Ohio, assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 25, 1965, Ser. No. 442,578
5 Claims. (Cl. 51—295)

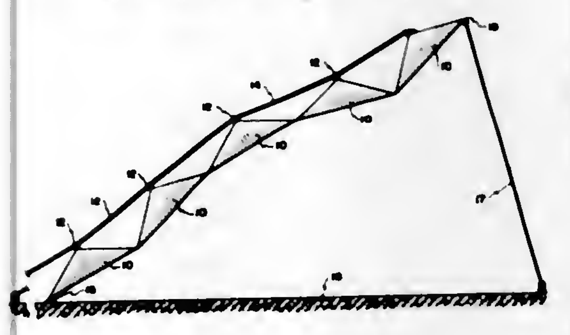
Fibrous abrasive articles formed of a mass of nonwoven fibers, preferably crimped or curled, the fibers being bonded at points where they cross and contact one another by means of a flexible binder which is a combination of an epoxy resin, polyamide and long chain polyester, the binder further serving to bond abrasive grain to the fibers.



3,401,492

BUILDING STRUCTURE

Stephen L. MacDonald, 3600 Millcreek Road, Salt Lake City, Utah 84106
Filed Jan. 4, 1967, Ser. No. 607,324
10 Claims. (Cl. 52—86)

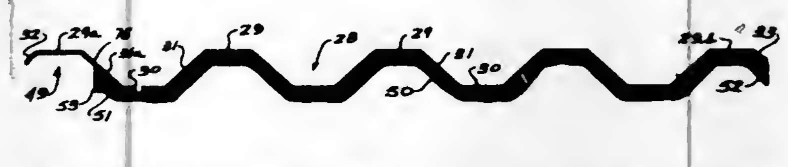


A building structure having a plurality of modular shells, each of which has a rectangular base and a midportion which passes through a plane spaced apart from the plane of the base, pivotly connected in a side by side relationship to form a row, and connected at their midportion to a flexible cable. The row of modular shells is secured to a fixed base to support said row in a predetermined position.

3,401,493

CORRUGATED METAL BUILDING SHEETS HAVING A RIGID PLASTIC FOAM COATING AND CONNECTIONS THEREFOR

Robert G. Lindner, Bridgeville, Pa., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 13, 1965, Ser. No. 471,640
6 Claims. (Cl. 52—309)

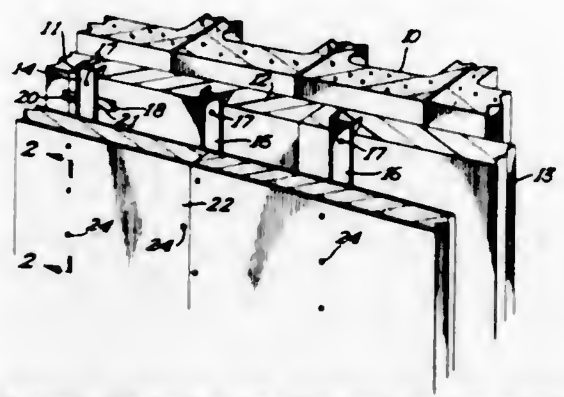


A corrugated building sheet formed from sheet metal and having overlapping and overlapped margins along first and second side edges of the sheet. A rigid plastic foam coating applied to the entire unexposed surface of the metal sheet except for the overlapping margin and an adjoining lengthwise portion of the unexposed surface. The foam coating has lengthwise beads of increased thickness, one adjacent to the adjoining lengthwise portion and one at the second side edge. A lengthwise strip of flexible foam plastic overlying the adjoining lengthwise portion and positioned along the length of the adjacent lengthwise bead.

3,401,494

METAL STUD FOR POLYSTYRENE FOAM SHEETS

Dallas A. Anderson, 541 Manor Drive,
Spring Lake Park, Minn. 55432
Filed Jan. 23, 1967, Ser. No. 611,110
12 Claims. (Cl. 52—309)

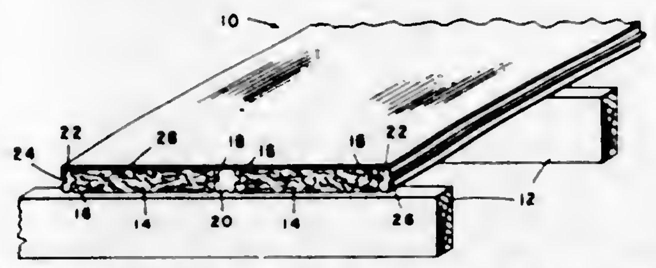


The present disclosure is directed to the method and fastening structure for securing sheets of polystyrene foam to a concrete wall and securing gypsum panels over the fastening structure. The metal fastening structure in general form, is channel shaped, having serrated edges to cut or bite into the sheet of polystyrene foam and allow it to be flush with the face of the sheet of foam. The fastener is nailed or secured by power driven pins to the concrete wall and the dry-wall construction is secured to the fastening structure by screws. One variation of the fastener is pressed into the polystyrene sheet at the edge and another variation has tabs formed in the face thereof to secure metal lath thereto for a plaster construction.

3,401,495

COMPOSITE FLOOR-CEILING ELEMENT

Joseph W. Schneller, Williamsville, N.Y., assignor to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware
Filed Apr. 5, 1965, Ser. No. 445,345
8 Claims. (Cl. 52—483)



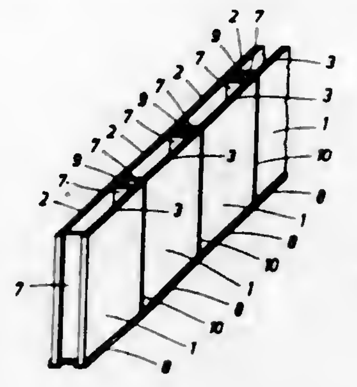
A prefabricated panel including as one face a relatively thin, dense floor board and including as the opposite face a plurality of elements for forming an exposed ceiling and for providing the structural characteristics necessary for combination with a floor board for stiffness, which plurality of elements includes a plurality of relatively, thick, low density ceiling boards and a plurality of narrow, dense stiffeners, with the stiffeners between adjacent ceiling boards and at the outer edges of the ceiling boards, the stiffeners and ceiling boards being adjoined by respective tongue and groove edges, and the ceiling boards and the stiffeners being laminated to the floor board.

3,401,496

COMPOSITE GLASS PANEL WITH DISPARATE EDGING

Hans Zöpnek, Hessenplatz 8,
Linz, Austria
Filed June 1, 1966, Ser. No. 554,458
Claims priority, application Austria, June 15, 1965,
A 5,389/65
3 Claims. (Cl. 52—586)

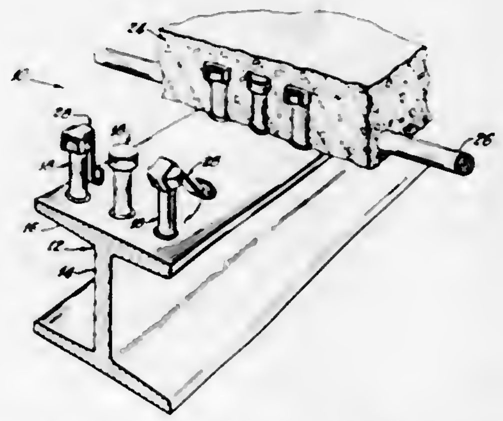
A plurality of juxtaposed box girders are connected into a structure by profiled bars inserted into cavities defined by adjacent edge portions of the box girders. Each girder is formed of two rectangular glass panels connected along two parallel edges by sealing strips while the two end openings of the girder defined by the perpendicularly extending panel edges are closed by detachable covers.



3,401,497

SUPPORT FOR REINFORCING MEMBERS

George E. Gregory, Jr., Rocky River, Richard E. McGinnis, Oberlin, and Roger W. Sholle, Lorain, Ohio, assignors to Gregory Industries, Inc., Lorain, Ohio, a corporation of Michigan
Filed Feb. 26, 1964, Ser. No. 347,460
5 Claims. (Cl. 52—677)



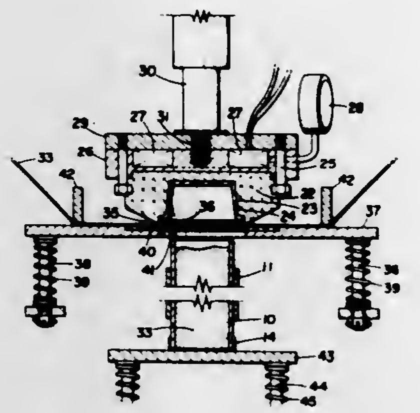
1. In combination, a shear connector stud having a post and an enlarged head, a bracket mounted on said shear connector stud for supporting a reinforcing member thereon, said bracket comprising a generally inverted U-shaped connection having a web extending over the top of said head and having legs extending downwardly on generally opposite sides of said head, one of said legs having a flange extending inwardly under said head and the other leg having an offset flange extending inwardly under said head, a shank extending downwardly from said offset flange and integral therewith, and a hook integral with said shank and positioned to receive a reinforcing member alongside said post of said shear connector stud.

3,401,498

METHOD AND APPARATUS FOR CAPPING CONTAINERS OF UNSTABLE DIMENSIONS

Alex James Garvin, Scarborough, Ontario, Canada, assignor to Superpack Vending (Curacao) N.V., Curacao, Netherlands Antilles
Continuation-in-part of application Ser. No. 229,898, Oct. 11, 1962. This application Sept. 30, 1965, Ser. No. 495,761
8 Claims. (Cl. 53—41)

Method and apparatus for capping tubular containers of flexible constitution by holding the container with one end exposed and applying a moldable film closure sheet over the exposed end of the container while flexing the latter inwardly. The film closure is applied to the container by application of heat and pressure on the closure in a mold recess, and the container is released which renders the film closure taut.



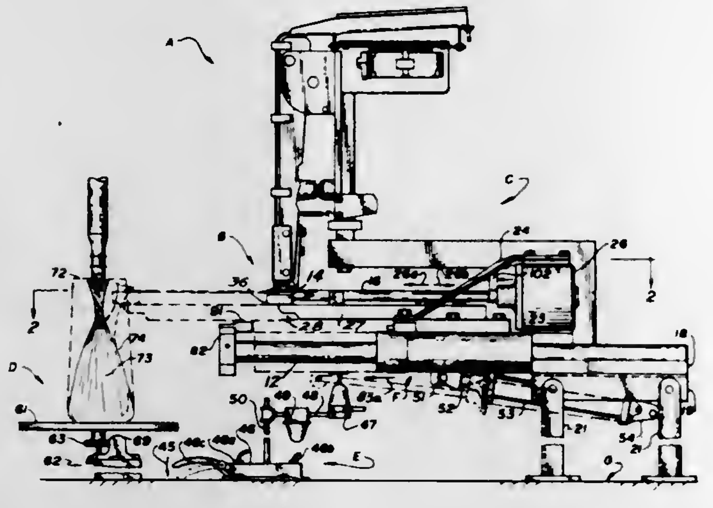
3,401,499

BAG PACKAGING DEVICE

Donald Jahnke, Milwaukee, Wis., assignor to Hydrahone Equipment Division of John Mohr & Sons, Milwaukee, Wis.

Filed July 27, 1964, Ser. No. 386,115

8 Claims. (Cl. 53—112)



Bag sealing apparatus for use with a vertically disposed magazine containing a plurality of stacked, C-shaped clips. The apparatus has jaw means movable from a position underlying the magazine to a position adjacent to a bag supporting station so that, when a bag neck is positioned within a clip, the jaw means is actuated to close the clip about the bag neck, thus sealing the bag. The bag neck is cut to remove excess material and clips are fed one at a time into the jaw means for each cycle of operation. Means is provided to twist the neck of the bag and to force the twisted neck into the open clip. The various functions are sequenced so that automatic operation is achieved.

3,401,500

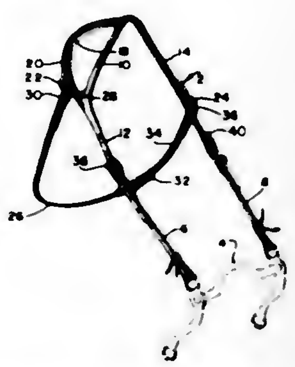
ONE-EAR BRIDLE OR HALTER WHICH CONFORMS TO THE ANIMAL'S HEAD

Earl R. Wright, 100 E. Grand, Comanche, Tex. 76442

Filed May 25, 1966, Ser. No. 552,787

4 Claims. (Cl. 54—6)

A bridle or halter to surround one ear of an animal, which bridle or halter has an apertured portion which surrounds the ear and extends downward on each side of the head toward a bit. An apertured portion of the halter or bridle is cut from a single piece of leather of a general curvilinear pattern, when laid flat, so when fitted around an ear on the head of a horse, the apertured portion thereof will lie in conformed relation with respect to the head of the horse, without wrinkling, buckling or being loose. Other straps are associated with the basic curvilinear, apertured portion so as to permit adjustment of the bridle or halter with respect to the length of the head of the horse and with respect to the distance beneath the jaw.



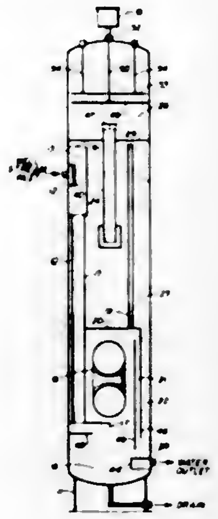
3,401,501

EMULSION TREATERS AND EMULSION TREATING METHODS

Paul E. Meyer, Tulsa, Okla., assignor to Combustion Engineering, Inc., New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 437,875, Mar. 8, 1965. This application July 28, 1967, Ser. No. 656,948

4 Claims. (Cl. 55—9)



A tall, vertical, cylindrical shell receives an oil well production and passes it through various vertically spaced internal compartments within which the forces of gravity, heat and an electrostatic field are applied to separate the production into its components.

3,401,502

PROCESS AND APPARATUS FOR SCRUBBING GASES

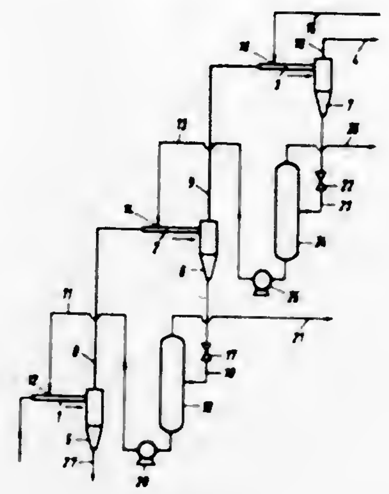
Peter Hailer, Gauting, and Adolf Gunkelmann, Munich-Solln, Germany, assignors to Linde Aktiengesellschaft, Wiesbaden, Germany

Filed Nov. 1, 1966, Ser. No. 591,222

Claims priority, application Germany, Nov. 4, 1965, L 52,070

13 Claims. (Cl. 55—43)

A process and apparatus for scrubbing gases, utilizing a straight pipe having a length of about 20–50 times the diameter, gas velocities of about 0.1–0.8 velocity of sound, and employing a plurality of counter-current stages, wherein the mixture is withdrawn from the pipe, subjected to phase separation, and the resultant scrubbing liquid from the phase separator is regenerated before being used in the next stage.



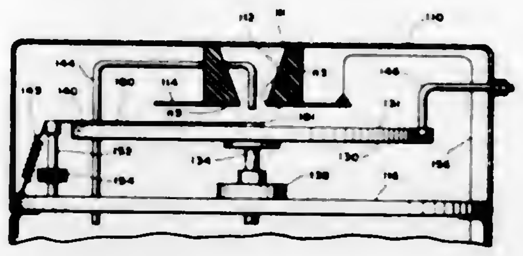
3,401,503

ELECTROSTATIC PRECIPITATOR

David Arlen Bergstrom, St. Paul, Minn., assignor to Litton Systems, Inc., a corporation of Maryland

Filed Oct. 19, 1967, Ser. No. 676,405

24 Claims. (Cl. 55—113)



An electrostatic precipitator in which particle laden air is first passed through an electric field where the particles receive an electric charge of one polarity and then passed through another electric field where the charged particles are attracted to an electrode having the opposite polarity. The attracting or collector electrode is a slowly rotating disk over which a film of liquid flows thereon outwardly from the center thereof. The charged particles are electrically precipitated into the moving film of collector liquid and are thereby collected. A stationary wire or line extends across the top surface of the disc in closely spaced relation thereto and at least substantially covers the collector disc with a film of liquid. The collector electrode is provided with an irregular or slightly rough surface.

3,401,504

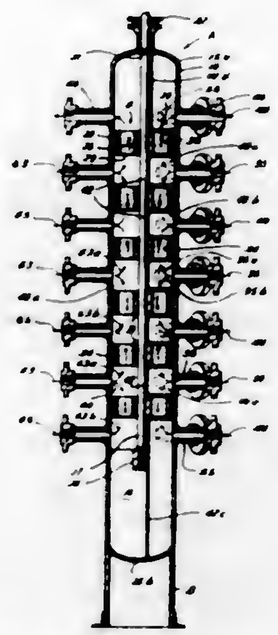
ROTATING BED ABSORBER

Edward L. Moragne, 4723 Nenana, Houston, Tex. 77035

Filed May 18, 1967, Ser. No. 639,376

7 Claims. (Cl. 55—179)

A vessel having a rotatable shaft positioned therein for receiving a plurality of spaced rotatable discs containing a suitable means for removing a portion of a mixture from the mixture. Positioned between each of the spaced discs is a plurality of baffles for dividing the vessel into a plurality of sections. Some of the sections continuously receive mixtures which are passed through the means for removing and other sections receive a suitable agent for removing the portion of the mixture from the means for removing for continuously regenerating the means for removal.



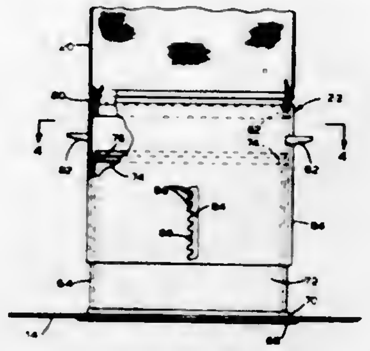
3,401,505

BAGHOUSE APPARATUS

Wade E. Ballard, Rolling Hills, Calif., assignor to Menardi & Company, El Segundo, Calif., a corporation of California

Filed Oct. 23, 1965, Ser. No. 503,731

2 Claims. (Cl. 55—341)



A baghouse construction in which a filter chamber is defined by vertically spaced upper and lower apertured tube plates between which extend open-ended tubular bags of gas-pervious particulate material-arresting fabric connecting corresponding apertures. Each bag is fixed at its upper end to the upper tube sheet and at its lower end releasably fixed to a vertically adjustable thimble section arranged to be releasably locked in telescoping relation to a second thimble section fixed in a corresponding aperture in the lower tube sheet, whereby the bags can be mounted and tensioned by a worker in the filter chamber.

3,401,506

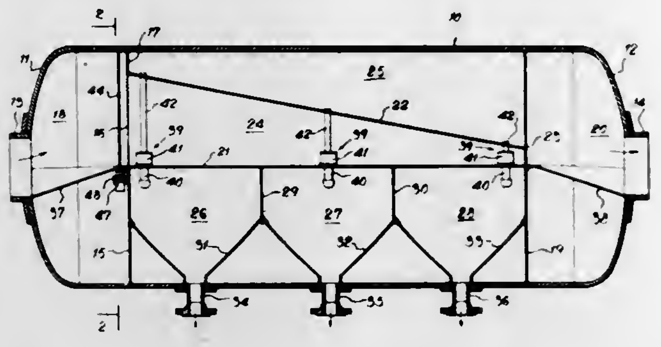
CENTRIFUGAL SEPARATORS

Joseph L. Burdock, Old Greenwich, Conn., assignor to Universal Oil Products Company, Des Plaines, Ill.

Continuation of application Ser. No. 376,047, June 18, 1964. This application Apr. 27, 1967, Ser. No. 634,388

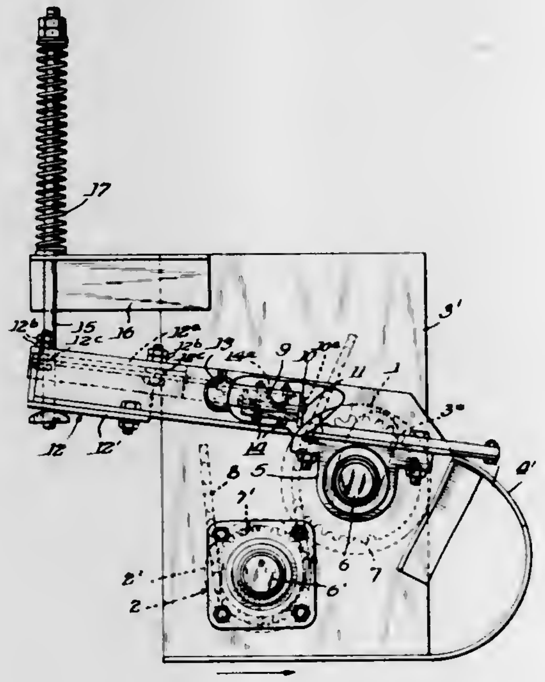
4 Claims. (Cl. 55—344)

Apparatus for separating suspended particles from gases consisting of a long horizontal closed cylinder divided by a horizontally extending flat sheet substantially in the mid-section of the cylinder, an inclined sheet extending over the horizontal sheet from the inlet end to the outlet end and formed to provide in cross-section a stepped plenum chamber. Conventional centrifugal tubes are mounted in the horizontal sheet to carry separated particles into compartments below and cleaned gas above the inclined sheet. A movable seal valve is arranged to seal off a portion of the plenum chamber for reducing the capacity of the apparatus.



3,401,507
ROLL SCRAPER BAR FOR HAY CONDITIONING MACHINE

Harry G. Yetter, Colchester, Ill. 62326
Filed June 6, 1966, Ser. No. 570,105
10 Claims. (Cl. 56—1)

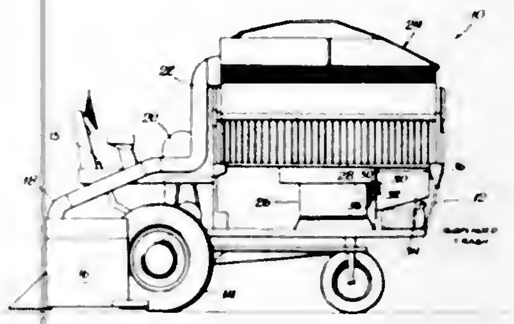


A scraper for one of the superposed rolls of a hay conditioning machine having a blade swingably mounted with relation to and scrapingly engageable with and along the peripheral surface thereof, the blade being capable of and mounted for torsional movement throughout its length upon movement of the one roll to a canted position relative to the other roll to maintain said peripheral scraping engagement.

3,401,508
COTTON HARVESTER WITH MEANS FOR AUTOMATICALLY CLEANING TRASH SCREEN

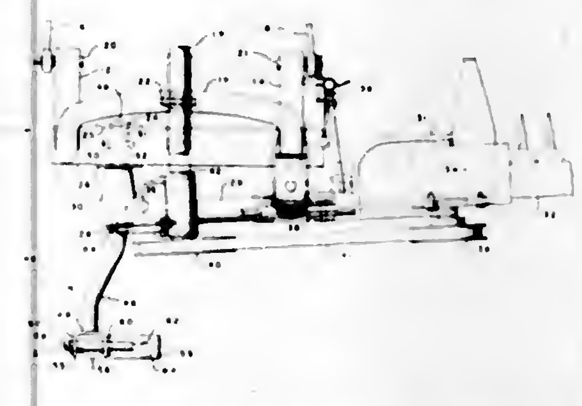
Arthur H. Keller, Western Springs, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 476,258
5 Claims. (Cl. 56—11)

A cotton harvester having an engine with a heat transfer unit and a perforated dirt shield, a fan blowing air in one direction from the shield to the unit, a reversing drive for rotating the fan to reverse the direction of air flow, and a linkage operative between the cotton basket and the drive for reversing the fan when the basket is dumped and for accelerating the fan operation to reverse the air flow to clear the shield and a supplementary linkage for manual operation for reversing air flow at the option of the operator.



3,401,509
HITCH

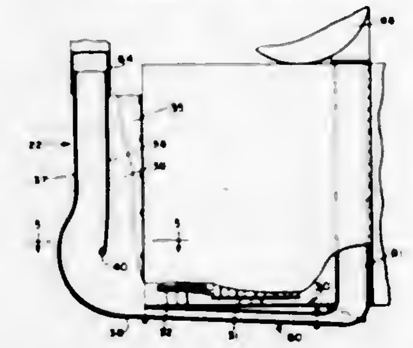
Joseph C. Hurlburt, Leola, Pa., and John A. Patterson, Wingrave, Buckinghamshire, England, assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Jan. 4, 1966, Ser. No. 518,689
4 Claims. (Cl. 56—25)



1. In combination with a mower base frame attachable to a tractor for selectively mounting one of a number of mower cutter bars of various lengths on the tractor with the mounted cutter bar extending laterally from said base frame to mow a swath of standing crop material, hitch mechanism for trailing a crop conditioner implement behind said base frame to condition the precedingly mowed swath, said hitch mechanism comprising an elongated member extending rearwardly from said base frame and having front and rear ends laterally offset from each other a predetermined distance, means for fixedly attaching said front end of said elongated member to said base frame selectively in either a right side up or an upside down orientation to selectively dispose said laterally offset rear end portion of the member either to the right or to the left of said front end of said member, a connector member selectively positionable along either side of said elongated member at said rear end portion of the elongated member, said connector member having an aperture therethrough to receive the hitch pin of a crop conditioner implement, and pivot means mounting said connector member on said rear end portion of said elongated member for pivotal movement relative thereto about a generally horizontal axis transverse to said elongated member with said aperture disposed laterally from said rear end portion of said elongated member a distance unequal to said predetermined distance whereby said hitching mechanism may be selectively assembled on said frame in any one of a plurality of ways to laterally vary the location of the hitch pin aperture in accordance with the particular length of mower cutter bar carried by said base frame for properly centering a trailing conditioner implement relative to the swath of cut crop material upon which it operates.

3,401,510
BLOWER ELEVATOR DEVICE

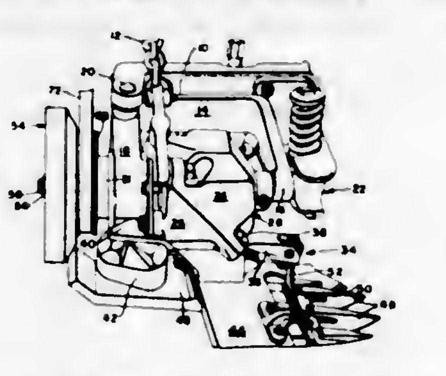
Arthur Lowell Hubbard, Des Moines, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Apr. 6, 1966, Ser. No. 540,587
4 Claims. (Cl. 56—30)



1. In a cotton harvester including an upright fore-and-aft extending panel structure with upright front and rear wall means and a horizontally disposed floor structure, the panel structure including an inner casing and an outer casing with an upright material passage between the casings, the outer casing having an upright partition panel dividing the outer casing into first and second compartments with the lower edge of the partition panel being spaced from the floor structure so as to define an opening common to and between the compartments, the first compartment being opposite to and in communication with the material passage; harvesting mechanism in the inner casing for removing cotton from the plants and dispatching it to the first compartment via the material passage; a blower supported on the harvester; a fore-and-aft extending blower duct supported in underlying relation to the floor structure with opposite ends adjacent the aforesaid front and rear wall means of the panel structure with one of the duct ends directed into the base of the second compartment; first conduit means connecting the other of the duct ends to the blower; second conduit means connected to and opening into the top of the second compartment whereby air will move in a stream from the duct end directed into the second compartment to the second conduit means and will effect an induced air flowage between the first and second compartments via the common opening between the compartments.

3,401,511
MOWER DRIVE VIBRATION DAMPENING MEANS

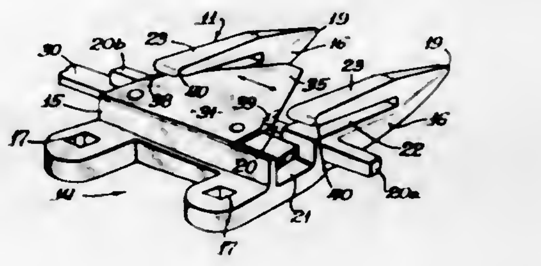
Marlin Earle Weakly, Moline, and Ralph August Gerhardt, Andover, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed May 31, 1966, Ser. No. 554,153
6 Claims. (Cl. 56—296)



1. In a mower of the type having a cutting apparatus including a reciprocating cutter, and a drive mechanism including a rotating drive shaft, an oscillating output member drivingly connected to the cutter, and motion-converting means drivingly connecting the drive shaft to the oscillating output member, the combination therewith of a flywheel coaxially affixed to the drive shaft, an input element coaxially journaled relative to the flywheel and drive shaft, and a flexible coupling member drivingly connecting the input element to the assembled drive shaft and flywheel.

3,401,512
RECIPROCATING MOWER HAVING IMPROVED CUTTING ACTION

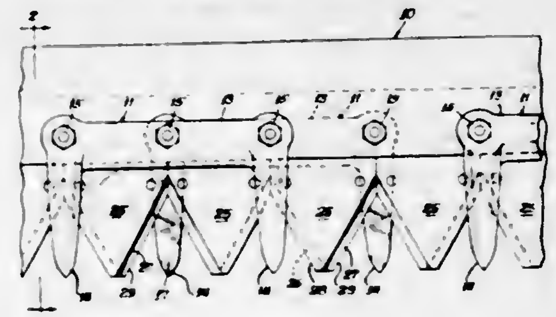
Stuart D. Pool, Naperville, Edward Sverelka, Chicago, and Arlie J. Thayer, Brookfield, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed July 13, 1965, Ser. No. 471,536
8 Claims. (Cl. 56—298)



A knife section having upper and lower sides, forwardly converging edges and a rear mounting portion, one of the sides being beveled along said edges to provide cutting edges and the other side having bevels at opposite edges adjacent to said mounting portion providing guides as well as cutting edges.

3,401,513
RECIPROCATING MOWER WITH BALANCED CUTTING ACTION

Calvin P. Rickerd, La Grange Park, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed July 13, 1965, Ser. No. 471,667
7 Claims. (Cl. 56—298)

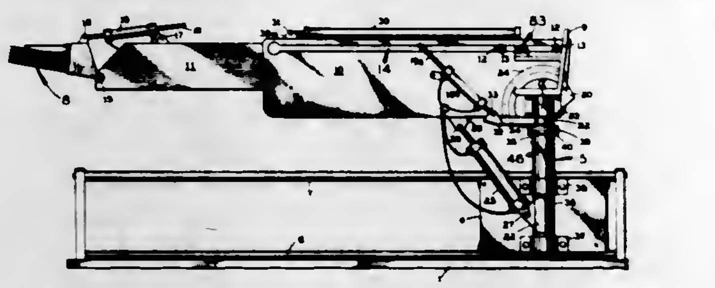


A mower having a support bar, a sickle reciprocal thereon, upper and lower guards mounted on the bar and receiving the sickle therebetween for cutting coaction therewith, each guard having a pair of fingers and a mounting member therebetween, the upper and lower guards being offset lengthwise of the bar and disposing a finger of each guard between the fingers of the other guard and common means interconnecting adjacent upper and lower guards through the mounting members thereof.

3,401,514
FRUIT HARVESTING MACHINE

Joseph C. Clark, 4843 Backacher Lane, Orlando, Fla. 32806
Filed Oct. 23, 1965, Ser. No. 503,108
5 Claims. (Cl. 56—328)

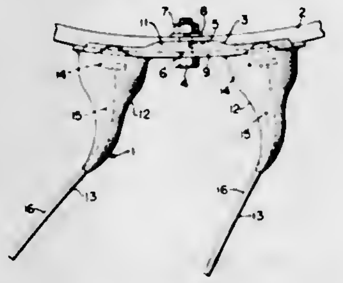
A fruit picking vehicle having thereon a pair of independent hydraulically operated booms, with each having a power driven picking head at the outer end thereof including hydraulic control means operated by a separate operator including controls for the independent extension and retraction of each boom and the vertical and lateral movement of same, as well as the control of the picking



head. Each boom also includes a conveyor for moving the picked fruit into the body of the vehicle.

3,401,515
HAY RAKE TOOTH

Byron L. Fishbaugh, St. Marys, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Feb. 4, 1966, Ser. No. 525,174
3 Claims. (Cl. 56—400)



1. A rake tooth mounting structure for use on a wheel hay rake in which a plurality of teeth are attached to the wheel rim in a substantially identical manner comprising
   - (A) a rigid clip contoured to fit the periphery of the rim and having transverse radially inwardly turned flanges along at least a portion of each lateral edge of said clip to engage the edges of the rim and hold the clip in alignment therewith, said radially inner surface of the clip being longitudinally curved to a radius substantially identical to that of the periphery of the wheel rim,
   - (B) means for fastening the clip to the rim,
   - (C) at least one block of elastomeric material having one end attached to the radially outward surface of the clip, and
   - (D) at least one tine having one end embedded in the block of elastomeric material extending therefrom in a direction substantially radially outwardly from the wheel with the outer portion of the tine inclined at an angle to the embedded portion.

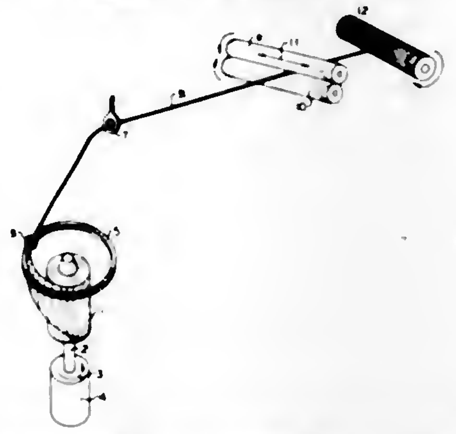
3,401,516
HIGH BULK CONTINUOUS FILAMENT LOW STRETCH YARN

Ronald W. Chidgey and William H. Hills, Pensacola, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed May 31, 1966, Ser. No. 553,890
8 Claims. (Cl. 57—140)

A synthetic continuous filament composite singles yarn having a high degree of bulk and yet a low degree of stretch is provided. The yarn has an internal integral uncrimped load-bearing central core of at least one filament surrounded by and having bonded thereto a bulk-imparting sheath made up of a plurality of textured filaments.

3,401,517
METHOD OF FIBRILLATION

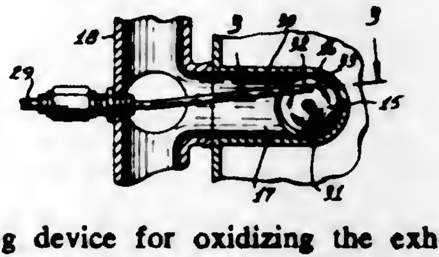
Paul L. Spivy, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 16, 1967, Ser. No. 609,427
5 Claims. (Cl. 57—157)



A method of forming a twisted fibrillation product comprising twisting a plastic film, passing same between a pair of rotating rolls, oscillating said rolls transversely to fibrillate said twisted film.

3,401,518
ANTISMOG DEVICE FOR INTERNAL COMBUSTION ENGINE EXHAUST

Eugene B. McWhirter, 2619 E. Victor Hugo Ave., Phoenix, Ariz. 85032
Filed Sept. 12, 1966, Ser. No. 578,708
1 Claim. (Cl. 60—30)



An antismog device for oxidizing the exhaust gases immediately after they discharge from the exhaust valve seats into the exhaust manifold by injecting air under pressure from the tips of air tubes exhausting adjacent the discharge side of the valve seats so as to provide a metering effect at the discharge end of the air tubes to cause a swirling of air around the valve seat and underside of the valve head to insure thorough mixing of preheated air and exhaust gases to promote complete combustion of carbon monoxide and unburned hydrocarbons

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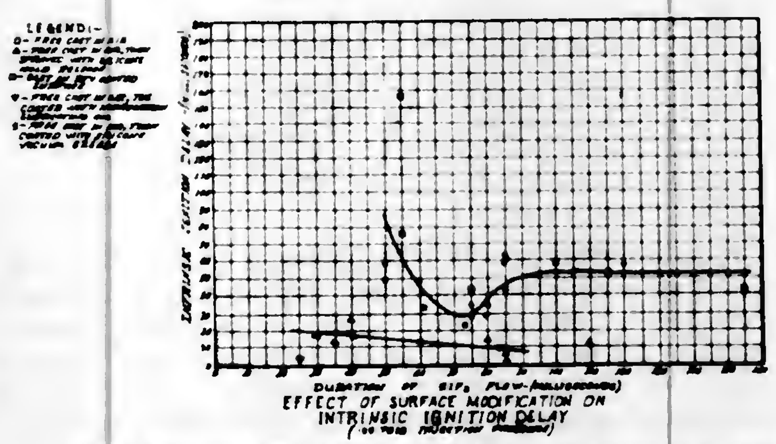
3,401,519
HYPERGOLIC IGNITION OF COATED COMPOSITE PROPELLANT GRAIN

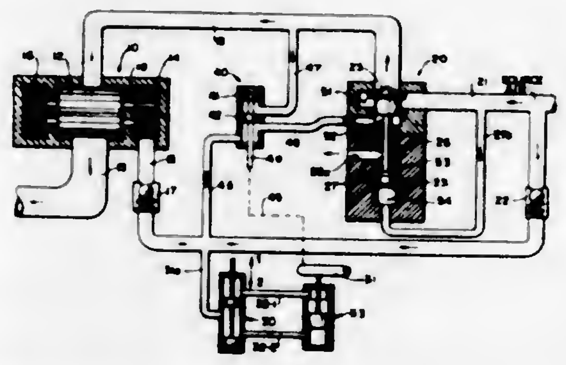
Robert S. Brown, Santa Clara, and James E. Erickson, Sunnyvale, Calif., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Nov. 15, 1966, Ser. No. 594,637
4 Claims. (Cl. 60—39.06)



An improved method for igniting composite type solid propellant grains by first applying a coating of a hydrocarbon or silicone-base lubricant to the burning surfaces of a propellant grain followed by the step of contacting the coated surfaces of the propellant grain with a hypergolically reactive fluid capable of penetrating the coating to effect autoignition of the propellant grain's burning surface.

3,401,520
BOOST COMPRESSOR

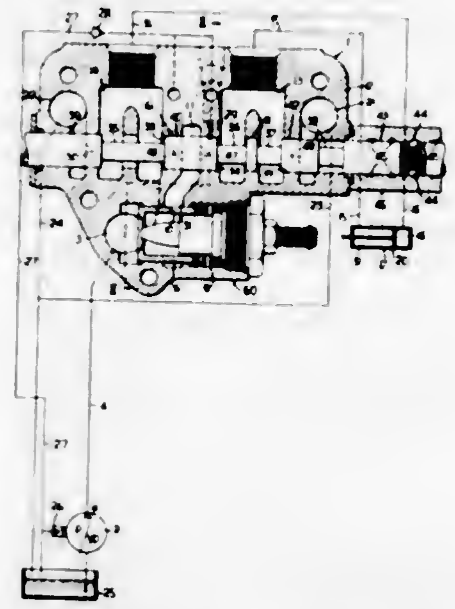
John J. Dineen, East Northport, N.Y., assignor to Fairchild Hiller Corporation, Bay Shore, N.Y., a corporation of Maryland
Filed Feb. 16, 1966, Ser. No. 527,829
13 Claims. (Cl. 60—51)



Apparatus for operating an aerodynamic surface which is movable from a first to a second position including a boost compressor and a supply valve located between a fluid pressure source and the boost compressor. A control arrangement is provided which is responsive to the position of the aerodynamic surface to close the supply means when the surface is in the first position to thereby shut off the boost compressor and to open the supply valve when the surface is in the second position to operate the boost compressor to provide a higher pressure fluid to return the surface from the second to the first position.

3,401,521
HYDRAULIC CONTROL VALVE

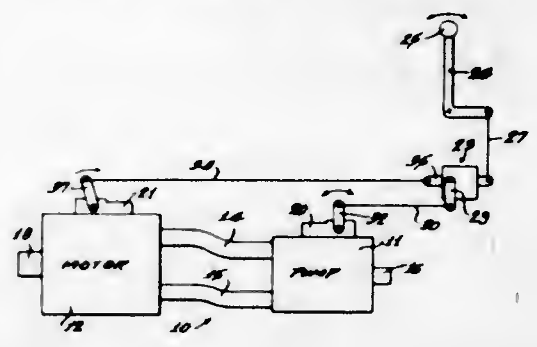
John R. Plate, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Mar. 6, 1967, Ser. No. 620,686
5 Claims. (Cl. 60—52)



A directional control valve providing a preload sensing of load pressure by a pressure responsive pump to eliminate delay in pump response due to inherent pressure build-up in the conventional hydraulic system as the load is applied to the pump.

3,401,522
HYDROSTATIC TRANSMISSION

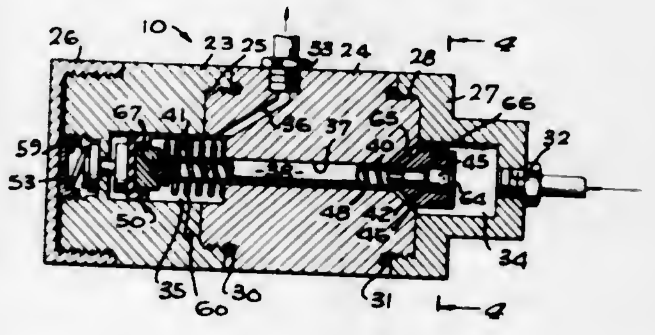
Melvin M. Hann, Ottawa, and Robert J. Lease, La Salle, Ill., assignors to Sundstrand Corporation, a corporation of Delaware
Filed Aug. 31, 1966, Ser. No. 576,478
10 Claims. (Cl. 60—53)



A displacement control for staging the displacement changes of the pump and motor in a variable hydrostatic transmission including a control link that first pivots and then translates in response to a manual operator, the control link being connected so that the pivotal movement thereof controls the pump displacement through a pivoting cam and so that the translating movement thereof controls the motor displacement.

3,401,523
ANTI-SKID CONTROL VALVE

Augustus R. Scott, Los Angeles, Calif.
(8934 Murietta Ave., Panorama City, Calif. 91402)
Filed Feb. 15, 1967, Ser. No. 616,381
12 Claims. (Cl. 60—54.5)

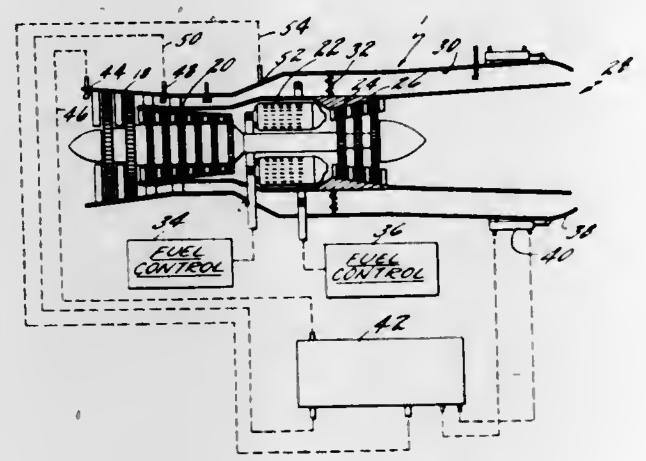


A valve body is provided with a pair of chambers communicating with an input port and an output port respectively disposed in the hydraulic line of a vehicle brake system. A rectilinearly moving valve mechanism includes a hollow stem having a plurality of apertures disposed along its length so as to conduct fluid between the pair of chambers during normal braking conditions. The stem is provided with a closure head at one end in the input chamber adapted to seal against fluid flow under emergency braking conditions. Spring biasing is employed to normally maintain the fluid passage open between the chambers.

3,401,524
CONTROL FOR DUCTED FAN ENGINE

Louis A. Urban, Granby, Conn., assignor to United Aircraft Corporation, Hartford, Conn., a corporation of Delaware
Filed Apr. 21, 1967, Ser. No. 632,805
12 Claims. (Cl. 60—224)

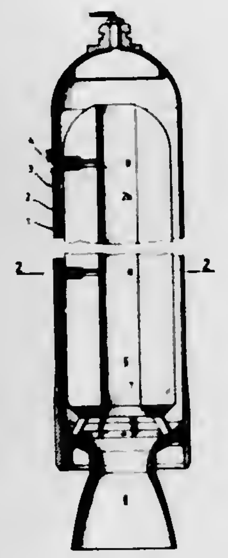
Fan-air flow of a ducted fan turbojet engine is controlled by varying the fan exhaust nozzle as a function of either the ratio of the difference between fan discharge total pressure and compressor inlet total pressure to the difference between fan discharge total pressure and fan discharge static pressure or the ratio of the difference between fan discharge total pressure and compressor inlet total pressure to the difference between fan discharge total pressure and the total pressure in the duct down-



stream of the duct burner or the reciprocals of these values.

3,401,525
SOLID FUEL MOUNTING FOR ROCKET ENGINE

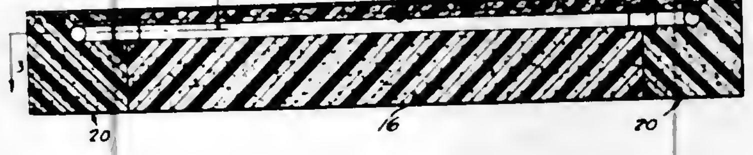
Johannes Schubert and Wilhelm Wessel, Munich, Germany, assignors to Bolkow Gesellschaft mit beschrankter Haftung, Munich, Germany
Filed Oct. 11, 1966, Ser. No. 585,970
Claims priority, application Germany, Oct. 23, 1965, B 84,233
9 Claims. (Cl. 60—255)



An arrangement for supporting a solid propellant charge within the combustion chamber of a rocket engine includes support elements having inner ends which are located entirely within the propellant charge and embedded within the material thereof and outer ends which bear against the interior walls of the combustion chamber in order to support the propellant charge centrally within the combustion chamber at a spaced location from a combustion chamber wall. The support elements are located at a plurality of uniformly spaced locations extending around the periphery of the charge and they are made of a material having thermal expansion characteristics similar to the propellant charge composition but being of substantially lower combustion velocity. They are embedded in the composition at a depth to maintain engagement with any remaining portion of the composition during substantially the whole combustion life thereof.

3,401,526
PREFABRICATED DRAINAGE FIELD STRUCTURES

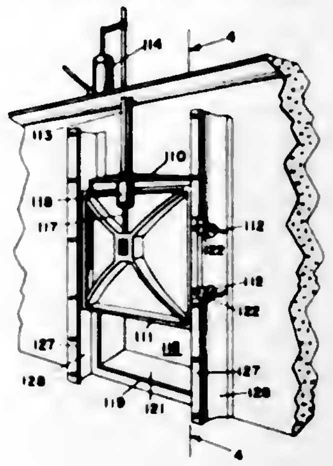
Samuel H. Rodgers III, P.O. Box 242, Crossville, Tenn. 38555
Filed Nov. 27, 1964, Ser. No. 414,321
2 Claims. (Cl. 61—13)



A drainage duct formed of porous prefabricated rectangular block material and having a longitudinal liquid flow passage. The top of the duct is overlaid by a layer of impervious material. The ducts can be connected in any desired pattern to convey liquid from a septic tank, or the like, to a drainage field.

3,401,527
SLUICE GATE

Charles Edward Palmer, Robert H. Palmer, and John A. Oldenburg, Fairview, Pa., assignors to Palmer Filter Equipment Company, Erie, Pa., a partnership firm
Continuation-in-part of application Ser. No. 295,985, July 18, 1963. This application Mar. 11, 1965, Ser. No. 438,857
4 Claims. (Cl. 61—28)



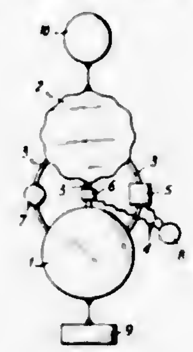
The sluice gate according to the present invention has actuating member and a frame. The frame overlies a sluice opening and the track is supported at each side of the opening. The actuating members are in the form of bell cranks. The bell cranks have spaced parts attached to two actuators that move relative to each other and a roller is attached to a third part of the bell crank. The two relatively moving parts are connected to a operating device which will either lift the two relatively moving members together to open the gate or will move them relative to each other to lock the gate when the two relatively moving members are moved relative to each other, the roller on the third part of the bell crank is moved to lock the gate. An improved power operator device is connected to the operating member to operate it.

3,401,528
SUBAQUEOUS HYDRAULIC ACCUMULATORS

Wladimir Tiraspolsky, 69 Ave. Victor Cresson, Issy-les-Moulineaux, Hauts-de-Seine, France
Filed June 7, 1966, Ser. No. 555,800
Claims priority, application France, June 11, 1965, 20,453
12 Claims. (Cl. 61—69)

A subaqueous hydraulic accumulator for the purpose of creating usable energy at underwater locations, preferably at considerable depths, which utilizes the energy

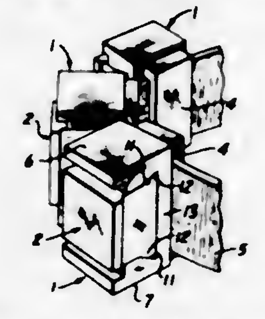
created by hydraulic fluid pressurized by the ambient hydraulic pressure flowing through an energy producing device into a low pressure reservoir. The pressurized fluid



energizing the energy producing device may be stored within a compressible and expansible chamber reservoir, or may consist of the sea water surrounding the apparatus.

3,401,529
COUPLING

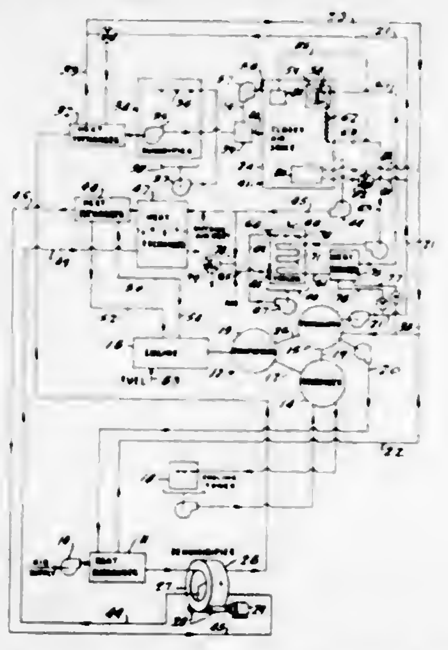
Thomas B. Fifield, 1535 W. Dean Road, Milwaukee, Wis. 53217
Filed Dec. 17, 1965, Ser. No. 514,551
5 Claims. (Cl. 61—70)



Two members are coupled together by two dovetail interlocking connections disposed at substantially right angles to each other and in which the male member of one connection extends across between the sides of the female slot of the other connection and the interlocking parts are deformable for the purpose of assembly and disassembly.

3,401,530
COMFORT CONDITIONING SYSTEM

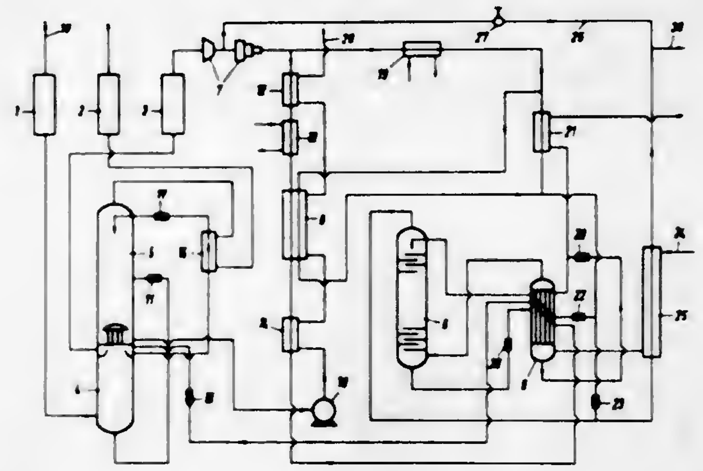
Gershon Meckler, Atlanta, Ga., assignor to Lithonia Lighting, Inc., Conyers, Ga., a corporation of Georgia
Filed Dec. 19, 1966, Ser. No. 602,796
9 Claims. (Cl. 62—2)



A system for supplying comfort conditioned air to a closed air space. Hot, humid air is forced through an indirect heat exchanger for simultaneous cooling and dehumidifying. The air is then circulated through a desiccant dehumidifier to further reduce its moisture content. As moisture is removed from the air, liberated heat increases the air temperature. From the dehumidifier, the air is cooled in a second heat exchanger and then in a humidifier. The cooled and humidified air is mixed with air circulated from the closed space and is then carried to the closed space. Exhaust heat, from an internal combustion engine used to drive refrigeration apparatus for the heat exchangers, regenerates the desiccant in the dehumidifier.

3,401,531
HEAT EXCHANGE OF COMPRESSED NITROGEN AND LIQUID OXYGEN IN AMMONIA SYNTHESIS FEED GAS PRODUCTION

Godehard Kessler, Strasslach, near Munich, and Walter Scholz, Munich-Solln, Germany, assignors to Linde Aktiengesellschaft, Wiesbaden, Germany
Filed May 17, 1966, Ser. No. 550,689
Claims priority, application Germany, May 19, 1965, G 43,643
9 Claims. (Cl. 62—20)



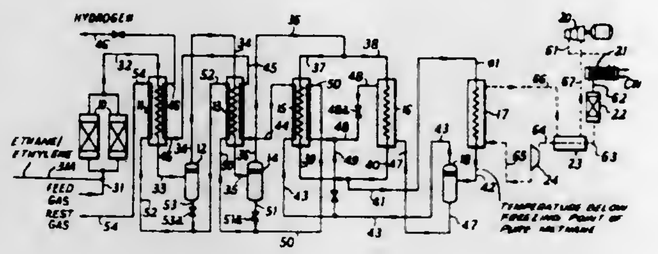
1. An integrated process for the low temperature separation of air into nitrogen and high pressure oxygen and the separation of a hydrogen-containing gaseous mixture into enriched hydrogen, the steps of:

(a) withdrawing nitrogen from an air rectification column and compressing at least a portion of said nitrogen to a high pressure;
(b) withdrawing liquid oxygen from said air rectification column and compressing same in the liquid phase to a high pressure;
(c) passing at least a portion of resultant high pressure gaseous nitrogen into heat exchange relationship with resultant high pressure liquid oxygen and vaporizing said liquid oxygen while cooling said gaseous nitrogen;
(d) liquefying resultant cooled gaseous nitrogen; and
(e) passing resultant liquid nitrogen into the top of a scrubbing column in direct countercurrent contact with ascending hydrogen-containing gaseous mixture.

3,401,532
HYDROGEN RECOVERY WITH A METHANE FREEZING POINT DEPRESSANT

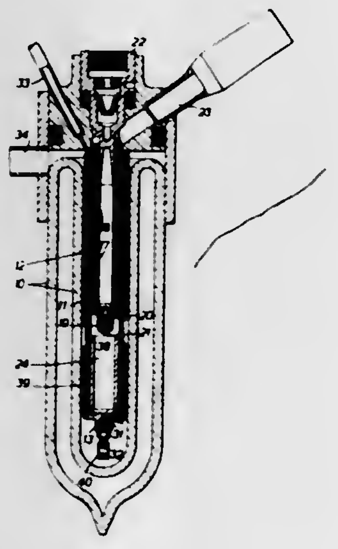
Paul L. Charlesworth, Huddersfield, and Martin S. W. Ruhemann, Brooklands, England, assignors to Petrocarbon Developments Limited, London, England
Filed May 13, 1965, Ser. No. 455,397
Claims priority, application Great Britain, May 19, 1964, 20,634/64
9 Claims. (Cl. 62—23)

A process for purifying hydrogen gas by condensing methane and heavier hydrocarbons therefrom in plural cooling stages while maintaining sufficient ethane, ethylene, propane and mixtures thereof in the hydrocarbon gas prior to the final cooling stage thru temperature regulation in a first cooling stage in order to depress the freezing point of the methane containing condensate by at least 1.5° K. below the freezing point of pure methane such that additional amounts of methane will be condensed when the temperature is lowered below the freezing point of pure methane.



3,401,533
GAS LIQUEFIERS

Alan Bradley Maybury, Redditch, England, assignor to The Hymatic Engineering Company Limited, a company of Great Britain
Filed Mar. 10, 1966, Ser. No. 533,271
Claims priority, application Great Britain, Apr. 1, 1965, 13,883/65
6 Claims. (Cl. 62—54)

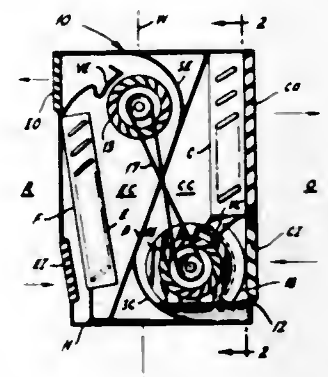


This invention relates to a device for gas liquefication comprising two heat exchangers of generally hollow cylindrical form, the first step heat exchanger being mounted coaxially within the warm end of the second stage heat exchanger, the space within the cold end of the second stage heat exchanger being in the form of a chamber for the first stage working medium, this chamber being insulated from the second stage heat exchanger. Also the second stage heat exchanger is substantially longer than the first stage heat exchanger and extends substantially between its cold end. The two-stage gas liquefier operates under the principle of the Joule-Thomson effect.

3,401,534
CONDENSATE REMOVAL MEANS FOR AIR CONDITIONERS

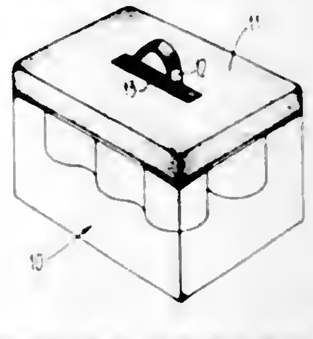
Kenneth E. Marsteller, Willow Grove, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Jan. 26, 1967, Ser. No. 612,032
10 Claims. (Cl. 62—280)

An air conditioner having a blower wheel including disc means dipping into a condensate sump. Rotation of the blower, equipped with discs, results in entrainment of the condensate in the condenser air stream. Shrouds associated with the discs prevent discharge of condensate out of the air conditioner through the blower inlet port.



3,401,535
COOLING CONTAINER FOR BEVERAGES AND THE LIKE

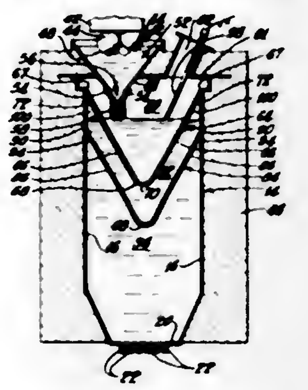
George L. Palmer, 915 37th Ave., Oakland, Calif. 94601
Filed June 22, 1967, Ser. No. 648,009
3,401,535
6 Claims. (Cl. 62—457)



A reusable container for carrying loose items that require cooling prior to use as for example canned beverages. The container is formed with recessed cavities for snugly receiving the items to retain the items in a relatively fixed position. The container is provided with voids surrounding the items with the voids being filled with a material that may be precooled.

3,401,536
APPARATUS FOR MELTING AND PROCESSING HEAT-SOFTENABLE MINERAL MATERIALS

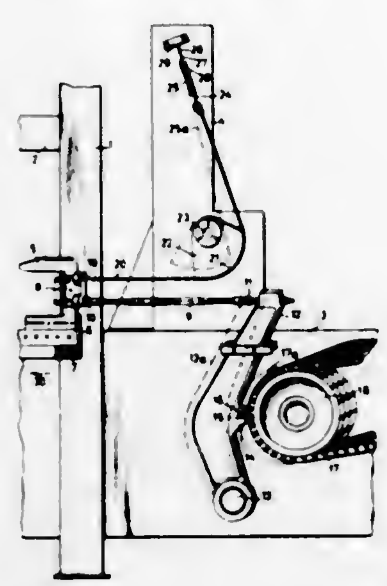
Hellmut I. Glaser, Anderson, S.C., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Aug. 20, 1965, Ser. No. 481,172
6 Claims. (Cl. 65—1)



The disclosure embraces a method of and apparatus for thermally conditioning and processing heat-softened glass in a stream feeder chamber by traversing the glass in both downwardly and upwardly directed paths and heating the glass to promote the effluence of gas bubbles to effect improved refinement of the glass.

3,401,537
GUIDE BAR DRIVE FOR A WARP KNITTING MACHINE

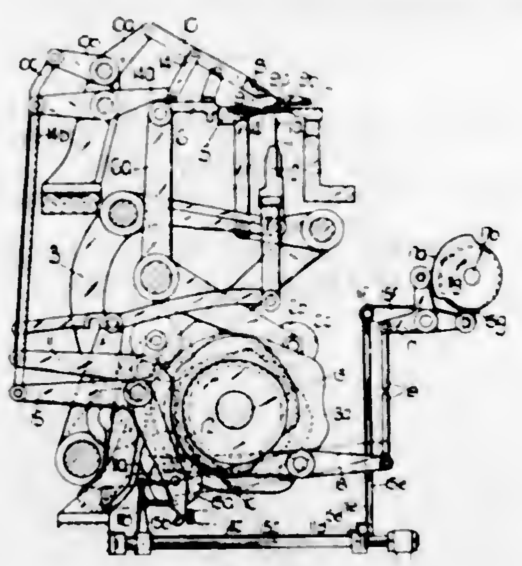
Karl Kohl, Offenbacherstrasse, Hainstadt am Main, Germany
Filed Oct. 5, 1965, Ser. No. 493,140
Claims priority, application Germany, Oct. 28, 1964, M 62,912
3 Claims. (Cl. 66—86)



A chain which connects a guide bar of a warp knitting machine to a helical return spring is trained over a circumferential face of a pivotally mounted guide member. The face spirals about the pivot axis of the guide member in such a manner that the rate of extension of the spring decreases with displacement of the guide bar from its normal position by the pattern mechanism. Excessive pressure exerted by the guide bar on high links of the pattern chain is thereby avoided.

3,401,538
STRAIGHT BAR KNITTING MACHINES

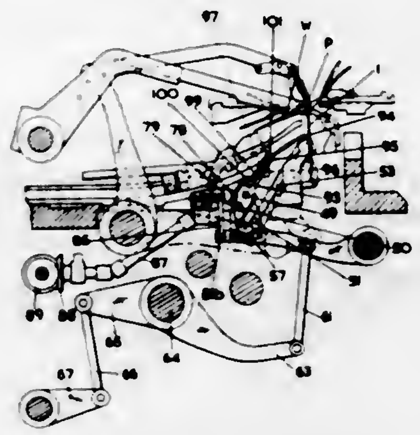
Ernest Start, Ruddington, and Leonard Brown, Nottingham, England, assignors to William Cotton Limited
Filed Oct. 15, 1965, Ser. No. 505,105
Claims priority, application Great Britain, Oct. 21, 1964, 42,834/64
3 Claims. (Cl. 66—90)



A straight bar rib knitting machine, and method, for producing fabric with Milan stitch in a repeat three course sequence wherein cam operated frame and machine needles first form a rib course, a main cam shaft is shogged for a circular cam to render the machine needles inoperative while a plain course is formed on the cam operated frame needles, and cam operated propping out means for a cam follower lever renders the frame needles inoperative while a bar of yarn controlling elements, one to each frame needle, and having depending portions with downwardly projecting hooks, are cam introduced while the sinkers sink yarn about them, the sinkers are retracted and the elements are cam lowered to lower the yarn kinks onto the machine needles, the elements are cam advanced to push the yarn kinks under the machine needle beards, the machine needles and elements are advanced for pressing the machine needle beards, and the machine needles are retracted for knocking over the loops to form a plain course on the machine needles.

3,401,539
STRAIGHT BAR KNITTING MACHINES

William Duncan, Alloa, Scotland, and Raymond Blood, Shepshed, England, assignors to Donaldson Brothers (Alloa 1937) Limited and William Cotton Limited
Filed Dec. 16, 1965, Ser. No. 514,212
Claims priority, application Great Britain, Dec. 24, 1964, 52,516/64
7 Claims. (Cl. 66—148)

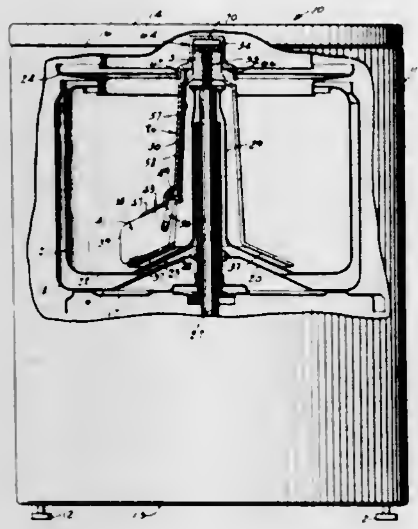


A multi-section straight bar knitting machine of rib to plain kind disclosed in British Patent No. 841,471 having plain and rib needles with loop spreader means in each knitting section for transferring rib needle loops of last rib welt courses to the plain needles, whereupon means may be operated for loop doubling, fabric take-off means may automatically hook up and release from the welts, a first transfer means in each knitting section transfers the welts from the plain needles to inner position point bars and transfers the loaded point bars to an outer position and onto a conveyor which carries the loaded point bars along the machine, a second transfer mechanism may transfer a plurality of the loaded point bars in succession from the conveyor to a loading machine, a third transfer means may transfer the welts from the loaded point bars successively to a magazine point bar in the loading machine, and there may be color changes and size-varying means for the welts.

3,401,540
WASHING MACHINE AGITATOR WITH ADJUSTABLE VANES

Clark I. Platt, Benton Harbor, and Clifton A. Cobb and Keith D. Salisbury, St. Joseph, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed Oct. 10, 1966, Ser. No. 585,494
16 Claims. (Cl. 68—134)

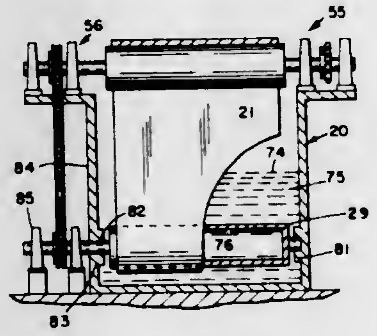
An adjustable vane agitator assembly including an agitator shell rotatable on an axis, radially movable agitator vanes supported on the shell, biasing means including spring members urging the vanes radially inwardly and follower arms connected respectively to the vanes and movable axially in response to radial movement of the vanes. An adjustment cap is mounted on the agitator shell in axial alignment with the follower arms to provide a stop for the follower arms against the bias of the spring members. The cap is axially adjustable for se-



lectively adjusting the radial positions of the vanes simultaneously to vary the agitation characteristics of the agitator assembly.

3,401,541
APPARATUS FOR ELIMINATING BEARING DRAG

Brooks Stevens, Jr., Concord, and Harold R. Wilcox, Maynard, Mass., assignors to Riggs & Lombard, Inc., Lowell, Mass., a corporation of Massachusetts
Filed Nov. 30, 1965, Ser. No. 510,641
9 Claims. (Cl. 68—175)

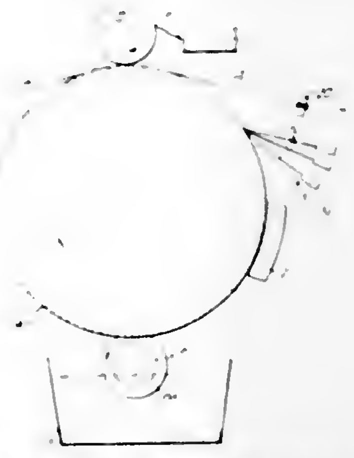


Apparatus for advancing a fragile web over and under a series of rolls in a liquid dyeing tank, some of the rolls being submerged. Each submerged roll is arranged to substantially float in the liquid to reduce frictional bearing drag. Each roll is mounted in double bearings with one bearing of each double bearing driven by means of a variable speed control mechanism so that bearing drag is reduced to zero. A slight impositive forward urge is given to each roll while a slight upward and downward tension is given to the web by the zero weight submerged rolls.

3,401,542
YARN DYEING MEANS

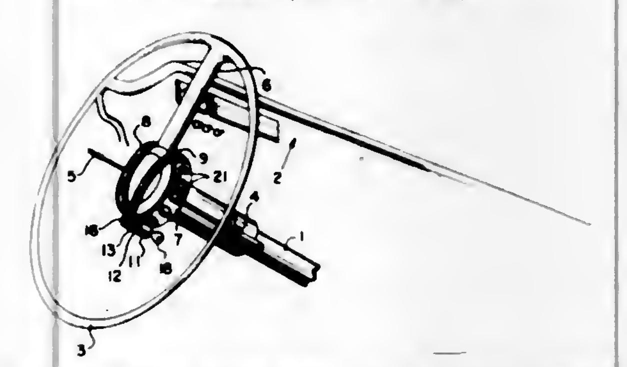
Raymond V. Evans, Feniscowles, Blackburn, England, assignor to Singer-Cobble Limited, Blackburn, Lancashire, England
Filed June 22, 1966, Ser. No. 559,602
Claims priority, application Great Britain, June 24, 1965, 26,791/65
10 Claims. (Cl. 68—202)

An apparatus for dyeing a moving textile yarn at spaced intervals therealong, includes a moving support surface having a continuous channel or a plurality of aligned recesses, in the surface defining a dyestuff receiving formation extending in the longitudinal direction of the yarn, a feed means for the dyestuff arranged to apply discrete quantities of dyestuff to the said formations as required and a guide means which causes the yarn to move in alignment with, and to a position adjacent, to the said formation thus to take up dyestuff therefrom.



3,401,543
STEERING WHEEL LOCKING ATTACHMENT

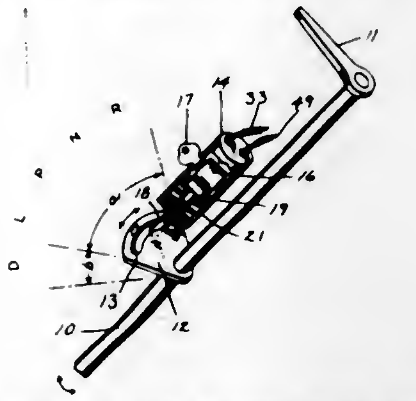
Samuel Lewis, 670 Riverside Drive, New York, N.Y. 10031
Filed June 26, 1967, Ser. No. 648,866
7 Claims. (Cl. 70—183)



A locking arrangement for the steering wheel of a motorcar includes a flexible, elongated metal belt formed with two passages therethrough of which one is laterally open. Two spacedly juxtaposed straps extend transversely from the belt. A locking mechanism permits the two ends of the belt to be locked to each other while the belt extends about the top of a steering column, and to lock the free ends of the two straps to the belt on either side of a spoke of the steering wheel.

3,401,544
THEFT PROTECTION FOR VEHICLES IN PARKING LOTS

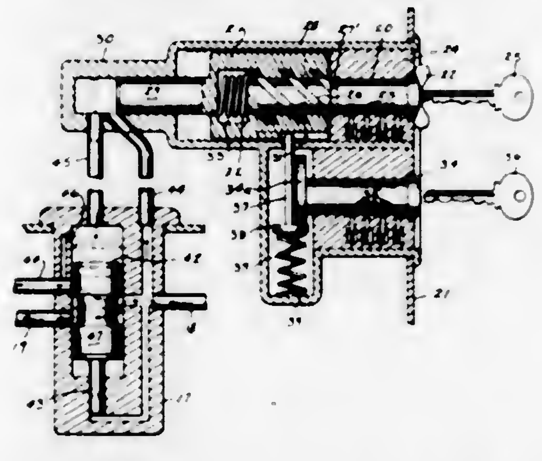
Cyril C. Fraser, 12337 NE. Shoreland Drive, Mequon, Wis. 53092
Filed Jan. 30, 1967, Ser. No. 612,615
10 Claims. (Cl. 70—248)



To protect parked cars against theft while allowing parking lot attendants to move the vehicle, a separate lock is provided under control of a key that may be kept by the owner while he leaves the regular ignition key in place. This separate lock allows movement of the gear shift control through a range so worked out that shifting into "low," "neutral," and "reverse" is permitted, but shifting into "high" or "drive" gear is prevented. A connection with the directional signal circuit also causes simultaneous operation of all of the directional signals as an alarm whenever the car is moved, and, in addition, the driving light circuit may be locked out.

3,401,545
THEFT PROTECTION FOR VEHICLES IN PARKING LOTS

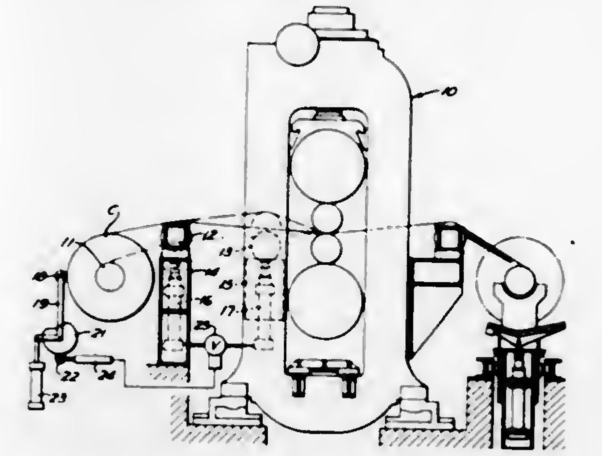
Cyril C. Fraser, 12337 NE. Shoreland Drive, Mequon, Wis. 53092
Filed Apr. 13, 1967, Ser. No. 630,702
10 Claims. (Cl. 70—255)



To protect parked cars against theft while allowing parking lot attendants to move the vehicle, a separate lock is provided under control of a key that may be kept by the owner while he leaves the regular ignition key in place. This separate lock allows operation of the automatic hydraulic transmission through a range so worked out that shifting into "low," "neutral," and "reverse" is permitted, but shifting into "high" or "drive" gear is prevented.

3,401,546
STRIP DEFLECTOR MEANS AND CONTROL

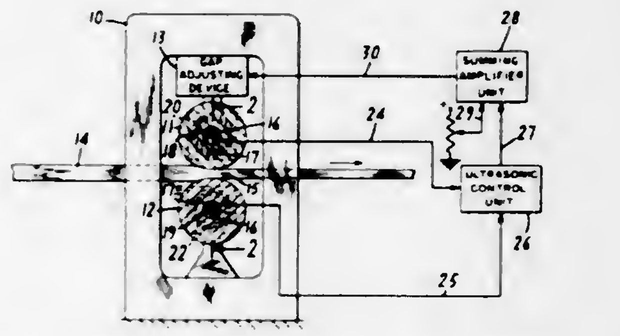
Joseph Irwin Greenberger, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 27, 1966, Ser. No. 560,508
Claims priority, application Great Britain, July 9, 1965, 29,308/65
4 Claims. (Cl. 72—10)



Apparatus for preventing "coil breaks" in strip unwound from a payoff coil at the entrance to a rolling mill. A follower in contact with the coiled strip transmits, via an arm, a cam, and a cam follower, to a digital position control unit, motion representative of the diameter of the coiled strip. The control unit controls a servovalve which is connected to an hydraulic cylinder. A piston within the cylinder is connected to a sliding frame which rotatably mounts a deflector roller. The system functions so that as the coil diameter decreases the deflector roller is automatically lowered to minimize the angle of bend of the strip around the roller.

3,401,547
MEASUREMENT AND CONTROL OF ROLLED MATERIAL THICKNESS AND QUALITY

Arnold M. Hall, Noank, and John A. Trevett, Old Lyme, Conn., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 26, 1966, Ser. No. 523,165
7 Claims. (Cl. 72—16)



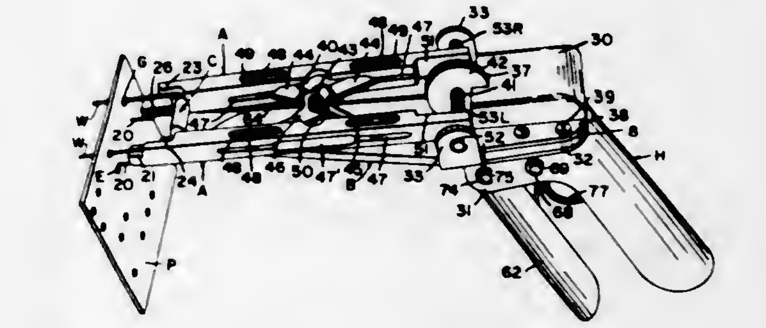
The rolls in a rolling mill are provided with transducers within their cavities by means of which ultrasonic signals are directed from one roll through material being rolled to the second roll. The thickness of the material is sensed by the effect of the material on the ultrasonic signal passing through it.

ERRATUM

For Class 72—145 see:
Patent No. 3,401,557

3,401,548
LEAD FORMING TOOL

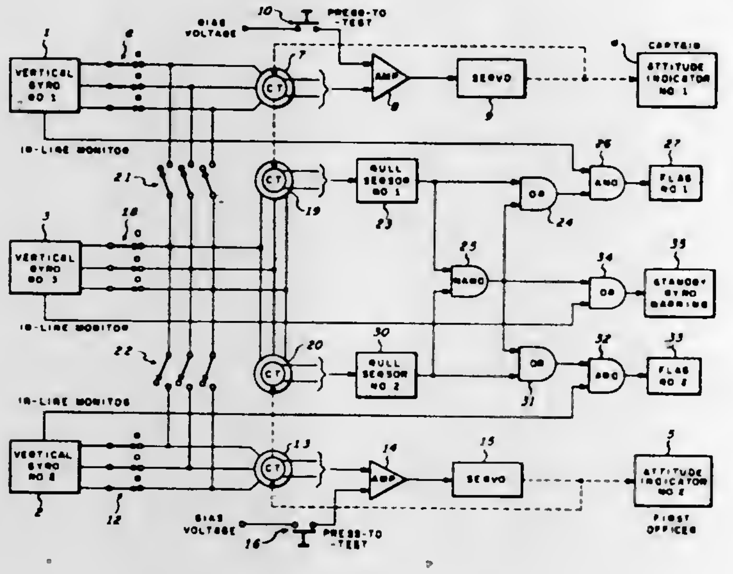
Gilbert H. Ross and Colin J. Anderson, Denver, and Byron E. Beaty, Englewood, Colo., assignors to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed Dec. 9, 1965, Ser. No. 512,690
15 Claims. (Cl. 72—389)



The tool has a pair of spaced longitudinally extending support surfaces across which the end portions of the leads of the component extend. Upstanding from the rearward end of each support surface is an anvil. A pair of longitudinally movable spurs are mounted adjacent to the support surfaces and engage portions of the lead so that when the spurs are moved rearwardly by a trigger mechanism, the lead ends are drawn past the anvils which form bends in the leads. The bent end portions of the leads extend axially beyond the ends of the tool and support the component so that the component can be mounted on a printed circuit board without removing same from the tool.

3,401,549
FAILURE MONITOR FOR ATTITUDE REFERENCE SYSTEMS

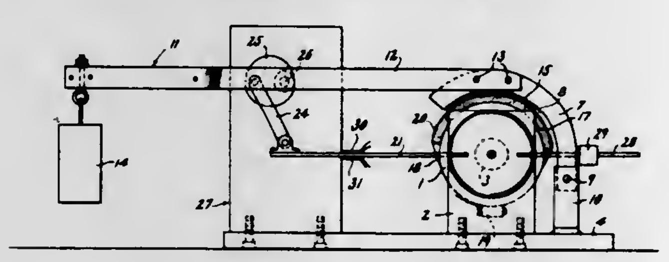
Harry Miller, Scottsdale, Ariz., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Aug. 9, 1966, Ser. No. 571,339
6 Claims. (Cl. 73—1)



1. In gyroscopic apparatus,
- (a) first, second and third substantially identical gyroscopic means for providing first, second and third substantially identical attitude signals respectively as well as first, second and third in-line monitoring signals, respectively, during normal operation,
- (b) first and second attitude indicating means,
- (c) first and second servo control means normally coupled between said first and second gyroscopic means and said first and second attitude indicating means respectively for providing redundant first and second attitude indicating channels,
- (d) first comparison means responsive effectively to said first and third attitude signals for providing a first comparison signal when the difference therebetween exceeds a first predetermined threshold,
- (e) second comparison means responsive effectively to said second and third attitude signals for providing a second comparison signal when the difference therebetween exceeds a second predetermined threshold, and
- (f) means including gating means responsive to said comparison signals and said in-line monitoring signals for providing discrete measures indicative of the malfunctioning portion of said apparatus.

3,401,550
LUBRICITY TESTER

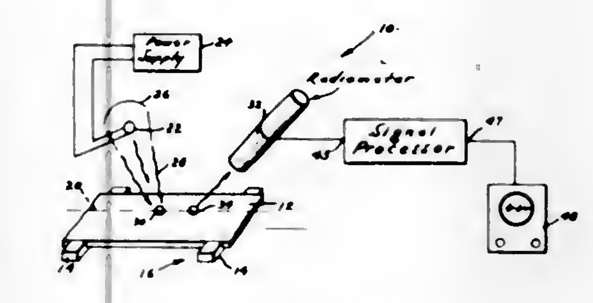
Haig D. Tarpinian, Grosse Pointe, and James D. Nanny, Detroit, Mich., assignors to Uniroyal, Inc., a corporation of New Jersey
Filed June 8, 1966, Ser. No. 556,167
7 Claims. (Cl. 73—10)



An apparatus for measuring the effectiveness of lubricants to be used between a curing bag and the liner of a tire which is being cured. A piece of curing bag stock and a piece of tire liner stock are positioned in sliding, face to face contact with each other, with only the lubricant to be tested disposed therebetween. The rubbery bag and liner stocks are located respectively on the surface of a cylindrical mandrel and on an opposing surface of a cooperating stator member. The stator is urged toward the mandrel, thereby pressing the opposing stocks against each other, while the mandrel and the stock thereon are oscillated with respect to the stock on the stator. The torque required to thus rotate the mandrel is measured.

3,401,551
NONDESTRUCTIVE TESTER

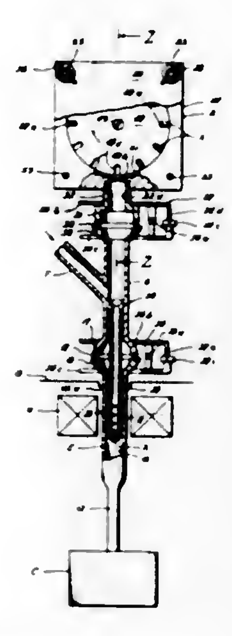
Dale R. Maley, Boulder, Colo., assignor to Automation Industries, Inc., El Segundo, Calif., a corporation of California
Filed July 26, 1965, Ser. No. 474,593
9 Claims. (Cl. 73—15)



The present disclosure relates to nondestructively inspecting materials by sensing the infrared radiations emanating from the surface of the material. Means are provided for canceling out the DC portion of a signal corresponding to a steady state temperature whereby only the remaining portion of the signal corresponds to the temperature changes resulting from discontinuities in the material.

3,401,552
AUTOMATIC SAMPLE INJECTOR

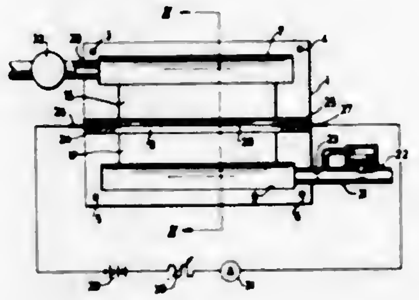
Maryon W. Ruchelman, 5422 Maple St., Bellaire, Tex. 77401
Filed Jan. 17, 1966, Ser. No. 521,215
10 Claims. (Cl. 73—23.1)



Sample injector for gas chromatograph apparatus and the like wherein an injection apparatus is adapted to hold a plurality of samples and automatically introduce each sample successively into a sample-evaporation chamber of the apparatus.

3,401,553
METHOD AND DEVICE FOR DETERMINING THE OXYGEN AND CARBONIC ACID CONTENT IN A GAS MIXTURE

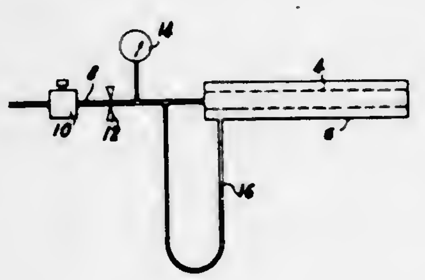
Bernardus Frederikus Visser, Mauritsstraat 2, Utrecht, Netherlands
Filed Aug. 4, 1964, Ser. No. 387,313
Claims priority, application Netherlands, Aug. 9, 1963, 296,499
3 Claims. (Cl. 73—27)



1. In the method for determining the oxygen and carbonic acid contents of a gas mixture by passing the gas mixture transversely through an elongated measuring chamber of substantially constant cross-section which has a thin wire of temperature dependent resistance extending longitudinally in the chamber and being heated by the passage of electric current through the wire, and by measuring the resistance of the heated wire as an indication of the contents of the gas mixture; the steps comprising, regulating the linear velocity of the gas mixture in said measuring chamber to more than 1 cm./sec., maintaining the pressure of said gas mixture in said chamber to a value less than 0.125 atmosphere, adjusting the passage of current through said wire when determining the carbonic acid content of the gas mixture to provide a low average temperature of said wire at which the resistance of said wire is uninfluenced by the oxygen content of the gas mixture, and, when determining the oxygen content of the gas mixture, adjusting the rate of flow of the gas mixture through said chamber to a low value and adjusting the average temperature of said wire to a high value at which low rate of flow and high wire temperature the resistance of said wire is independent of the carbonic acid content of the mixture within the range of from 0% to at least 10%.

3,401,554
CLOSED-VOLUME PERMEAMETER

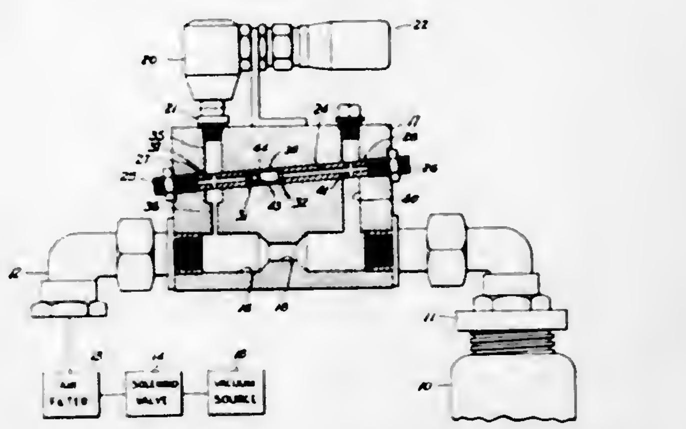
Jean Bonnet, Avignon, France, assignor to Commissariat à l'Energie Atomique, Paris, France
Filed Sept. 16, 1965, Ser. No. 487,800
Claims priority, application France, Sept. 28, 1964, 989,517
2 Claims. (Cl. 73—38)



The mean pore radius of porous barriers having the same specific permeability are measured by applying a pair of differential pressures across the barriers and then measuring the time between the differential pressures, the value of the difference between the pressures being inversely proportional to this time and a measure of the mean pore radius.

3,401,555
LIGHT-SENSITIVE SYSTEM FOR DETECTING PRESSURE VARIATIONS

James H. McMeekin, Brockway, Pa., assignor to Brockway Glass Company, Inc., Brockway, Pa.
Filed Sept. 16, 1966, Ser. No. 579,974
3 Claims. (Cl. 73—40)



1. A pneumatic leakage testing device comprising a pair of parallel fluid passages each having an end connected to a common source of differential fluid pressure, the opposite end of one of said passages being engageable with means to be tested for leakage, the opposite end of the other of said passages having an orifice leading to atmosphere, flow restrictions in each of said passages, a passage connecting across said fluid passages between the flow restrictions therein and said opposite ends thereof and including a transparent section, a member closely fitting within said section and yieldably biased in one direction, whereby movement of said member in a direction opposite to said one direction occurs in response to a pressure differential in said connecting passage, and a light source and light sensitive means on opposite sides of said transparent section in line with said member in its yieldably biased position for generating a signal in response to said movement.

3,401,556
EMULSIFIER FOR NON-DESTRUCTIVE TESTING METHODS

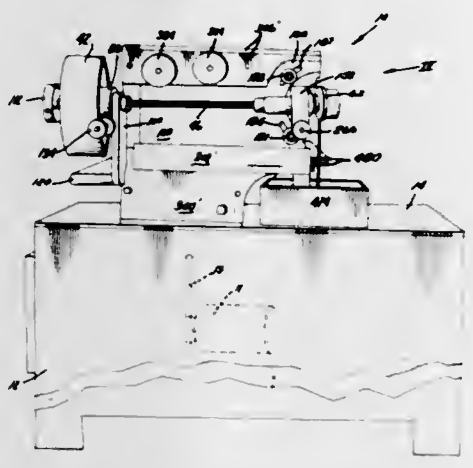
James S. Borucki, Chicago, Ill., assignor to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 9, 1964, Ser. No. 417,079
6 Claims. (Cl. 73—104)

1. An aqueous emulsifier composition free from sulfur, chlorine and phosphorus consisting essentially of the following ingredients and the proportions by volume:

3 to 10% of a water-immiscible C_1–C_3 alkanolamine;
10 to 20% of a tall oil in a state reactable with said alkanolamine to form a soap;
10 to 30% of a water-miscible polymerized monohydroxy oxy 1,2-propylene aliphatic monoether having a molecular weight between about 200 and 1,000;
15 to 30% of lauroyl diethanolamine;
5 to 15% of alkyl aryl polyethoxyethanol containing about 9 to 10 ethylene oxide groups per molecule;
10 to 30% of an isoparaffinic hydrocarbon solvent, and the balance water;

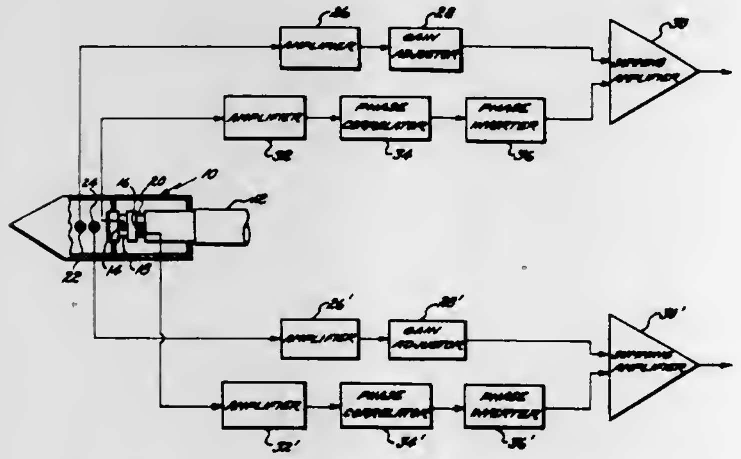
the aforenamed ingredients being in such proportions that the resulting composition is non-gelling and exhibits high tolerance toward aromatic hydrocarbon penetrant contamination.

3,401,557
WIRE COILING MACHINE
Stephen A. Platt, 1100 Fulton,
Grand Haven, Mich. 49417
Filed Sept. 1, 1965, Ser. No. 484,222
12 Claims. (Cl. 72—145)



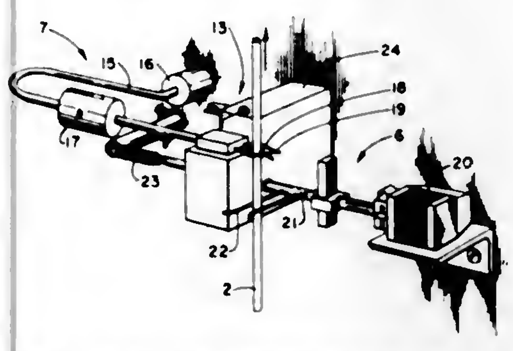
A wire coiling machine involving a driven spindle with an arbor chuck, a pair of spindle straddling flexible drive shafts frictionally driven from the spindle and in turn driving a pair of arbor straddling coiling rolls through speed reduction timing belts, the work rolls being mounted on longitudinally pivotal hangers, which are pivotally mounted on transversely pivotal sectors, which are pivotally mounted on longitudinally shiftable slide plates, all in a manner to achieve high speed coiling versatility with retained sensitivity.

3,401,558
INERTIA COMPENSATED BALANCE SYSTEM
Charles G. Stouffer, Baltimore, William Silver, Bel Air, and Clyde V. Stahle, Jr., Timonium, Md., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Mar. 21, 1966, Ser. No. 537,620
1 Claim. (Cl. 73—147)



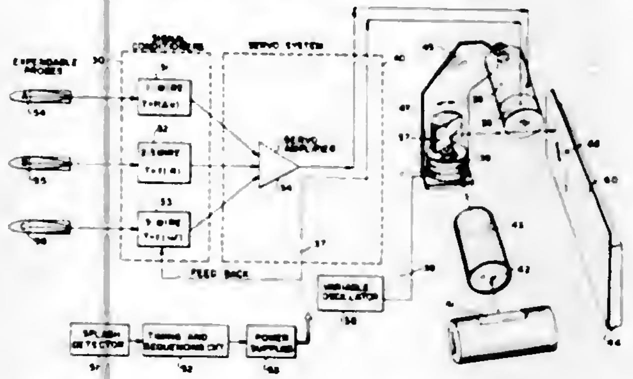
A dynamic balance system for the measurement of ingrated transonic buffet loads on wind tunnel models wherein signals from a standard moment balance are combined with the signals from accelerometers, located where the inertia loads measured by the balance can be canceled by the accelerometers with proper gain adjustments and thereby measuring only the total random oscillatory aerodynamic loads resulting from local surface pressure fluctuations.

3,401,559
METHOD AND APPARATUS FOR DETERMINING THE DEGREE OF COHESION IN MULTIFILAMENT YARN STRANDS
Charles M. Rice, Candler, N.C., assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Oct. 28, 1965, Ser. No. 505,538
2 Claims. (Cl. 73—160)



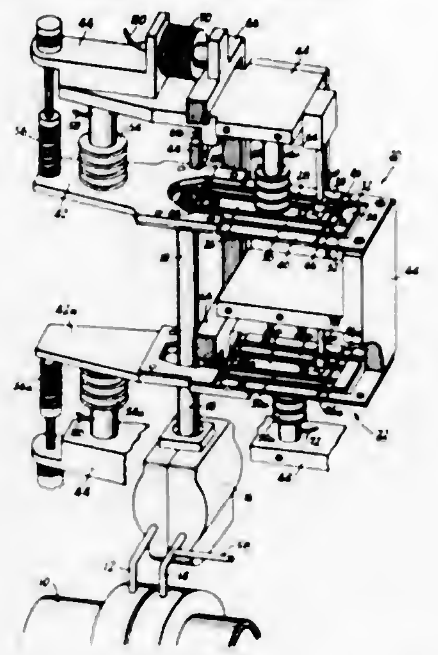
The amount of filament entanglement or cohesion in multifilament yarn may be determined automatically by feeding a predetermined amount of yarn over a needle-like yarn probe which is mounted for movement as filament entanglement occurs, and by recording movement of the yarn probe while simultaneously releasing the probe from yarn entanglement to permit reinsertion and additional recording at another point in the continuously moving yarn.

3,401,560
OCEANOGRAPHIC MEASURING AND RECORDING DEVICE
Samuel A. Francis, Marion, Mass., assignor to The Sippican Corporation, Mattapoisett, Mass., a corporation of Massachusetts
Filed Apr. 7, 1965, Ser. No. 446,342
8 Claims. (Cl. 73—170)



A signal conditioner senses changes in a property of a medium by sensing changes in an electrical signal supplied to it from the medium and indicating the property of the medium and produces a first signal derived from the changes. A reflective surface mounted for rotation about first and second perpendicular axes is rotated about the second axis by a first control servomotor under the control of the first signal and about the first axis by a second control electric motor. The electric motor is driven in accordance with time. The first control servomotor produes via a voltage divider a voltage in accordance with the rotation of the reflective surface about the second axis. The voltage and the electrical signal are compared to produce the first signal from the difference between the voltage and the first signal in a manner whereby the rotation of the reflective surface about the second axis is proportional to the magnitude of the changes in the property of the medium. A beam of light directed to the reflective surface is reflected therefrom and impinges upon a record medium. The record of light upon the record medium is developed by heat and the various components are controlled in their energization and deenergization by a controlled power source.

3,401,561
DIFFERENTIAL PRESSURE RESPONSIVE APPARATUS
Lyman Cook, Foxboro, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Aug. 9, 1966, Ser. No. 571,335
9 Claims. (Cl. 73—205)



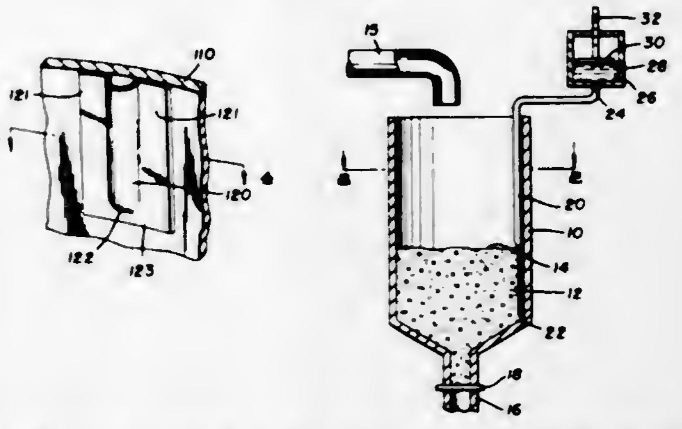
1. Apparatus for measuring the flow of a gas and for producing a signal corresponding to the measured flow, comprising, in combination:

means in the flowing gas stream to create a pressure drop and to develop a differential pressure signal corresponding thereto, first sensing means comprising a pressure cell responsive to said differential pressure to produce a first input force-signal corresponding to said differential pressure signal, a force bar coupled at one end thereof to said pressure cell to be acted on by said first input force-signal, second sensing means responsive to a characteristic of said gas for producing a second force-signal proportional to the value of said characteristic;

a first stage mechanism for producing an intermediate signal representing the product of said first and second force-signals, said mechanism comprising a first balanceable member, means connecting the other end of said force bar to said balanceable member to transmit thereto a force corresponding to said first force-signal; a first reaction element, a connecting flexure directly securing said reaction element to said balanceable member so that said reaction element serves to control the extent of movement of said balanceable member in response to changes in force applied thereto, first force-transmitting means for applying a force to said balanceable member, second force-transmitting means for adjusting the angular position of said reaction element with respect to said balanceable member so as to adjust the extent of movement of said balanceable member in response to changes in force thereon, first feedback means responsive to movement of said balanceable member for producing a rebalance signal corresponding to any unbalance of forces on said member, means for directing said second force-signal to one of said force-transmitting means, means for directing said rebalance signal to the other of said force-transmitting means to maintain the forces on said member in balance, said rebalance signal thereby serving as said intermediate signal and representing by its magnitude the product of said first and second force-signals;

and a second stage mechanism physically mounted together with said first stage mechanism and structurally similar thereto, said second stage mechanism serving to produce a final output signal corresponding to a square-root function of the quantity represented by said intermediate signal, so that the final output signal is linearly related to the gas flow rate, said second stage mechanism comprising a second balanceable member, a second reaction element secured to said second balanceable member by a second connecting flexure, a set of three force-transmitting means consisting of third and fourth force-transmitting means for applying transversely-directed forces to said balanceable member and a fifth force-transmitting means for adjusting the angular position of said second reaction element with respect to said second balanceable member, second feedback means responsive to movement of said second balanceable member for producing a rebalance signal corresponding to any unbalance of forces on said second balanceable member, means for directing said intermediate signal to one of said set of three force-transmitting means, and means for directing said rebalance signal to the remaining two force-transmitting means of said set, so that said second rebalance signal serves as a final output signal corresponding to the square-root of the product of the signals representing said gas flow rate and said characteristic respectively.

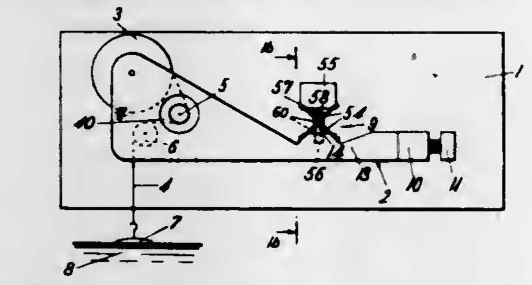
3,401,562
MATERIAL LEVEL INDICATOR
Warford A. Reaney, Box 338,
Delaware, Ohio 43015
Filed July 20, 1966, Ser. No. 566,627
8 Claims. (Cl. 73—290)



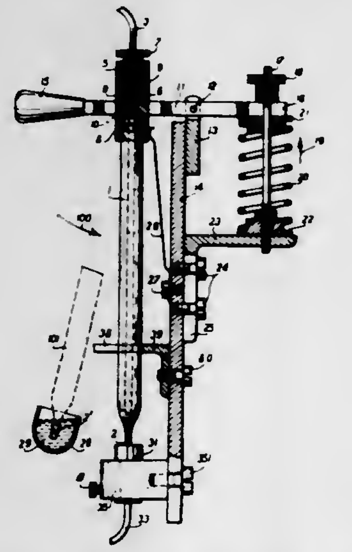
This invention relates to a device for measuring or indicating the height of solid material in a bin or similar container. More specifically the invention deals with a device for measuring or indicating the height or level of solid material in a bin which device comprises a resilient, fluid-filled tube, the latter being vertically disposed in the bin. The fluid in the resilient tube, when displaced by the lateral pressure of the solid material, operates a float, piston, or similar element in a cooperating indicating device in a manner correlatable with changes in the level of material in the bin. The float, piston, or similar element may, in turn, operate a regulation system that controls the amount of solid material in the bin.

3,401,563
MEASUREMENT OF THE SURFACE LEVEL OF LIQUIDS
Lawrence Lonnon, Chiswick, London, England, assignor to Evershed & Vignoles Limited, London, England, a British company
Filed Jan. 13, 1966, Ser. No. 520,533
Claims priority, application Great Britain, Jan. 22, 1965, 2,975/65
11 Claims. (Cl. 73—313)

Apparatus for measuring the surface level of a liquid in a tank where a partially immersed displacer has means for suspending it including a winding member carried by a movable support member such as a pivoted balance beam. A constant restoring force applied to the movable support means tends to maintain it in a balanced position. Sensing means sense the movement of a support member from the balance position to control a motor which rotates the winding member in the direction to restore balance. As the entire suspension is effectively balanced against a constant restoring force, the weight of the unwound portion of the suspension will have a constant effect on the displacer.



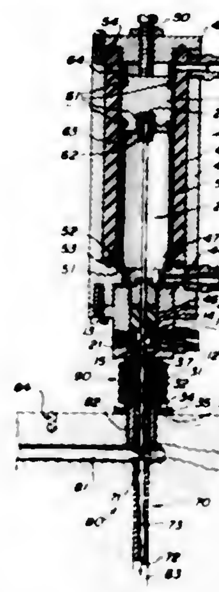
3,401,564
APPARATUS FOR TRANSFERRING MEASURED SAMPLES
Jiří Hrdina, Prague, Czechoslovakia, assignor to Ceskoslovenska akademie ved, Prague, Czechoslovakia
Filed May 17, 1966, Ser. No. 550,828
Claims priority, application Czechoslovakia, May 19, 1965, 3,245/65
6 Claims. (Cl. 73—421)



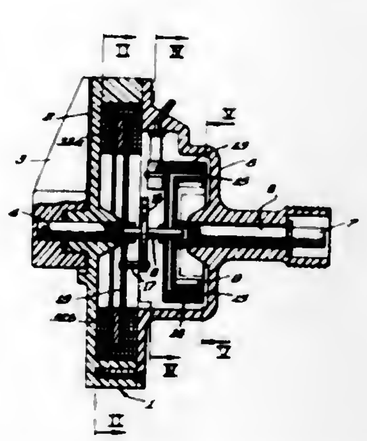
An arrangement for transferring dosed samples, particularly for automatic analyzers, which includes at least one sample tube; a distributing valve; a discharge tubing; means for connecting one end of said sample tube with said distributing valve while the other end of said sample tube is adapted to be connected with said discharge tubing; means for sealing the connection between said other end of the sample tube and the discharge tubing and means for imparting a relative movement between the second end of the sample tube and the discharge tubing so as to allow alternately free access to this other end of the sample tube, and to accomplish a tight coupling between the sample tube and the discharge tubing.

3,401,565
LIQUID SAMPLING APPARATUS FOR GAS CHROMATOGRAPHY
Edward H. Stoll, Chicago, and Nelson E. Nuding, Brookfield, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 28, 1966, Ser. No. 530,732
7 Claims. (Cl. 73—422)

1. Apparatus for transferring a calibrated volume from a liquid stream into a carrier gas stream for introduction into a gas chromatographic column which comprises a sample chamber block having a cavity forming the sample chamber, said block having through passages for influent and effluent liquid and upper and lower opposed openings; a rod having a depression for containment of said calibrated volume, said rod passing through said upper and lower opposed openings; a tube adjacent to and aligned with said lower opening; actuating means for positioning said rod in an upper position whereby said depression resides in said sample chamber and for moving said rod downwardly causing said depression to move through said tube to a lower position entirely below said tube while retaining a calibrated volume of liquid in said depression and for returning said rod to said upper position; a second tube so positioned adjacent said tube that movement of said rod to said lower position establishes contact of said rod with said second tube, said second tube having an entrance and an exit permitting flow of said carrier gas through said second tube into the chromatographic column; and means for heating said rod sufficient to cause flash vaporization of the calibrated volume into the carrier gas stream flowing through said second tube and thence into the gas chromatographic column.

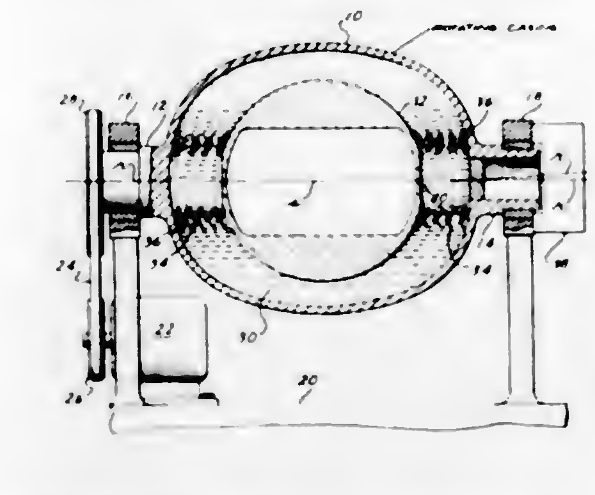


3,401,566
SENSING CONTROL DEVICE
Lloyd R. Westby, P.O. Box 233, Wayne, Ill. 60184, and Francis H. Bourgeois, P.O. Box 84, Oak Park, Ill. 60305
Filed May 3, 1967, Ser. No. 635,881
11 Claims. (Cl. 73—518)



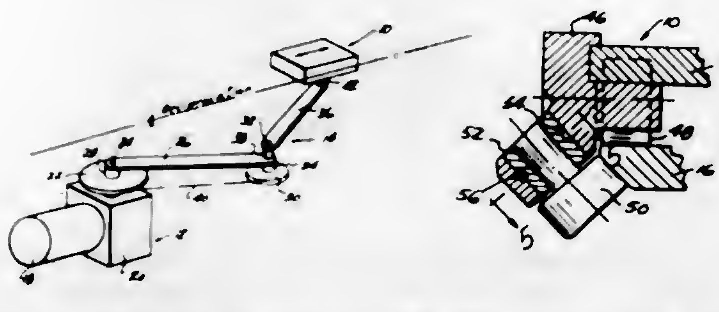
A sensing device for rotating elements, having a spring biased magnetically coupled driven element which is positionally responsive to the r.p.m. of a rotating driving element, the driven element being operatively connected with switch means, directly or indirectly actuatable thereby, including by pneumatic means, with the spring biasing means being selectively adjustable, for example, by manual or electromagnetic operation. Where used as a vehicle speed sensing device, it may be incorporated as a part of the speedometer.

3,401,567
GYROSCOPES
Paul B. Boswell, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Oct. 12, 1964, Ser. No. 403,085
7 Claims. (Cl. 74—5)



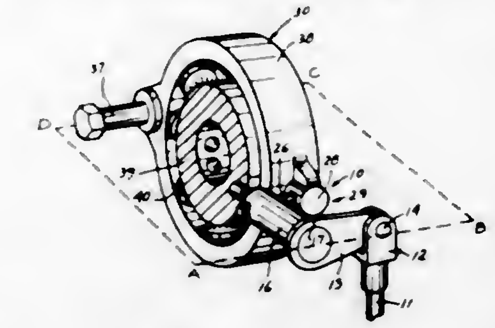
1. A gyroscope comprising a rotatable casing, a gyroscopic element disposed therein, said casing being partially filled with a suspending liquid for the gyroscopic element, means for disposing a second fluid having a density less than that of the suspending liquid at one axial end of the casing, means for rotating the casing to entrap the second fluid in a column at said one axial end, and means for discharging a second portion of said second fluid into the opposite axial end of said casing to form a second column of the second fluid thereby positioning the gyroscopic element in an axial sense relative to the casing.

3,401,568
CARRIAGE DRIVE MECHANISM
Leland F. Blatt, Grosse Pointe, Mich. (24121 Mound Road, Warren, Mich. 48091)
Filed Aug. 17, 1966, Ser. No. 573,005
1 Claim. (Cl. 74—37)



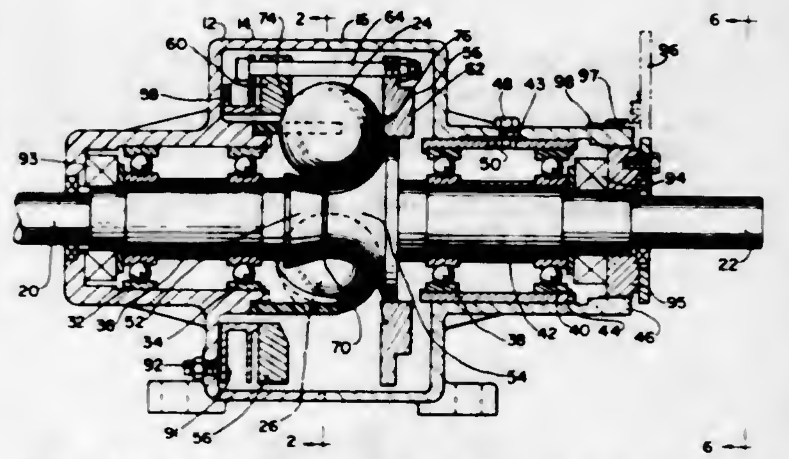
A tool-holding carriage is reciprocated along guide rails by a planetary gear system wherein the planet carrier rotates around a stationary sun gear, and wherein an arm coaxial with the planet gear and fixed at one end for rotation therewith is connected at its other end to the carriage to be driven. Two guide rails are each provided with two bearing surfaces at an acute angle to each other, so that when rollers mounted on the carriage engage the surfaces, they are capable of resisting thrusts applied to the carriage in any direction. The rollers are eccentrically mounted in bushings, so that selective rotation of a given bushing adjusts the position of its respective roller relative to the guide rail surface.

3,401,569
CONTROL LINKAGE
Keith A. Boyd, Mount Clemens, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Mar. 21, 1966, Ser. No. 536,009
7 Claims. (Cl. 74—96)



A linkage system for transferring oscillatory motion in a first plane to oscillatory motion in a second plane transverse to said first plane and including first and second oscillatable levers in said first and second planes, respectively, and having a cylinder-and-socket joint connected in association with the free ends of said first and second levers.

3,401,570
VARIABLE SPEED TRANSMISSION
Leonard A. Erickson, 4354 Blythe Road, Columbus, Ohio 43224
Filed Jan. 20, 1966, Ser. No. 521,992
13 Claims. (Cl. 74—193)

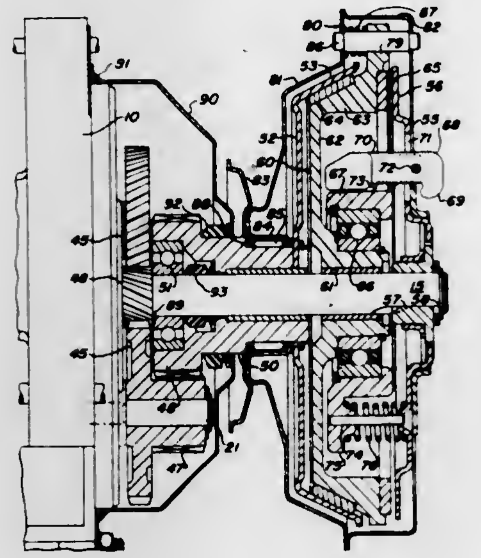


An orbital ball transmission is described having: an outer, stationary race comprising a pair of spaced, circular, resiliently axially separable, surfaces against which the balls roll; an inner frusto-conical race concentrically fixed to the input shaft and in driving contact with the balls; and an inner concave race concentrically fixed to the output shaft and in driving contact with the balls. Means are provided to axially movably adjust the output shaft to vary the point of contact between the balls and the concave race.

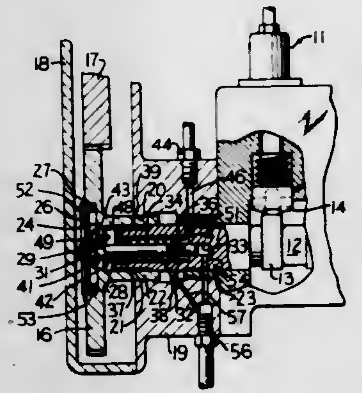
3,401,571
ELECTRIC MOTOR DRIVE FOR WASHING MACHINES
Walter William Ralph Searle, Beaconsfield, England, assignor to The Hoover Company, North Canton, Ohio, a corporation of Delaware
Filed Nov. 30, 1966, Ser. No. 598,045
Claims priority, application Great Britain, Dec. 1, 1965, 51,018/65
6 Claims. (Cl. 74—336)

1. An electric motor drive for driving a part of a washing machine at either of two widely different speeds, including a pole changing motor having a single output pulley mounted rotatably on the shaft of said motor, a low ratio gear transmission connected to said motor shaft and connectable to said output pulley by means of a low speed

friction clutch member, a high speed friction clutch member directly driven from said motor shaft, a centrifugal device means responsive to the motor speed supported between said low speed friction clutch member and said high speed clutch member, said centrifugal device means being the common driving connection to said low speed and said high speed clutch members, said centrifugal device means moving axially on said motor shaft upon an increase in speed above a predetermined value to disengage its connection to said low speed friction clutch member and to thereupon engage said high speed friction clutch member.



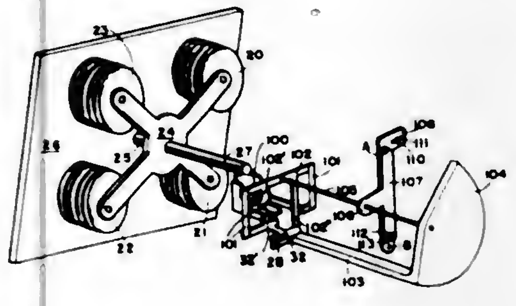
3,401,572
COMPACT SPEED SENSITIVE TIMING DEVICE FOR INTERNAL COMBUSTION ENGINES
John M. Bailey, East Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Sept. 12, 1966, Ser. No. 578,783
6 Claims. (Cl. 74—395)



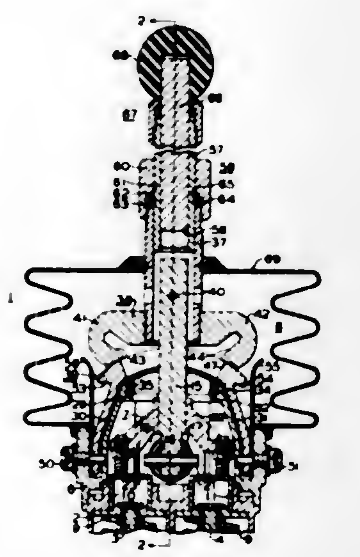
Compact mechanism for adjusting engine timing has a fluid filled vortex chamber contained within a cam shaft drive gear and centrifugally generating a force proportional to engine speed. Means translate the force into axial movement at a helical spline coupling between the gear and one of the rotating members engaged therewith to vary the annular phase relationship therebetween in accordance with engine speed.

3,401,573
RELAY DEVICE WITH ADJUSTMENT MEANS
Richard G. Beach, Greece, and Howard R. Jaquith, Rochester, N.Y., assignors to Taylor Instrument Companies, a corporation of New York
Filed July 18, 1966, Ser. No. 565,927
15 Claims. (Cl. 74—469)

A four-bellows pneumatic controller where the bellows act in parallel on one side of a plate. Plate position is detected by a baffle and nozzle mechanism. The mechanism is mounted on a first lever which is pivotally mounted on a second lever pivotally mounted independently of the plate. The pivot axes of the levers are parallel to the line of action of the bellows. The positions of the levers are individually adjustable on their pivot axes, and the geometry is such that such adjustments move the baffle and nozzle mechanism in directions substantially at right angles to each other and to the rod on the plate contacting the baffle, in effect. The baffle and nozzle mechanism can be angularly adjusted bodily about the rod.

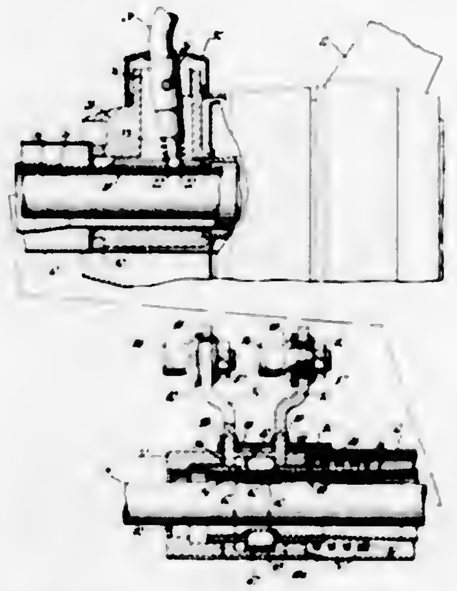


3,401,574
MULTIPLE VALVE CONTROL DEVICE WITH POSITION LOCK
Charles Doolittle, Lexington, Ky., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed July 21, 1966, Ser. No. 566,943
12 Claims. (Cl. 74—471)



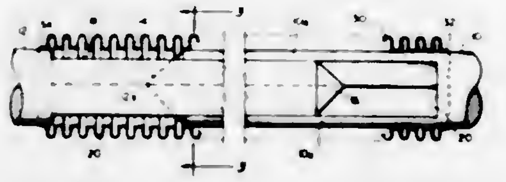
A multiple valve control device with position lock in which a universally pivoted lever is movable about the pivot from a neutral position in a direction to operate one valve and is simultaneously movable perpendicularly to the first direction in either a left or right direction about the pivot to operate a second and third valve, respectively. A latch saddle pivotally movable with the lever in the first direction carries a pair of leftwardly and rightwardly extending latches engageable by a pair of correspondingly extending latches carried on one end of a lever extension pivotally attached to the first mentioned lever so that when the lever extension is urged leftwardly or rightwardly, the lever extension pivots relative to the lever so that corresponding latches engage to lock the lever in the left or right position while the lever is free to move in the first direction. A manually operable lock mechanism is actuable to prevent relative pivotal movement between the lever and lever extension to prevent engagement of the latching mechanism.

3,401,575
TRANSMISSION CONTROL LINKAGE
William E. von Kampen, Mount Clemens, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 23, 1966, Ser. No. 536,838
12 Claims. (Cl. 74—473)



Shift control linkage in which the shifter tube carries roller pins which are selectively engageable with recesses in shift levers rotatably mounted on a support to drivingly connect the shifter tube and any selected shift lever.

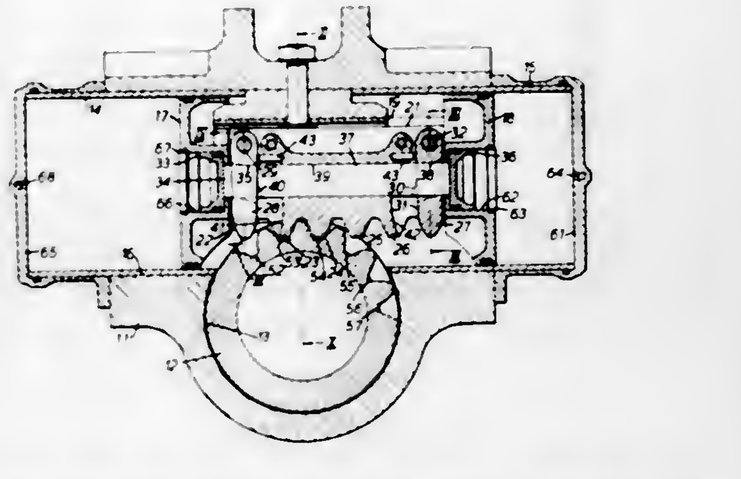
3,401,576
COLLAPSIBLE STEERING COLUMN
Robert E. Eckels, 2101 Youngfield, Golden, Colo. 80401
Filed May 23, 1966, Ser. No. 553,004
5 Claims. (Cl. 74—493)



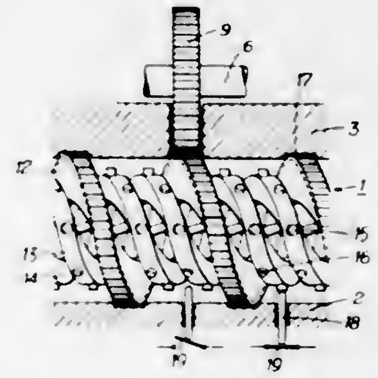
An impact absorbing, collapsible steering column uses two rod portions connected for conjoint rotation and slidable on each other for shortening while retaining the rotatable connection. An energy absorbing collapsible bellows is attached to the two rod portions covering the connection and arranged to absorb impact energy applied to either end of the column on collapsing the undulations of the bellows.

3,401,577
STEERING DEVICES FOR AN AIRCRAFT WHEEL MOUNTING
Raymond William Partridge, Cinderford, England, assignor to Dowty Rotol Limited, Gloucester, England, a British company
Filed July 13, 1966, Ser. No. 564,865
Claims priority, application Great Britain, July 14, 1965, 29,826/65
9 Claims. (Cl. 74—498)

A drive mechanism is disclosed for the rotatable steering member of a ground engaging element which is casterable on the ground. The drive mechanism comprises a rack and pinion mechanism in which the pinion is interconnected with the steering member to rotate therewith, and interengageable with the rack to be driven thereby over a predetermined range of angular steering movement. In addition, the drive mechanism includes a pair of pistons disposed to abut the ends of the rack and each operable to drive the rack through positions corresponding to the range of angular steering movement, or in the alternative to retract with the rack through the same positions. The drive strokes of the pistons are restricted to positions of the rack corresponding to the end positions of the pinion in the range of angular steering movement. Yet the ground engaging element can caster on the ground when the pinion is disposed in either of the aforesaid end positions, by the further inclusion of means whereby in either of the latter positions thereof, the rack can be retracted from the drive piston to a new position relatively outside the range of steering movement, and means whereby the other piston can be retracted to the new position therewith.



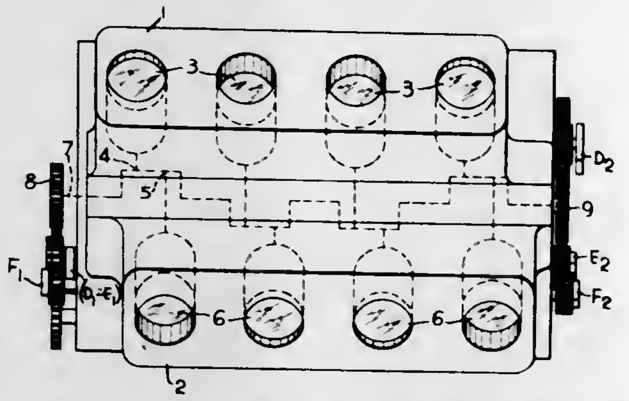
3,401,578
SWITCH OPERATOR
Josef A. Körber, Zedlitzgasse 3, Vienna, Austria
Filed Jan. 25, 1966, Ser. No. 522,922
Claims priority, application Austria, Feb. 1, 1965, A 882/65
5 Claims. (Cl. 74—567)



A switch assembly for generating a train of impulses in which an endless body is threadedly guided in a toroidal housing and is peripherally engaged by a drive wheel for axially advancing the carrier body around the toroid while rotating the body about the axis of the toroid, the body being provided with a multiplicity of signal-generating projections helicoidally disposed about the body with the pitch of its thread and cooperating with stationary contact members for producing the pulses upon co-operation of the stationary and movable elements.

3,401,579
ENGINE BALANCER

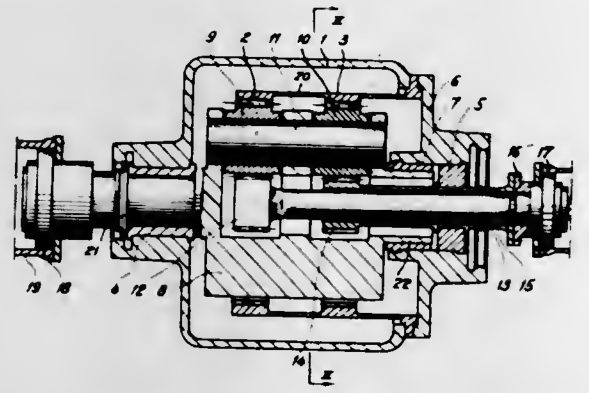
George J. Derrig, Park Forest, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Feb. 23, 1967, Ser. No. 617,985
4 Claims. (Cl. 74—604)



A balancing system for a V-8 engine to neutralize accelerating and decelerating forces of reciprocating parts and unbalanced couples inherent with offset opposing banks of cylinders in this type of an engine.

3,401,580
PLANETARY GEARING DRIVE TRANSMISSION

Hans Sigg, Aargau, Switzerland, assignor to Maag Gear Wheel & Machine Company Limited, Zurich, Switzerland, a Swiss company
Filed Dec. 17, 1965, Ser. No. 514,607
Claims priority, application Switzerland, Dec. 23, 1964, 16,593/64
2 Claims. (Cl. 74—801)

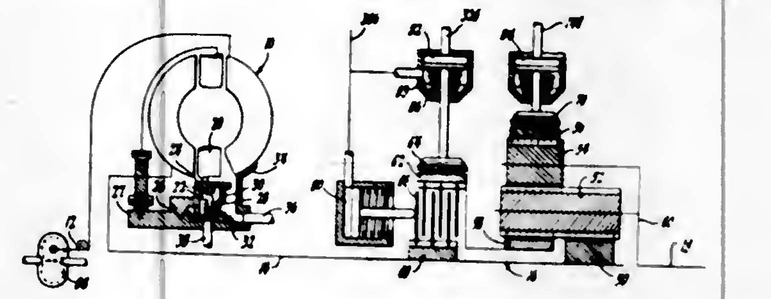


Planetary gearing drive transmission, comprising two similar sun and planet assemblies parallelly mounted and connected to each other by a rim gear mounted on a common carrier, the two sun wheels of said assemblies being mounted respectively at the adjacent inner ends of two concentric shafts which are connected together and have substantially the same torsional rigidity, whereby the torques which the transmission is required to transmit are distributed substantially uniformly between the two assemblies.

3,401,581
TRANSMISSION

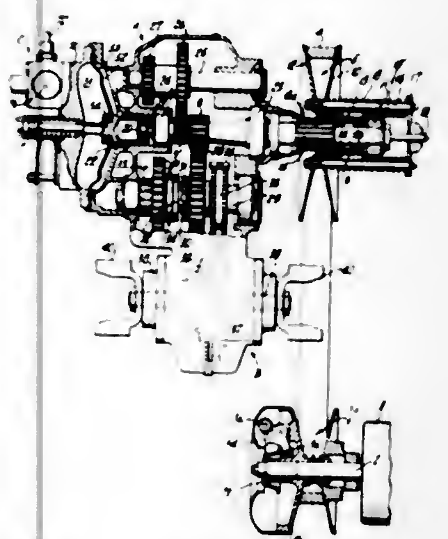
Howard E. Chana, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 18, 1964, Ser. No. 376,111
15 Claims. (Cl. 74—864)

1. In a transmission for driving an output shaft and for being driven by an engine provided with means for generating a pressure which is measured by the torque demand on the engine, the combination of means for generating a pressure measured by the speed of rotation of the output shaft, a torque establishing device, a first fluid pressure chamber for selectively engaging and disengaging the torque establishing device, means for conducting pressure fluid to and from the first chamber, an expansible volume accumulator chamber for controlling the rate of change of pressure in the first chamber, a third fluid pressure chamber for opposing expansion of the accumulator, a normally closed valve for selectively excluding pressure fluid from or admitting it to the third fluid pressure chamber to selectively permit or prevent expansion of the accumulator respectively, a first fluid pressure motor supplied with torque demand pressure for opening the valve to prevent expansion of the accumulator, and a second fluid pressure motor supplied with speed pressure for opening the valve to prevent expansion of the accumulator.



3,401,582
AUTOMATIC VARIABLE SPEED TRANSMISSION FOR AUTOMOTIVE VEHICLES

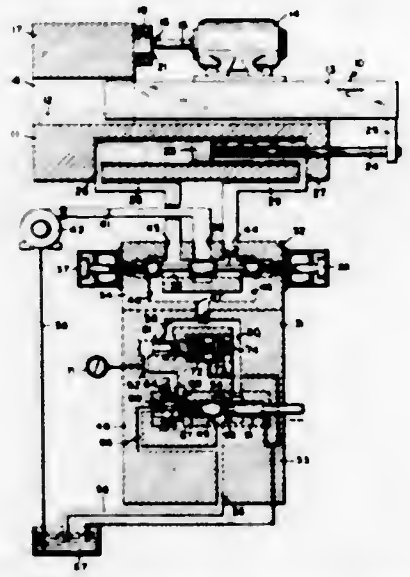
Eric Jaulmes, Paris, France, assignor to Ateliers de la Motobecane, a corporation of France
Filed Dec. 15, 1965, Ser. No. 513,997
Claims priority, application France, Dec. 17, 1964, 998,926
8 Claims. (Cl. 74—864)



The operating characteristic of a variable speed transmission for automotive vehicles of the type comprising a pair of spring-loaded expansible pulleys interconnected by a trapezoidal belt and functioning by the speed reduction ratio between the driven pulley connected to the vehicle and the driving pulley connected to the engine being reduced gradually during acceleration of the vehicle from a predetermined initial value towards unity or direct drive and, vice versa, during deceleration, respectively, of the vehicle, is automatically controlled by a pneumatic corrector comprising multiple valve means connected with the input conduit of the engine and a diaphragm mounted in a cavity for operation in either direction by the input conduit pressure through said valve means, both said valve means and said diaphragm being operably connected with the displaceable part of the driven pulley, to control the operating characteristic of the transmission upon passing in either direction through a predetermined intermediate position between said initial and unity transmission ratios, to thereby effect an accelerated operation towards direct drive during acceleration and to effect increased engine braking during deceleration, respectively, of the engine.

3,401,583
MACHINE TOOL WITH TOOL FEED CONTROL

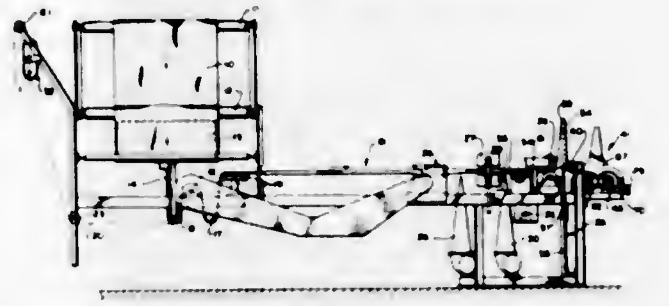
Alden H. Jacobson, Paxton, Bruno A. Holmstrom, West Boylston, and Harry W. Ostlund, Holden, Mass., assignors to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Filed Sept. 7, 1965, Ser. No. 485,365
9 Claims. (Cl. 77—3)



A metal working apparatus having means to advance a tool into a workpiece, which apparatus includes a hydraulic system having a variable-orifice valve and programmable means for selecting various orifice sizes from time to time during a machine cycle.

3,401,584
METHOD AND APPARATUS FOR SLITTING AND OPENING TUBULAR KNITTED FABRIC

Eugene Cohn, Great Neck, Sargent P. Snyder, Springfield Gardens, and Frank Catallo, Elmont, N.Y., assignors to Samcoe Holding Corporation, Woodside, N.Y., a corporation of New York
Filed Dec. 13, 1965, Ser. No. 513,516
17 Claims. (Cl. 83—15)

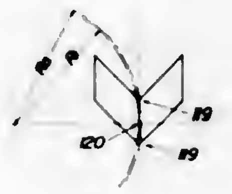


The invention is concerned with a method and apparatus for converting tubular fabrics to open width form. The invention provides a trapezoidal converting frame over which the tubular fabric is drawn after it is slit. This converting frame guides and supports the edge and center portions of the fabric during the opening operation, resulting in a dimensionally stable, open width product that requires a minimum, if any, edge trimming.

3,401,585
CUTTING ARRANGEMENTS FOR CUTTING LONGITUDINALLY MOVING WEBS

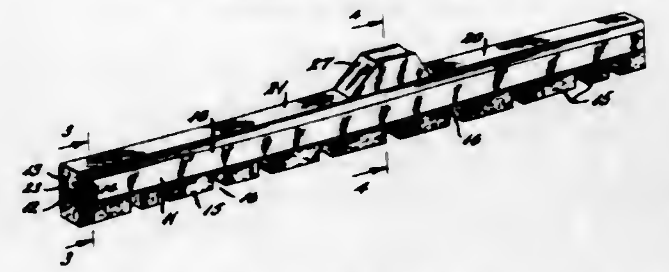
Alfred Schmermund, 62 Kornerstrasse, Gevelsberg, Westphalia, Germany
Filed Mar. 25, 1966, Ser. No. 537,370
Claims priority, application Great Britain, Mar. 31, 1965, 13,541/65
4 Claims. (Cl. 83—341)

The disclosure relates to cutting arrangements for cutting longitudinally moving webs into predetermined lengths as are used, for example, for wrapping cigarette blocks. The arrangement comprises a rotatable cutter having a cutting edge which cooperates with a counter-edge. In order to avoid a chopping action of the cutting edge and to achieve a slicing cut which begins at one margin of the web and proceeds to the other margin, a rectilinear cutting edge and a rectilinear counter-edge are provided on a rotatable cutter and a counter member respectively, the cutter and counter member being inclined at equal angles, but in opposite senses, relative to the axis of rotation of the cutter. A specific arrangement for mounting the cutter and counter member, for rotating the cutter and for moving a web between the cutter and counter member is described in detail.



3,401,586
CHORD BAR FOR MULTI-STRINGED INSTRUMENT

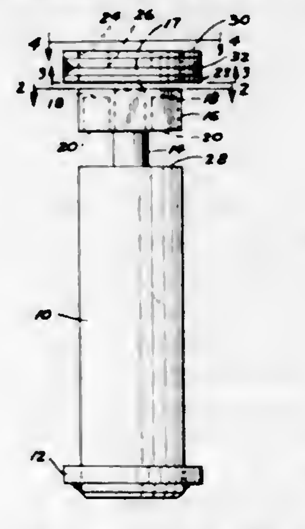
Glen R. Peterson, Jr., Summit, N.J., assignor to Oscar Schmidt-International, Inc., Union, N.J.
Filed Aug. 8, 1967, Ser. No. 659,114
5 Claims. (Cl. 84—287)



A chord bar for a multi-stringed instrument of the zither type has an extruded main body of substantially dimensionally stable material to which string dampers are attached and has a plastic rod along its top to which a finger-engaging button is attached.

3,401,587
MAGNET PIN

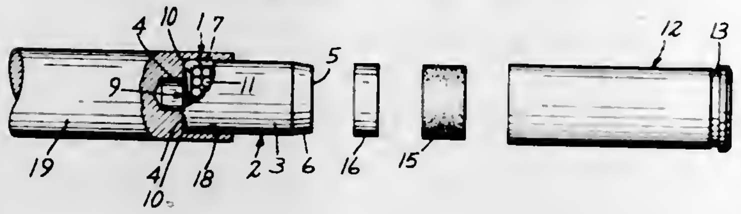
Andrew W. Kalls, Warren, Mich., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 13, 1967, Ser. No. 609,726
3 Claims. (Cl. 85—7)



An apparatus of the pin type for use in fastening parts together comprising, a pin having a head on one end and a nut on undercut portion with a T-section at its opposite end and having permanent magnet means within the undercut face thereof to lock nut to the T-section.

3,401,588
SHOT CONTAINER FOR CARTRIDGES AND METHOD OF LOADING

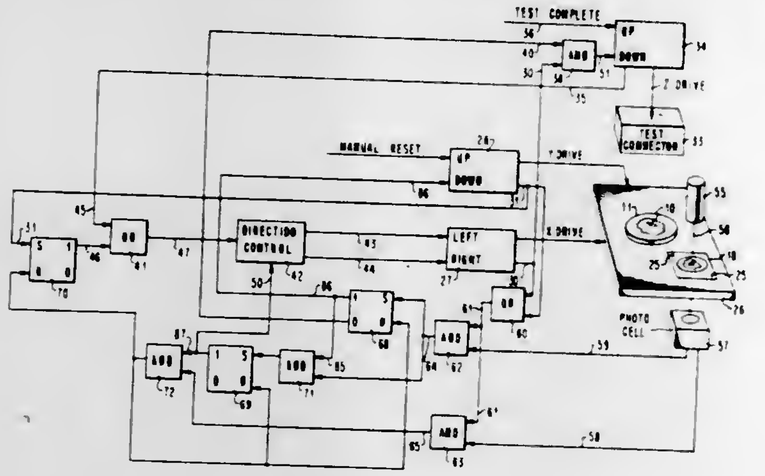
Ole N. Olson, 2909 Quentin Ave. S., Minneapolis, Minn. 55416
Filed Aug. 11, 1966, Ser. No. 571,925
3 Claims. (Cl. 86—23)



A shot container for hand gun cartridges comprising a pair of individual cooperating semi-cylindrical container sections each having a semi-cylindrical wall portion and semi-circular front and rear segmental end wall portions, the wall portions of each section defining a marginal edge disposed in a plane on the axis of its respective cylindrical wall portion. The container sections are adapted to be filled with shot pellets and disposed in marginal edge-to-edge abutting relationship in a cartridge casing. A method of loading a cartridge with shot involves the holding of a pair of container sections together, bending the sections to provide an opening therebetween, filling the container sections with shot, and inserting the container into the cartridge casing.

3,401,589
METHOD OF CONTROLLING A TESTING APPARATUS THROUGH THE USE OF A PHOTOGRAPH OF THE OBJECT BEING TESTED

William O. Druschel, Granite Springs, and Eugene J. Rymaszewski, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 23, 1964, Ser. No. 420,626
9 Claims. (Cl. 88—14)

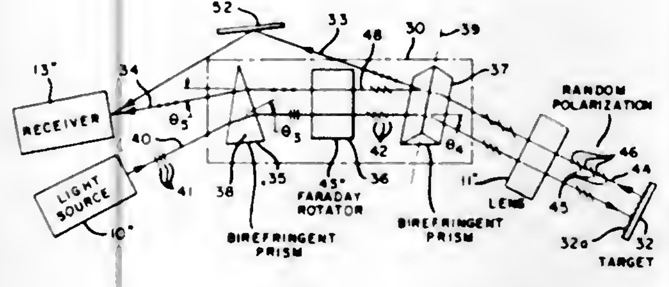


1. A method of selectively positioning an object relative to a mechanism to operate on the object within an undefined outline of points on the object, these points being defined by a preceding operation of cutting the object into an array of chips, comprising:

- producing a photograph of the object having transparent and opaque regions differently signifying points of the object to be operated on and points to not be operated on;
- illuminating the photograph at a point corresponding to a point on the object in a position to be operated on;
- detecting whether a point on the object is to be operated on according to light transmitted through transparent points on the photograph;
- moving the point of illumination of the photograph as the operation on the object is moved relative to the operating mechanism from point to point, this movement being such that a point to point correspondence is maintained between the photograph and the object; and
- controlling the operating mechanism to sequentially operate on the points of the object according to the pattern of the photograph.

3,401,590
OPTICAL COUPLER

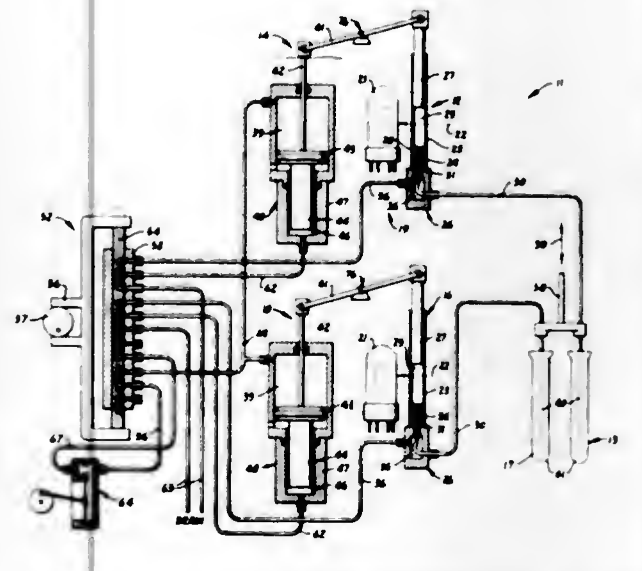
Gail A. Massey, Belmont, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Mar. 1, 1965, Ser. No. 436,065
3 Claims. (Cl. 88—14)



This optical coupler employs a birefringent prism or prisms and a light polarizer arranged to alter the direction of propagation of light passing in opposite directions through the prisms. The polarization angle of the light is related to the optic axes of the prisms so that the beams with different polarization angles are refracted differently and thus are separated from each other without substantial loss.

3,401,591
ANALYTICAL CUVETTE AND SUPPLY SYSTEM WHEREIN THE CUVETTE INLET AND OUTLET ARE LOCATED ON THE BOTTOM OF THE CUVETTE

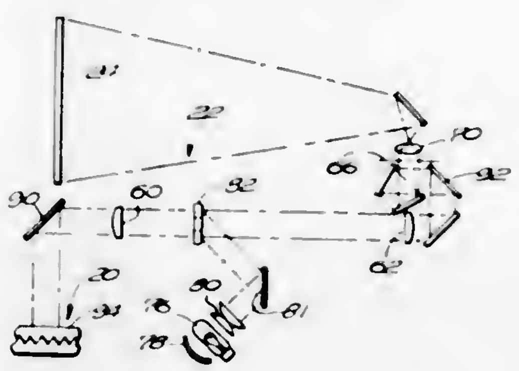
Erik W. Anthon, Kensington, Calif., assignor, by mesne assignments, to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J.
Filed Dec. 9, 1963, Ser. No. 329,201
4 Claims. (Cl. 88—14)



A apparatus for transferring samples to a spectrophotometer automatically and in serial fashion including a special cuvette constructed for automatic filling and emptying and capable of self-cleaning from a small quantity of sample, said cuvette being constructed as a cylindrical housing having a bottom and a plunger adapted to reciprocate in said housing so that the plunger and bottom wall fit in matching configuration and the cuvette operates between the substantially zero volume and the filled volume, a filling duct directed vertically through the bottom wall so as to direct incoming sample toward the plunger and a separate and distinct outlet duct extending through the bottom of the chamber for removing fluid therefrom, said filling and exit ducts preferably having their ends terminating at the inner surface of the bottom wall of the chamber and in concentric relation.

3,401,592
CONTOUR PROJECTION APPARATUS

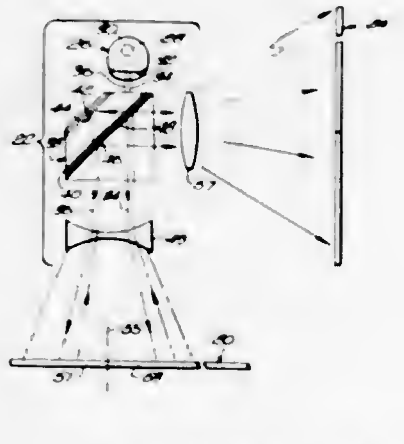
Gerald Altman, 41 Westminster Road, Newton Center, Mass. 02159
Filed Oct. 11, 1965, Ser. No. 494,526
7 Claims. (Cl. 88—24)



An optical projection apparatus for determining the structural contours of manufactured objects. Light projected on the object is returned via a reflex reflecting stage, on which the object is positioned, to a viewing screen on which the image of the object may be compared with a standard. Polarized light may also be projected on to the object. In the instance, a reflection polarizer which serves both to direct light to the object from a source and to direct radiation from the object to the viewing screen is employed.

3,401,593
PROJECTION SYSTEM FOR REFLECTED IMAGES UTILIZING POLARIZED LIGHT

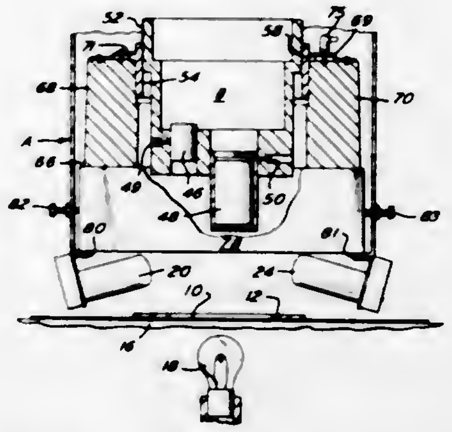
Gerald Altman, 41 Westminster Road, Newton Center, Mass. 02159
Filed Oct. 11, 1965, Ser. No. 494,813
14 Claims. (Cl. 88—24)



An optical projector for imaging a visual subject on a screen. The visual subject is optically associated with a nondepolarizing, reflecting background, and is illuminated by light of a specified polarization form which is transmitted from a source via a Brewster's angle polarizer. The visual subject is imaged on a screen by light of a crossed polarization form which is returned from the nondepolarizing, reflecting background via the Brewster's angle polarizer. In one form, the nondepolarizing, reflecting background is a reflex reflecting sheet.

3,401,594
PHOTOGRAPHIC PRINTING APPARATUS FOR MAKING PLURAL ASSORTED-SIZED PRINTS SIMULTANEOUSLY

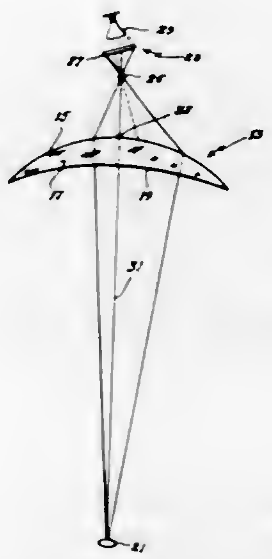
Arthur J. Daugherty, Philadelphia, Pa., assignor to Film Corporation of America, Philadelphia, Pa., a corporation of Delaware
Filed Dec. 1, 1965, Ser. No. 510,852
4 Claims. (Cl. 88—24)



Interchangeable lens cells for photographic printing apparatus to project plural assorted-sized prints simultaneously from single frames of various film sizes. Each cell includes a plurality of a first set of object lenses of a particular focal length mounted in a first plane and at least one objective lens of a second focal length mounted in a second plane parallel to and displaced from the first plane.

3,401,595
SCALE FACTOR CORRECTION DEVICE

Friedrich Dinhobel, University City, Mo., and James H. Miller, Thousand Oaks, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed Mar. 23, 1966, Ser. No. 538,178
6 Claims. (Cl. 88—24)



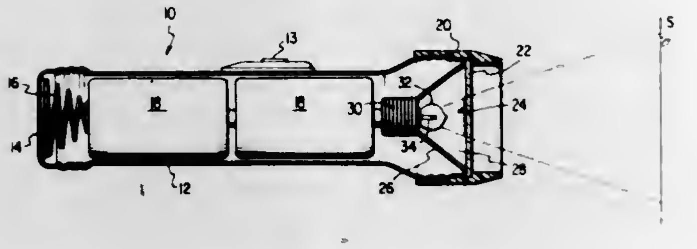
1. Apparatus for the rectification of aerial photographs taken from extreme heights above the earth and at oblique angles to the vertical comprising a screen having one surface spherically ground, said spherically ground surface being translucent, the other surface of said screen being

concave and shaped to allow rays from said translucent surface to pass perpendicularly therethrough, means for projecting an image of the aerial photograph onto said translucent surface, said projecting means being positioned relative to said screen to correspond to the angle of the camera which made the original aerial photograph, camera means spaced from the concave surface of said spherical screen, the optical axis of said camera means being in alignment with a line through the center of curvature of said spherical screen for photographing the image projected on the translucent surface of said spherical screen.

3,401,596

PROJECTION APPARATUS

Jeffery G. Hirsch, 20 Scott Drive,
New City, N.Y. 10956
Filed July 22, 1966, Ser. No. 567,208
1 Claim. (Cl. 88—24)

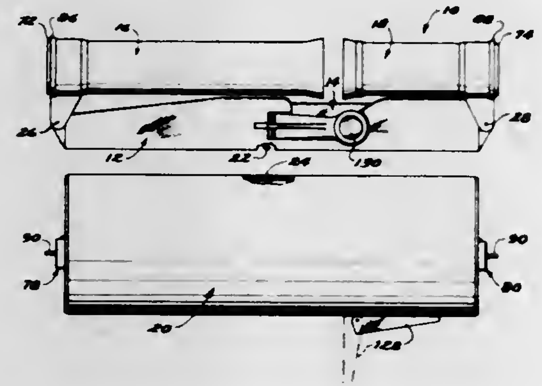


A projection device in the form of a conventional flashlight. The interior surface of the flashlight reflector is coated with a light absorbing material. The function of the light absorbing material is to reduce reflection from the reflector so as to effectively reduce the flashlight bulb to a single point source of light. A flat glass lens is provided with a decalcomania affixed thereto. The resultant structure yields a projection device that projects a sharp shadow of the decal.

3,401,597

ROCKET LAUNCHER

Donn J. Comte and Robert J. Martin, Costa Mesa, Calif., assignors to The Susquehanna Corporation, a corporation of Delaware
Filed Apr. 21, 1967, Ser. No. 632,712
10 Claims. (Cl. 89—1.804)

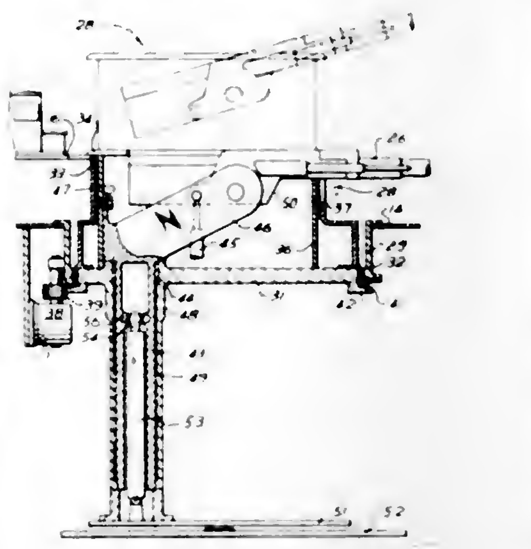


A portable launcher for a rocket or other self-propelled projectile, comprising a unitary trigger, barrel and attenuator assembly which is adapted to be releasably attached to a firing cylinder including a plurality of rockets disposed within a rotatable magazine. As each rocket is fired by actuation of the trigger, the magazine is automatically indexed to move another rocket into firing position, thereby enabling a plurality of rockets to be fired in rapid succession.

3,401,598

GUN MOUNTING FOR ARMED VEHICLES

Charles C. Sons, Jr., Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Sept. 6, 1966, Ser. No. 577,522
2 Claims. (Cl. 89—40)

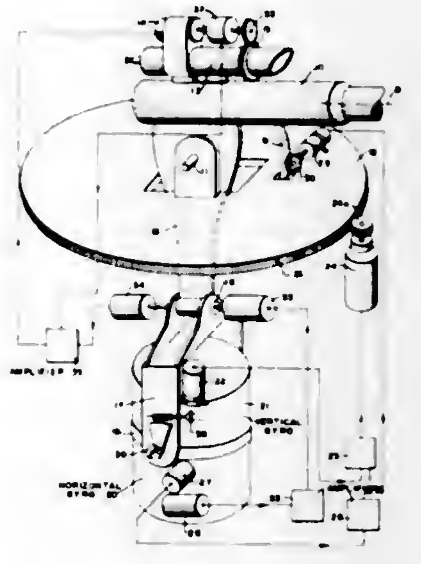


Support mechanism for a gun and turret of a military vehicle provides for traverse and elevation of the gun and in addition provides for raising and lowering of the gun and turret to increase effectiveness during firing and to reduce the vehicle height at other times.

3,401,599

STABILIZER

Armin Schönherr, Hamburg-Niendorf, and Wolfgang Pestel, Hamburg, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed May 25, 1966, Ser. No. 561,305
8 Claims. (Cl. 89—41)

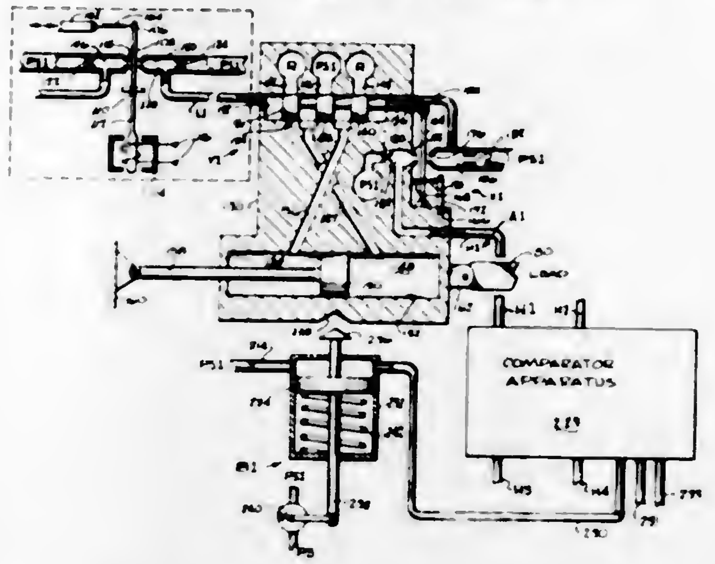


A stabilizing arrangement for a weapon carried on a movable platform. The platform itself is stabilized about a vertical axis and an elevation axis. The sighting device for aiming the weapon, which sighting device is also arranged on the platform, has rotatable line markings. Means are provided for producing a signal which is a function of the movement of the platform about a roll axis, and further means are provided for rotating the line markings in response to this signal, thereby to stabilize the line of sight of the sighting device. In this way, the weapon can be properly aimed, even though the platform on which the weapon is carried is itself stabilized only about the vertical axis and the elevation axis.

3,401,600

CONTROL SYSTEM HAVING A PLURALITY OF CONTROL CHAINS EACH OF WHICH MAY BE DISABLED IN EVENT OF FAILURE THEREOF

Derek Wood, Sun Valley, Calif., assignor to Bell Aerospace Corporation, a corporation of Delaware
Filed Dec. 23, 1965, Ser. No. 515,822
10 Claims. (Cl. 91—44)

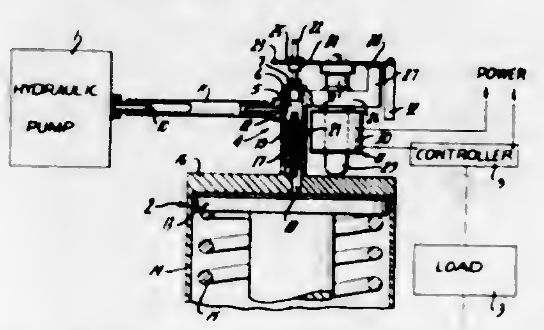


Disclosed is a redundant control system having a plurality of control chains each connected to position a movable member pursuant to input control signals. Each of the chains includes a first transducer receiving input signals such as from a manual input (pilot's control stick) and other inputs (stability augmentation and/or autopilot). The first transducer responsive to the input signals provides an out hydraeric pressure control signal. The pressure signal is connected to a remotely positioned control valve which controls the flow of hydraeric fluid to an actuator which is coupled to the movable member (aircraft control surface). A second transducer is connected to the control valve and produces a hydraeric pressure monitor signal, representative of the position of the control valve. The monitor signals from the plurality of control chains are compared in a comparator apparatus which generates a disabling signal in the event of nonconformity between monitor signals. The disabling signal activates disabling apparatus which disables that control chain not conforming to the remainder of the system control chains.

3,401,601

HYDRAULIC SERVO VALVE

Wencel J. Velicer, Milwaukee, and Urban A. Weber, Brookfield, Wis., assignors to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Continuation of application Ser. No. 427,592, Jan. 25, 1965. This application Jan. 23, 1967, Ser. No. 622,380
5 Claims. (Cl. 91—47)

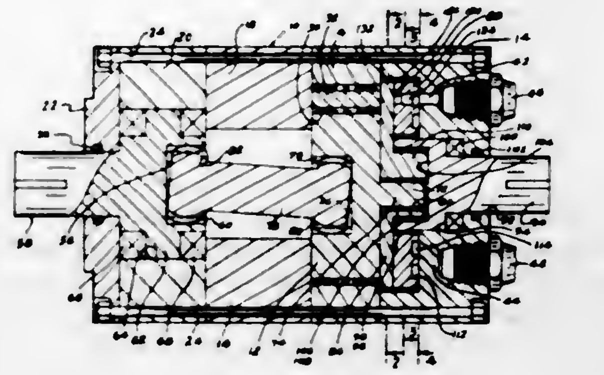


A constant displacement pump is connected to a piston type hydraulic actuator via a servo valve having an electromagnetically positioned leak port for physically positioning a damper, valve or other load. A special restrictor in the form of a tubular restrictor for optimum results is inserted between the servo valve and the actuator to control the relationship between the magnetic torque and the hydraulic torque acting on the leak port.

3,401,602

PRESSURE FLUID OPERATED MOTOR OR THE LIKE

J. C. Birdwell, 8535 Glencrest,
Houston, Tex. 77017
Filed June 9, 1965, Ser. No. 462,518
3 Claims. (Cl. 91—56)

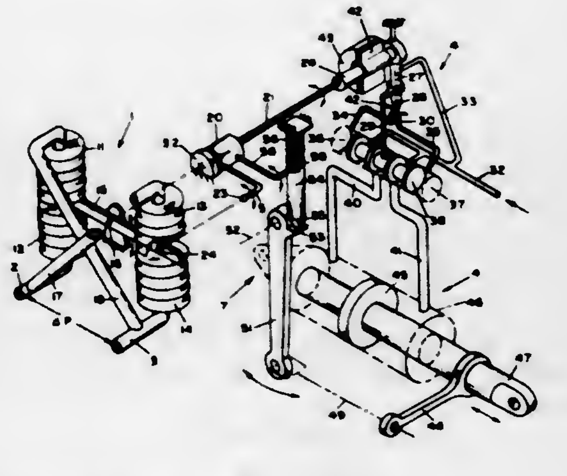


A pressure fluid apparatus, alternatively operable as a motor or a pump, employing a rotor mounted for rotation about its own axis and for orbital movement relative to the axis of an enclosing housing, rotatable pressure fluid chambers which function as means for driving the rotor in response to pressure fluid action therein, or alternatively as means driven by the rotor for pumping fluid through the chambers, and having valving means including two co-operating valve plates which function as means for regulating the fluid flow through the pressure fluid chambers.

3,401,603

FLUIDIC-HYDRAULIC SERVOACTUATOR

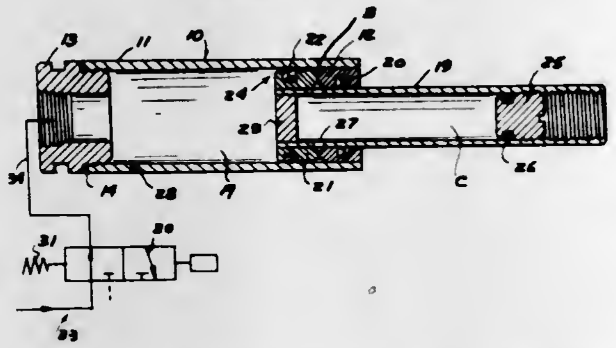
James L. Coakley and Paul M. Lawhead, Camarillo, Calif., assignors to Abex Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 3, 1967, Ser. No. 620,336
13 Claims. (Cl. 91—387)



A servoactuator having a position output proportional to a pressure differential control signal, wherein the control signal is transduced to a mechanical movement which is in turn transduced to a torque and applied to a torque summer. A signal indicating the position of the actuator is also transduced to a torque and applied to the summer. The difference between these torques is used as an error signal to actuate a torque controlled servovalve which meters fluid to the actuator piston causing it to move in a direction reducing the error signal.

3,401,604
DIFFERENTIAL AREA GAS CYLINDER

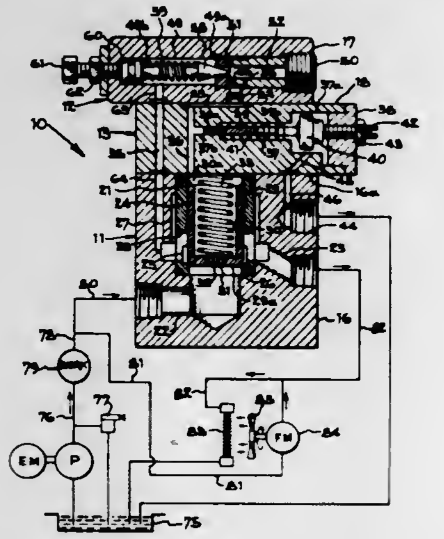
Leland F. Blatt and Paul R. Williams, Grosse Pointe Woods, Mich., assignors to Industrial Specialties, Inc., Warren, Mich., a corporation of Michigan
Continuation of application Ser. No. 459,870, May 28, 1965. This application May 17, 1967, Ser. No. 639,246
1 Claim. (Cl. 91—399)



The present invention relates to a differential area gas cylinder and more particularly to a cylinder assembly including a piston which is alternately pressurized and depressurized from the blind end thereof for effecting alternate reciprocal movements of the piston rod.

3,401,605
TEMPERATURE RESPONSIVE HYDRAULIC SYSTEM AND VALVE MEANS THEREFOR

Ellis H. Born, Columbus, Ohio, assignor to Abex Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 13, 1966, Ser. No. 579,122
11 Claims. (Cl. 91—419)



A temperature responsive valve for regulating the rate of flow of fluid in a hydraulic circuit in accordance with the temperature of the fluid. The valve includes a differential pressure operated main valve, a variable orifice for controlling the pressure differential across the main valve and a thermostatically controlled actuator for varying the area of the orifice in accordance with the fluid temperature. Also disclosed is a circuit for cooling hydraulic fluid at an increasing rate as the fluid temperature increases.

3,401,606
INTERNALLY BREATHING BRAKE ACTUATOR

George P. Mathews and Allen L. Gummer, Cloverdale, Calif., assignors to MGM Brake Inc., Cloverdale, Calif., a corporation of California
Filed Oct. 24, 1966, Ser. No. 588,884
6 Claims. (Cl. 91—433)

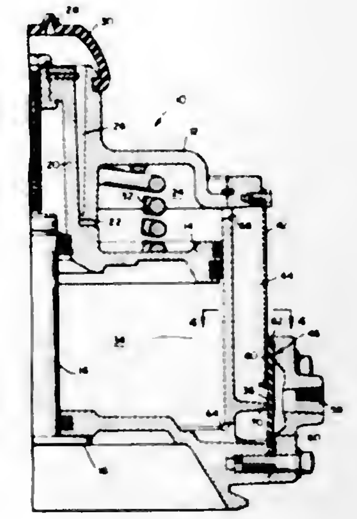
1. In an air brake actuator having an emergency section housing, an emergency piston or diaphragm in said housing, and means for moving said piston or diaphragm to thereby actuate said brake in the absence of service pressure, that improvement which comprises:

an intake port defined by said emergency housing and disposed rearwardly of the rearward limit of movement of said piston or diaphragm;

an exhaunt port defined by said emergency housing and disposed forwardly of the said forward limit of movement of said piston or diaphragm;

a channel defined by said housing extending axially along said emergency section housing from said intake port to said exhaust port, said channel having a wall disposed adjacent said exhaust port and between said exhaust port and said intake port;

a cover plate over a portion of said channel and running from said intake port to adjacent but spaced from said wall;

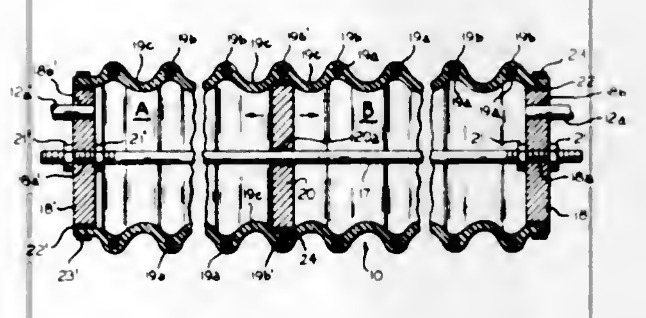


cover means over the remainder of said channel and running from said cover plate to said housing and passing over and spaced from said wall and said exhaust port and including a service pressure inlet;

a cantilevered flexible valving element held only at one portion thereof between said cover plate and said cover means and extending between and seatable against and unseatable from said wall and a portion of said cover means, said portion of said cover means being further along said valving element from said held portion than said wall.

3,401,607
RECIPROCATING BELLOWS

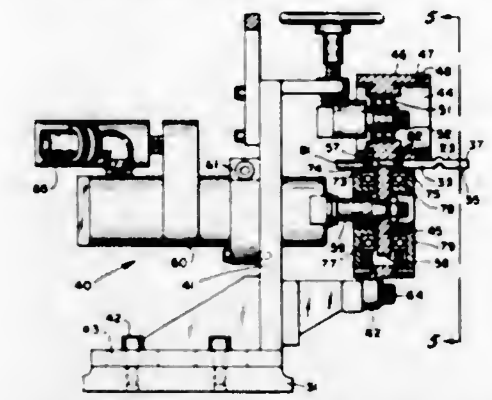
Michael L. Wortman, 5936 Monroe, Morton Grove, Ill. 60053
Filed Aug. 8, 1966, Ser. No. 571,048
11 Claims. (Cl. 92—39)



Reciprocating bellows includes flexible reciprocating hose having internal guide means for defining the path of travel of the hose. The hose is adapted to have a working unit coupled thereto and fluid pressure selectively introduced within the hose moves the hose and the working unit in either direction along the path of travel.

3,401,608
APPARATUS FOR REMOVING SOLIDIFIED COATING FROM BOX BLANKS

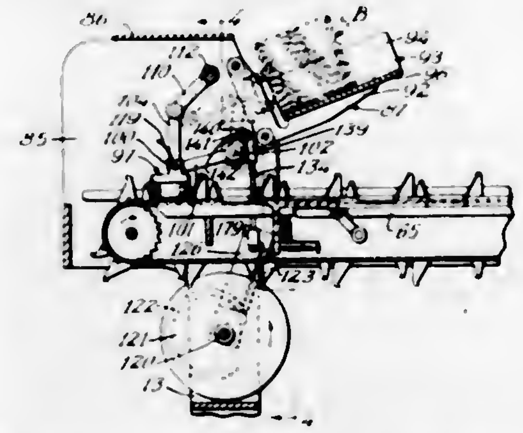
Raymond A. Labombarde, Lowell Road, Nashua, N.H. 03060
Filed Jan. 5, 1967, Ser. No. 607,438
10 Claims. (Cl. 93—36)



An apparatus for removing solidified coating of the difficult-to-bond type from the coated face of a flat box blank advancing along the paper line of a folder-gluer machine. A hard-faced, bed roll, driven at blank speed, forms a nip on the paper line with a high speed, driven, rotary cutting or abrading disc, the nip clearance being predetermined and unyieldable. Juxtaposed to the cutting disc is a clamping roll having a yieldable, resilient face forming a yieldable nip with the hard-faced bed roll and freely rotatable at blank speed. The resilient-faced roll prevents lateral and longitudinal displacement of the blank during removal of coating and urges the leading and trailing edge of the blank away from the cutter disc to prevent chewing and gouging.

3,401,609
PACKAGE FORMING APPARATUS

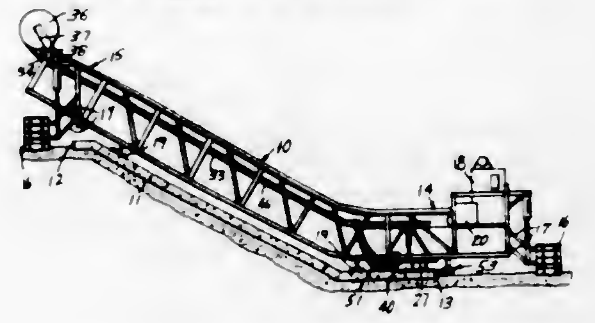
Iver L. Nelson, and Harold V. Dettman, Minneapolis, Minn., assignors to Hoerner Waldorf Corporation, Ramsey, Minn., a corporation of Delaware
Filed Nov. 14, 1966, Ser. No. 594,106
9 Claims. (Cl. 93—49)



1. A package forming apparatus for use with a folder having a main apertured panel and a pair of rear panels hingedly connected to opposite edges thereof, and a pouch of product enclosing a block of product adapted to extend through the aperture in said main panel and having marginal flanges adapted to be sandwiched between edges of said main panel and said rear panels when said rear panels are folded against the rear surface of said main panel, the apparatus including a hopper for supporting a series of flat folder blanks, a feed mechanism for removing said blanks, one by one, and a conveyor onto which said blanks are deposited by said feed mechanism, said conveyor including spaced pairs of lugs between which said blanks are deposited, said lugs flexing said rear panels out of the plane of said main panel upon insertion of said blanks therebetween, and holding said rear panels in upwardly diverging relation from said main panel.

3,401,610
TRANSVERSE JOINT INSTALLING APPARATUS

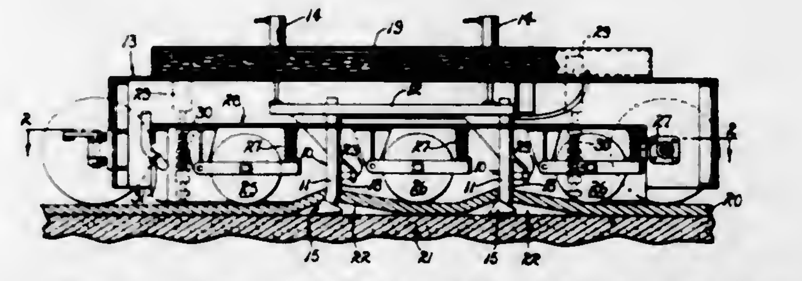
Raymond A. Hanson, ℅ R. A. Hanson Company, Palouse, Wash. 99161
Filed Mar. 22, 1967, Ser. No. 625,081
9 Claims. (Cl. 94—39)



This disclosure is concerned with the placement of joints across a concrete slab by an apparatus that feeds the joint material along a transverse ledge during return movement of the device across the slab and which then draws the material from the ledge for placement in the concrete during subsequent movement across the concrete, the joint being placed by a guiding tubular member. It includes a mechanical clamp for temporarily anchoring the free end of the joint material when placement is initiated and a severing device for terminating the placed joint at the completion of the transversal of the concrete slab. In addition, the tubular member that guides the joint material into place in the slab is oscillated to facilitate its plowing action through the concrete and to assist in riding over longitudinal joint strips.

3,401,611
APPARATUS AND METHOD FOR REPAIR OF PAVEMENT

Gordon L. Schneider, 1407 E. Olive Ave., Fresno, Calif. 93728
Filed Apr. 25, 1966, Ser. No. 545,011
10 Claims. (Cl. 94—39)

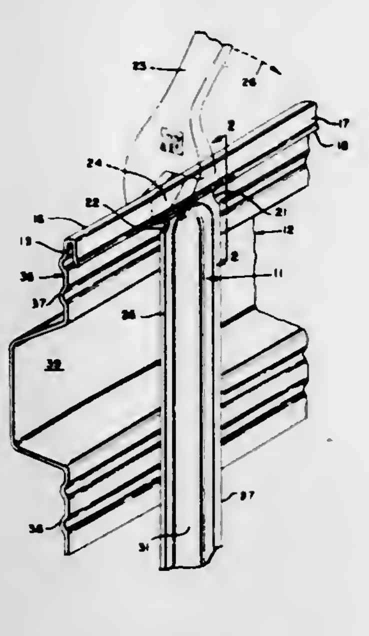


The invention consists essentially of a blade mounted on an arm or shank and adapted to slit and cut under a layer of paving and lift it for the injection thereunder of a paving treating material which is applied by a nozzle discharging from the rear of the blade. Ahead and to the sides of the blade are rollers which prevent excessive lifting and lateral sliding or tipping of the lifted paving. A nozzle on the back of the blade shank discharges paving treating material on the cut faces of the slit and a following roller presses the layer and closes the slit for trapping and sealing in the paving treating material injected beneath the paving.

3,401,612
STAKE FOR CONCRETE FORM

Richard N. Toue, 1883 Mezes Ave., Belmont, Calif. 94002
Filed Dec. 14, 1965, Ser. No. 513,692
1 Claim. (Cl. 94—51)

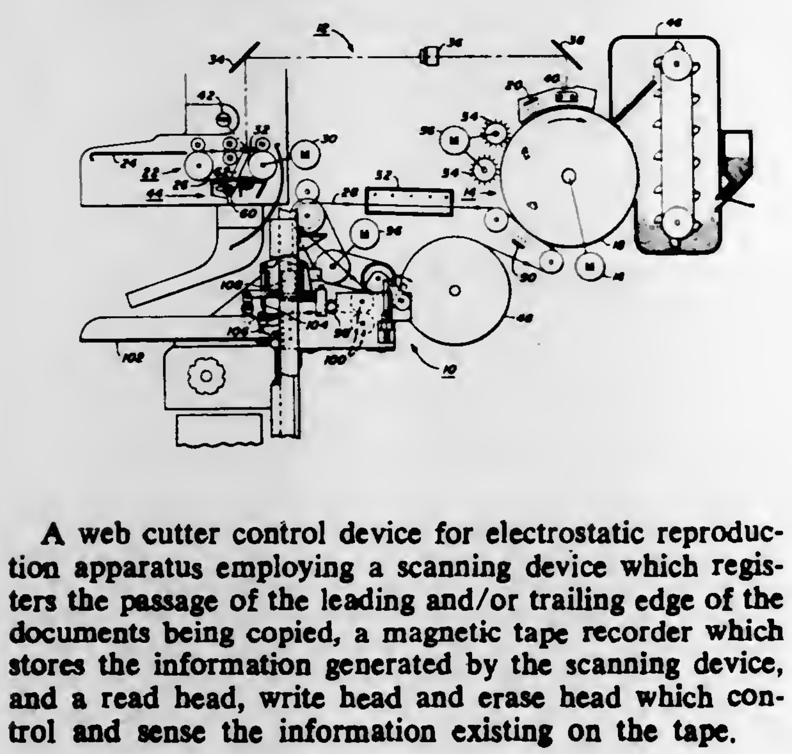
A stake is especially designed for a concrete form member having an inverted top channel for receiving an upper portion of the stake and providing a lower free edge adjacent the upper portion of the stake; the stake being formed at such upper portion with at least one



outer edge recess for receiving and interlocking with an inwardly defomed portion of the lower edge of the channel.

3,401,613
WEB CUTTER CONTROL DEVICE FOR XEROGRAPHIC REPRODUCING APPARATUS

Miles Davis, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 30, 1964, Ser. No. 407,696
3 Claims. (Cl. 95—1.7)

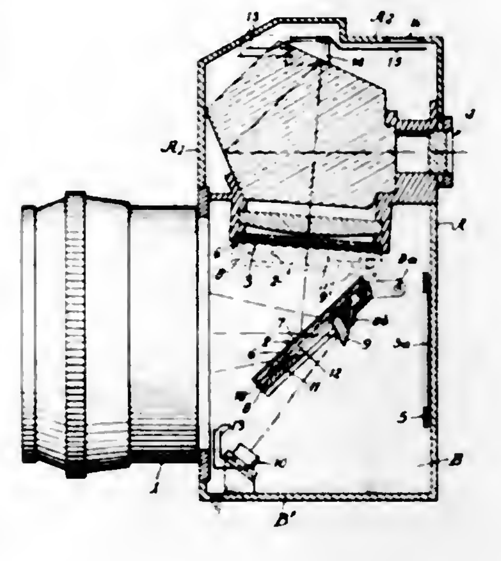


A web cutter control device for electrostatic reproduction apparatus employing a scanning device which registers the passage of the leading and/or trailing edge of the documents being copied, a magnetic tape recorder which stores the information generated by the scanning device, and a read head, write head and erase head which control and sense the information existing on the tape.

3,401,614
MIRROR REFLEX CAMERA

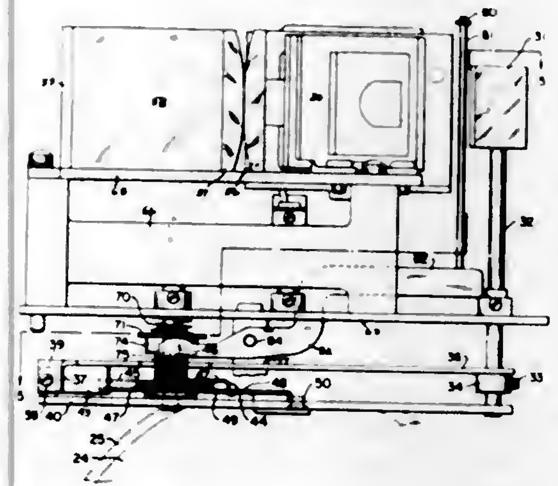
Willi Günther, Stuttgart-Mohringen, Germany, assignor to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany, a corporation of Germany
Filed June 27, 1966, Ser. No. 560,731
Claims priority, application Germany, July 3, 1965, Z 11,631
4 Claims. (Cl. 95—42)

1. A mirror reflex camera having an exchangeable camera objective arranged on the front wall of a camera body, a viewfinder, a pivotally mounted partly transparent mirror for reflecting a portion of the light beam passing through said objective into said viewfinder, a photoelectric element fixedly mounted inside said camera body on the bottom wall thereof, a light beam deflecting means disposed on the rear of said pivotally mounted partly transparent mirror for reflecting a portion of the light beam passing through said objective and through said partly transparent mirror onto said photoelectric element, and a diaphragm plate having an aperture which is conical in cross-section disposed on the rear face of said partly transparent mirror between the latter and said light beam deflecting means, the size of said conical aperture in said diaphragm plate is the same as the maximum aperture of the least powerful objective of the number of exchangeable objectives of different powers which may be used with the camera.



3,401,615
PHOTOGRAPHIC CAMERA

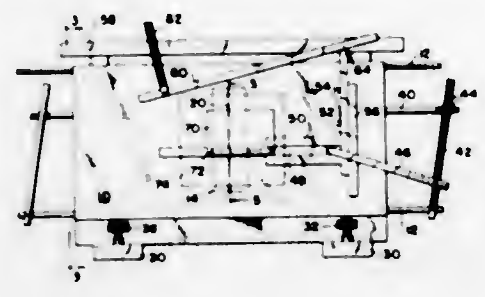
William R. Sanderson, Irondequoit, and Johannes G. Padelt, Rochester, N.Y., assignors to Graflex, Inc., Rochester, N.Y., a corporation of Delaware
Filed July 19, 1965, Ser. No. 472,935
5 Claims. (Cl. 95—44)



Each objective lens for the camera carries a cam for operating the rangefinder system. A first lever carries a follower adapted to engage the cams. A second lever engages a third lever which carries at one end the mirror of the rangefinder system and at its other end a screw which engages a fixed infinity stop. A spring urges the screw toward engagement with the stop. A second spring interposed between the first and second levers urges the follower toward engagement with the lens cam, and the second lever toward engagement with the third. A friction coupling releasably connects the first and second levers. When this coupling is released, the second spring moves the first and second levers apart to engage the follower with the cam, or the first spring engages the screw with the stop forcing the second lever toward the first, depending on whether screw or follower is disengaged. The screw permits setting the rangefinder system to infinity prior to inserting a lens in the camera.

3,401,616
PHOTOCOMPOSING APPARATUS

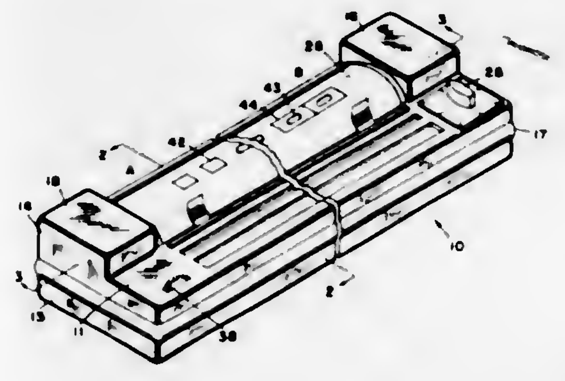
Richard D. Cross, 21235 Benjamin, St. Clair Shores, Mich. 48081
Filed Jan. 24, 1966, Ser. No. 522,632
7 Claims. (Cl. 95—75)



1. Photocomposing apparatus for distorting a design comprising a work table for holding a design negative, said table being linearly movable, mounting means on said table independently movable relative to said table in a direction parallel to movement of said table and adapted to hold a photosensitive film in contact with the negative, a drive rod extending parallel to the direction of table movement, a swing arm pivoted on said table and engageable with said drive rod, a connecting arm with one end thereof pivoted to said swing arm and the other end thereof pivoted to said mounting means, and drive means for moving said rod and table in the same direction at different speeds whereby the film and negative are moved at different speeds so that the film may be exposed to a distorted image of the negative design.

3,401,617
APPARATUS FOR MAKING COPIES BY CONTACT PRINTING

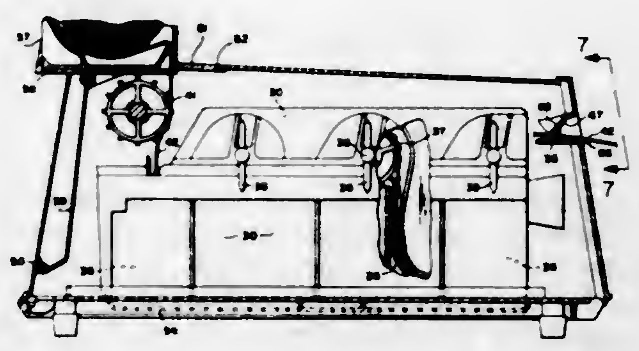
Joseph M. Rait, 25 Huxley Drive, Snyder, N.Y. 14226
Continuation-in-part of application Ser. No. 488,975, Sept. 21, 1965. This application May 18, 1967, Ser. No. 639,402
3 Claims. (Cl. 95—77.5)



An apparatus for making exposures in direct contact printing. A stationary, transparent cylinder is mounted in a frame, and a tubular light source positioned concentrically through the cylinder. A flexible plastic sheet extends around the cylinder and is adapted to hold an original paper and a sheet of light-sensitive copy paper securely against the surface of the cylinder. Magnetic closure means maintain the sheet in this position. Light measuring and registering means may be provided to control the duration of exposure of the paper.

3,401,618
DEVELOPER FOR A PHOTOSENSITIVE WEB

Darwin S. Crouser, Mentor, Ohio, and Roland F. Hecker, Berkeley Heights, N.J., assignors to Varityper Corporation, Newark, N.J., a corporation of Delaware
Filed July 6, 1966, Ser. No. 563,134
5 Claims. (Cl. 95—94)



1. A processing machine for developing a photographic web, comprising:

a process fluid tank having a plurality of separate fluid holding compartments in longitudinal alignment;

process drive means carried by said tank for passing a web into and out of each compartment in series;

a tank holder stand with interfitting surfaces formed to accept said tank in a slidable and removable fit;

power drive means carried by said tank holder stand, said power drive means and process drive means being mechanically engageable to transfer power drive by sliding the tank longitudinally into said stand, said power means and process drive means having at least one possible interference position which prevents insertion and removal of the tank, and said two means being engaged only when said tank is seated in said tank holder;

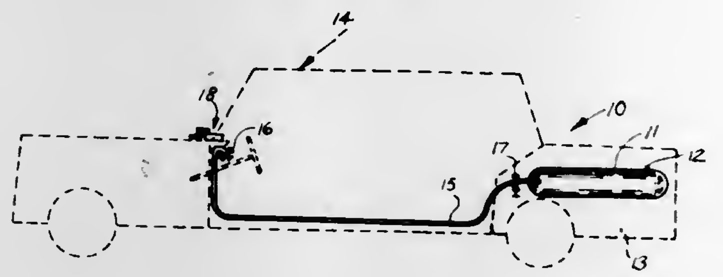
feed roller means carried by said stand in a position of feed alignment with the tank engaged position for driving a web into said tank, and a drive interconnection from said power means to said feed roller, whereby said feed roller and said process drive means are coordinated by drive interconnection to one power means;

an electrical power supply to said power drive means, said power supply including a manually operable switch having an open and a closed position, a secondary switch, and an actuator for said secondary switch carried by said power means and operable at all times of power means operation, to open said secondary switch during predetermined cyclic periods; said power supply including one circuit which is either closed or open according to the condition of said manually operable switch, said power supply including another circuit which is normally closed and is opened in cyclic periods in relationship to the driver's position of said actuator, said power supply operable to power said motor upon closing of said manually operable switch, and operable to remove said power supply only by opening of both said manually operable switch and secondary switch; and

said actuator coordinated with said process power means to cause said process power means to stop in a predetermined aligned position of drive other than said possible interference position, whereby the process drive is positioned to permit tank insertion and removal without interference.

3,401,619
PRESSURIZED AIR SYSTEM FOR MOTOR VEHICLES

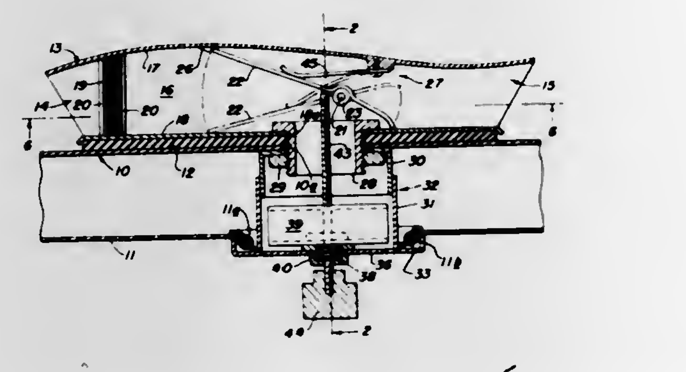
Gene E. Sotory, Jersey City, N.J. (8200 Kennedy Blvd. E., Apt. 18J, North Bergen, N.J. 07047)
Filed Mar. 22, 1967, Ser. No. 625,187
1 Claim. (Cl. 98—1.5)



A pressurized air system for motor vehicles having a compressed air tank, a feed line, a control valve and a pressure indicator. This pressurized air system is primarily for those having allergies such as due to pollen, dust and so on, the pressurized air system preventing air outside of the vehicle containing pollen and so on from entering the passenger compartment of the vehicle.

3,401,620
VENTILATOR FOR VEHICLE ROOF

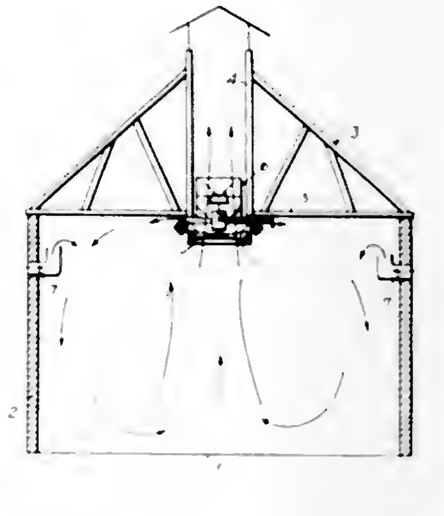
William M. Armstrong, 25 Patrol Court, Woodside, Calif. 94062, and Mervin J. Hooey, 1250 Phelps St., San Francisco, Calif. 94124
Filed Mar. 6, 1967, Ser. No. 620,829
6 Claims. (Cl. 98—2)



A roof ventilator, including an adjustable damper, mounted on the top of a vehicle over an aperture to control the flow of air into or out of the vehicle compartment. The damper is controlled from within the body.

3,401,621
PLANT FOR VENTILATION OF ROOMS, MORE PARTICULARLY IN STABLES

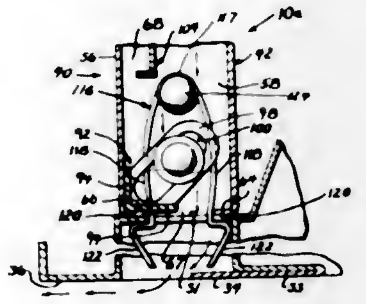
Carl Peter Noe Aaberg, Poul Andersensvej 10, Holstebro, Denmark
Filed July 6, 1966, Ser. No. 563,209
Claims priority, application Denmark, July 8, 1965, 3,470/65; Apr. 5, 1966, 1,770/66
15 Claims. (Cl. 98—33)



A ventilating system is provided for stables and the like comprising means for admitting fresh air to a room, and means for drawing air toward the ceiling of the room, for forcing a part of the air drawn toward the ceiling out through a vent and for forcing the remaining air which is drawn toward the ceiling radially out into the room for recirculation thereby causing the temperature in the room to be substantially uniform throughout and renewing the air near the floor so that livestock will receive an ample supply of fresh air.

3,401,622
AIR DIFFUSER

Friedrich G. Honerkamp, Clarks Summit, Pa., assignor to Dynamics Corporation of America, New York, N.Y., a corporation of New York
Filed Aug. 30, 1966, Ser. No. 576,126
15 Claims. (Cl. 98—40)



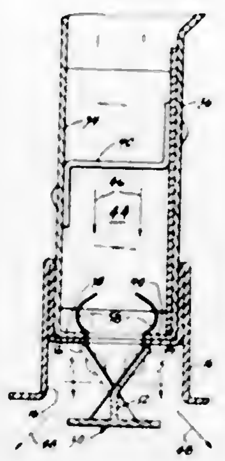
A slot diffuser receiving air from a distribution source and connected to an air distributor on a light troffer has an elongated deflector supported for pivotal movement about and lateral movement relative to a fixed axis. The deflector is movable to one position to direct a flow of air along one wall of the distributor so that air emanates downwardly from the distributor discharge opening and to another position to direct the flow toward a lip of the distributor so that air impinges on the lip and emanates from the distributor transversely of its discharge opening.

3,401,623
LINEAR AIR DIFFUSING DEVICE

William J. Waeldner, Waverly, Pa., assignor to Dynamics Corporation of America, New York, N.Y., a corporation of New York
Filed Oct. 12, 1966, Ser. No. 586,286
3 Claims. (Cl. 98—40)

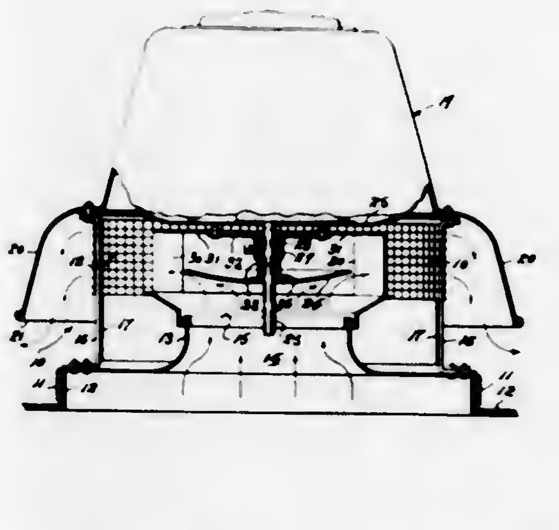
The disclosure relates to a ceiling type linear air diffuser which is especially adapted for insertion between

conventionally mounted light troffers. The air diffuser includes an elongated T-shaped air splitter plate which has alternately off-set vane portions so that the air entering the room is directed in relatively opposite directions along the longitudinal length of the diffuser. The flow splitter is mounted relative to side walls of the diffuser by spring clips for ease of attachment.



3,401,624
AIR EXHAUSTER WITH DAMPER MEANS

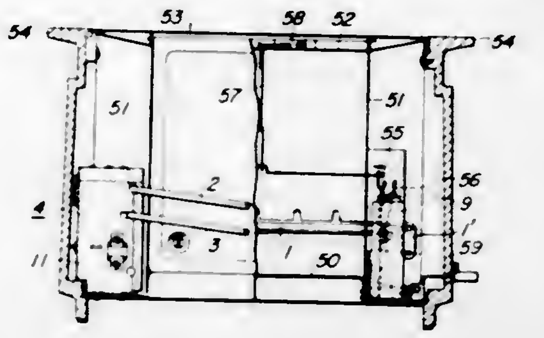
Harry L. Mohrman, West Caldwell, N.J., assignor, by mesne assignments, to Allied Thermal Corporation, New Britain, Conn., a corporation of Connecticut
Filed Aug. 11, 1966, Ser. No. 571,765
8 Claims. (Cl. 98—116)



An air exhauster for exhausting air from an enclosed space which include a conduit, a concave damper member slidably mounted on a shaft for movement between an open position and a position in which the damper rests on and closes the conduit, and motor driven air impeller means. When the air impeller means is operated, the damper rides up the shaft on the current of air flowing out of the enclosure and falls back by gravity to closed position when the impeller is stopped. The damper may be mounted on a fixed shaft, in which case it is provided with vanes upon which flowing air acts to cause the damper to rotate on the shaft. Alternatively, the shaft on which the damper is mounted may be motor driven to impart rotary motion to the damper due to friction between the damper and shaft. The rotary motion of the damper speeds up the opening of the damper but slows the closing to provide smooth operation.

3,401,625
FULLY AUTOMATIC TOASTER

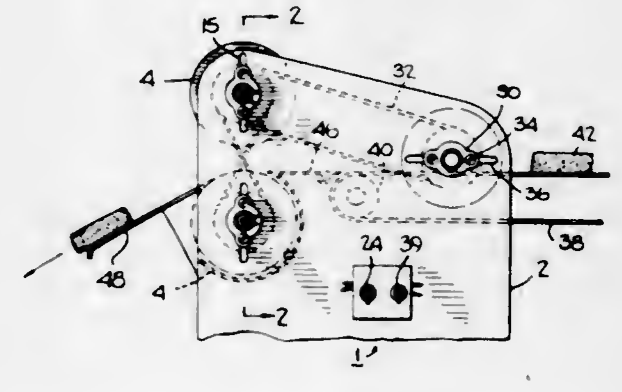
Sinzo Kimura, Higashi-Osaka-shi, Michinori Nagahiro, Hirakata-shi, and Hiroo Hosono, Osaka, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Mar. 16, 1967, Ser. No. 623,660
Claims priority, application Japan, Mar. 24, 1966, 41/18,572; May 19, 1966, 41/32,367; May 24, 1966, 41/33,753; Aug. 11, 1966, 41/52,915
9 Claims. (Cl. 99—329)



Fully automatic toaster having a bread carriage which is moved to and locked in its nontoasting position upon completion of toasting by the force of an electromagnet through pivotal levers, unlocked from its locked state in response to bread removal but still held in the nontoasting position by a balancing means, and moves downwardly by gravity to its toasting position against the balancing means when bread is replaced on it. The above operation is effected by a latch mechanism unlocked with little load, a stably operable unlocking mechanism and a stably operable electromagnet mechanism of low power.

3,401,626
QUARTZ RADIANT HEATER

Jerry S. Amalfitano, 1175 84th St., Brooklyn, N.Y. 11228
Filed Feb. 21, 1966, Ser. No. 529,129
4 Claims. (Cl. 99—386)

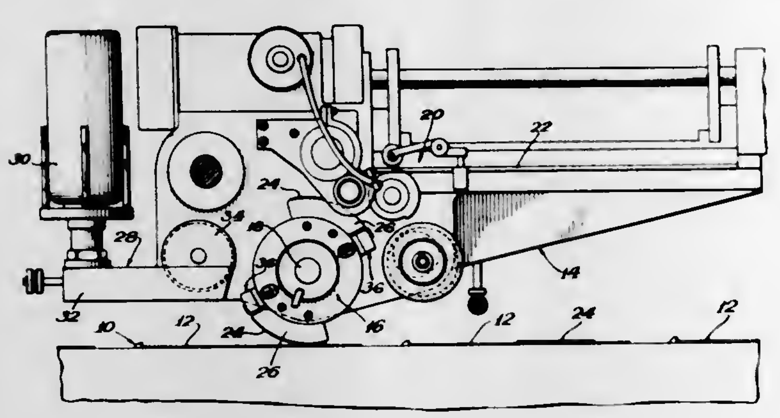


A food heating apparatus having heated rotatable quartz surfaces which are adapted to engage and traverse an article of food, thereby heating said article of food to a desired degree.

3,401,627
ADDRESSING MACHINE HAVING RADIALLY MOVABLE IMPRINTING MEANS

Robert C. Sheriff, Round Lake, Ill., assignor to Cheshire Incorporated, a corporation of Illinois
Filed Jan. 4, 1967, Ser. No. 607,220
3 Claims. (Cl. 101—52)

Apparatus for imprinting indicia on mailing articles, wherein the apparatus has a rotary member mounted on a frame and a radially movable member is mounted on the rotary member. The radially movable member has means for imprinting the indicia on the articles. The follower member is carried by the radially movable member and a cam member is secured to the frame and engages the follower member. The follower and the cam co-operate to control the radial movement of the radially movable member so that the imprinting means imprints indicia on the articles.

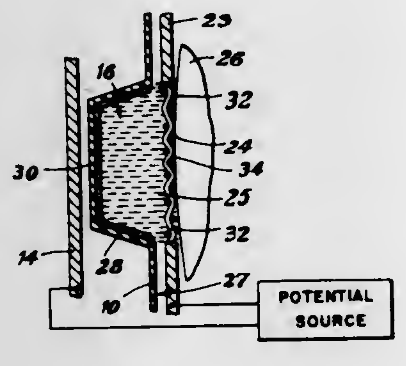


3,401,628
METHOD OF ELECTROSTATICALLY COATING RECESSED SURFACES

Donald Marvin Fredrickson, Trenton, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed July 2, 1964, Ser. No. 379,970

4 Claims. (Cl. 101—129)



A method for uniformly electrostatically coating recesses upon the surface of a substrate material by utilizing a stencil-like screen through which coating particles pass. The screen has varied sized apertures such that the larger apertures are aligned with those portions of the recesses lying most normal to the screen and the smaller apertures are aligned with those portions of the recesses lying most parallel to the screen.

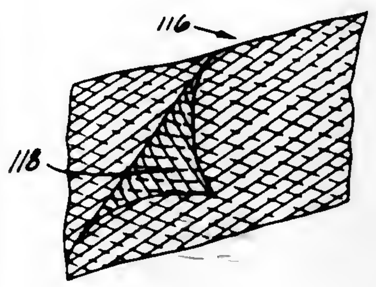
3,401,629
PRINTING METHOD AND PRINTING MEANS FOR AMBIENT LIGHT FILTERS

Vern E. Hamilton, Palos Verdes Estates, Calif., assignor to Douglas McDonnell Corporation, a corporation of Maryland

Filed Feb. 10, 1964, Ser. No. 343,763

25 Claims. (Cl. 101—426)

Accurate printing of multiplicity of extremely fine lines very closely spaced is accomplished with printing member having planar margin and planar grid-printing face recessed only a few thousandths of an inch. Sheet of material is contacted by margin and then moved by pressure differential to contact inked printing face. The uniform pressure causes every part of sheet to touch face and eliminates skips. Parallel grid lines at an acute angle to horizontal and sloping in opposite directions are printed on opposite sides of transparent sheet to produce diamond grid pattern without ink filleting in acute angled corners of each diamond.

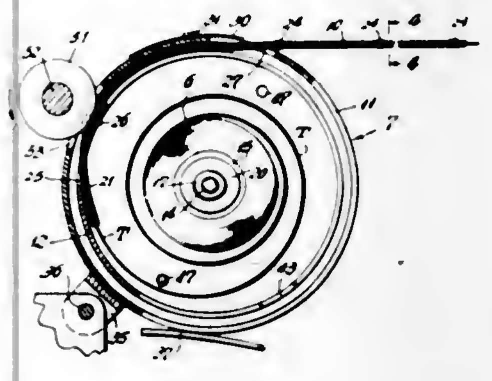


3,401,630
RECORD MATERIAL FEEDING MEANS

Albert S. Goodrich, Jr., Newtown, and Vladimir Ignatjev, Norwalk, Conn., assignors to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware

Filed Nov. 12, 1964, Ser. No. 410,559

7 Claims. (Cl. 101—228)



Apparatus for feeding a strip of record material to a work station from a remote magazine wherein a guide track containing the strip of record material is fed from the magazine to the work station and the strip of material is advanced through the guide track. The magazine consists of two concentric cylindrical shells having apertures in the periphery thereof and the guide track is stored in the magazine between the concentric shells and the supply of record material is stored inside the inner shell so that the strip of material extends through the aperture of the inner shell and through the guide track to the work station.

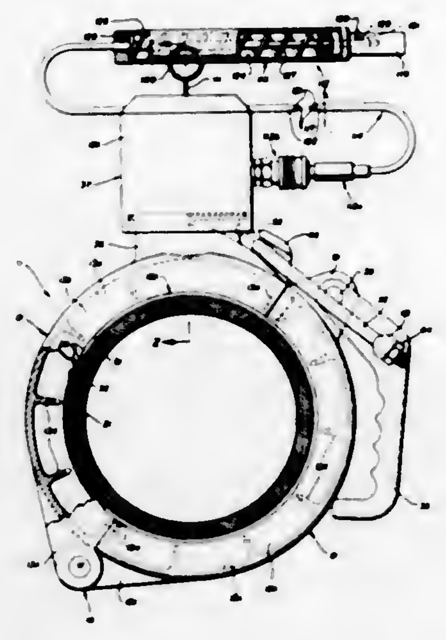
3,401,631
EXPLOSIVE CUTTING DEVICE

Harold W. Hannagan, Napa, and Robert L. Dobrei, Fairfield, Calif., assignors to Explosive Technology, Inc., Fairfield, Calif., a corporation of California

Filed Sept. 16, 1966, Ser. No. 580,071

13 Claims. (Cl. 102—24)

Explosive cutting device formed of at least two sections and having non-yieldable latching means for securing the free ends of the sections and also having safety features to prevent inadvertent firing.

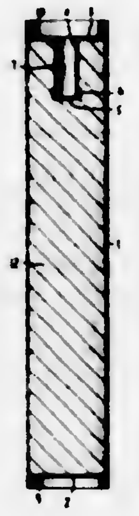


3,401,632
PACKAGED BOOSTER EXPLOSIVE

George L. Griffith, Coopersburg, and William L. Schwoyer, Allentown, Pa., assignors to Trojan Powder Company, Allentown, Pa., a corporation of New York

Filed May 3, 1965, Ser. No. 452,693

13 Claims. (Cl. 102—24)



1. A packaged booster explosive which will not turn over to detonation when exposed to flame comprising, in combination, a container of rigid thermoplastic solvent-soluble synthetic plastic material filled with a booster explosive which when subjected to high temperatures or exposed to flame will burn and turn over to detonation, one wall of the container being formed with a well for insertion of a means for detonating the booster charge.

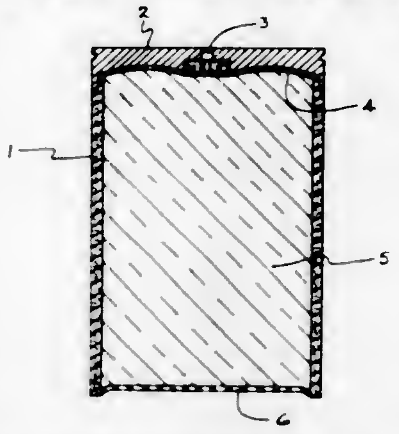
3,401,633
FIRE CARTRIDGE

Ralph H. Allen, 318 Paradise Road,
Aberdeen, Md. 21001

Filed July 6, 1967, Ser. No. 651,626

4 Claims. (Cl. 102—32)

A cartridge, which is actuated by a pyrotechnic primer, and which contains a special pellet that when loaded in a weapon and discharged, projects a special pellet in the burning state at a low velocity; thus the target material when contacted will not be disturbed, and though damp or wet, combustion will take place.



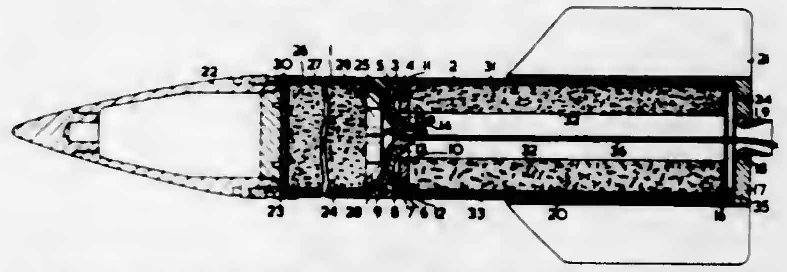
3,401,634
ROCKETWISE PROPELLED PROJECTILES

John William Martin, Wilmington, and Reginald John Rosser, Bexley, England, assignors to Minister of Supply in Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England

Filed Nov. 21, 1958, Ser. No. 775,656

Claims priority, application Great Britain, Nov. 22, 1957, 36,558/57

4 Claims. (Cl. 102—49.7)



1. A projectile motor having an axial line of symmetry comprising, a first tubular casing having a domed rearward wall, a rearwardly directed, detachable nozzle mounted axially in said domed wall, a first liner along the inner peripheral surface of said casing, said first liner extending along a substantial portion of the inner peripheral surface of said domed wall, a second liner having a thickness greater that that of said first liner and extending along the inner peripheral surface of said domed wall, to overlap a portion of the rearward end of said first liner, a solid cylindrical sustainer charge having an inhibitive coating in said first casing, a second tubular casing detachably engaged to the rearward end of said first casing, a liner extending along the inner peripheral surface of said second casing, a cylindrical inhibited booster charge in said second casing, said booster charge having an axial bore of constant diameter throughout its length and piercing said booster charge, a cylindrical cap detachably secured over the rearward end of said second casing, a series of stabilizing fins integral with said cap, a rearwardly directed detachable nozzle mounted axially in the rearward end of said cap, a warhead detachably secured to the forward end of said second casing and an igniter fixed to the rearward end of said sustainer charge.

3,401,635
FAST STARTING TURBINE FOR A PROJECTILE FUSE

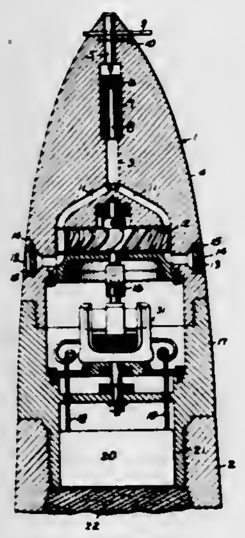
Jacob Rabinow, Takoma Park, Md., assignor to the United States of America as represented by the Secretary of the Army

Filed June 22, 1951, Ser. No. 233,095

2 Claims. (Cl. 102—70.2)

1. An electrically actuated fuse for explosive missiles, comprising in combination a housing having a cap mem-

ber affixed to a base member, a turbine in the cap member coupled to an electric generator in the base member, a longitudinal bore in the cap member, striker means releasably fixed in one end of said bore, air ducts formed in the cap member in communication with the opposite end of the bore, a primer and high pressure gas producing means positioned in the bore in cooperative relationship to the striker and the turbine, the air ducts being spaced about the periphery of the turbine, exhaust ports formed in the peripheral surface of the cap member in communication with the ducts, sealing means in said ports, said striker in response to forces of setback functioning the primer and causing the gas producing means to eject said striker and sealing means whereupon said turbine obtains operating speed due to passage of the high pressure gases through said ducts.

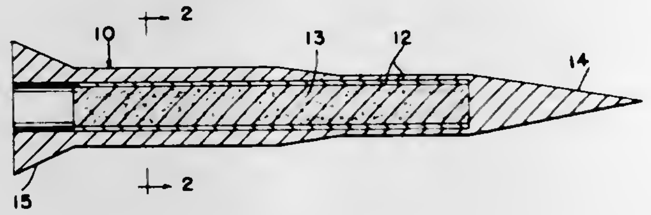


3,401,636
CLAD PYROTECHNICS

Thomas Q. Ciccone, Langhorne, Pa., William E. Perkins, Runnemede, N.J., and James J. Caven, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Army

Filed Nov. 30, 1966, Ser. No. 598,129

4 Claims. (Cl. 102—87)



A clad pyrotechnic device for use in small cavity projectiles, such as flechettes, for example, which comprises a pyrotechnic composition enclosed in a metal sheath. The device is formed by filling the metal sheath which is plugged at one end with a pyrotechnic composition, then plugging the other end and passing the clad pyrotechnic through swaging and extruding means until desired diameters are obtained.

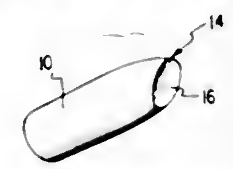
3,401,637
BROADSIDE BULLET

Madison H. Briscoe, Box 767, Athens, Ga. 30601

Continuation-in-part of application Ser. No. 418,036, Dec. 14, 1964. This application Sept. 28, 1966, Ser. No. 582,587

12 Claims. (Cl. 102—92.1)

A bullet having an asymmetrical surface on its leading end for causing the bullet to turn into a broadside position upon impact with a target. In one embodiment, a depressed surface is formed generally at the rear end of the bullet for aiding movement of the bullet into the broadside position.

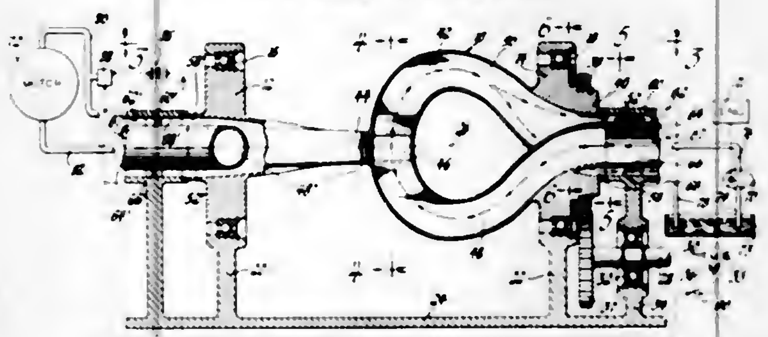


3,401,638
METHOD AND APPARATUS FOR TRANSFORMING FLUID POWER

Roy S. Cataldo, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 9, 1966, Ser. No. 593,049

19 Claims. (Cl. 103—1)



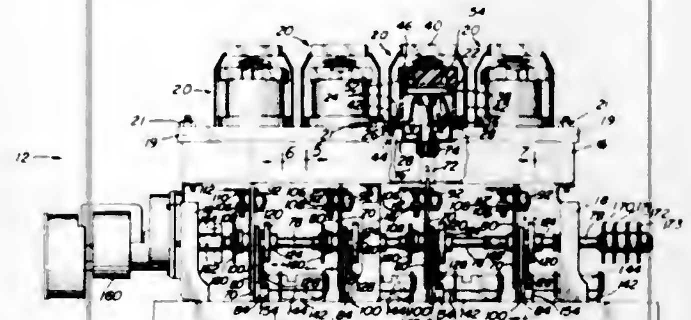
Method and apparatus are disclosed for transforming fluid power by the conversion of primary flow and differential pressure into a secondary flow and differential pressure. A primary fluid flow is established in a direction perpendicular to a spin axis and spun about the spin axis to transform the primary fluid power into secondary fluid flow in a direction perpendicular to the spin axis and transverse to the primary flow without producing substantial resultant centrifugal force in the flow directions. By this method and apparatus, the two flows have impedance that are functions of the spin velocity which is variable.

3,401,639
PUMPING DEVICE AND CENTRAL CONTROL UNIT

Owen J. Schwertfeger, Chicago, and Frank D. Brill, Norridge, Ill., assignors to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware

Filed Dec. 16, 1965, Ser. No. 514,248

13 Claims. (Cl. 103—11)



A device adapted to selectively pump metered volumes of liquids features a plurality of individual metering pumps, including a pumping chamber and reciprocal piston means for altering the volume thereof. Each metering pump may be engaged by a single power source through the actuation of selection means. The selection means include a plurality of clutch means which are adapted when actuated to effect driving engagement between drive means and associated cam means, which in turn, effect driving engagement with the associated metering pump. Control means for selectively actuating the clutching means are provided and comprise retainer means, in association with each clutch means, which normally maintain the clutch means in a declutched position, but which, when momentarily actuated, release the clutch to its clutched position. Means are also provided to permit the selective actuation of a predetermined one of the retaining means. In addition a plurality of cam means responsive to drive means perform various central control functions in a beverage dispensing unit in which the disclosed invention is disposed.

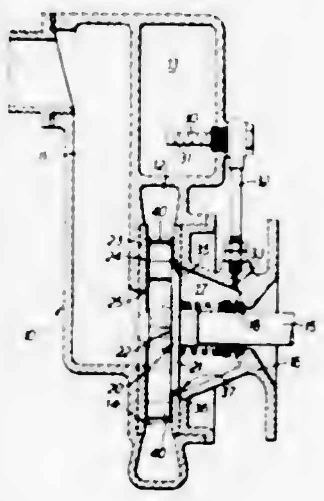
3,401,640
CENTRIFUGAL PUMPS

Brian John Fowler and Arun Kumar Bose, Stamford, England, assignors to Newage Lyon Limited, a company of Great Britain

Filed Dec. 5, 1966, Ser. No. 599,277

Claims priority, application Great Britain, Dec. 3, 1965, 51,489/65

7 Claims. (Cl. 103—113)



The invention relates to self-priming centrifugal pumps for pumping liquids, and provides such a pump with a bypass passage extending from the priming chamber into the seal chamber in which the shaft seal is mounted, and from the seal chamber into the entrainment region of the impeller within the impeller chamber, so that pumped liquid is recirculated from the priming chamber through the seal chamber for cooling purposes and from the seal chamber passes to the impeller chamber where it is reentrained by the impeller and hence serves to initiate the priming action of the pump on starting. The bypass passage between the seal chamber and the entrainment region of the impeller chamber either passes through an annular gap between the impeller hub and a surrounding wear plate fixed in the housing or, in the case of a shrouded impeller, it passes through elongated arcuate ports formed in the shroud plate near the inner ends of the impeller vanes.

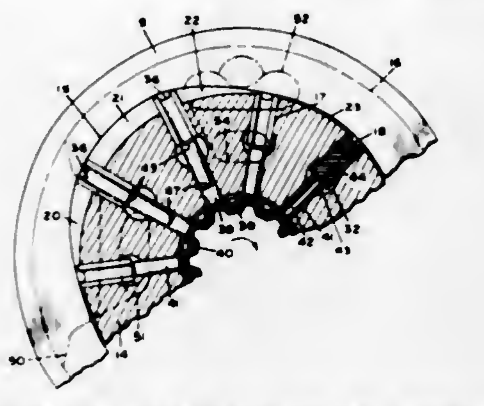
3,401,641
THREE AREA VANE TYPE HYDRAULIC PUMP HAVING FORCE MODULATING FLOW RESTRICTOR MEANS

Cecil E. Adams, Columbus, and Randall E. Griffith, Westerville, Ohio, assignors to American Brake Shoe Company, New York, N.Y., a corporation of Delaware

Filed Feb. 16, 1966, Ser. No. 527,661

10 Claims. (Cl. 103—136)

In a vane pump of the type which includes hydraulically operated pistons for vane control and wherein pressure to urge the pistons outwardly is applied to the pistons from a pressure zone through an interconnecting pressure chamber, flow restricting means are provided in the pressure chamber between each two adjacent piston cylinders, to reduce the pressure acting on the pistons as flow through the restrictors increases with pump speed. This automatically reduces the pressure force component on the pistons when the centrifugal force component is increased, so that the total force on the vanes at high operating speeds is modulated.

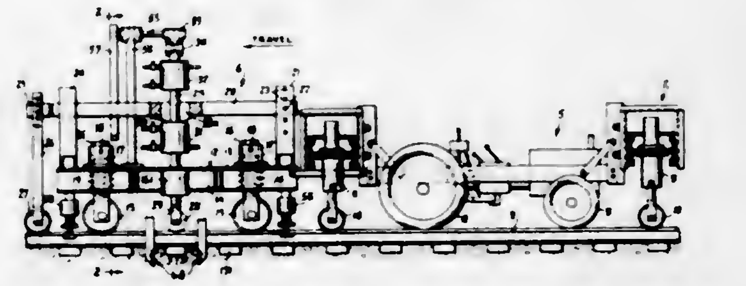


3,401,642
AUTOMATIC JACKING, LEVELLING AND LINING RAILROAD TRACK TAMPERS

Earl H. Fisher, 630 Casgrain Ave., St. Lambert, Montreal, Quebec, Canada

Filed Nov. 4, 1966, Ser. No. 592,202

16 Claims. (Cl. 104—8)



1. An automatic tamper machine movable on railroad tracks for jacking, levelling and lining of the railroad tracks comprising a main wheel supported frame running on railroad tracks, sensing devices for individually sensing the longitudinal, cross level and lining of the separate rails of the railroad track means to maintain a reference datum in the said sensing devices transversely of the said frame for individually sensing the longitudinal and cross level and the lining of the separate rails of the railroad track, control mechanisms associated with each of the said sensing devices, the said control mechanism each adapted to collect and transmit data indicative of the out of position condition of the separate rails of the railroad tracks, separate means to adjust the railroad track to a corrected position of longitudinal and cross level and lining in agreement with the data transmitted by the said control mechanism, railroad bed tamping devices mounted on the said frame, and means to operate the said tamping devices to tamp the railroad bed under the corrected position of the railroad tracks, the said latter means being started up and cut-out in response to data received from the said control mechanisms.

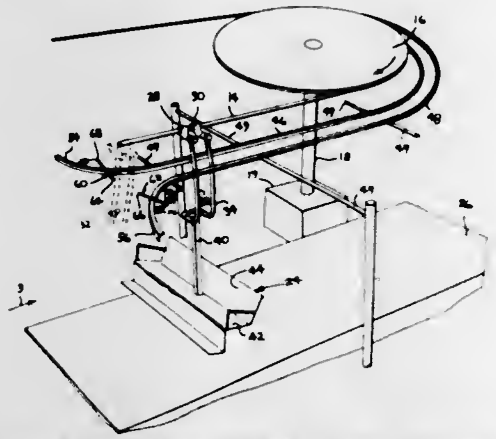
3,401,643
SKI LIFT CONTROL MECHANISM

Everett F. Kircher, % Boyne Mountain Lodge, Boyne Falls, Mich. 49713

Filed Nov. 29, 1965, Ser. No. 510,217

4 Claims. (Cl. 104—173)

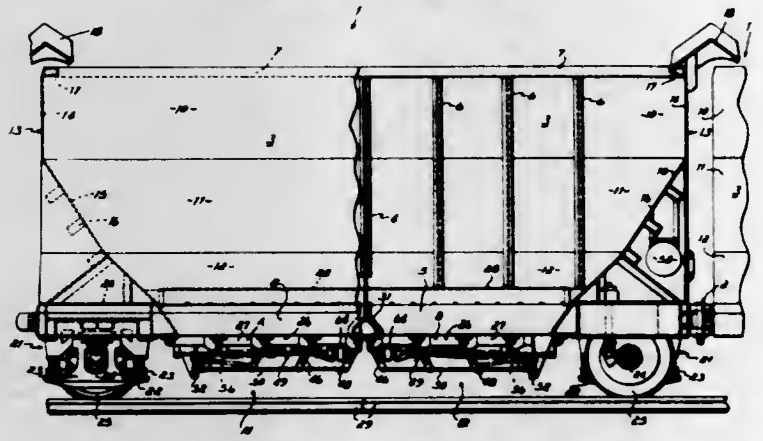
A safety control mechanism for a chair lift which is operably connected to the propulsion unit of the lift so as to halt movement of the chair should the same be tilted beyond a safe attitude. The safety control mechanism preferably includes switch arms mounted one on each side of the path of travel of the chair near the exit end of a pair of guides which keep the chair from tilting excessively during passenger loading or unloading. If the chair is improperly loaded so as to tilt it excessively when freed from the guides, the chair will actuate the arms so



as to halt the chair before it has moved beyond the loading or unloading area.

3,401,644
MOTOR ACTUATED RAILWAY HOPPER CAR DOOR MECHANISM

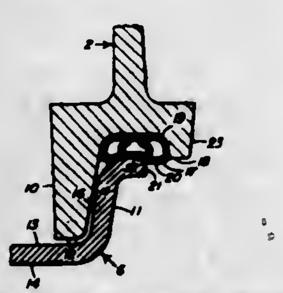
Alan R. Cripe, Richmond, Va., assignor to Aeronca Manufacturing Corporation, Middletown, Ohio, a corporation of Ohio
Filed Jan. 17, 1966, Ser. No. 521,088
9 Claims. (Cl. 105—240)



This invention relates to railway transport vehicles and more particularly to a hopper car-unit intended for transporting coal, grain, dry chemicals, and other dry bulk commodities. The present invention is directed more particularly to the hopper doors which form the bottom of the car-unit, and to the pneumatic motor mechanism for operating the rotatable torsion shafts which mount the door latches. The hopper doors are pivotally mounted concentrically on the torsion shafts with further pneumatic motor mechanism for operating the hopper doors.

3,401,645
RAILWAY HOPPER CAR DOOR SEALING ASSEMBLY

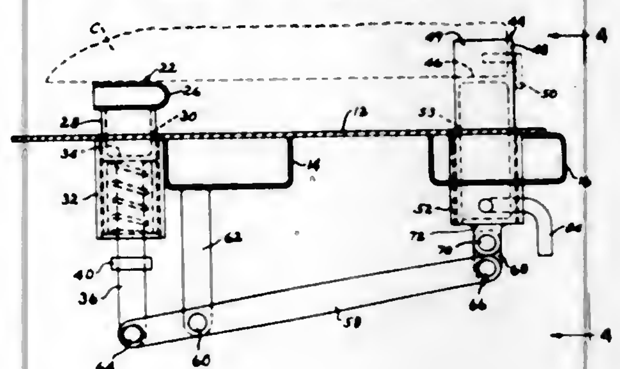
Walter L. Floehr, Toledo, Ohio, assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 1, 1966, Ser. No. 576,748
7 Claims. (Cl. 105—253)

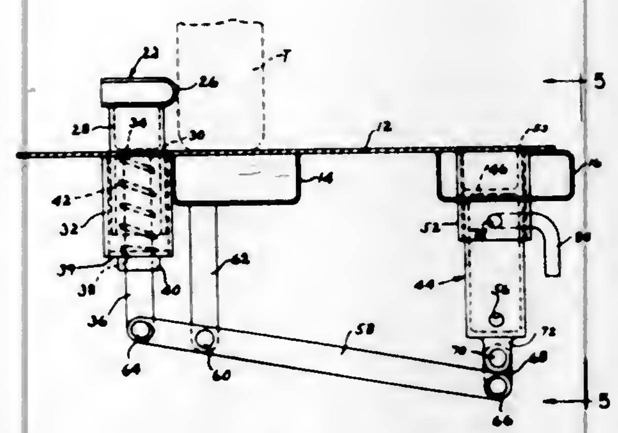


A self-sealing railway car hopper door assembly combining an inturned marginal flange on a door and a sealing flange on a frame overlapped by the marginal flange in the door's closed position, with a rubber sealing gasket on the frame surrounding and spaced rearwardly from a front end of the sealing flange and engaged and deformed by a rear end of the marginal flange when the door is closed.

3,401,646
MEANS TO SUPPORT CONTAINERS ON RAILWAY FLAT CARS

Walter E. O'Leary, Creve Coeur, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Jan. 25, 1967, Ser. No. 611,757
5 Claims. (Cl. 105—368)

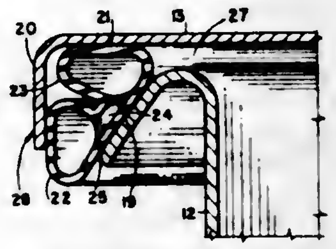




A container support on the deck of a railway flat car mounted for movement between a container support position extending above the railway car deck and a lowered retracted position, and means actuated by the weight of the container as the container is lowered onto the railway car to effect an upward movement of the container support into a raised container support position above the deck. The container support returns by gravity to its lowered retracted position when the container is removed from the railway car.

3,401,647
HATCHES FOR RAILWAY COVERED HOPPER CARS

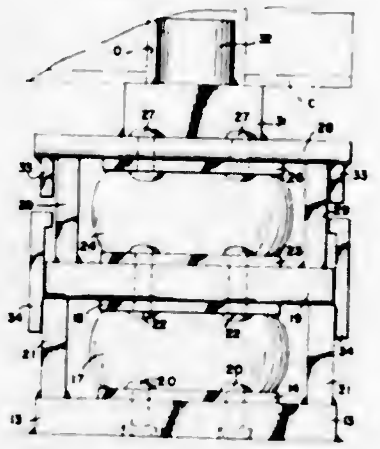
Orville Ingram, Toledo, Ohio, assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 12, 1966, Ser. No. 601,237
4 Claims. (Cl. 105—377)



Self-adjusting seal for a hatch assembly, adapted to seal a lid which is movable from open position to closed position by gravity, and is adjustable by a portion of the lid contacting an inflatable tube system mounted on the hatch frame of the hatch assembly.

3,401,648
CUSHIONED MOUNTING STRUCTURE

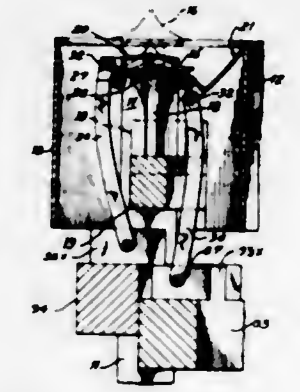
Jack E. Gutridge, Dyer, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed June 20, 1966, Ser. No. 558,812
12 Claims. (Cl. 105—392.5)



A cushioned mounting arrangement for supporting vertical loads against generally horizontally longitudinally applied impacts, said mounting arrangement comprising a plurality of superposed elastomeric pads, a plate member fixed on top of the uppermost of said pads, plate means being fixed between adjacent ones of said pads, a supporting member, means fixing the bottom of said lowermost of said pads to said supporting member, and means extending between the members and the plate means and providing vertical support for the load in compression on said pads and frictionally engageable with surfaces facing between said plate means and the members during movement of said pads in shear upon the application of a longitudinally applied impact on said support means.

3,401,649
TWOFOLD PASTRY MAKING DEVICE

Leonhard Schafer, 219 Miriam Ave., Bronx, N.Y. 10458
Filed Mar. 17, 1967, Ser. No. 624,039
3 Claims. (Cl. 107—9)

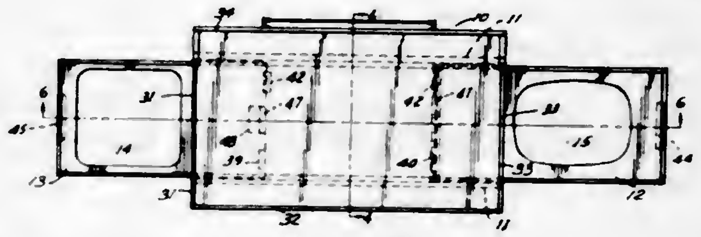


A device for double folding cut pastry dough having a filling thereon. The cut dough falls onto a flat plate and opposite corners are then folded over by the successive operation of opposing folder arms. Thereafter the folded product is elevated for ease of removal from the device.

3,401,650
STEP SAVER UTILITY CART

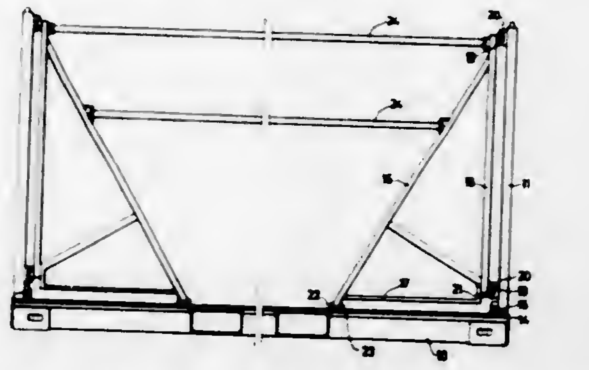
Geraldine Ann Terezas, % St. Vincent Charity Hospital, 2222 Central Ave., Cleveland, Ohio 44115
Filed Jan. 20, 1967, Ser. No. 610,654
9 Claims. (Cl. 108—25)

The disclosure herein contained comprises a wheeled utility cart having extensions movable outwardly from the ends thereof to extended positions and adapted for holding receptacles of different kinds beyond the ends of said cart. Means are disclosed for detachably mounting a table portion of the cart to foldable legs thereof whereby the wheeled utility cart herein disclosed is collapsible.



3,401,651
DEVICE IN LOADING PALLETS

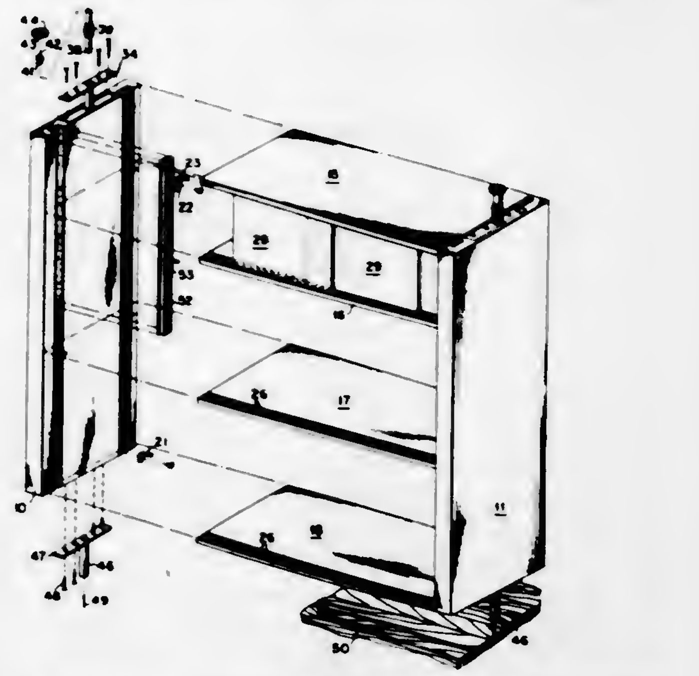
Roland Carlström, Arjangsgatan 1A, Amal, Sweden
Filed Feb. 17, 1967, Ser. No. 616,868
1 Claim. (Cl. 108—51)



A load carrying pallet having a rectangular bottom frame, pillars located at the corners of the frame and hingedly connected to the frame and lateral supports hingedly connected to said pillars, so that the pillars with the supports may be easily swung from an upright position to a lying position upon the frame and vice versa.

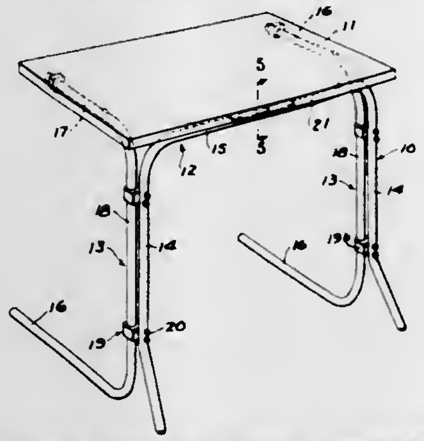
3,401,652
CABINET ASSEMBLY

Harry A. Thor, 48 Crestmont Road, Binghamton, N.Y. 13905
Filed June 1, 1967, Ser. No. 642,960
7 Claims. (Cl. 108—106)



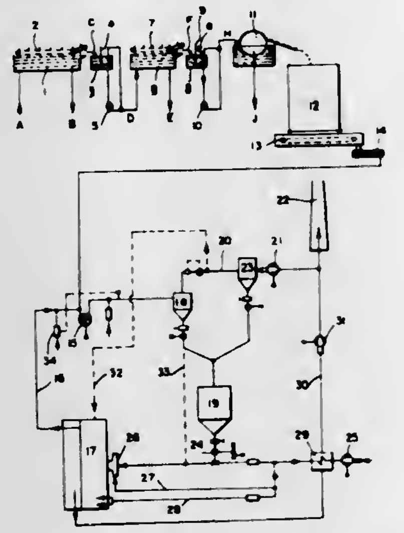
A cabinet assembly comprising side panels which have longitudinally placed metallic U-shaped channel inserts placed in flutings cut into the panels. Angle brackets, slidable in the channels, may be secured at desired levels for the support of horizontally placed shelf boards. The side panels are supported between ceiling and floor by studs attached to the upper and lower edges of the panels. A spring supported telescoping portion in each of the upper studs is adjustable as to height, and carries a contact disc for engaging the ceiling. Grooves in the shelf boards accommodate sliding panels serving as doors of the cabinet.

3,401,653
FOLDING TABLE
Frederick D. Knoblock, 436 Bonnie Brier,
Birmingham, Mich. 48009
Filed Nov. 22, 1966, Ser. No. 596,303
15 Claims. (Cl. 108—124)



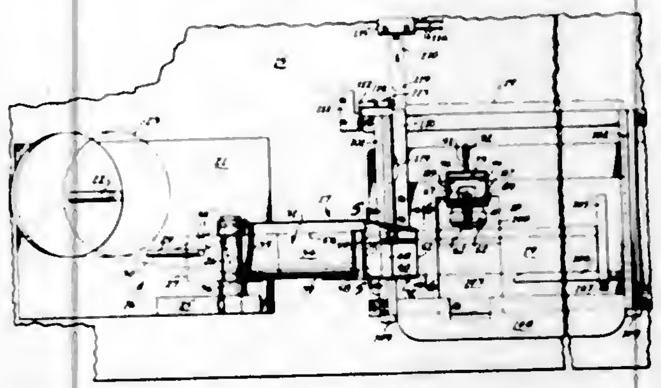
The folding table disclosed herein comprises a pair of frame members which are movable between an extended position and a position wherein the frame members are substantially flat against one another. One of the frame members has a connecting cross portion at the upper end thereof and means are provided for pivoting a table top to the cross portion. This means includes a pivot member that is mounted for rotation about a fixed pivotal axis perpendicular to the axis of the cross portion of the frame member and means for mounting the table top on the pivot member for swinging movement about an axis forming an angle with the first-mentioned pivotal axis.

3,401,654
PROCESSING AQUEOUS SOOT SUSPENSIONS
Martin Reichert, Frankenthal, Pfalz, Ulrich Wagner, Limburgerhof, Pfalz, Werner Heitmueller, Bielefeld, and Guenter Huebner, Moerfelden, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed May 12, 1967, Ser. No. 638,094
Claims priority, application Germany, May 14, 1966,
D 50,120
4 Claims. (Cl. 110—7)



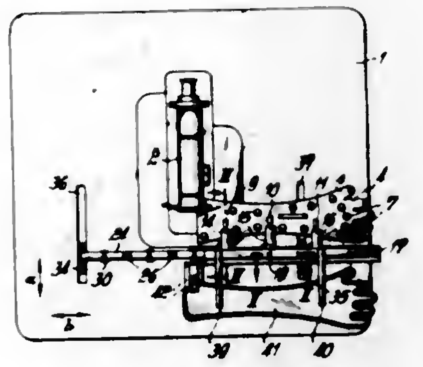
A method of processing carbon black (soot) suspensions obtained in the manufacture of petrochemical raw materials, such as acetylene, ethylene and the like, from natural gas or petroleum or fractions of the same by partial combustion of these starting materials followed by quenching of the reaction gas formed with water. The suspensions of soot in water are creamed and separated from the bulk of the water, the separated sludge is homogenized by stirring and again creamed, and the concentrate thus obtained is withdrawn and filtered and then dried and ground to fine-grained soot which is burnt after removal of the vapor.

3,401,655
CUFF MAKING MACHINE
Allie Johnson and Harry E. Bryan, Pulaski, Tenn., assignors of fifty percent to Joseph Resnick, New York, N.Y.
Filed Feb. 2, 1966, Ser. No. 524,511
12 Claims. (Cl. 112—2)



A machine for making cuff blanks including guide means for a web of sheet material of indeterminate length, adapted to first fold the material longitudinally about its middle to substantially register its longitudinal raw edges, and subsequently to fold at least one raw edge longitudinally over the other raw edge, means for operating upon the folded material to secure the material in folded position and to sever the folded material transversely, and platform means for relatively moving the folded material toward and away from the operating means.

3,401,656
AUTOMATIC SEWING PATH COPYING DEVICE FOR SEWING AND THE LIKE MACHINES
Ernst Becker, Darmstadt, and Karl Notz, Kulmbach, Oberfranken, Germany, assignors to Quick-Rotan Becker & Co., Darmstadt, Germany, a firm of Germany
Filed Dec. 20, 1966, Ser. No. 603,303
Claims priority, application Germany, Dec. 22, 1965,
Q 876
11 Claims. (Cl. 112—2)



1. An automatic sewing and the like working path copying device for use in connection with sewing and the like machines comprising in combination:

(1) a support,

(2) a control stencil having a contour conforming with the configuration of said path and displaceable upon said support,

(3) drive means to operate said stencil,

(4) a mounting frame holding a workpiece to be operated on also displaceable upon said support, and

(5) a cross-slide coupling mechanism operably connecting said stencil with said frame, to operate said frame through a path conforming with the stencil operating path and past the stitching or the like tools of a machine mounted upon said support, said mechanism including

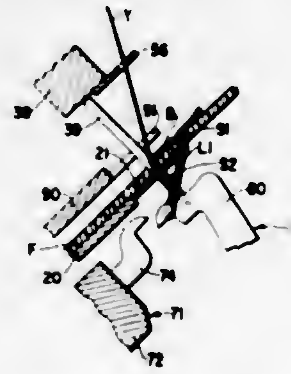
  (a) an elongated carrier supporting both said frame and said stencil,

  (b) a guide rail parallel to and slidably supporting said carrier for movement in a direction along the axis thereof,

  (c) means slidably supporting said rail on said support for movement in a direction at right angle to said axis, and

  (d) cooperating magnetic means upon said carrier and said rail, to urge said carrier into releasable sliding engagement with said rail.

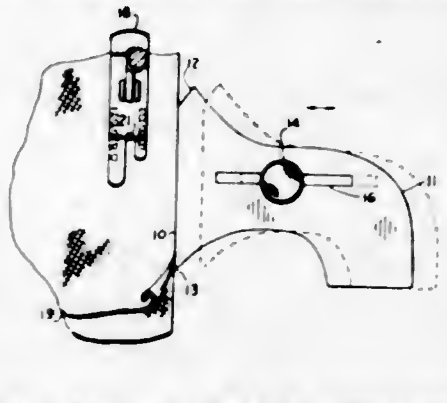
3,401,657
TUFTING MACHINES FOR AND THE METHOD OF PRODUCING TERRY-LIKE FABRICS
Charles W. Watkins, Hixson, Tenn., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 15, 1965, Ser. No. 507,940
5 Claims. (Cl. 112—79)



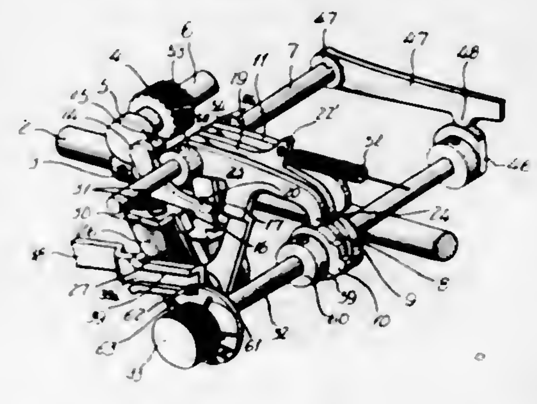
This disclosure relates to textile machinery and in particular to tufting machines which through a novel method of operation is capable of producing novel pile fabrics such as terrycloth and the like. Basically, the novel machine disclosed herein includes means for projecting a first loop of yarn through a backing fabric, means for holding said first loop while the backing fabric is advanced, means for projecting a second loop of said yarn through said first loop of said yarn and means for holding said second loop of yarn in loose pile-like disposition and for collapsing said first loop of yarn around said second loop of yarn whereby said second projected loop is held in loose pile-like disposition by said first projected loop for forming a pile-like surface on at least one side of said backing fabric.

3,401,658
STITCHING AND SEAM GUIDE FOR SEWING MACHINES
Dorothy Y. Kirby, Rte. 2, Box 97,
Clermont, Fla. 32711
Filed Aug. 19, 1966, Ser. No. 573,652
4 Claims. (Cl. 112—153)

A stitching and seam guide for sewing machines made from a flat metal plate approximately $\frac{3}{32}$ inch thick with edges formed to guide material being sewed in a direction to form an even seam. One relatively long straight edge guides material when sewing a straight seam; a relatively short straight edge joining the relatively long straight edge guides material when sewing a narrow seam. Near one end of the guide, at one side, is a convexly curved edge for guiding material when sewing a curved seam. On the side of the plate opposite the convexly curved edge is a relatively short straight edge and a concavely curved edge joins the last mentioned straight edge at a sharp angle to the first mentioned relatively long straight edge to provide a point for guiding material when sewing a seam with sharp angles or when sewing seams of varying directions.



3,401,659
BUTTONHOLE STITCHING DEVICE
Noboru Kasuga, Tokyo, Japan, assignor to Janome Sewing Machine Co., Ltd., Tokyo, Japan
Filed Mar. 24, 1966, Ser. No. 537,234
16 Claims. (Cl. 112—158)



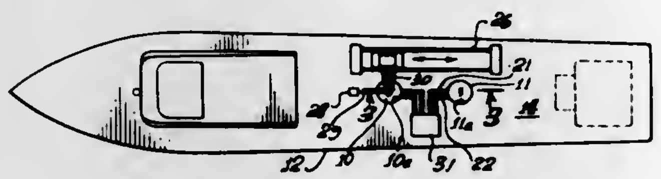
1. In a sewing machine, in combination, a buttonhole stitching device, comprising a drive cam; cam follower means cooperating with said drive cam and having an abutment; motion transmitting means actuated by said cam follower means and adapted to be connected with a needle for oscillating the same under the control of said cam follower means; carrier means supporting said cam follower means for oscillatory movement about a first axis spaced from said abutment; fulcrum means having a fulcrum cooperating with said abutment for supporting said cam follower means for oscillatory movement about a second axis; mounting means for mounting said carrier means for movement with said cam follower means between a normal position and a displaced position, and for mounting said fulcrum means for movement between a first position in which said fulcrum is spaced from said abutment in said normal position of said carrier means and engages the same in said displaced position, and a second position in which said fulcrum engages said abutment in said normal position of said carrier means; and control means having three positions for simultaneously moving said carrier means to said normal position and said fulcrum means to said first position so that said cam follower means oscillates about said first axis and the nedle makes long bar tack stitches, or said carrier means to said normal position and said fulcrum means to said second position so that said cam follower means oscillates about said fulcrum and the needle makes short stitches on one side of a buttonhole, or said carrier means to said displaced position and said fulcrum means to said first position so that said cam follower means oscillates about said fulcrum and the needle makes short stitches on the other side of the buttonhole.

3,401,660
SEISMIC SHIP

Booth B. Strange, Houston, Tex., and Carl H. Savit, Van Nuys, and Thomas L. Slaven, Los Angeles, Calif., assignors to Western Geophysical Company of America, Los Angeles, Calif., a corporation of Delaware

Filed Apr. 21, 1967, Ser. No. 632,837

1 Claim. (Cl. 114—.5)



This invention relates to a vessel for use in marine seismic surveying. A seismic surveying vessel in accordance with the present invention comprises a self-propelled vessel with a well extending from the working deck of the vessel through the hull of the vessel to below the waterline. A seismic signal transmission apparatus is removably positioned within the well. The well and signal transmission apparatus therein are so constructed and arranged in the vessel that the bottom of the ship's hull acts as a substantial baffle for the signal transmission apparatus to provide efficiency of signal transmission not heretofore possible by seismic exploration vessels except by positioning the signal transmission point at an inconvenient depth beneath the water surface.

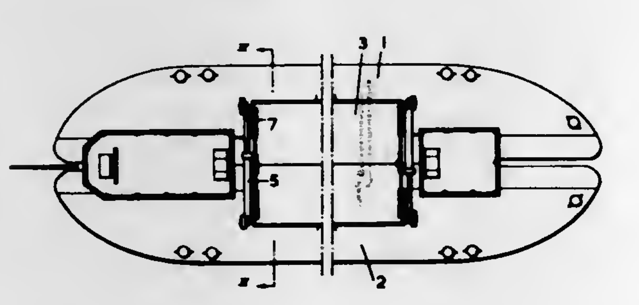
3,401,661
HOPPER BARGE

Bartele van der Werff, Capelle aan den Ijssel, Netherlands, assignor to A. Vuyk & Zonen's Scheepswerven N.V., Capelle aan den Ijssel, Netherlands, a corporation of the Netherlands

Filed Oct. 10, 1966, Ser. No. 585,607

Claims priority, application Netherlands, Oct. 22, 1965, 6513713

2 Claims. (Cl. 114—29)



A hopper barge comprising two pivotably connected floating body elements and a valved hydraulic circuit to control closing and opening of the cargo space defined between the floating body elements by hydraulic pump pressure, the power of a load in said cargo space, and the floating power of said body elements respectively.

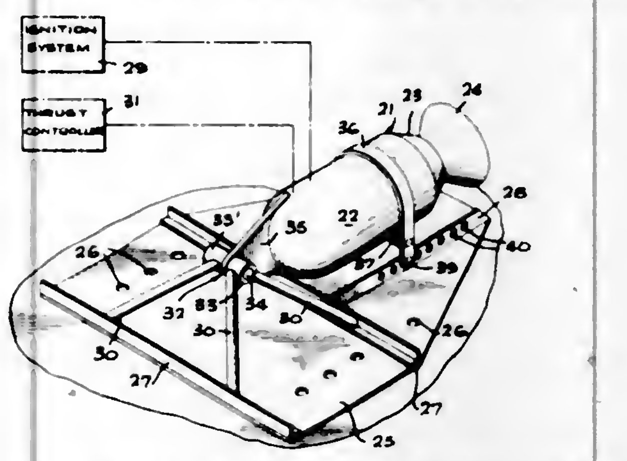
3,401,662
ROCKET-ASSISTED SHIP REORIENTATION SYSTEM

Doris L. Wickersham, Los Angeles County, Calif. (3424 Alana Drive, Sherman Oaks, Calif. 91403)

Filed Apr. 20, 1967, Ser. No. 632,267

18 Claims. (Cl. 114—51)

A system for reorienting a grounded or disabled ship. Rockets, mounted at appropriate locations on the hull of the vessel, provide extremely large forces for relatively short durations of time. By selectively firing the rockets, the ship may be changed in heading or attitude, or moved in abnormal directions, thereby improving its orientation to permit recovery of the ship or salvage of its contents.



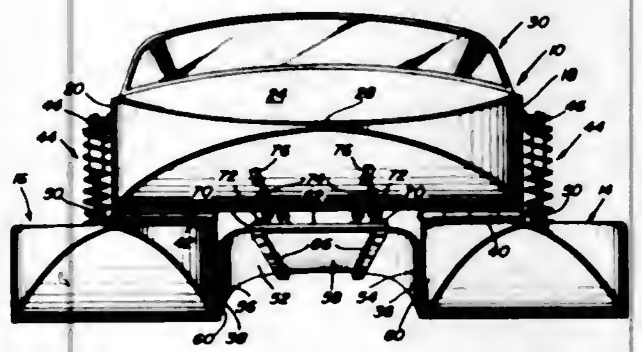
A rocket thrust adapter, including a base plate configured for mounting to the hull of a ship, and a rocket pivotally supported at a selectable angle on the base plate, also is disclosed.

3,401,663
CATAMARAN BOAT CONSTRUCTION WITH CENTER SPRAY SHIELD

John V. Yost, 2233 Riverside Drive, Trenton, Mich. 48183

Continuation-in-part of application Ser. No. 519,618, Jan. 10, 1966. This application Dec. 27, 1966, Ser. No. 604,763

15 Claims. (Cl. 114—66.5)



A boat hull construction of the catamaran type including a pair of generally parallel elongated hull members supported from a somewhat raised center passenger supporting body portion and including a panel-like substantially imperforate spray shield and supplemental planing surface member extending between the hull members, the latter having their rear ends pivotally supported from the rear end of the passenger supporting body for oscillation about a horizontal transverse axis and the forward ends of the hull members being mounted for limited vertical swinging movement relative to the forward end of the passenger supporting body and yieldingly urged toward their lowermost positions with respect to the body.

3,401,664
APPARATUS FOR FIXING A WATERPROOF BAND FOR USE IN THE CUTTING OR THE JOINING OF A STRUCTURE FLOATING ON THE WATER

Shinichi Furukawa, Kazuyoshi Yamada, and Ichizo Takizawa, Tokohama-shi, Japan, assignors to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan

Filed Jan. 11, 1967, Ser. No. 608,578

Claims priority, application Japan, June 27, 1966, 41/41,683 (utility model), 41/60,697

9 Claims. (Cl. 114—77)

An apparatus to be attached to a floating hull structure below its water level for use in separating the hull or in rejoining the hull. The apparatus comprising a waterproof band assembly having a U-shaped configuration with its opening directed toward the hull. Reinforcing means within the assembly for supporting its walls against exterior pressure when water is evacuated from its interior. Attachment members extending through the hull for securing the member onto the hull whereby it can be forced into watertight engagement with the hull to prevent any passage of water into the interior of the waterproof band assembly.

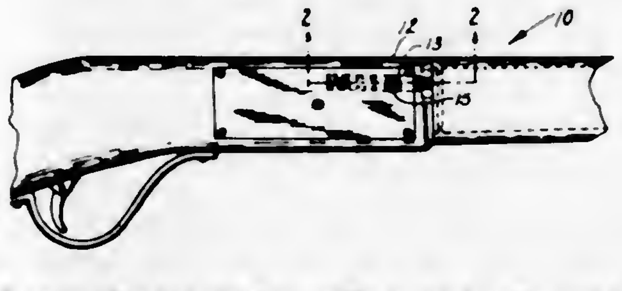
A method for preparing a floating hull structure to be cut or welded together whereby openings are provided in the hull, inserting a securing means through the openings in the hull, attaching a structure in sealed relationship to the hull, removing water from the structure sealed to the hull and subsequently performing the operation of cutting or rejoining the hull as required.

3,401,665
FIREARM LOADED CONDITION INDICATOR

Donald W. Kelley, Powderly, Tex. (Donald W. Kelley, RA18450077, Hq. Co., V Corps CMMI, APO New York 09079)

Filed Mar. 8, 1967, Ser. No. 621,544

4 Claims. (Cl. 116—114)



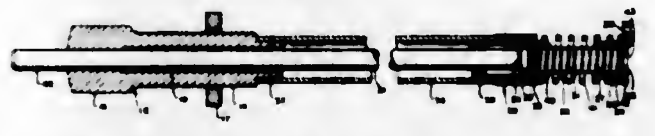
A firearm load indicator with a spring-loaded spring device slideable within a sleeve which when urged back by a cartridge in the firing chamber will visibly show a red color in an opening rearwardly of the action of the firearm, clearly indicating that a shell is in the firing chamber.

3,401,666
TEMPERATURE DETECTING ACTUATOR FOR BEARINGS

William O. Munroe, Rodeo, Calif., assignor to Amot Controls Corporation, a corporation of California

Filed June 30, 1965, Ser. No. 468,207

7 Claims. (Cl. 116—114.5)



A bearing temperature alarm having a pair of temperature sensing and spring actuated parts which are telescopically mounted for sliding engagement of their opposed walls, and urged to a relatively expanded position by a spring, and held in a relatively contracted position against the resilient action of the spring by a thin film of fusible material bonded between such walls.

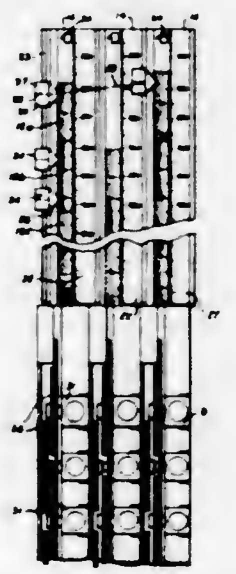
3,401,667
INDICATING BOARD

Franz Holler, Obermainanlage 21, Frankfurt am Main, Germany

Continuation-in-part of application Ser. No. 267,731, Mar. 25, 1963. This application June 21, 1965, Ser. No. 469,047

8 Claims. (Cl. 116—135)

1. An indicating apparatus having an elongated first housing comprising a base member, parallel side walls and a plurality of open channels supported on said base member in juxtaposed relation, a second housing connected to one end of said first housing and comprising a plurality of spaced walls forming closed channels constituting a continuation of respective first-mentioned channels, a plurality of respective tape drive means each comprising a drive roller and a cooperating counter roller longitudinally spaced and operatively positioned in each of the second-mentioned channels, a plurality of push buttons reciprocably mounted in said walls of the second housing and longitudinally spaced therein, each of said drive rollers being rotatably mounted in a respective push button for reciprocating movement therewith toward and away from its cooperating counter roller, a plurality of actuating discs, each one of said discs being operatively connected to a respective drive roller, a plurality of superposed tapes disposed in respective channels and having free ends extending into the channels of the first-mentioned housing, respective guide means disposed within the second-mentioned channels and directing a respective one of said tapes toward a space between a respective drive roller and its cooperating counter roller, so that each one of said tapes is operatively associated with a respective drive roller, whereby depression of a push button and the turning of the associated disc will cause the associated drive roller to move its associated tape, a plurality of locking means connected with said push buttons and operable when a push button is depressed for preventing movement of other tapes in a respective channel, spring means operatively connected with respective push buttons to return said push buttons to their original positions when pressure against the push buttons is released, said locking means comprising a spring biased swingable member having a pair of arms, a pin pivotally supporting said member in a respective wall of said second housing, one of said arms engaging and movable with a respective drive rollers and the other arm being adapted to engage and press upon said other tapes when the respective push button is depressed.



3,401,668
MASK WASHER APPARATUS

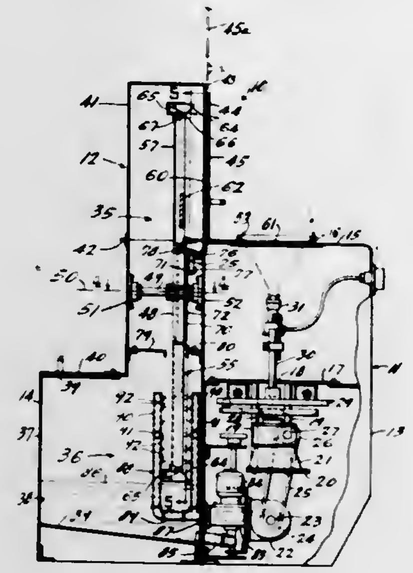
Erwin K. Welsh and Glenn L. Welsh, Vassar, Mich., assignors to Deco Tools, Inc., Toledo, Ohio, a corporation of Ohio

Filed Dec. 14, 1966, Ser. No. 601,704

9 Claims. (Cl. 118—70)

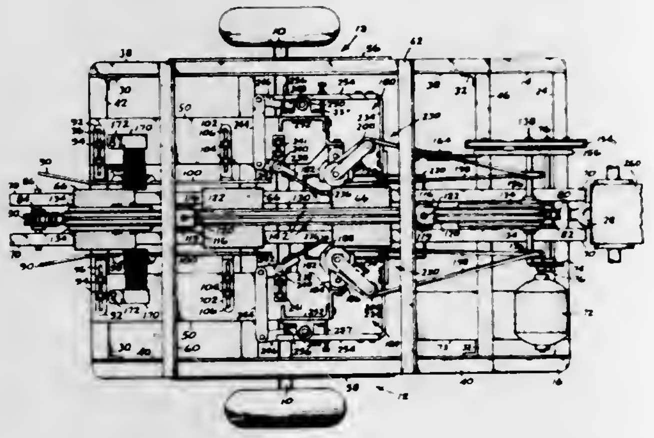
A mask washer apparatus for use in a decorative painting operation. A mask assembly having a plurality of outwardly extending mask holding frames is positioned within a housing and is mounted for rotation on a horizontal axis. The mask assembly is removably held in a respective one of a plurality of predetermined rotative positions.

The housing has a mask opening and each of the mask holding frames is pivotally mounted for movement between a rest position perpendicular to the horizontal axis and an operational position wherein the mask is moved through the mask opening into a painting position. The housing defines a cleaning chamber which has a solvent



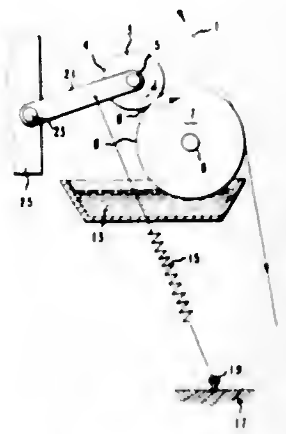
reservoir. A solvent distribution system effective to direct a pressurized solvent spray to opposed sides of a mask is provided in the cleaning chamber. The solvent distribution system includes a plurality of spray conduits positioned adjacent to and on opposite sides of the path of movement of the mask holding frames. A pump is used to supply solvent under pressure to the spray conduits.

3,401,669
STRUCTURAL BLOCK COATING APPARATUS
John J. Galloway, 14033 SE. Stark St., Portland, Oreg. 97233
Filed July 5, 1966, Ser. No. 562,907
3 Claims. (Cl. 118—121)



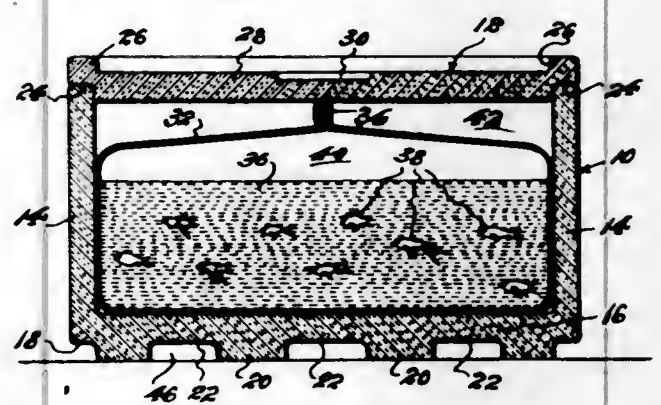
A conveyor moves blocks successively past laterally spaced brushes which clean the blocks, then past laterally spaced coating rolls which apply excess liquid coating material to the cleaned block surfaces, then past laterally spaced and laterally movable squeegee blades which remove the excess coating material from the coated surfaces. Each squeegee blade is moved outward to inoperative position by engagement of each block with a finger connected through pivoted linkage to the blade, and the blade is moved inward to operative position upon disengagement of the finger from the trailing end of the block when the leading edge of the block intercepts the plane of the squeegee blades.

3,401,670
APPARATUS FOR COATING TOW
Clarence Edward Oxford, Jr., Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 20, 1967, Ser. No. 647,402
2 Claims. (Cl. 118—212)



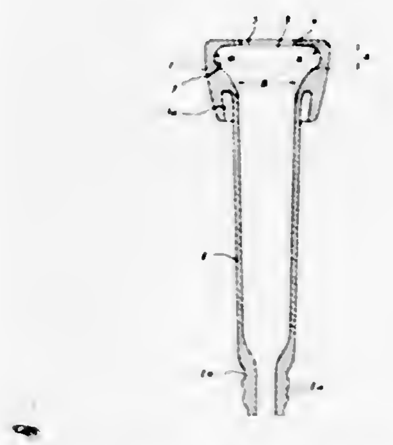
An apparatus and process for uniformly applying a liquid in discrete metered quantities to moving continuous filaments or tow. The apparatus comprises a finish applicator roll having a hard, peripheral yarn-treating surface roughened to a controlled degree to form pits, the applicator roll is arranged to rotate in a fluid supply reservoir and is further arranged such that the filaments or tow to be coated can pass over a portion of its surface; a second roll of relatively inelastic material having a smooth surface is in loaded tangential contact with the applicator roll at a point between the fluid pickup and the yarn contact, the second roll being loaded to a degree such that substantially all the excess fluid is removed from the applicator roll and allowing only the liquid retained in the pits to reach the yarn. The process comprises the steps of transferring the finish to be applied from a fluid supply to a rotating finish applicator roll having a surface roughened to form pits; removing the excess finish from the applicator roll by means of a second roll in loaded tangential contact with the applicator roll thereby allowing only the fluid retained in the pits of the roughened surface of the applicator roll to pass through the nip, conveying the fluid retained in the pits of the applicator roll to the yarn to be coated which is guided over a portion of the surface of the applicator roll located at a point beyond the nip of the two rolls.

3,401,671
INSULATED SHIPPING CONTAINER FOR LIVE AQUARIUM FISH
Herbert R. Axelrod, Deal, N.J., and Bernard Duke,, Sarasota, Fla., assignors to T.F.H. Publications, Inc., Jersey City, N.J., a corporation of New Jersey
Filed May 12, 1966, Ser. No. 549,619
6 Claims. (Cl. 119—5)



Thermally insulated shipping containers for plastic bags of water holding live fish, having a hollow body and a top, each molded in one piece of cellular plastic such as Styrofoam, are provided with insulating means to support the bottom wall of the body in spaced relationship to a surface on which the container rests. The bottom of the body of each box is adapted to nest in the open top of another box to close it when the boxes are stacked; the cover of the lower box being placed beneath the stack for added insulation.

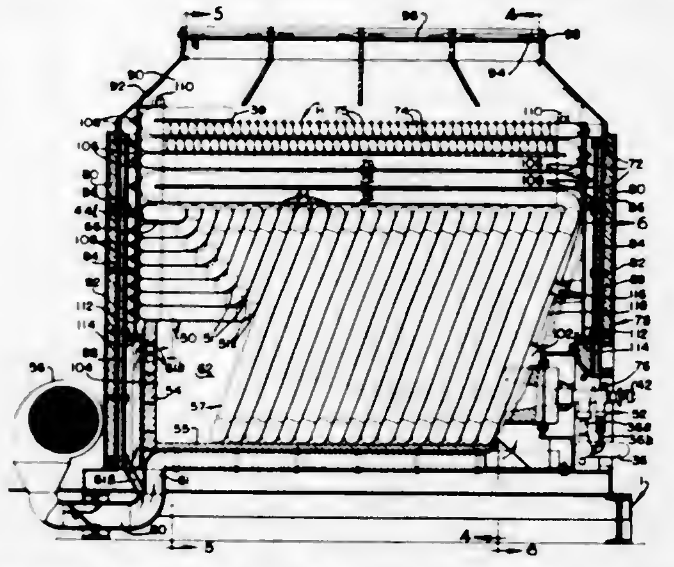
3,401,672
TEAT CUP LINER
Karl Lennart Berglind, Stockholm, Sweden, assignor to Alfa-Laval AB, Tumba, Sweden, a corporation of Sweden
Filed June 21, 1966, Ser. No. 559,196
Claims priority, application Sweden, June 24, 1965, 8,429/65
2 Claims. (Cl. 119—14.49)



The top part of the teat cup defines a laterally-enlarged hollow space opening downwardly into the upper end of the cup's depending tubular body, where the latter has a predetermined inner diameter, the top part having at its upper end a flat wall provided with an opening for insertion of a teat, the lower portion of the top part forming an annular groove for receiving the upper end of a teat cup shell adapted to maintain the tubular body in longitudinally stretched condition. The liner is characterized in that the part of the hollow space adjacent the flat end wall has a circumferential wall the inner surface of which, as viewed in an axial section of the liner, is concave and of substantially semicircular shape, the radius of the semicircular shape being such a fractional part of said inner diameter of the tubular body that the axial length of said hollow space is substantially equal to but no greater than one-half of said inner diameter.

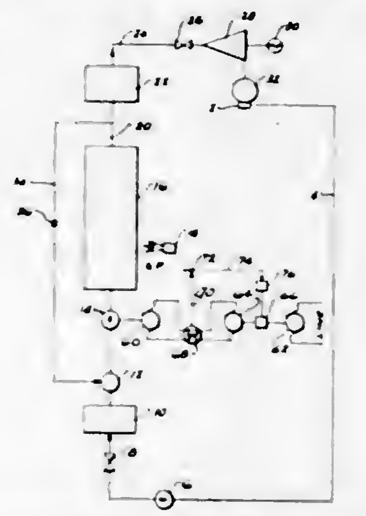
3,401,673
DIRECT FIRED FLUID HEATER
Lawrence M. Key, Jr., P.O. Box 305, Wichita Falls, Tex. 76307
Filed Aug. 30, 1966, Ser. No. 576,040
6 Claims. (Cl. 122—250)

A portable, self-contained, heat exchange system for heating oil or other fluids, wherein a sectionalized coil system is utilized in such manner as to enable a section of coil to be removed, repaired and replaced with a minimum of coil sections having to be removed and replaced. The heater is so constructed as to effect the maximum heat exchange between the heat produced by the burner and the coil system, which coils are removably fitted within an insulated housing, so as to retain a maximum of heat therein, but prevent the heat radiating through the housing to such extent as to be dangerous and without being wasteful of the radiated heat. A burner system is provided which utilizes primary and secondary air to obtain maximum combustion. Provision is made to circulate the oil or fluid continuously through the heating coil and either into a storage tank or into an oil well or the like



which is being treated to remove paraffin and to treat the producing formation.

3,401,674
STEAM GENERATOR RECIRCULATING PUMP OPERATION
David Palchik, Bloomfield, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Sept. 20, 1966, Ser. No. 580,765
10 Claims. (Cl. 122—406)

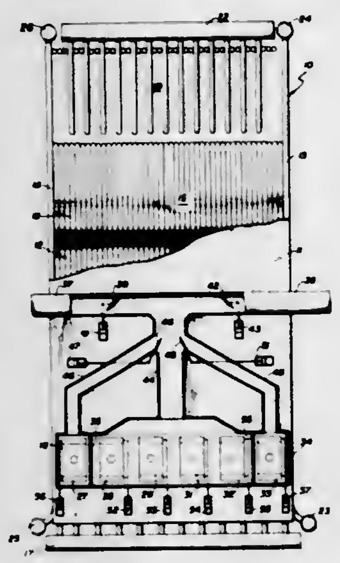


A once-through supercritical pressure steam generator of the recirculating type, employing a centrifugal pump to effect recirculation. A measure of the density of the fluid passing through the pump is determined and the pump speed is regulated in response to this measurement. The measure of density may be the density itself, temperature, power consumption of the pump drive motor, or any other reliable parameter under the particular operating conditions.

3,401,675
STEAM GENERATING UNIT
Earle C. Miller, Worcester, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Oct. 31, 1966, Ser. No. 590,924
4 Claims. (Cl. 122—479)

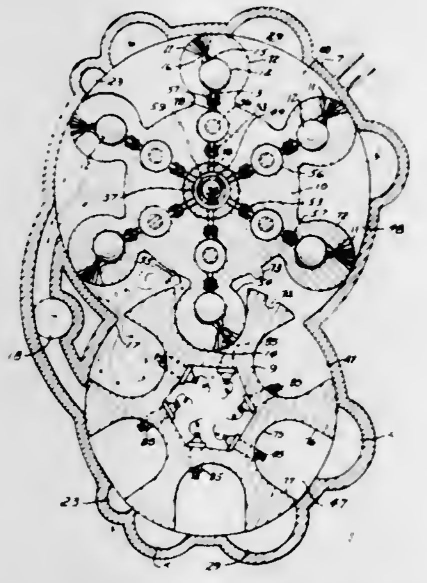
1. A steam generating unit, comprising
(a) front, rear, and side water walls defining a vertically elongated combustion chamber,
(b) a horizontal row of burners mounted on the front wall at the lower end of the chamber,
(c) a convection pass connected to the upper end of the chamber,
(d) a superheater mounted in the said pass, and

(e) means to close down the burners closest to the said side walls to maintain the temperature of superheated steam at a predetermined value, the said means including a main control which receives a signal indicative of temperature of superheat and a signal indicative of load, the main control regulating



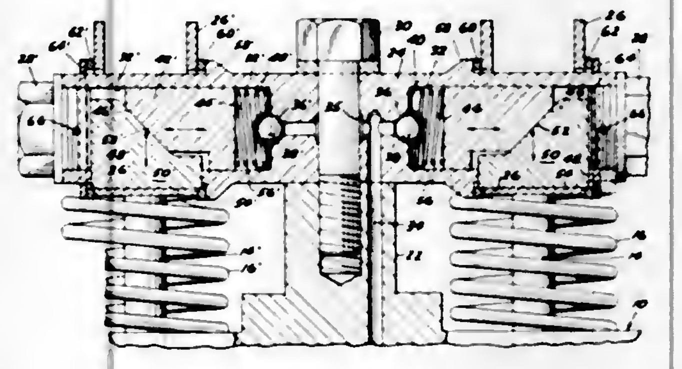
the total amounts and proportions of fuel and air passing to the burners, separately regulating the amount of fuel-air mixture passing to the said burners closest to the side walls, and regulating the velocity of the fuel-air mixture passing through the burners which are not closest to the side walls.

3,401,676
BALLISTIC INTERNAL-COMBUSTION TURBINE ENGINE
Fritz W. Wanzenberg, 9 Campbell Lane, Larchmont, N.Y. 10538
Continuation-in-part of application Ser. No. 461,401, June 4, 1965. This application Sept. 6, 1967, Ser. No. 665,917
20 Claims. (Cl. 123—12)



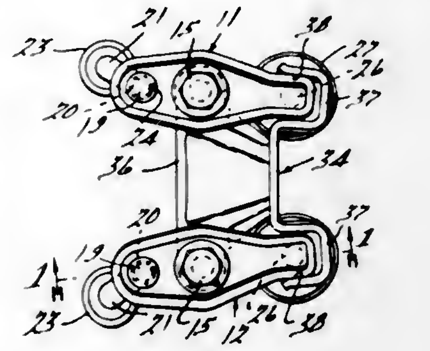
An internal-combustion turbine-type engine which is characterized by a main housing formed with intersecting cylindrical chambers in which two intermeshing turbine wheels are mounted on parallel shafts with provision for feeding fuel through one shaft to combustion chambers in peripherally spaced, radially extending piston forming teeth on the one turbine wheel which are contoured to mate with cylinder forming, peripherally spaced chambers on the other turbine wheel so as to confine for combustion a mixture of fuel and compressed air, the air being delivered to the spaces between the teeth by an impeller mounted on the drive shaft and enclosed in an apertured supercharger cowl secured over a head block on the front face of the main housing, the impeller being driven by a supercharger turbine which is in turn driven by exhaust gases from the turbine wheels in the main housing. The shafts, one of which forms the output power shaft, are connected by synchronizing gears and the supercharger impeller and turbine are connected to the output shaft by a planetary gear set. An hydraulically actuated side plate closes the back faces of the turbine wheels and telescopes in liquid sealing relation into an inwardly opening chamber in the back wall of the main housing through which a cooling fluid is circulated under pressure and holds the side plate against the wheel faces.

3,401,677
INTEGRAL LASH ADJUSTER
Richard C. Ronzi, Southfield, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 29, 1967, Ser. No. 664,114
9 Claims. (Cl. 123—90)



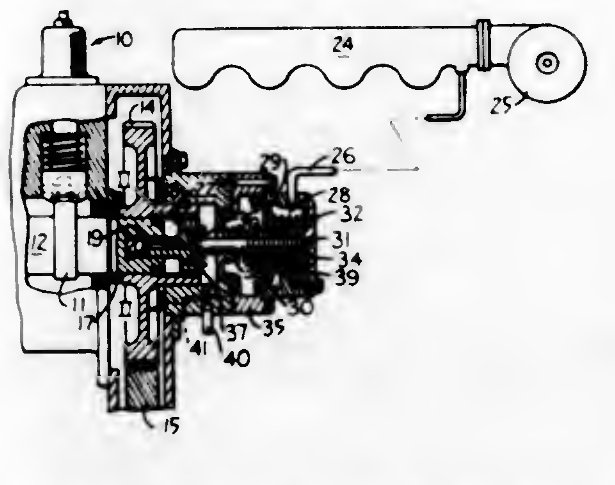
A hydraulic lash adjuster is built into the support shaft for the rocker arm of a reciprocating engine valve train. A chamber is formed in the support shaft and connected to the engine oil supply. Mounted in the chamber is a piston subject to oil pressure on one side and having an inclined surface on the other side. The inclined surface bears on a correspondingly inclined surface of a member projecting down through an opening in the wall of the shaft, and this member bears on the lower inside surface of the bore in the rocker arm. Engine oil pressure positions the piston, the piston acts through the inclined surfaces to position the member projecting through the opening in the shaft wall, and the member in turn positions the rocker arm to eliminate lash existing in the valve train.

3,401,678
ROCKER ARM GUIDE
Frederick M. Rose, Sarasota, Fla., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Nov. 29, 1966, Ser. No. 597,623
10 Claims. (Cl. 123—90)



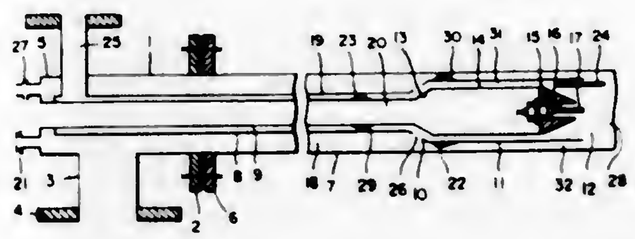
A rocker arm installation for overhead valve engines wherein dished, stud mounted rocker arms with ball-and-socket type fulcrums are employed. The push rods associated with a pair of the rocker arms angularly engage the rocker arms to exert a force tending to rotate them in opposite directions about their respective mounting stud axes. A rocker arm guide spans the two studs, is secured to the engine head by the studs, and has flanges extending laterally in opposite directions to engage opposite sides of the two rocker arms to prevent such rotation.

3,401,679
ENGINE FUEL INJECTION TIMING DEVICE
Robert D. McDowell, Ralph Tegg, Jr., and Glenn I. Branstad, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed July 21, 1966, Ser. No. 566,980
4 Claims. (Cl. 123—139)



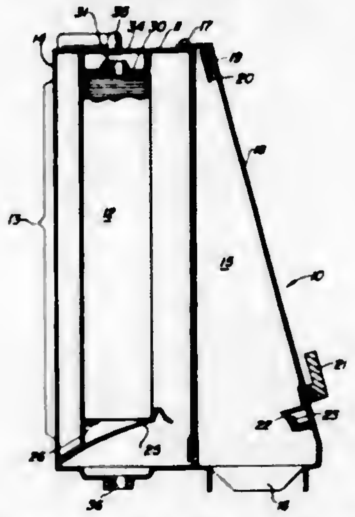
A device for automatic timing of fuel injection in a turbocharged internal combustion engine wherein the timing is varied in accordance with engine requirements and particularly to means for varying the timing in response to turbocharged intake manifold pressure.

3,401,680
COMBUSTION OF GASES
Leo Unterstenhoefer, Limburgerhof, Pfalz, and Carl Hezel, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany,
Filed Dec. 7, 1966, Ser. No. 599,889
Claims priority, application Germany, Dec. 8, 1965, B 84,871
6 Claims. (Cl. 126—91)



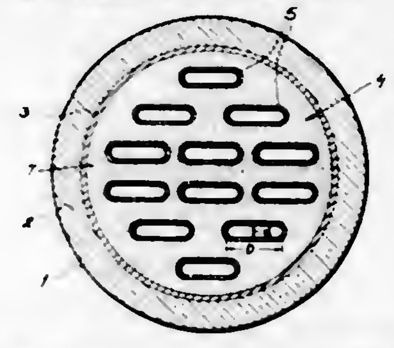
Apparatus for combustion of fuel gas with air including a burner tube arranged coaxially within an elongated heating tube, an inner tube inserted within the burner tube and capped at its outlet end with a glow plug which is located adjacent the outlet of the burner tube, inlet means for introducing air into the heating tube, inlet means for introducing fuel gas into the burner tube, and an annular constricting means located downstream from said inlet means in each of the annular channels defined by the three coaxially arranged tubes. The apparatus provides adequate damping of vibrations which are caused by the combustion flame.

3,401,681
HUMIDIFIER APPARATUS
Paul E. McDuffee, Sr., 216 N. Elmwood Drive, Aurora, Ill. 60506
Filed Oct. 26, 1966, Ser. No. 589,545
5 Claims. (Cl. 126—113)



A humidifier adapted for disposition within a warm air furnace; the humidifier having two housing sections with the openings therein being rotatable with respect to each other and being constructed so that ready access is provided to a moistened humidifying element disposed within the humidifier housing.

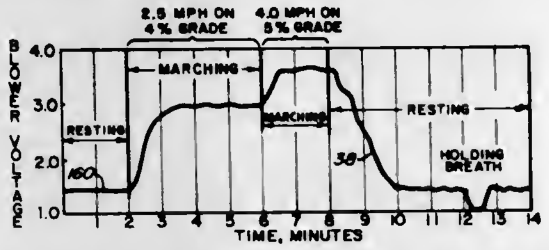
3,401,682
REGENERATIVE TUBE-BUNDLE HEAT EXCHANGER HAVING SCREW-LIKE FLATTENED TUBES HELICALLY WOUND IN SPACED-APART RELATIONSHIP
Fritz Jakob, Wolfratshausen, Germany, assignor to Linde Aktiengesellschaft, Wiesbaden, Germany, a corporation of Germany
Filed Sept. 12, 1966, Ser. No. 578,767
Claims priority, application Germany, Sept. 16, 1965, L 51,652
2 Claims. (Cl. 126—400)



A regenerative tube-bundle heat exchanger having a plurality of spaced-apart helicoidally wound tubes of flattened cross-section with a ratio of the major internal diameter to the minor internal diameter of 5:1 to 25:1 and twisted in a screw-like configuration; and a heat-storage mass packed around the tubes and filling the spaces between them.

3,401,683
APPARATUS AND METHOD FOR METABOLISM MEASUREMENT
Paul Webb and Jeremy F. Crocker, Yellow Springs, Ohio, assignors to Webb Associates, Inc., Yellow Springs, Ohio, a corporation of Ohio
Filed June 3, 1965, Ser. No. 460,934
13 Claims. (Cl. 128—2.07)

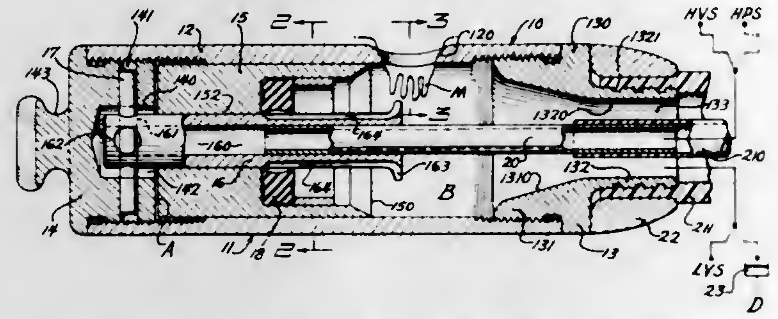
An open-ended metabolic rate monitor including a headpiece received over a subject's head incorporating a controllable electric blower for moving air through the headpiece for breathing by the subject. A polarographic cell is positioned downstream from the subject and is responsive to oxygen partial pressure. A control system operates the blower to maintain a given oxygen partial pressure at the cell downstream from the subject, and the



blower excitation voltage is measured as an indication of oxygen consumption rate of the subject.

3,401,684
BIOPSY CAPSULES

Jules M. Dremann, Birmingham, Mich., assignor, by mesne assignments, to Edward Weck & Company, Inc., Long Island City, N.Y., a corporation of Delaware
Filed Dec. 16, 1965, Ser. No. 514,332
4 Claims. (Cl. 128—2)



1. Means for taking one or a plurality of mucosa specimens from the gastrointestinal tract of a patient subsequent to swallowing of a biopsy capsule with a single intubation of the patient consisting of

a biopsy capsule comprising a housing including a cylindrical shell, and a nose element and a cap threaded in opposite ends thereof, said cap having a central axially disposed recess formed in the inner threaded end thereof,

a cylindrical piston-cutter element reciprocally mounted in said cylindrical shell hydraulically movable to and from a Retracted, End-of-Cut and Flush position formed with an annular cutting edge at the forward end thereof disposed adjacent the inner wall of said cylindrical shell, said piston-cutter element dividing said shell into a pressure chamber at the rearward end of said piston-cutter element and a flush chamber at the forward end thereof,

said cylindrical shell having a mucosa receiving aperture in the wall thereof formed and located to permit a spear of mucosa to be drawn by vacuum into said shell when said piston-cutter element is in its Retracted position to be cut off upon the advancing of said piston-cutter element by hydraulic pressure applied thereto to move it to its End-of-Cut position, a central hollow by-pass valve stem and means pivotally and floatingly mounting the same at its inner end in said recess formed in said cap,

said hollow by-pass valve stem having an aperture therein opening into said recess in said cap providing a fluid passage communicating from said hollow by-pass valve stem to the rearward end of said piston-cutter element,

said piston-cutter element being centrally bored and counterbored from the forward cutter end thereof and reciprocally mounted at said bore over said central hollow by-pass valve stem,

a resilient annular washer element reciprocally disposed in frictional contact around said central hollow by-pass valve stem, and means fixing said annual washer element in said piston-cutter element counterbore adjacent the base and outer wall thereof,

said central hollow by-pass valve stem having an outwardly flared free end and longitudinally disposed fluid channels formed in the outer wall at the free end portion thereof providing communication between the pressure chamber and the flush chamber of the biopsy capsule when said piston-cutter element is advanced under hydraulic pressure to its flush position therein,

said resilient washer means being compressed during said advance under hydraulic pressure of the piston-cutter element from its End-of-Cut to its Flush position, resiliently returning said piston-cutter element to its End-of-Cut position after said hydraulic pressure is released,

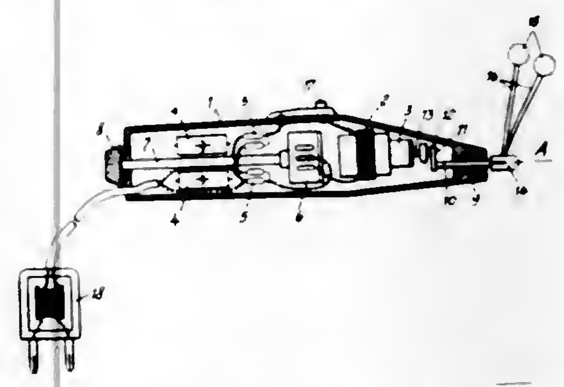
an extension tube extending forwardly from said hollow by-pass valve stem,

a double lumen tube including a central pressure-vacuum lumen and an outer vacuum-flush lumen connected respectively to said hollow by-pass valve stem extension tube and the interior of the outer end of said cylindrical shell,

said pressure-vacuum lumen being connectable selectively to a variable pressure or to a vacuum source, and said vacuum-flush lumen being connectable selectively to a variable vacuum source or to a specimen retrieve element and drain.

3,401,685
THERAPEUTIC TREATMENT OF DISORDERS OF SPEECH, PARTICULARLY RHOTACISM AND SIGMATISM

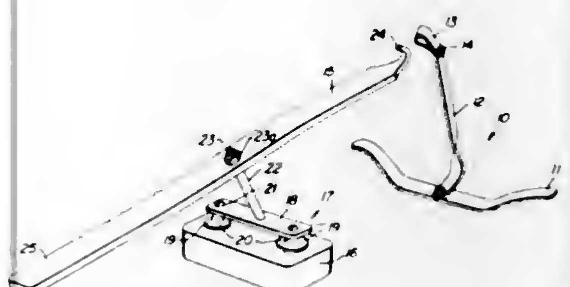
Olga Staub, 22 Neuhofstrasse, 6330 Cham, Switzerland
Filed Nov. 18, 1965, Ser. No. 508,423
1 Claim. (Cl. 128—24)



For the treatment of speech defects, a vibratile probe is placed on or under the tongue of a patient while being subjected to rapid oscillation.

3,401,686
SELF-OPERABLE RESPIRATORY AID

Evan H. Edwards, P.O. Box 156, Caliente, Nev. 89008
Filed Mar. 28, 1966, Ser. No. 537,839
10 Claims. (Cl. 128—28)



1. A reciprocatory aid, operable by a user upon himself, comprising

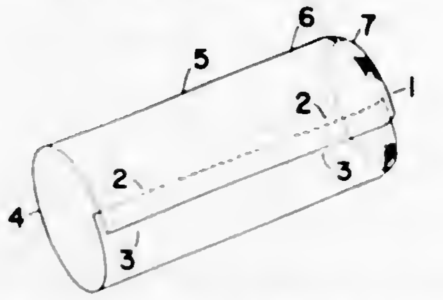
a lever;

a pressure pad fixed to said lever intermediate the length of said lever for exerting pressure on the lower lung region of said user; and

an anchor means providing a fulcrum engageable by one end of said lever and anchorable to a lower portion of the user's body so that the lever is disposed centrally and substantially longitudinally relative to said user's body.

3,401,687
SEXUAL AID

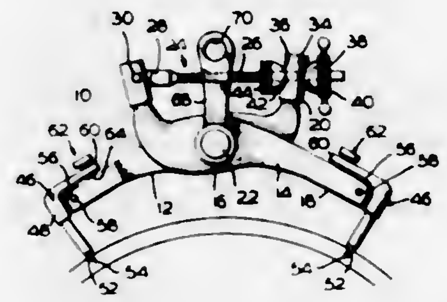
Lewis D. Hood, Baltimore, Md., assignor to Blue Ridge Enterprise, Inc., Baltimore, Md.
Filed July 27, 1964, Ser. No. 385,342
4 Claims. (Cl. 128—79)



1. A sexual aid appliance adapted to encompass and support a male penile organ comprising an elongated tubular member of inherent stiffness and of a length substantially coextensive with the corpus cavernosum of the organ, said tubular member being axially split throughout its length, the portions of the tube adjacent said split lying in contacting overlapping relationship and adapted to resiliently diametrically expand under pressure of the organ to grip and hold fast to the organ.

3,401,688
SKULL TONGS

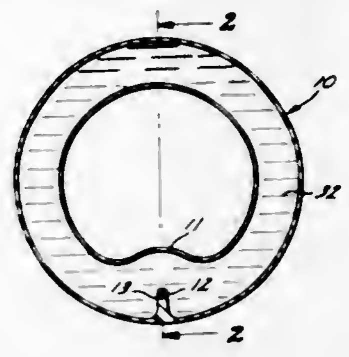
William Gayle Crutchfield, Charlottesville, Va., assignor to Research Corporation, New York, N.Y., a nonprofit corporation of New York
Filed May 20, 1966, Ser. No. 551,667
1 Claim. (Cl. 128—84)



1. Skull tongs comprising a pair of generally rigid members, each of said members including a center or body portion and integral end portions, pivot means interconnecting the body portions of the rigid members in a scissors-like pivotal arrangement, one of the end portions of each member being curved in relation to the center portion such that said one end portions lie in spaced generally parallel relationship during use of the tongs, means engageable by each of said one end portions of the members for pivoting the members about the pivot means to urge the end portions toward and away from each other, a pair of generally L-shaped skull pins mounting members, pivot pins mounting each of the L-shaped members on each of the other ends of each of said members adjacent the apex of the L-shaped members, a pair of skull pins, each of said skull pin mounting members having one of the skull pins projecting from one leg of each of the L-shaped members with each of said skull pins positioned generally parallel with its leg, an adjustment screw received in the extended end of each of the other legs of the L-shaped members and adapted to bear against its respective rigid member of the skull tongs and a traction force attaching means connected to said tongs.

3,401,689
INTRA-UTERINE CONTRACEPTIVE DEVICE AND METHOD AND APPARATUS FOR INSERTING AND RETAINING THE SAME

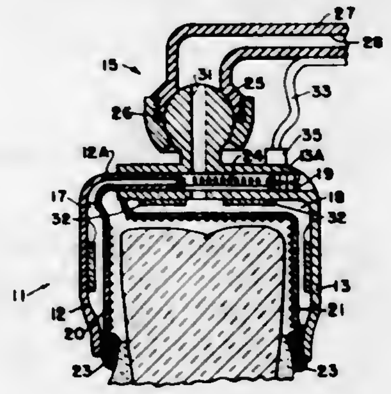
Eugene C. Greenwood, 8864 Lindell, Apt. 3, Downey, Calif. 90240
Continuation of abandoned application Ser. No. 446,546, Apr. 8, 1965. This application May 23, 1967, Ser. No. 640,754
14 Claims. (Cl. 128—129)



An intra-uterine contraceptive device comprising an inflatable member sufficiently small to be inserted through the cervix when in deflated condition, and sufficiently large to be retained within the uterus when in inflated condition. A method of inserting the device by mounting the same within an elongated small-diameter sheath or sleeve.

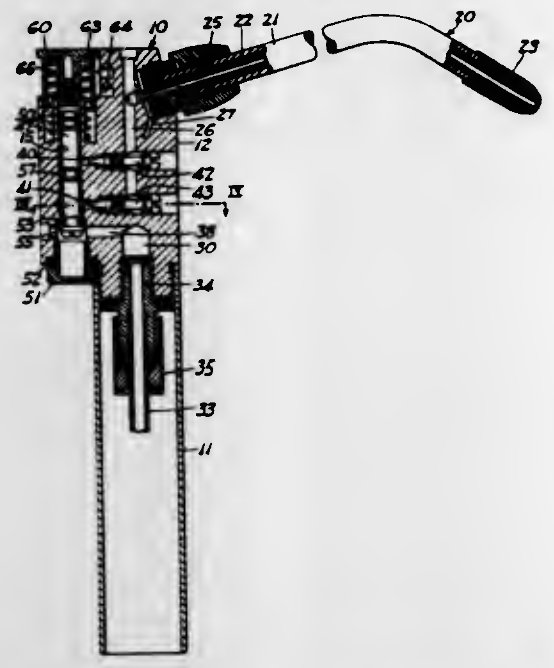
3,401,690
ULTRASONIC DENTAL CLEANING AND TREATMENT DEVICE

Leonard G. Martin, 1 Roseld Ave., Deal, N.J. 07723
Filed Apr. 20, 1966, Ser. No. 544,004
8 Claims. (Cl. 128—172.1)



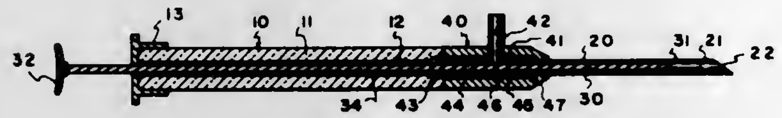
1. A dental cleaning device comprising: a clamp which covers at least one tooth, said clamp including two jaws coupled together by resilient means; an envelope secured to the inside surface of each clamp, said envelopes each including a perforate flexible sheet positioned next to the tooth surface when applied to a jaw, the interior space within each of the envelopes connected to a conduit and a liquid source; an electric-to-sonic transducer in each of said envelopes for generating high frequency vibrations within the envelopes, and a pair of conductors connected to said transducers for connection to an external source of alternating current power.

3,401,691
DENTAL SYRINGE
Richard A. Beu, Eggertsville, N.Y., assignor to Hanau Engineering Company, Inc., Buffalo, N.Y.
Filed Dec. 2, 1964, Ser. No. 415,229
4 Claims. (Cl. 128—173.1)



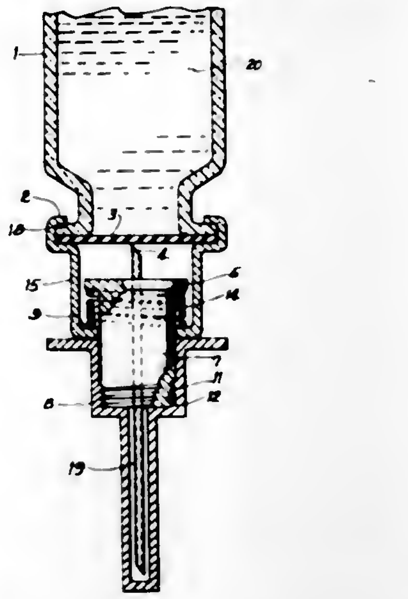
A dental implement for ejecting water, air or an air-water spray through a nozzle has a pair of adjacent push buttons to provide water or air to the nozzle. The maximum range of movement of the air push button is equal to a fraction of the full range of movement of the water push button whereby joint depression of both push buttons to the maximum range of movement of the air push button moves the water push button only fractionally to produce a properly proportioned water-air spray, each push button being separately operable to provide either air or water discharge alone.

3,401,692
SYRINGE PROVIDED WITH A LATERAL VENT AND HAVING HIGH COMPRESSION SEALS WITHIN THE SYRINGE BORE
Rano Joseph Harris, Jr., Baton Rouge, La., assignor, by mesne assignments, to Micro-Tek Instruments Corporation, Baton Rouge, La., a corporation of Texas
Filed June 26, 1964, Ser. No. 378,349
16 Claims. (Cl. 128—218)



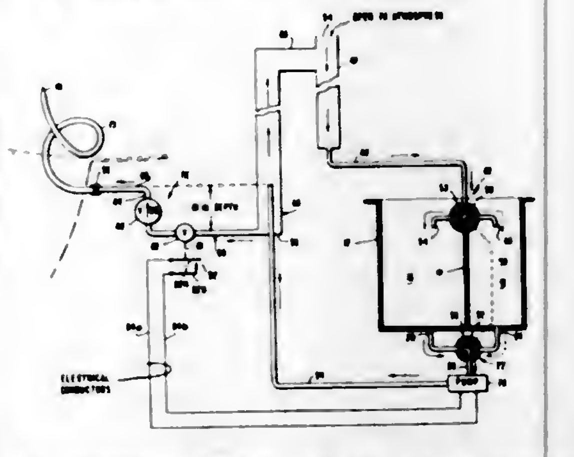
1. In a needle syringe wherein a body and a needle have a communicating bore, an elongate plunger mounted to slidably travel with a loose slip fit within said bore; a vent line laterally communicating with said bore, the vent line being blocked off by the plunger as it commences travel toward the needle; and sealing means adapted to cooperate with the plunger stem to effect a high pressure seal on both sides of the locus of said lateral communication without preventing slidable travel of the plunger stem therethrough.

3,401,693
NEEDLE-HUB ASSEMBLY FOR HYPODERMIC SYRINGE
Milton J. Cohen, 7111 Connecticut Ave., Chevy Chase, Md. 20015
Filed Oct. 19, 1965, Ser. No. 497,888
3 Claims. (Cl. 128—221)



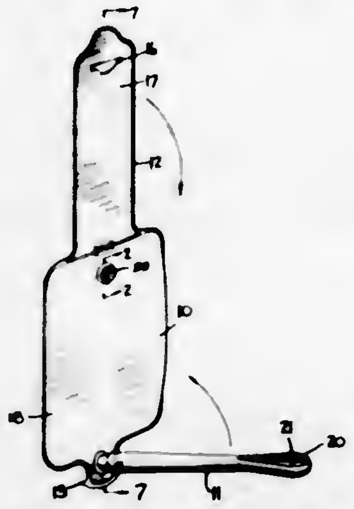
A disposable hypodermic syringe comprising a cartridge barrel having an open end with an annular lip, a sealing disc extending in sealing relationship across the open end of the cartridge barrel, a cup shaped receptacle having an inner end portion and an outer end portion with means on the inner end portion for mounting the cup shaped receptable on the annular lip to secure the cup shaped receptable onto the open end of the cartridge barrel and an annular shelf on the outer end portion, a needle hub having an inner portion located within the cup shaped receptacle and an outer portion beyond the cup shaped receptacle and dimensioned to be received between the annular shelf for sliding movement between extended and retracted positions, a hypodermic needle extending through said needle hub with the inner end of the needle in close proximity to the sealing disc when the needle hub is in retracted position, means constantly urging the needle hub towards extended position to project the inner end of the needle through the sealing disc, a needle cover, and means releasably securing the needle cover onto the end portion of the needle hub extending outwardly of the cup shaped receptable for retaining the needle hub in retracted position, when mounted thereon, and to release the needle hub for displacement to extended position responsive to removal of the cover.

3,401,694
SYSTEM FOR COLONIC THERAPY
Alice Touchberry, 401 Worth Ave., Palm Beach, Fla. 33480
Filed Dec. 4, 1964, Ser. No. 415,973
8 Claims. (Cl. 128—227)



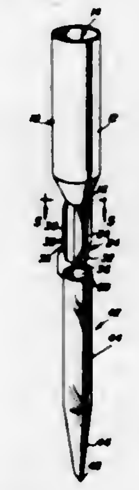
A system for colonic therapy employing a container through which liquid is continuously circulated. A conduit withdraws part of the liquid circulating through the container and supplies it to the patient. The container advantageously is a standpipe providing a constant pressure of liquid to the conduit for application to the patient. The conduit and container include a U-shaped passage below the level of the patient which serves to retain liquid to form a liquid seal, preventing air from passing into the patient from the container whenever the circulation of liquid through the container is halted. Liquid from a supply tank regulated to be of constant temperature may be circulated through the container; the circulation through the container maintains liquid at the conduit for application to the patient at the fixed temperature.

3,401,695
DISPOSABLE SYRINGE PACKAGE
David Rosenberg, 4635 Matilda Ave., Bronx, N.Y. 10470, and Louis Mirando, 34 Coach Lane, Upper Saddle River, N.J.
Filed Sept. 13, 1965, Ser. No. 486,951
8 Claims. (Cl. 128—232)



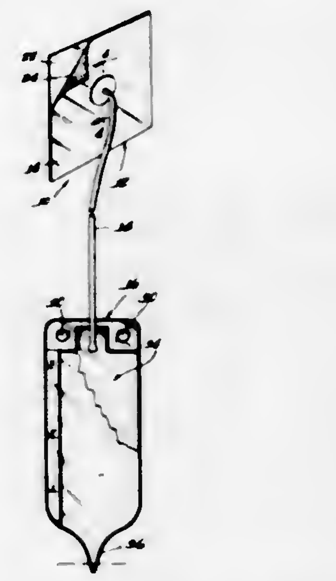
A disposable package for storing a medicinal solution and for expelling the solution into a body cavity comprises a compressible container for the solution having an elongated nozzle hingedly connected to one of its ends for insertion into a body cavity and being swingable to a stored position extending toward the other container end, and a sheath hingedly connected to the other container end and being swingable to a stored position lying against the container where it can enclose the nozzle in its stored position. The nozzle has an elongated bore through which the contents of the container can be expelled upon compression of the container, and a valve is provided within the somewhat elastic nozzle which is selectively manipulatable to position the valve for either closing the bore or permitting the outflow of solution therethrough.

3,401,696
SEMEN COLLECTION FUNNEL
Coleman A. O'Brien, 3805 26th St., Lubbock, Tex. 79410
Filed Oct. 4, 1965, Ser. No. 492,665
10 Claims. (Cl. 128—294)



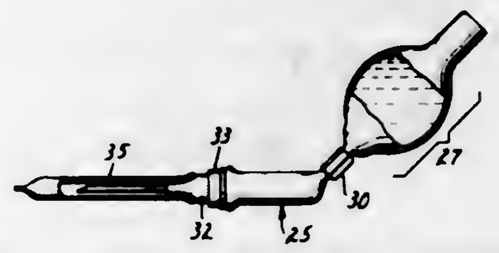
A funnel used in combination with a semen collecting and storage vial having a neck section telescoped into the vial and frictionally retained therein by the provision of a plurality of flexible fins on the neck section which are disposed at an angle from an extended radius and depressed inwardly by the rigid inner surface of the vial for frictionally and releasably retaining the collecting funnel and vial in assembled condition. The collecting funnel may be cylindrical or frusto-conical in configuration. A handle structure is releasably attached to the frusto-conical funnel to enable it to be easily held in position for use.

3,401,697
PEDIATRIC FLUID COLLECTOR
Robert G. Lefley, 517 S. Summit Ave., Wheaton, Ill. 60187, and John G. Raffensperger, 190 Exmoor Ave., Glen Ellyn, Ill. 60137
Filed Feb. 18, 1965, Ser. No. 433,679
10 Claims. (Cl. 128—295)



The present application discloses a pediatric fluid collector comprising a first sheet of thin, pliable material in the form of a patch readily conformable to the human skin contour such as heat-sealable polyethylene material. One surface of the first sheet is adhesively coated for attachment to the human skin, the central portion of said sheet being free from contact with the user's skin. A second apertured sheet is sealed to the first sheet in the vicinity of the margin which defines the aperture of the first sheet, said second sheet having a sealed coupling with one extremity of a flexible tube, the opposite extremity of said tube having a sealed connection with a urine receptacle adapted to be supported on the bed of the user.

3,401,698
INFLATION ATTACHMENT FOR INFLATABLE BAG CATHETER
Dean A. Rosecrans, 429 S. Western Ave., Los Angeles, Calif. 90005
Filed May 5, 1964, Ser. No. 365,110
4 Claims. (Cl. 128—349)

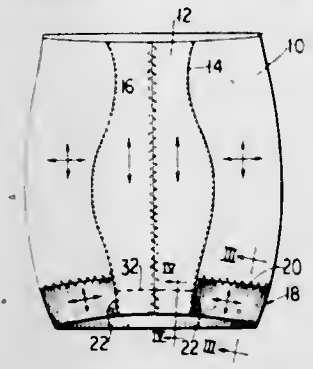


1. For use with a Foley-type catheter comprising an elongated first tube having adjacent to its forward end an orifice to permit the passage of body fluid into the bore of said first tube and having a resilient, distensible wall member secured to and engirdling an exterior portion of

said tube so as to form an inflatable bag located adjacent said orifice, said catheter further having a second tube joined to said first tube, said second tube having a rearward end, and a third tube formed in the wall of said first tube joining said second tube with said inflatable bag, and attachment comprising:

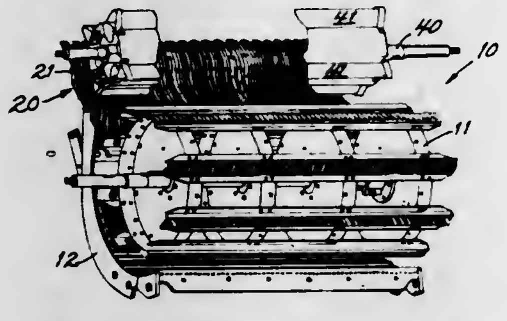
(a) a container having an opening therein and having a resilient, distensible wall portion which is less elastic than the resilient, distensible wall member of said inflatable bag, said container containing a fill liquid which expands the distensible wall portion of said container to place said fill liquid under pressure;
(b) valve means connected to said container closing off flow of liquid through the opening of said container until such time as the valve is opened; and
(c) a tubular instrument connected to the opening of said container and adapted to be inserted in the rearward end of said second tube of the catheter so that, when said valve means is opened, the fill liquid will pass from the container into said inflatable bag thereby inflating the same.

3,401,699
GIRDLE BAND CONSTRUCTION
Madeline K. Shea, 170 Connecticut Ave., Freeport, N.Y. 11520
Filed Jan. 26, 1966, Ser. No. 523,112
7 Claims. (Cl. 128—536)



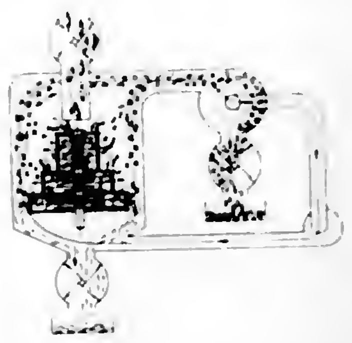
A girdle construction in which the lower edge is provided with a double thickness of stretch material (preferably two-way stretch) of substantial vertical width and extending around the entire, or almost the entire, bottom edge of the girdle to form a zone which firmly grips the wearer's body without cutting or creasing it and anchors the girdle against tendencies to "ride up."

3,401,700
COMBINE BEATER GRATE
Elof K. Karlsson, East Moline, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed June 2, 1966, Ser. No. 554,791
6 Claims. (Cl. 130—27)



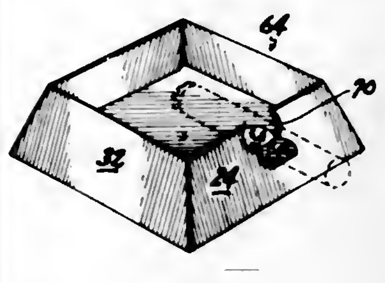
1. In a threshing apparatus including a cylinder and a concave,
  a grate disposed behind said concave and comprising a row of laterally spaced fingers, said fingers supported at one end on said concave and extending rearwardly therefrom,
  said fingers including elongated rods, circular in cross section and having projections spaced longitudinally thereof,
  said projections being circular in cross section and shaped such that they taper gradually down to the size of the elongated rod on the side toward the concave and change abruptly to the size of the rod on the side away from the concave whereby material moving over said grate away from said concave will ride up and over the projections but will be prevented by the projections from moving over the grate in a direction toward the concave.

3,401,701
PROCESS AND MEANS FOR SEPARATING THE PARENCHYMA FROM LIGNACIOUS PARTS OF VEGETABLE LEAVES AND IN PARTICULAR TOBACCO
André Pietrucci, Fleury-les-Aubrais, France, assignor to Service d'Exploitation Industrielle des Tabacs et des Allumettes, Paris, France, a French public establishment
Filed June 13, 1966, Ser. No. 557,277
Claims priority, application France, June 11, 1965, 20,448
12 Claims. (Cl. 131—146)



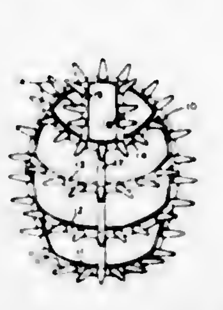
Apparatus for comminuting tobacco leaves and for classifying the resulting particles comprises two or more coaxial superimposed cutting units, a feed for supplying leaves axially to the uppermost unit, and a conveyor system for supplying the heavier fraction of the mixture formed in each upper cutting unit to the unit therebelow by advancing such fraction in substantial parallelism with the common axis of the cutting units.

3,401,702
ASHTRAY CONSTRUCTION
Norton L. Rossman, 4461 Howard Ave., Western Springs, Ill. 60558
Filed Mar. 24, 1966, Ser. No. 537,175
3 Claims. (Cl. 131—235)



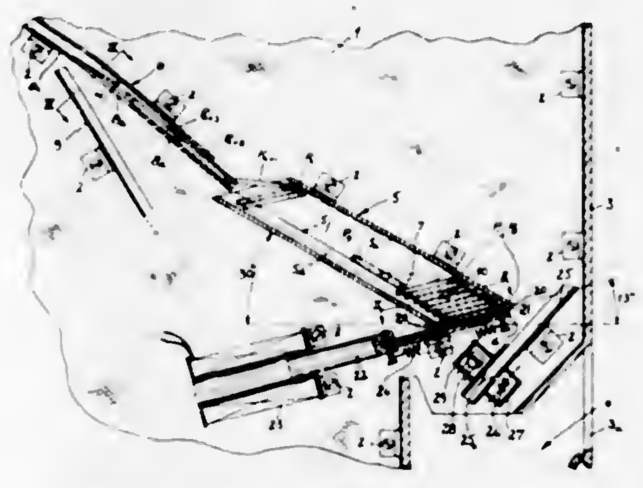
A disposable ashtray composed of foil-lined paperboard has a cigarette supporting ledge formed in a double-wall portion thereof. The foil surfacing of the ledge and of the adjacent multiple layers of the wall serve to extinguish the cigarette when the lighted end is disposed on said ledge.

3,401,703
HAIR STYLING DEVICE
John R. Claycomb, Great Falls, Mont. (25851 Miramonte St., Redlands, Calif. 92373)
Filed June 7, 1965, Ser. No. 461,878
1 Claim. (Cl. 132—9)



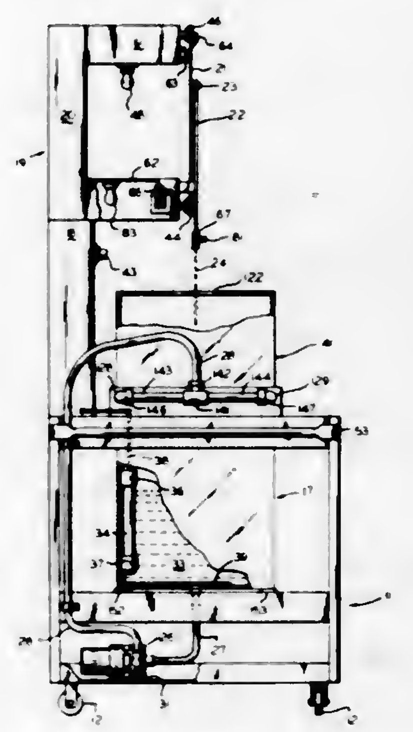
A hair styling device comprising an open lattice-structured helmet-like headpiece adapted to fit against the wearer's head with the wearer's hair being accesible for engagement with curlers. The headpiece includes a plurality of prong-like members fixed on and projecting outwardly from said headpiece for releasably engaging the curlers to hold and support the same in a desired arrangement on the wearer's head.

3,401,704
COIN MAGAZINE FOR SLOT MACHINES DESIGNED TO RETURN CHANGE
Jean Jullien-Davin, Valence, France, assignor to Crouzet, Paris, France, a French company
Filed Apr. 14, 1967, Ser. No. 630,918
Claims priority, application France, Apr. 27, 1966, 720
12 Claims. (Cl. 133—5)



A coin magazine for a slot machine which is designed to return change by extraction from a stacked-coin reserve contained in the magazine and normally maintained with coins introduced by users of the slot machine. Coins supplied to the magazine by means of a guide duct are stacked automatically and solely under the action of gravity. To this end, the magazine is of generally tubular shape, is inclined to the horizontal and has two coplanar surfaces disposed longitudinally of the magazine on each side of its vertical plane of symmetry so as to permit the sliding motion of coins in a flat position thereon. Said two coplanar surfaces are separated from each other by a longitudinal opening which is delimited by two planes located parallel to the plane of symmetry and which serves to direct excess coins for separate collection as and when the magazine is completely filled. The flat end-wall of the magazine is also inclined to the horizontal in the direction opposite to the magazine casing in order that any coin which is stored in the magazine should be parallel to the aforesaid end-wall and intersected by the plane which contains the coplanar surfaces referred to.

3,401,705
ETCHING EQUIPMENT
David Goldware, 3858 N. Cicero, Chicago, Ill. 60641
Filed Sept. 21, 1966, Ser. No. 580,996
21 Claims. (Cl. 134—57)

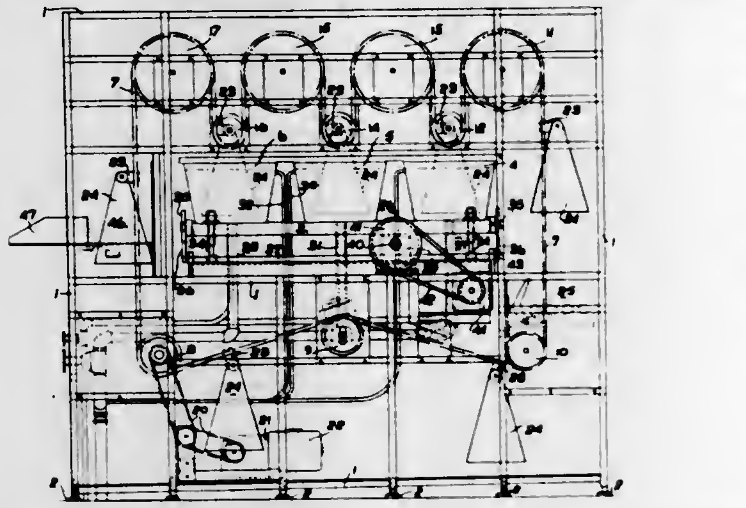


1. Automatic etching equipment for etching workpieces, such as in process printed circuit boards, said equipment comprising tank means for holding a supply of etchant, spray assembly means coupled to said tank means for directing a spray of etchant liquid, drive means for automatically repeatedly inserting and removing said workpiece into and out of said spray during an etching operation, drive control means for controlling said drive means to remove said workpiece from said spray after the termination of an etching operation, means included in said drive control means for automatically turning off said spray at the termination of said etching operation said drive means comprises drive chain assembly means having a pair of sprocket wheels, drive chains means virtically extended between said sprocket wheels, motor means for driving at least one of said sprocket wheels, dog means attached to said drive chain, extension means supporting said drive chain means over said spray, and means for attaching said workpieces to said dog means whereby when said one sprocket wheel is driven, said workpiece will be raised and lowered into and out of said spray.

3,401,706
INSTRUMENT CLEANING MACHINES
Raymond L. Eastland, Petersfield, England, assignor to Eastland Engineering Limited, Petersfield, England, a British company
Filed Oct. 4, 1966, Ser. No. 584,161
7 Claims. (Cl. 134—75)

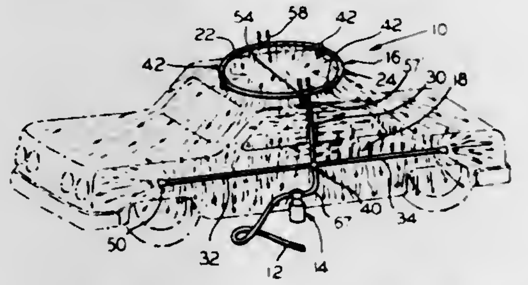
1. A machine for cleaning articles by successively immersing articles to be cleaned in one or more containers for cleaning liquid, said machine including an endless conveyor having at least one arm attached to and projecting from the endless member of the conveyor to provide a pivot point at a fixed distance from the point of attachment to said member, said conveyor including two spaced upper circular guide members for said endless member and one lower circular guide member for said endless member disposed below said upper guide member and in register with the space between them, the radius of said lower guide member being equal to said fixed distance and the spacing between said upper guide members being equal to the diameter of said lower guide

member whereby the locus of said pivot point is a vertical straight line extending between the horizontal plane



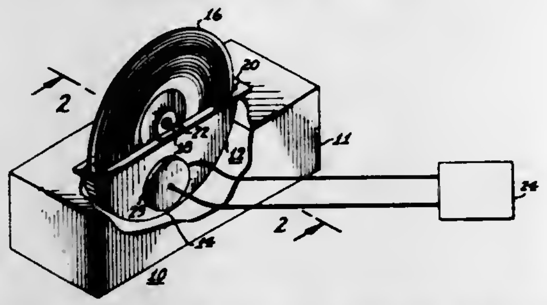
through the centre of said lower guide member and that through the centres of said upper guide members.

3,401,707
PORTABLE VEHICLE WASHING DEVICE
Mandel Horwitz, 270 Euclid Ave.,
Winnetka, Ill. 60093
Filed Nov. 28, 1966, Ser. No. 597,366
12 Claims. (Cl. 134—100)



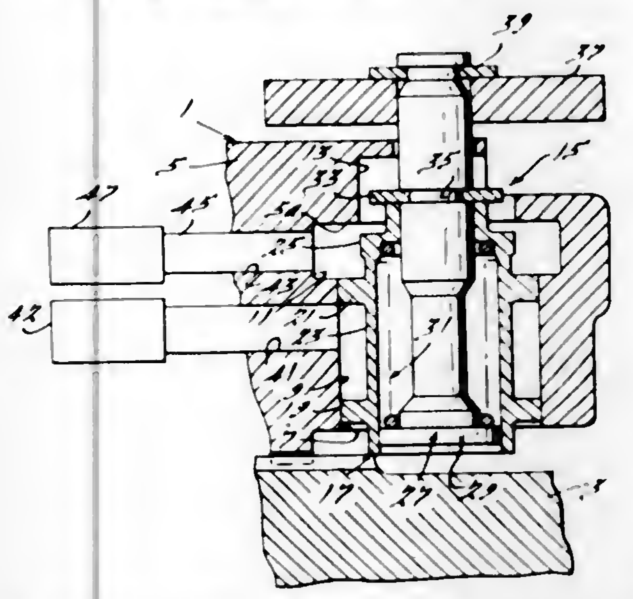
A vehicle washing device removably self-mounted in spaced relationship with the roof of an automobile or the like and comprising various hose members interconnected together. The device sprays the entire surface of the automobile with water supplied from a conventional garden hose. Means are provided to automatically mix detergent or wax with water. The various hose members may be disassembled or folded into a compact package for transporting or storage.

3,401,708
DEVICE FOR ULTRASONICALLY CLEANING PHONOGRAPHIC RECORDS
Richard W. Henes, 5901 E. Calle Del Sud,
Phoenix, Ariz. 85018
Filed Nov. 28, 1966, Ser. No. 597,293
7 Claims. (Cl. 134—149)



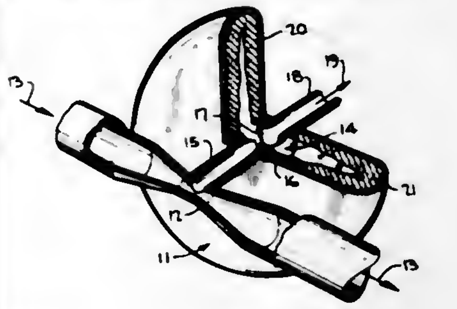
1. A device for ultrasonically cleaning micro-grooved phonographic record surfaces comprising in combination a tank for housing a cleaning solution, said tank comprising a pair of end walls having their plane surfaces substantially vertically arranged and spaced apart a distance up to twenty-five times the thickness of the record to be cleaned, means for rotatably mounting a record in said tank between and substantially parallel to said end walls, and a transducer supported by said tank for generating vibratory waves when connected to a suitable source of power, said transducer being coupled to one of said end walls so as to radiate vibratory waves substantially directly into the micro-grooved surfaces of the record as the record is rotated in said tank.

3,401,709
CENTRIFUGAL FORCE OPERATED HYDRAULIC GOVERNORS
Ervin R. Miller, Detroit, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed May 27, 1966, Ser. No. 553,519
10 Claims. (Cl. 137—56)



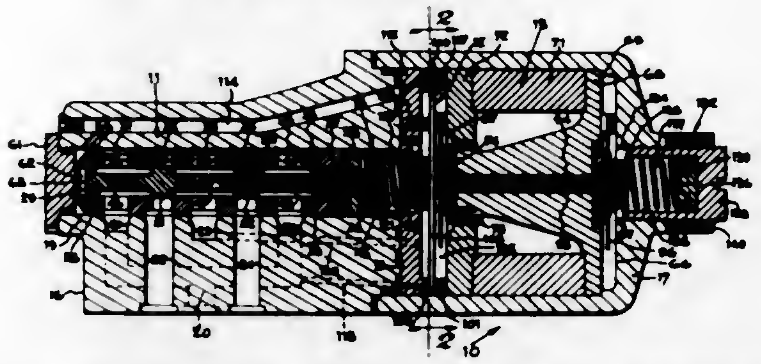
7. A governor comprising a body adapted to be mounted on one side of a rotatable member, said body having a radially extending bore therein, an inlet into said bore adapted to be connected to a source of pressure fluid, an outlet from said bore adapted to be connected to a fluid pressure operated device, said outlet being located outwardly of said inlet, a vent from said bore, said vent being located outwardly of said outlet, a valve member in said bore movable radially therein and adapted to be moved outwardly by centrifugal force, weight means connected to said valve for aiding the outward movement of said valve, said valve placing said inlet and outlet in communication as it moves outwardly and placing said outlet in communication with said vent as it moves radially inwardly.

3,401,710
PURE FLUID DEVICE FOR ISOLATING STEADY FLOW AND FOR CLIPPING TRANSIENT SIGNALS
Jorma R. Keto, Rockville, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 25, 1965, Ser. No. 435,390
10 Claims. (Cl. 137—81.5)



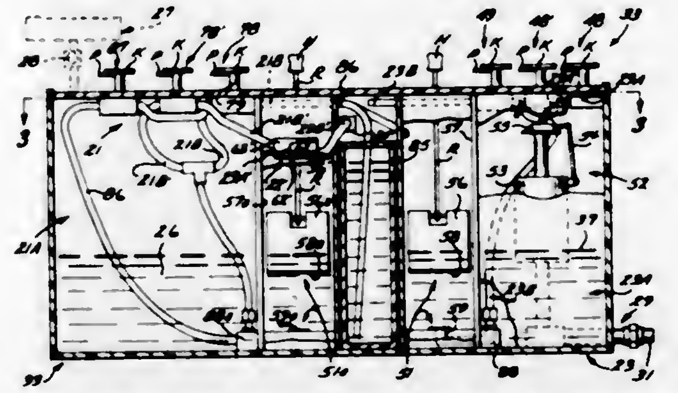
Fluid is passed through a transmission line having a means therein to create a low pressure region. Conduit means are in parallel with the means to create a low pressure region in the transmission line and receive the perturbations of flow in the transmission line.

3,401,711
SINGLE RECEIVER PORT JET DISPLACEMENT SERVOVALVE
Charles A. Kubilos, Oxnard, Calif., assignor to Abex Corporation, New York, N.Y., a corporation of Delaware
Filed July 29, 1966, Ser. No. 568,971
15 Claims. (Cl. 137—83)



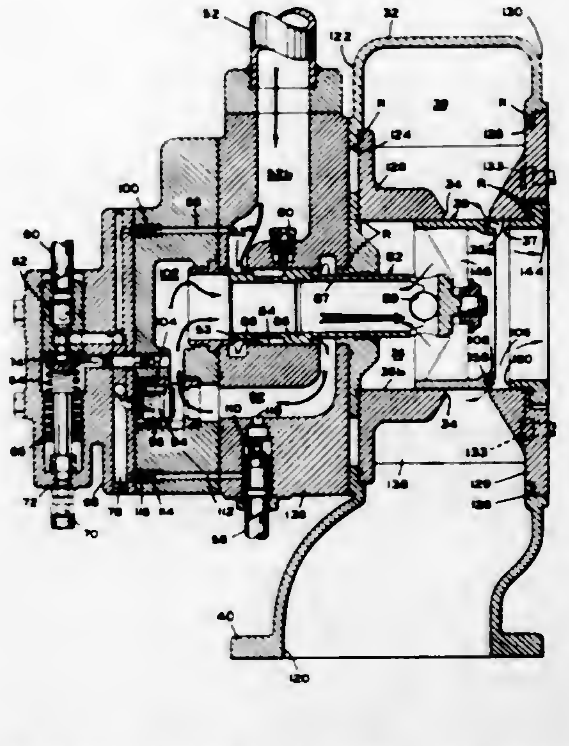
An electrohydraulic servovalve of the type wherein a spool valve element in a main stage of the servovalve controls the passage of fluid through the main stage in accordance with fluid pressure forces acting upon opposed control surfaces of unequal areas on the spool. The fluid force acting on one of the control surfaces is dependent upon the magnitude of an electric current applied to a solenoid in a pilot stage of the valve. The solenoid applies a bending force to a jet tube which has a nozzle at one end that develops pressure at a receptor, depending on the degree of alignment of the jet with the receptor. When energized, the solenoid tends to deflect the jet from its centered no-current position with respect to the receptor. Pressure at the receptor is applied to the larger of the opposed control surfaces of the spool. A feedback spring is positioned between one end of the spool and the jet tube, and other spring means act in opposition to the force of the feedback spring. Pressure fluid from a source is applied into the jet tube and onto the smaller of the spool control surfaces.

3,401,712
LIQUID ADDITIVE APPARATUS OF AN ASPIRATING AND MIXING TYPE
Rex V. White, 2048 S. La Cienega Blvd., Apt. 1,
Los Angeles, Calif. 90034
Continuation-in-part of application Ser. No. 311,085, Sept. 24, 1963. This application Sept. 11, 1964, Ser. No. 395,863
13 Claims. (Cl. 137—101.27)



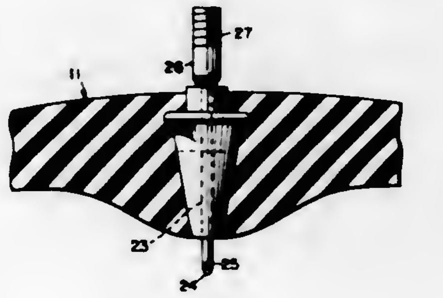
A liquid additive device including aspiration apparatus for mixing two liquids in a controllably adjustable ratio in a Venturi means composed of two concentric flow paths where the interior flow path is defined by a longitudinally movable tube. By moving the movable tube, the length of the concentric portion of the flow path, and hence the resistance to the aspiration, may be regulated.

3,401,713
PREFILL VALVE
Peter B. Olmsted, Ann Arbor, Mich., assignor to Olmsted Products Co., Ann Arbor, Mich., a corporation of Michigan
Filed Oct. 16, 1964, Ser. No. 404,394
18 Claims. (Cl. 137—112)



This disclosure relates to a prefill valve which is not only quick acting but will make a smooth transition between low pressure and high pressure fluid delivery, with the disclosure also showing a sleeve gate capable of expanding under fluid pressure after the gate has been shifted to a port-blocking position to effectively seal the port against high pressure leakage.

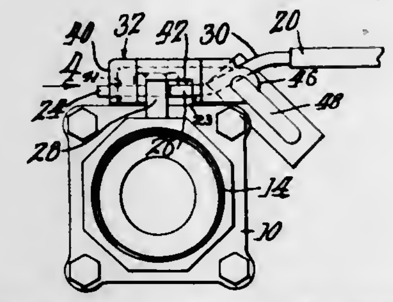
3,401,714
VALVE STRUCTURES FOR INFLATABLE ARTICLES
James L. Scott, North Baltimore, Ohio, assignor to The D. S. Brown Company, North Baltimore, Ohio, a corporation of Ohio
Filed Aug. 26, 1965, Ser. No. 482,726
2 Claims. (Cl. 137—223)



Inflatable articles having apertured enlargement with tapered, slit, elastomer body valve tightly fitted therein.

3,401,715
TAMPER-PROOF LOCK FOR VALVES
Francis E. Johnson, West Boylston, and Daniel Lorusso, East Templeton, Mass. (both % Smith Valve Corp., 81 Hope Ave., Worcester, Mass. 01603)
Filed Aug. 3, 1967, Ser. No. 658,135
3 Claims. (Cl. 137—385)

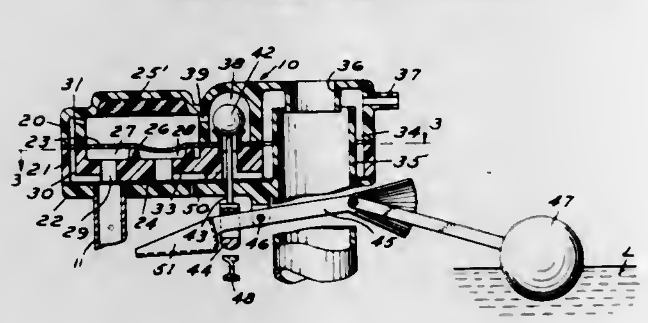
A tamper-proof lock for a valve which comprises a removable cover for a portion of the valve handle, said cover having an aperture in one side thereof for the reception of a projection on the handle in one direction and a notch in a different portion thereof for reception of a projection on the handle which is located at ap-



proximately ninety degrees to the first-named projection, in combination with means to connect the handle and cover together as for instance a padlock, whereby the handle cannot be turned and the cover cannot be removed.

3,401,716
TOILET FLUSH VALVE

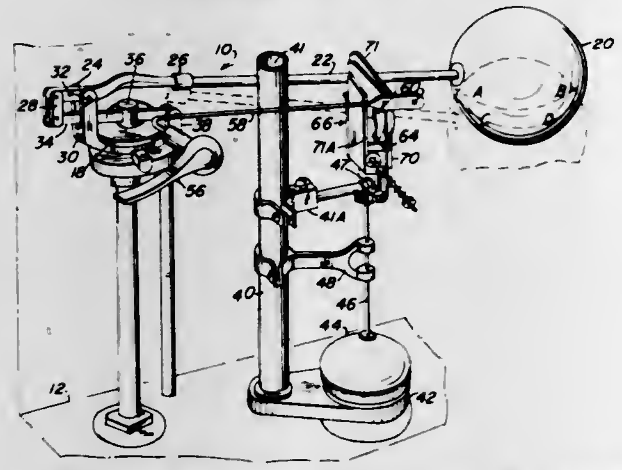
West H. Gallogly, Birmingham, Mich.
(1225 E. Maple, Troy, Mich. 48084)
Filed Mar. 11, 1964, Ser. No. 351,110
14 Claims. (Cl. 137—414)



A toilet flush valve comprising a diaphragm which divides a housing into a first chamber adjacent one surface of the diaphragm. The housing has an inlet adjacent the opposite surface of the diaphragm and an outlet spaced from the inlet and adjacent said opposite surface of the diaphragm. The housing further has a passage between the inlet and the first chamber and a passage between the inlet and a second chamber. Float operated valve means is provided between the second chamber and the outlet.

3,401,717
BALLCOCK FLOAT CONTROL MEANS

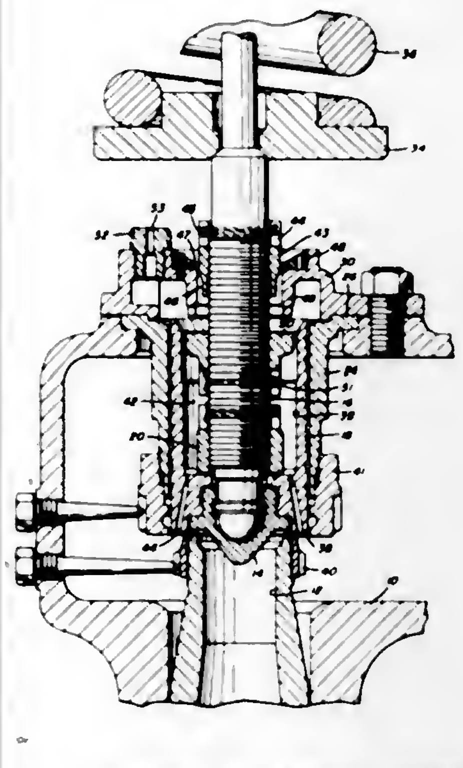
Leslie E. Lamb, 4024 Waveland Ave.,
Chicago, Ill. 60641
Filed Dec. 28, 1966, Ser. No. 605,436
5 Claims. (Cl. 137—421)



An assembly is disclosed for a stem of a ballcock including a lever which intercepts the stem and is moved upwardly and downwardly therewith. The assembly limits its upward movement of the stem until the buoyant force exceeds a preset amount to thereby urge an associated valve to quick closure.

3,401,718
SAFETY VALVE HAVING PARALLEL FLOW BLEED OUTLETS

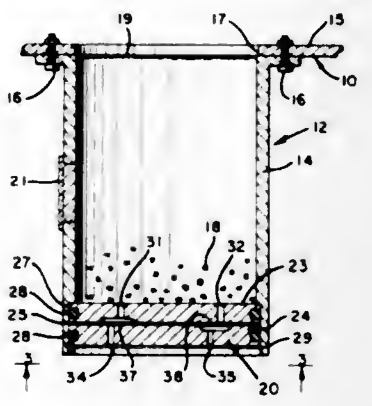
William H. Bowen and Homer E. Ferrill, Alexandria, La., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed June 22, 1965, Ser. No. 465,842
5 Claims. (Cl. 137—470)



A safety valve for relief of system overpressure. The valve includes an adjustable blowdown control by means of a backpressure chamber above the lift disc having adjustably and responsively variable but continuous controlled venting from between full lift to valve closed positions.

3,401,719
MULTIPLE BLEED VALVE CARTRIDGE ASSEMBLY

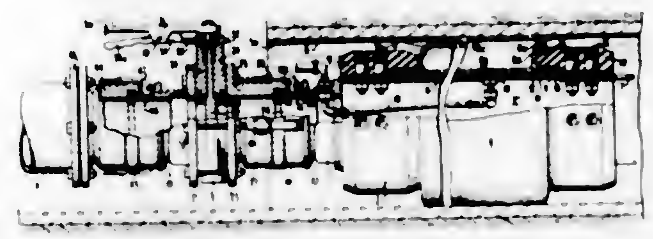
William D. Rosser, San Francisco, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Mar. 31, 1966, Ser. No. 539,076
2 Claims. (Cl. 137—493.8)



This valve assembly has a diaphragm responsive to differential pressure to open and close ports and control fluid communication in opposite directions through the valve. The diaphragm has two openings offset from the ports normally closed by the diaphragm and generally aligned with normally open ports, respectively, on the side of the diaphragm opposite from the normally closed ports. Fluid passes in one direction only at one time through this valve so that bidirectional fluid communication through two sets of said ports is established.

3,401,720
APPARATUS FOR CONTROLLING FLUID FLOW THROUGH CONDUIT MEANS

E. B. Telford, Kettering, Ohio, assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Mar. 30, 1965, Ser. No. 443,869
8 Claims. (Cl. 138—44)

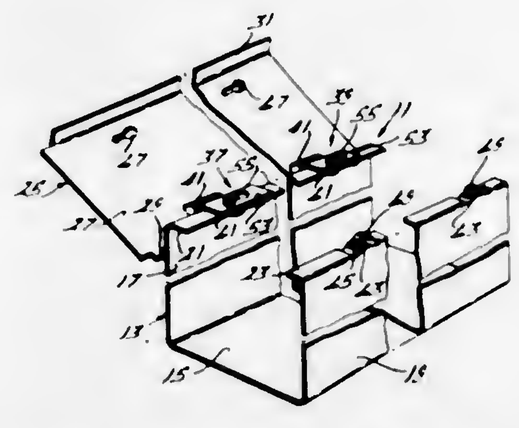


Apparatus for controlling flow through conduits such as sewer lines. The apparatus includes an arrangement for wedging a portion of an inflatable packer between a sewer line and a wedging element carried by the apparatus itself. The inflatable packer carries an annular web which lies directly against a cylindrical body portion of the apparatus and is received within an annular groove defined by an apparatus guide shoe.

The apparatus includes selectively connectable and disconnectable valve and packer assemblies.

3,401,721
REMOVABLE HINGED COVER FOR A LAY-IN WIREWAY

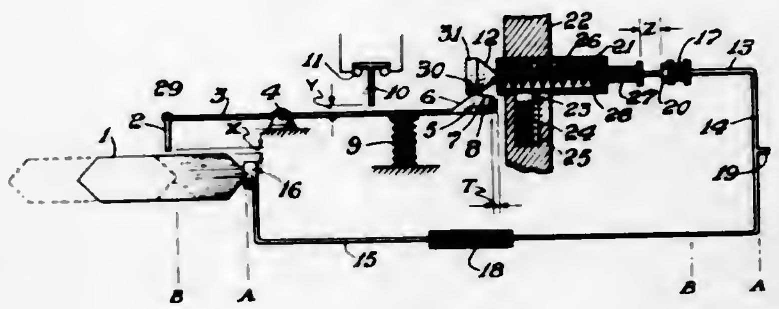
Melvin J. George, Southfield, Mich., assignor to Keystone Manufacturing Company, Division of Avis Industrial Corporation, Warren, Mich., a corporation of Michigan
Filed Nov. 5, 1965, Ser. No. 506,519
6 Claims. (Cl. 138—92)



The invention comprises a lay-in wireway having an elongate three sided conduit provided with an open side which normally is closed by a hinged cover. One plate of the hinge is fixed to the cover and the other plate thereof is detachably fastened to the conduit. To this end, the last mentioned hinge plate is interposed between the cover and the conduit and has a portion which overlies the conduit and underlies the cover. A fastening screw is threaded into the conduit through a keyhole slot in the mentioned portion of the hinge plate and an access opening is provided in the cover which registers with and receives the head of the screw when the cover is closed. Thus, the head of the screw can be reached through the access hole in the cover to tighten or loosen the screw so that the cover can be selectively opened and closed on the hinge or removed completely from the conduit simply by loosening said fastening screw all from a position directly in front of the wireway and without the necessity of access to any side of the conduit.

3,401,722
APPARATUS FOR CONTROLLING THE OPERATION OF A WEAVING LOOM

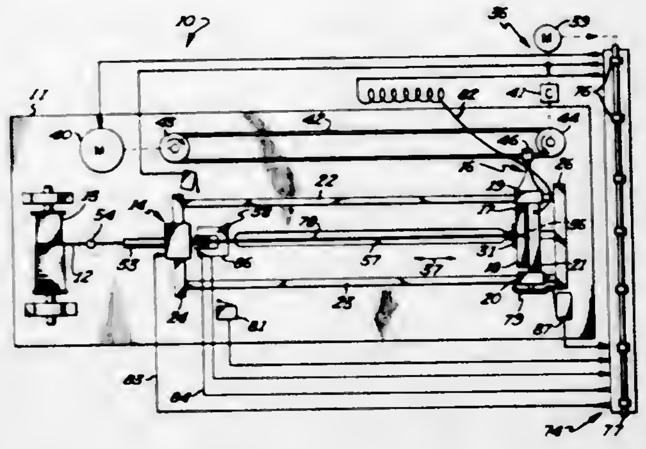
Zdeněk Rambousek, Liberec, Czechoslovakia, assignor to Elitex, Závody textilního strojírenství, Liberec, Czechoslovakia
Filed Sept. 9, 1966, Ser. No. 578,199
Claims priority, application Czechoslovakia, Sept. 10, 1965, 5,553/65
9 Claims. (Cl. 139—341)



A loom in which the shuttle, after one stroke, is moved from its end position by a displacing mechanism to the starting position for the return stroke before the latter actually starts, and a scanner is released by the displacing mechanism when the latter is operated by the main drive of the loom, the scanner sensing the presence of the shuttle and shutting off the loom if the shuttle has not arrived. If the shuttle has arrived, the scanner is deactivated by the displacing mechanism to keep the loom in operation during the movement of the shuttle from the end position to the starting position.

3,401,723
NEEDLE MAKING METHOD AND APPARATUS

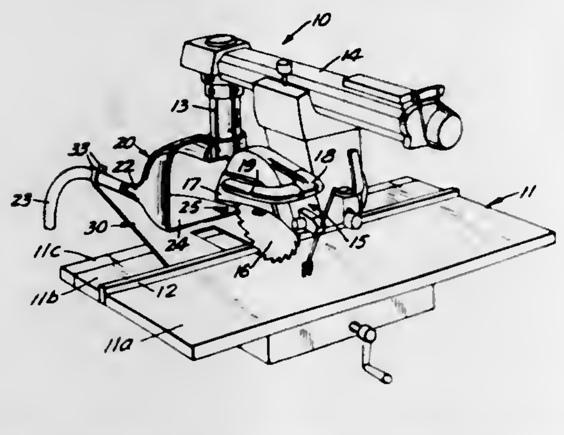
Eduard C. Petry, Hopkins, Minn., assignor to Fabri-Tek Incorporated, Minneapolis, Minn., a corporation of Wisconsin
Filed Aug. 8, 1966, Ser. No. 570,876
15 Claims. (Cl. 140—140)



A needlemaking method and apparatus having a movable carriage for drawing a wire through a clamp and guide unit. The carriage has a pair of gripping jaws which are opened by wedge shaped cams to grasp and release the wire. Near the end of the draw, the wire is heat treated and straightened under tension. The grasping cam is also a contact member which moves into engagement with the portion of the wire adjacent the clamp and guide unit. A cut voltage applied to the contact member heats the wire very hot at the point of engagement with the contact member so that the tension on the wire established by the movable carriage elongates the heated point until the wire breaks. After the wire is broken it is released from the jaws by the action of the release cam and deposited in a container.

3,401,724
DUST COLLECTOR

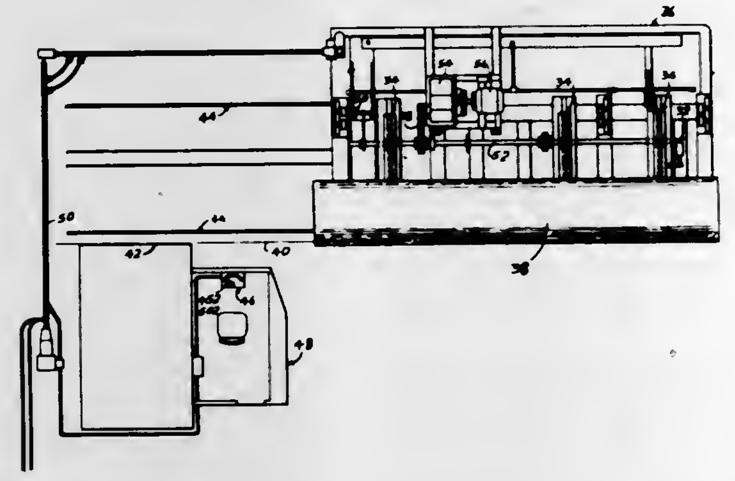
Lloyd D. Kreitz, 10022 E. River Blvd.,
Coon Rapids, Minn. 55433
Filed Oct. 12, 1965, Ser. No. 495,269
12 Claims. (Cl. 143—6)



A dust collector for a radial arm saw comprises a funnel-shaped hood positioned at the rear of the worktable and arranged to be arcuately moved thereover in alignment with the saw.

3,401,725
REMOTE CONTROL PRE-SET SYSTEM

Lionel Pease, Seattle, Wash., assignor, by mesne assignments, to Lloyd Controls, Inc., Seattle, Wash., a corporation of Washington
Continuation-in-part of application Ser. No. 130,355, Aug. 9, 1961. This application Mar. 22, 1965, Ser. No. 444,504
27 Claims. (Cl. 143—115)

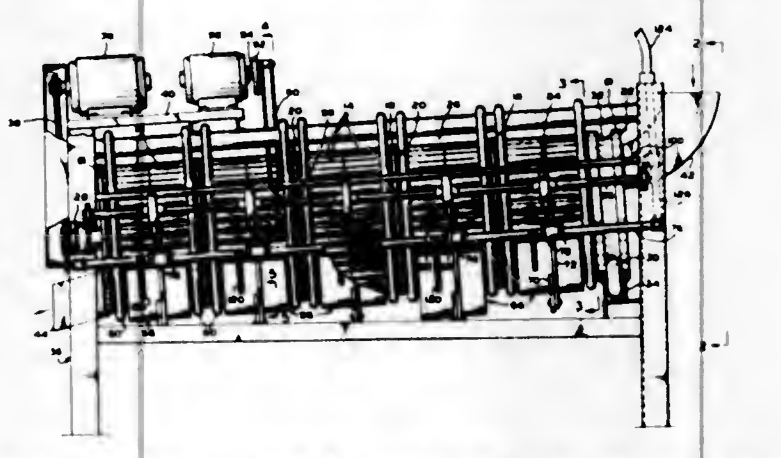


This invention is for a control unit for sawmill carriages to regulate the advancement of the knees and the log toward the saw line. The control unit makes it possible to advance the knees and the log, a predetermined distance, toward the saw line so as to allow the saw to remove a slab of wood or a flitch from the log. Then, the knees and the log can be further advanced so as to repeat this process. After the log has been sawed, it is possible to retract the knees so as to receive another log.

3,401,726
APPARATUS FOR REMOVING STEMS FROM CHERRIES

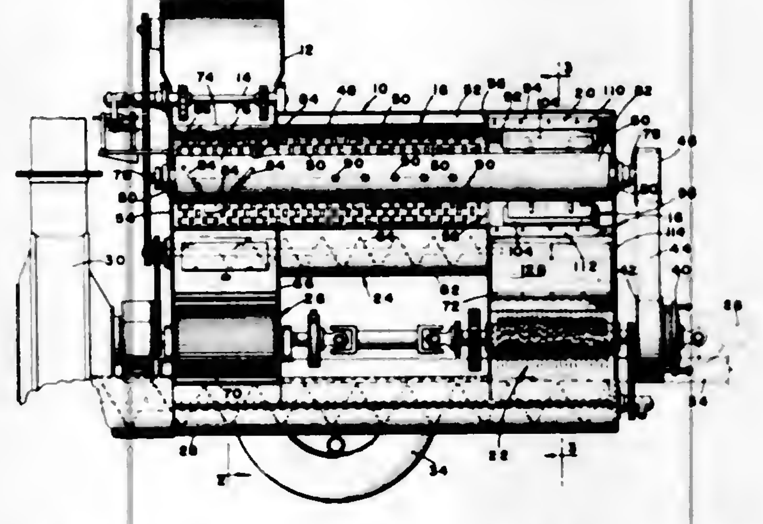
Kenneth M. Allen and Chester H. Harper, both of P.O. Box 352, Newberg, Oreg. 97132
Filed Feb. 21, 1966, Ser. No. 528,861
11 Claims. (Cl. 146—55)

A series of rods are arranged in the form of a drum which is rotated, and cherries with stems are fed therealong. A series of hollow pads pressed against the rods to grip the stems and resilient tubes rotate the rods to turn the cherries to tear them incrementally from the gripped stems. A camshaft periodically moves each pad to a retracted position for flushing stems therefrom.



3,401,727
CORN SHELLING AND COB-HUSK SHREDDING MECHANISM

Allison W. Blanshine, Lititz, Claude K. Focht, New Holland, Charles M. Kline, Reinholds, and Robert E. Wallin, New Holland, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed July 19, 1966, Ser. No. 566,365
3 Claims. (Cl. 146—71)

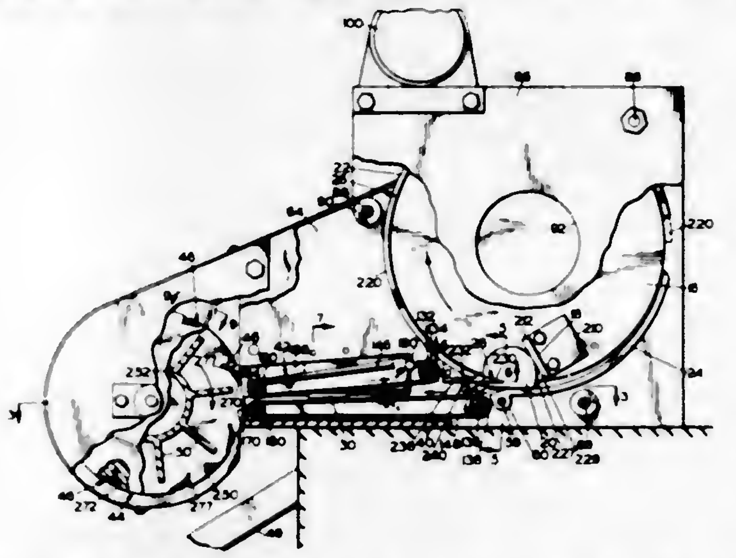


A corn processing machine including a housing with inlet means to receive ears of corn, and shelling and shredding means therein operable to separate the kernels from the cobs, shred the cobs, and combine the kernels and shredded cob material in predetermined proportions, said shelling and shredding means comprising a stationary cylindrical perforated screen having a rotatable arbor therein to shell and separate the kernels from the cobs and said screen having serrated sheller bars therein adjacent the inlet thereof to facilitate the shelling operation.

3,401,728
POTATO SLICER

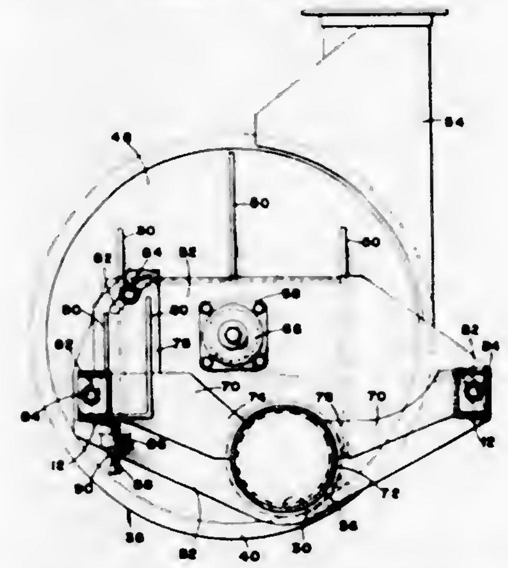
Kenneth M. Allen and Chester H. Harper, Newberg, Oreg., assignors to Allen-Harper, Inc., Newberg, Oreg., a corporation of Oregon
Filed Oct. 15, 1965, Ser. No. 496,561
3 Claims. (Cl. 146—78)

A potato slicer includes a slicer having a drum **16** provided with a pusher **18** having a sharp edge **229** which pushes a potato past a corrugated blade **28**, a flexible guide plate **24** being adjustable to adjust the thickness of the slices. The corrugated slice is conveyed by endless strands or belts **146** and **148**, which enter grooves in the corrugated slice to keep the slice oriented. The strands **146** are presser strands and are carried by a roller **134** and a roller **180**, which is carried by arms **186** pivoted on member **190** and the elastic strands **146** pull the arms off-center to press the strands **146** toward the slice **30** and press the slice against the strands **148**. The strands **146** and **148** push the slice into a chopper **43** having corrugated knives **46** which extend across the slice and chop the slice into shoestrings. Blades **50** push the shoestrings out of the rotor onto a chute **49**. The relative speed of the belts and the rotor can be varied by a rheostat controlled motor **52**.



3,401,729
BLOWER ASSEMBLY AND MOUNTING MEANS

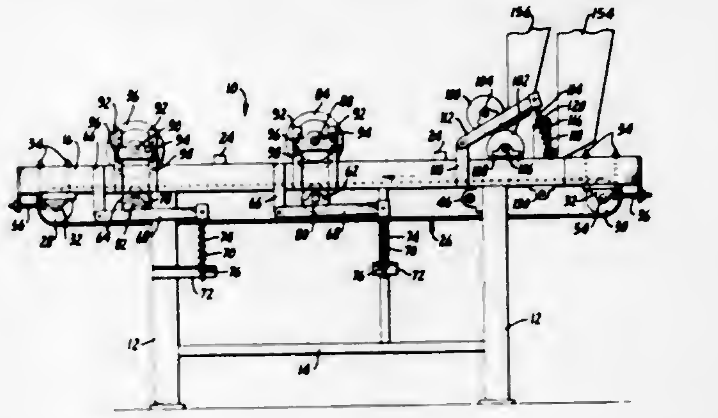
Robert E. Wallin, New Holland, Allison W. Blanshine, Lititz, Daniel C. Heitshu, Shippensburg, and Claude K. Focht, New Holland, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Aug. 15, 1966, Ser. No. 572,439
7 Claims. (Cl. 146—107)



A corn processing machine including frame means, a drive shaft and power means to drive it supported by said frame means, a discharge auger rotatable within a conduit parallel to said drive shaft and spaced therefrom, and a blower assembly having a housing with an inlet coaxially communicating with the discharge end of said conduit and rotatably supported upon said end of said conduit, said blower assembly having a blower fan supported on a shaft parallel to and spaced transversely from said drive shaft and the axis of said conduit, an endless flexible drive member extending around pulley-like means on said fan shaft and drive shaft, and complementary mounting means on said blower assembly and frame means operable to permit limited pivotal movement of said blower assembly about the axis of said conduit to increase the distance between the axes of said drive shaft and fan shaft to increase the tension of said endless flexible drive member therebetween.

3,401,730
APPARATUS AND METHOD FOR PROCESSING NUTS

Bentley B. Mathews, P.O. Box 335, Arbuckle, Calif. 95912, and Paul T. Frentzen, Arbuckle, Calif.; said Frentzen assignor to said Mathews
Filed Aug. 22, 1966, Ser. No. 573,930
9 Claims. (Cl. 146—237)



8. A method of treating nuts of non-uniform size, comprising:

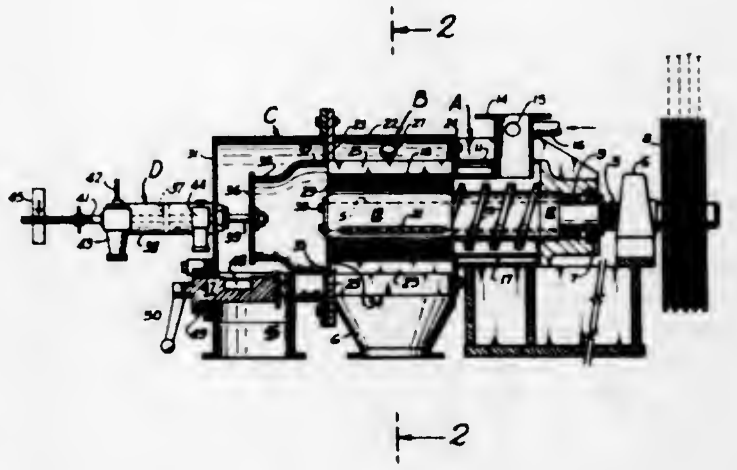
(a) conveying nuts on a moving resilient first surface from a first station where nuts are dispensed on said surface to successive second and third stations;

(b) subjecting the larger of the nuts to shear and compressive forces at said second station by engaging said larger nuts between said first surface and a second resilient surface spaced thereabove by a predetermined distance and moving in the same direction, but at a different velocity; and,

(c) subjecting the smaller of the nuts to shear and compressive forces at said third station by engaging said smaller nuts between said first surface and a third resilient surface spaced thereabove by a predetermined distance less than the predetermined distance, said second resilient surface is spaced from said first surface and moving in the same direction, but at a different velocity.

3,401,731
HORIZONTAL RICE MILL

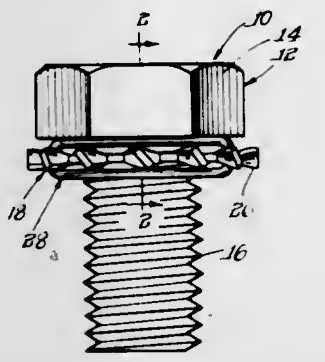
Truman B. Wayne, P.O. Box 13086, Houston, Tex. 77019
Filed June 28, 1965, Ser. No. 467,427
5 Claims. (Cl. 146—256)



A horizontal rice mill for milling bran from the substantially whole kernels of rice grain and including means for subjecting the rice to solvent extraction during the milling. It includes a generally horizontal housing having an inlet section, a milling section, and an outlet section consecutively communicating with each other, and a horizontally ribbed rotor in the milling section for rotation inside of a fixed milling screen.

3,401,732
LOCKING DEVICE

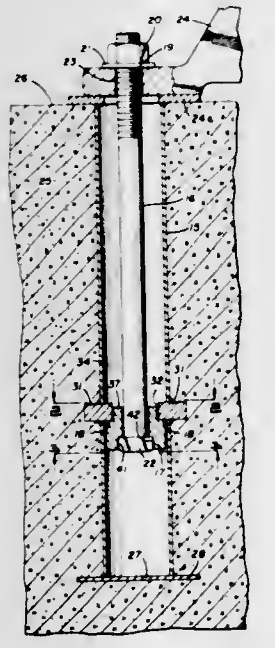
David P. Wagner, Elmhurst, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed May 2, 1966, Ser. No. 546,869
4 Claims. (Cl. 151—37)



The present invention relates generally to fastener devices and more particularly to fastener devices of the preassembled type comprising a rotary threaded fastener and lockwasher, and the invention relates also to lockwasher structures of the particular type used in such assemblies. More specifically, the fastener structure as described herein includes a lockwasher having in association therewith a resilient cord means normally traversing a portion of the washer opening and so spaced from the washer axis as to present a screw accommodating opening of such width that a complementary threaded screw shank will automatically spread the resilient cord means upon initial engagement therewith to permit complete telescoping association and contemporaneous assembly of the washer and threaded screw shank adjacent the clamping face of the screw head.

3,401,733
ANCHOR BOLT STRUCTURE

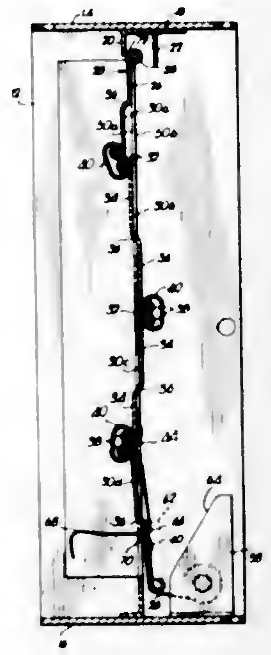
John E. Circle, 187 Sinsbury Drive N., Worthington, Ohio 43085
Filed Sept. 12, 1966, Ser. No. 578,860
5 Claims. (Cl. 151—41.76)



An anchor bolt arrangement which is particularly useful for anchoring heavy machinery to bases or floors, such as concrete floors, but which is not necessarily limited thereto and which includes mainly an anchoring member, adapted to be embedded in the floor, and a bolt or stud adapted to be connected to that member in a novel manner.

3,401,734
ARTICULATED BARRIER

Francis J. McCabe, Penn's Park, Pa., assignor to Ruskin Manufacturing Company, Grandview, Mo., a corporation of Missouri
Filed July 5, 1966, Ser. No. 562,921
7 Claims. (Cl. 160—207)



A folding blade type barrier including a rectangular frame having a pair of inwardly extending flanges which cooperate with slots in the blade ends to provide a track for movement of the blades from an open to the closed position. The blades have a longitudinally extending offset intermediate the edges of the blade so that a portion of each blade is disposed on each side of the flanges when the blade assembly is opened. The blades may be of three different widths, and are arranged in a series with a blade of intermediate width between blades of the other two different blade widths whereby the hinge joints are staggered when folded to minimize the folded space of the blade assembly.

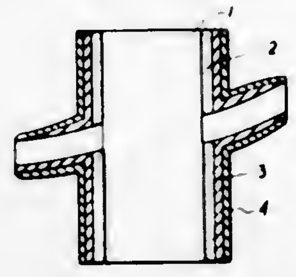
3,401,735
METHOD FOR MAKING SAND MOLDS

Francis Walter Pursall, Birmingham, England, assignor to Foseco International Limited, Nechells, Birmingham, England, a British company
No Drawing. Original application Mar. 2, 1965, Ser. No. 436,675. Divided and this application May 5, 1967, Ser. No. 644,745
5 Claims. (Cl. 164—40)

A method for the production of sand moulds in which a pattern is pretreated with a surface coating, after which moulding sand is compressed against the pattern at a pressure of at least 80 lbs. per square inch. The composition of the surface coating is such that it penetrates into the surface of the sand adjacent the pattern, under the applied pressure, so as to act as a mould release agent during the production of the mould, and as a mould dressing in the subsequent use of the mould for casting molten metal. The coating is applied as a colloidal suspension of a refractory material, such as graphite, mica, or talc, in a liquid carrier, such as paraffin oil or kerosene.

3,401,736
PROCESS FOR FORMATION OF NON-ABRASIVE REFRACTORY RUBBING SURFACE HAVING HIGH THERMAL CONDUCTIVITY BY CASTING

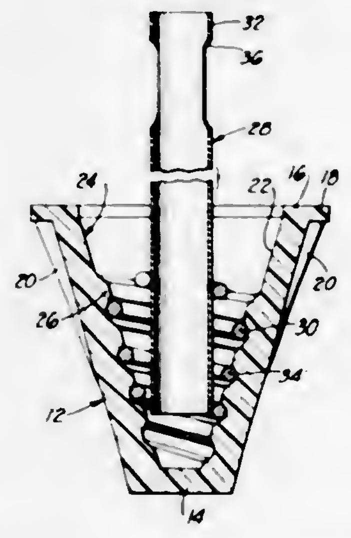
Tameichi Imagawa, Omiya, Japan, assignor to Bridgestone Cycle Industry Company Limited, Tokyo, Japan, a corporation of Japan
Filed May 26, 1964, Ser. No. 370,282
Claims priority, application Japan, Aug. 27, 1963, 38/45,124; Oct. 22, 1963, 38/56,623
5 Claims. (Cl. 164—95)



A method of coating a metal article having a layer of non-abrasive heat-resistant metal on a body of high thermal conductivity metal comprises spraying a first porous layer of a lower melting point metal on a sand core, spraying a second porous layer of higher melting point non-abrasive heat-resistant metal on the first layer, positioning the core in a casting mold, and pouring molten high thermal conductivity metal into the mold and over the core, the porosity of said layers permitting venting of entrapped air and gases therethrough and providing a good bond between the body and the layers. After separating the casting from the core, the first layer may be removed to expose the layer of non-abrasive heat-resistant metal.

3,401,737
WAX CUP AND HANDLE FOR INVESTMENT CASTING

Arthur Rosenfeld, 6336 W. 5th St., Los Angeles, Calif. 90048
Filed Apr. 26, 1965, Ser. No. 450,861
2 Claims. (Cl. 164—244)

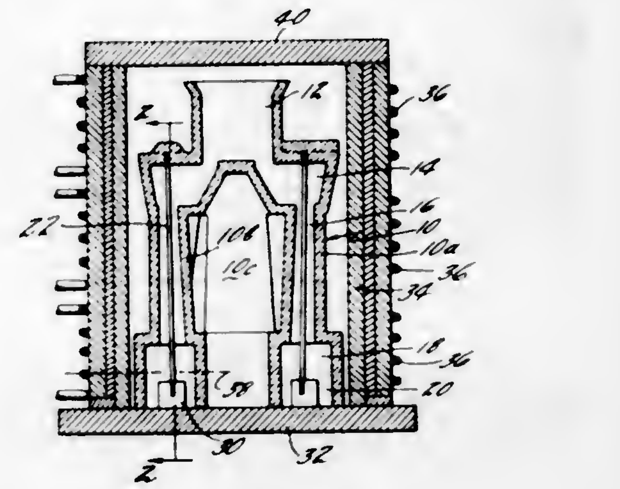


A wax pattern to be used in investment casting comprising a cup-shaped wax base which is internally threaded to receive an externally threaded handle.

3,401,738
CORE LOCATION IN PRECISION CASTING

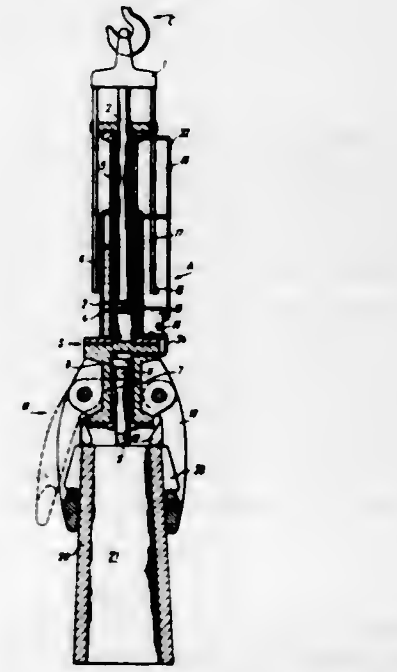
Donald R. Parille, Wapping, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Feb. 10, 1966, Ser. No. 526,432
6 Claims. (Cl. 164—353)

An improved mold for investment casting hollow articles, wherein the core is supported, at the end adjacent to the chill plate, by lateral projections located in a growth zone separate from the finished article and where the core support is out of contact with the chill plate.



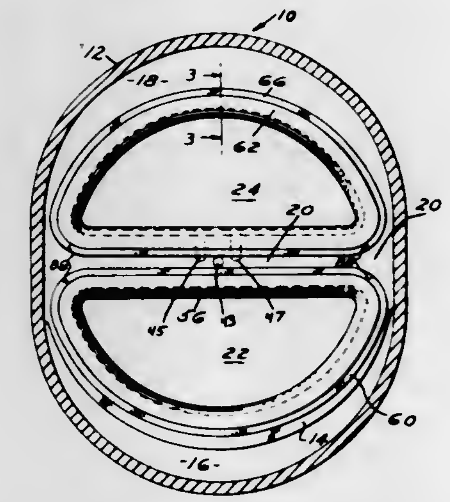
3,401,739
APPARATUS TO BE USED WITH INGOTS

Bohuslav Opletal, Brno, Czechoslovakia, assignor to CHEPOS Sdruzeni Chemickeho a Potravinarskeho Strojirenstvi, Brno, Czechoslovakia
Filed Dec. 19, 1966, Ser. No. 602,901
Claims priority, application Czechoslovakia, Dec. 22, 1965, 7,687/65
15 Claims. (Cl. 164—408)



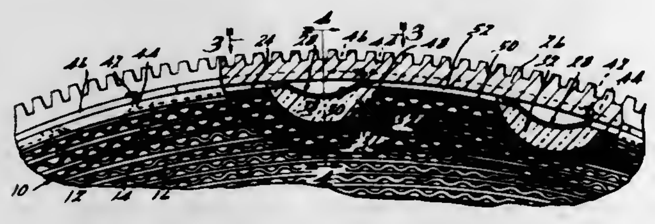
The apparatus of the invention includes a support means that has a main cylinder in which a main piston is slidable, said main cylinder extending vertically during use of the apparatus with the main piston which is slidable in the main cylinder being fixed to a piston rod that extends upwardly beyond the main cylinder and carries at its upper end a suspending means by which the piston rod and all of the remaining structure of the invention is suspended from a suitable lifting and lowering device, such as a crane. The main piston carries a nonreturn valve means which provides for flow of fluid from the space in the main cylinder beneath the main piston to the space in the main cylinder over the main piston, while preventing flow of fluid in the reverse direction from the space over the main piston to the space beneath the latter. A lower conduit communicates with the space in the main cylinder beneath the main piston, and a reservoir which contains a suitable hydraulic liquid is in permanent communication with the lower conduit which communicates permanently with the space in the main cylinder beneath the main piston therein. An upper conduit communicates permanently with the space in the main cylinder over the main piston, and a second nonreturn valve means is carried by and coacts with this upper conduit to provide for flow of fluid out of the space in the main cylinder over the main piston and through the upper conduit, while preventing flow of fluid in the reverse direction through the upper conduit into the space over the main piston.

3,401,740
GAS TURBINE REGENERATOR SEAL
John J. Trudeau, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 22, 1967, Ser. No. 625,138
6 Claims. (Cl. 165—7)



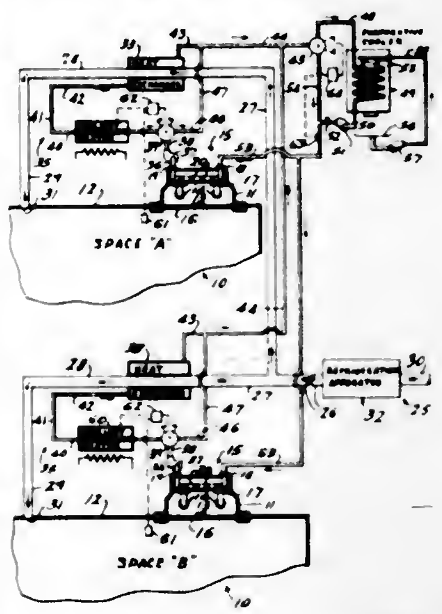
A D-shaped flexible metal leaf is subjected to an air pressure differential that moves the leaf into a sealing arrangement between the housing and a nonrotating shoe of a gas turbine engine where the leaf seals both the periphery and a diameter of the shoe. Two of the leaves can be located in a retainer having a U-shaped cross section with one leaf sealing between the housing and the retainer and the second leaf sealing between the retainer and the shoe. Cooling air is conducted along the straight portions of the leaves and the heat removed thereby is recovered by the regenerator. Three identical D-shaped assemblies of leaves and retainers seal the entire regenerator.

3,401,741
ROTARY HEAT EXCHANGER DRIVE ASSEMBLY
Antoni Paluszny, Ann Arbor, and Armenag Topouzian, Detroit, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 21, 1966, Ser. No. 603,632
13 Claims. (Cl. 165—8)



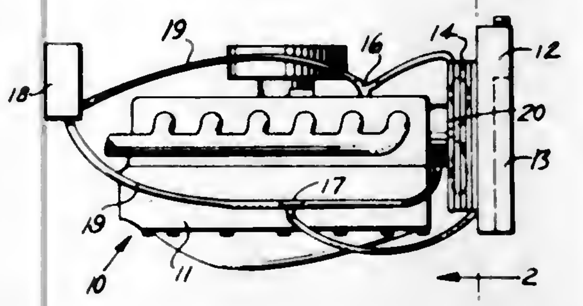
A rimless rotary heat exchanger of the disc type having ceramic plugs buried in the peripheral face, the plugs having scalloped depressions frictionally containing spring metal clips hooked to a drive ring gear.

3,401,742
COMFORT CONDITIONING SYSTEM
Gershon Meckler, Atlanta, Ga., assignor to Lithonia Lighting, Inc., Conyers, Ga., a corporation of Georgia
Filed Jan. 26, 1966, Ser. No. 523,113
11 Claims. (Cl. 165—22)



A comfort conditioning system including artificial light fixtures, having panel means effective to absorb lighting heat are positioned in each of a plurality of spaces. A duct system for supplying conditioned air to each of the spaces is provided and a heat exchanger is positioned adjacent the ductwork leading to each of the spaces. A heat transfer system is provided to transfer heat from the individual space panel means to the space heat exchanger. An auxiliary heater and the cooling means are also preferred components in the heat transfer system.

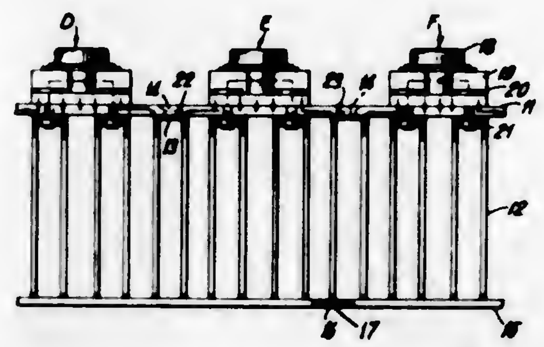
3,401,743
AUTOMOBILE COOLING SHROUD
Mike J. Francis, 606 Tapawingo Road, Vienna, Va. 22180
Filed Nov. 18, 1966, Ser. No. 595,402
1 Claim. (Cl. 165—51)



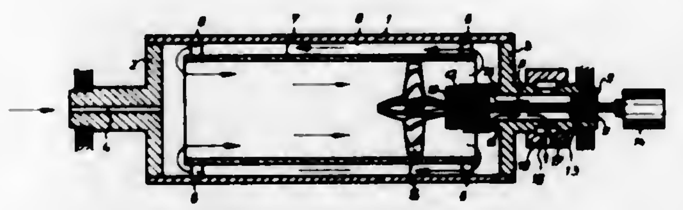
A circular enclosure around an automobile cooling fan, the enclosure serving to direct air blown by the fan toward the engine, the enclosure being comprised of a tubular coil that is connected in parallel with an automobile heater to the cooling system for allowing water to circulate therethrough, the tubular coil thus performing the function of an auxiliary cooling unit.

3,401,744
HEAT EXCHANGE TECHNIQUES FOR ELECTRONIC POWER SUPPLIES
Lester Dubin, Pelham Manor, and Benjamin Shmurak, Lynbrook, N.Y., assignors to Lambda Electronics Corporation, Melville, N.Y., a corporation of New York
Filed Mar. 20, 1967, Ser. No. 624,360
11 Claims. (Cl. 165—80)

This invention relates generally to heat exchange techniques for use in designing electronic power supplies and more particularly, to techniques for minimizing the difference in operating temperatures of the hottest and coolest power transistors of a power supply in order to effect a reduction in the number of power transistors required for providing a given power output without the danger of exceeding maximum permissible transistor junction operating temperatures. The power transistors are mounted along the base plate of a heat dissipating unit having a plurality of heat radiating fins, the transistors and fins being arranged and thermally coupled to allocate greater fin radiating area to the more centrally located transistors for dissipating heat therefrom than to the outermore transistors on the base plate. In the illustrative embodiment, the transistors are mounted in parallel rows on a base plate having plate-like fins depending therefrom to extend parallel to the transistor rows, each of the transistors being directly thermally coupled to a like number of fins with supplemental fins depending from the base plate intermediate the centrally located transistor rows. The spacing between transistors and between fins is adjusted to provide an optimum sharing of the heat dissipating load.



3,401,745
HEAT TRANSFER ROLLER HAVING FLUID CIRCULATING MEANS THEREIN
Tibor Georges Pato, Erlangen, Germany, and Ernst Ammon, Bern, Erwin Graf, Zurich, and Hans Heinrich Wymann, Lutzelfluh, Switzerland, assignors to Winkler, Fallert & Co., Ltd., Bern, Switzerland
Filed May 20, 1966, Ser. No. 560,910
Claims priority, application Sweden, May 20, 1965, 6,605/65
7 Claims. (Cl. 165—90)

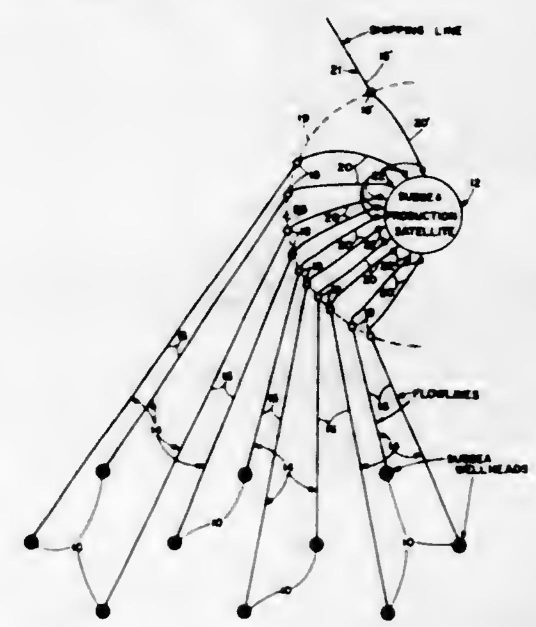


A rotatable heat transfer roller is disclosed as including an outer cylinder having a pair of end walls closing respectively opposite ends thereof and each formed with an axially outwardly extending tubular pivot. Bearing means rotatably support the tubular pivots, and a cylindrical directing pipe extends coaxially within the cylinder and has at least partially open axially opposite ends. This pipe, together with the cylinder, defines an annular passage for flow of heat transfer fluid, the passage communicating with the interior of the pipe through the opposite ends of the latter.

A vane-type pump is disposed within the directing pipe and includes a rotor on a shaft which is rotatably mounted in bearings in the tubular pivot of one end plate, a driving means being connected to the shaft exteriorly of the roller. In one embodiment of the invention, heat transfer fluid is admitted through one tubular pivot and is exhausted through orifice means associated with the other tubular pivot.

In the second embodiment of the invention, the roller is essentially sealed, with one end plate being formed with a filling opening and a pressure relief opening. In this case, a conducting pipe extends concentrically of the directing pipe and encloses a bellows compensating for expansion and contraction of the heat transfer fluid with variations in temperature. Electric heating means are associated with the wall of the directing pipe and supplied with current by leads extending through one of the tubular pivots.

3,401,746
SUBSEA PRODUCTION SATELLITE SYSTEM
L. C. Stevens, Palos Verdes Estates, Calif., and Robert D. Townsend, Jr., Esher, Surrey, England, assignors to Mobil Oil Corporation, a corporation of New York
Filed Dec. 10, 1965, Ser. No. 522,805
5 Claims. (Cl. 166—.5)



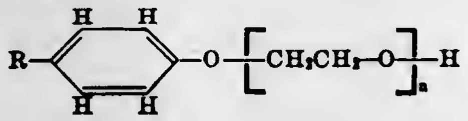
This specification and drawings disclose a subsea production satellite system having gathering and monitoring equipment, within an enclosed satellite, operatively connected to a plurality of subaqueous wells through subsea wellheads thereof by means of flexible flowline sections permitting the satellite to be raised from its normal resting place on the marine bottom, to the surface of the body of water, to allow maintenance and repair operations to be conducted within the satellite at the surface without interrupting any connections between the satellite and the subsea wellheads.

3,401,747
METHOD OF SEALING FISSURES IN EARTHEN FORMATIONS
Albert W. Coulter, Jr., and Claude T. Copeland, Tulsa, Okla., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 13, 1967, Ser. No. 622,386
12 Claims. (Cl. 166—33)

A method of grouting and of plugging openings, e.g. passageways, fissures, cracks, and the like, in the earth which comprises emplacing in such opening a fluid, settable resinous composition comprising an epoxide-acrylate polymer, or preferably such polymer in admixture with up to 75% by weight of monomeric styrene, and more preferably also with a small but effective amount of a selected silane to provide a bonding agent between the resin and the earth, and allowing the so emplaced composition to set to a substantially fluid-tight firmly emplaced solid resistant to the movement of fluids therethrough.

3,401,748
OIL RECOVERY METHOD USING AN AQUEOUS DETERGENT COMPOSITION
Charles A. Stratton, Copan, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Oct. 26, 1966, Ser. No. 589,522
5 Claims. (Cl. 166—42)

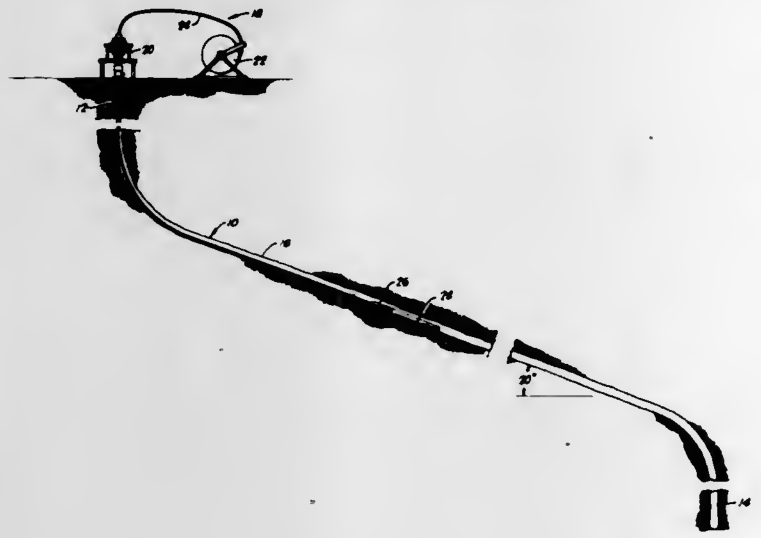
1. In a method for recovering oil from a formation by injecting an aqueous fluid which consists essentially of an aqueous liquid into that formation, the improvement comprising incorporating into said aqueous fluid a mixture of ethylene oxide adducts of alkyl phenols having the formula



$$R-C_6H_4-O-[CH_2CH_2-O]_n-H$$

wherein R is one of octyl and nonyl radicals, said mixture containing (1) an effective amount of at least one adduct within the scope of the above formula having an *n* value in the range of 1.5 to 5 and (2) an effective amount of at least one adduct within the scope of the above formula having an *n* value in the range of 9.5 to 100, the amount of said mixture employed in said aqueous fluid being that sufficient to increase the amount of oil removed from said formation by the injection of said aqueous fluid.

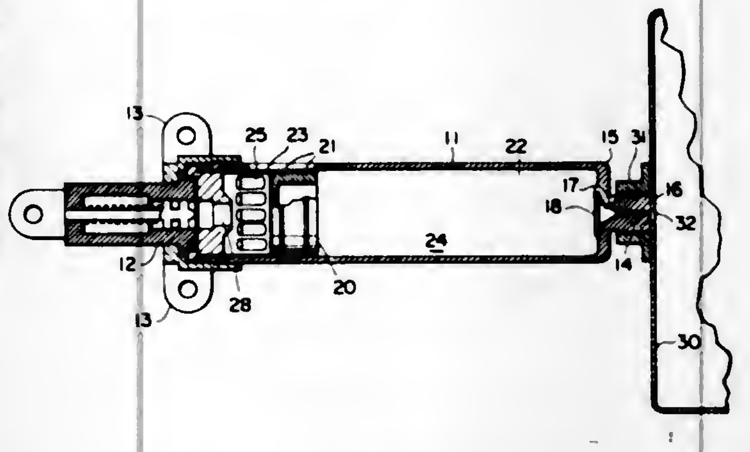
3,401,749
METHOD AND APPARATUS FOR MOVING WIRE-LINE TOOLS THROUGH DEVIATED WELL BORES
Wilbur L. Daniel, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Sept. 6, 1966, Ser. No. 577,309
10 Claims. (Cl. 166—46)



1. A method of moving a wire-line tool through a well bore having a deviated portion, the method including the steps of:
- extending the wire-line through a length of conduit;
  - connecting the tool to the wire-line adjacent one end of the conduit;
- extending the tool, wire-line and conduit into the well bore until the tool is disposed in the deviated portion of the well bore; and,
- applying a force to the tool through the conduit in a direction to move the tool, conduit, and wire-line along the deviated portion of the well bore.

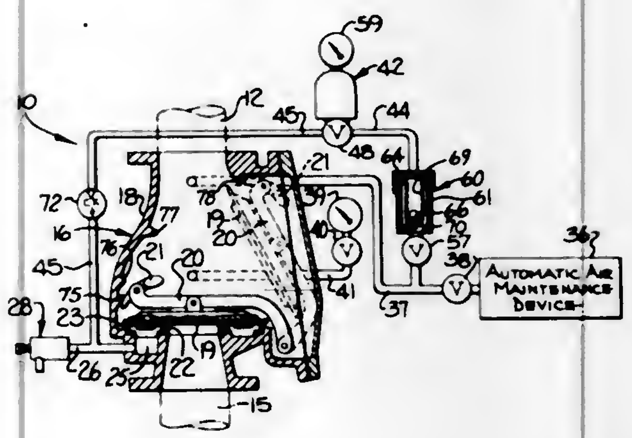
6. Apparatus useful in well bores having a deviated portion, said apparatus including:
- a relatively flexible elongated conduit;
- a wire-line extending through the interior of said conduit;
- a well tool connected with one end of said wire-line and arranged to be actuated thereby, said well tool being engageable with said conduit; and,
- force applying means including means on said conduit for exerting a force on said tool to inject said conduit, wire-line, and well tool into the well bore and through the deviated portion thereof.

3,401,750
FLAME REPELLANT APPARATUS
Agnew E. Larsen, 122 E. Butler Ave., New Britain, Pa. 18901
Continuation-in-part of abandoned application Ser. No. 461,211, June 3, 1965. This application Jan. 17, 1968, Ser. No. 698,562
13 Claims. (Cl. 169—2)



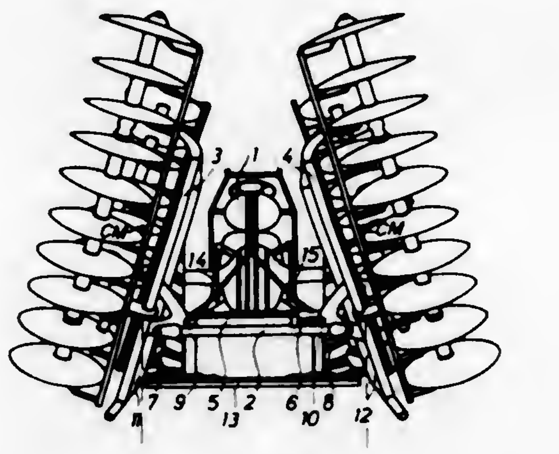
As an abstract of the disclosure, the invention is directed to flame repellant injection apparatus particularly adapted for emergency fire situations adjacent an aircraft fuel tank whose flammable fluid can be quickly converted to a non-flammable condition by use of ballistic or propellant cartridge gas generating media to rapidly deliver flame repelling chemical agents to permeate the fuel tank.

3,401,751
DRY PIPES SPRINKLER SYSTEM
James W. Loftin and James H. Williams, Charlotte, N.C., assignors to Standard Fire Protection Equipment Company, Charlotte, N.C., a corporation of North Carolina
Filed Apr. 22, 1966, Ser. No. 544,456
5 Claims. (Cl. 169—17)



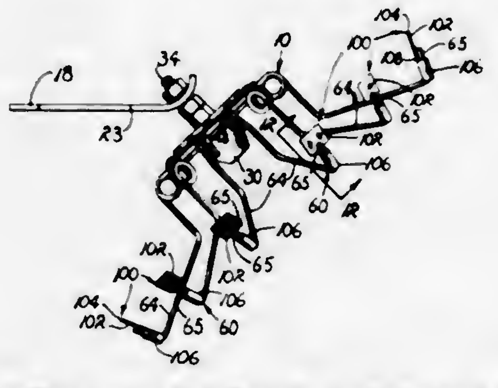
A dry pipe sprinkler system including a dry pipe valve controlling the admission of water under pressure to a sprinkler pipe and a plurality of normally closed sprinkler heads and having an accelerator valve for facilitating opening of the dry pipe valve and wherein means are provided in combination with the system for protecting the accelerator valve from damage and the collection of debris therein.

3,401,752
TRACTOR IMPLEMENTS
Olav Njå, Kvernaland, Norway, assignor to Kvernelands Fabrikk A/S, Kvernaland, Norway
Filed May 27, 1965, Ser. No. 459,392
Claims priority, application Norway, June 12, 1964, 153,641
2 Claims. (Cl. 172—452)



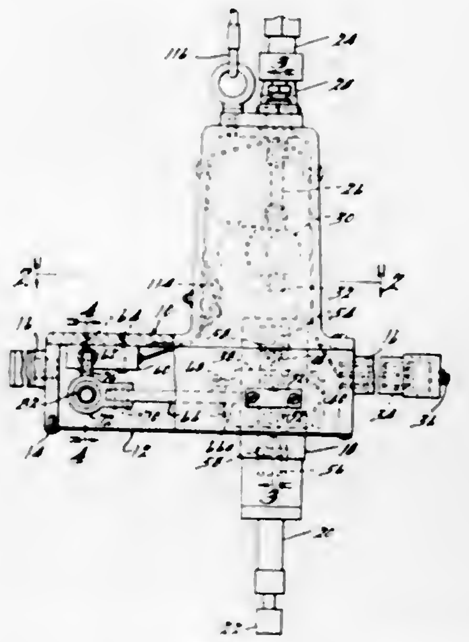
A tractor drawn agricultural ground working implement comprises at least two ground-working sections the inner ends of which are pivotally connected on a frame adapted to be attached to the tractor. When the frame is elevated by the tractor to clear the implement from the ground, the two sections are actuatable by a ram to be swung upwardly about their respective pivot axes to a raised position for transport by the tractor, or for parking when released from the tractor. When the sections occupy their raised position, the center of mass of each section is so located that a line projected vertically downward from such center to the ground passes to the outside of the pivot axis. Thus, with the frame in its elevated position clear of the ground, the raised implement sections will be in an unstable position and hence will automatically lower themselves into the ground-working positions when the ram is released. With the implement sections in their raised position, the frame can then also be lowered to the ground for parking, in which case the implement sections will occupy a stable position since the lower ends of the sections which make contact with the ground then lie to the outside of the aforementioned line of projection from the center of mass as well as to the outside of the pivot axis.

3,401,753
EARTHWORKING TOOL FOR THINNING PLANTS
Paul A. Bezzerides and Arthur A. Bezzerides, both of P.O. Box 211, Orosi, Calif. 93647
Filed Feb. 7, 1966, Ser. No. 525,642
4 Claims. (Cl. 172—543)



An earthworking tool for thinning plants and the like adapted for earth traversing movement in a predetermined forward direction of travel longitudinally along rows of plants having a hub mounted for rotation about an axis disposed in oblique relation to said forward direction of travel including a plurality of resiliently flexible arms mounted on the hub and having outer earth engaging ends radially outwardly extended from the hub in axially offset relation for successive movement through the earth along the plant rows for removing plants and forming spaced swaths therethrough between plants remaining in the rows.

3,401,754
PREDETERMINED TORQUE RELEASE WRENCH
Alan G. Loofbourrow, Bloomfield Hills, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Apr. 11, 1967, Ser. No. 629,970
10 Claims. (Cl. 173—12)

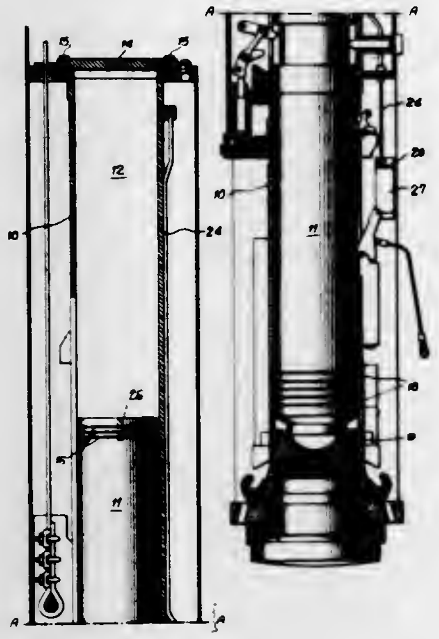


A motor driven torque wrench having a torque arm laterally extending from the motor housing. The torque arm is mounted so as to be capable of movement at some predetermined torque level which movement actuates a motor control switch. The switch opens an electrical circuit which breaks the power supply to the motor thereby causing the torque wrench to shut off.

3,401,755
DIESEL HAMMER CONVERTIBLE TO SINGLE OR DOUBLE ACTION AND HAVING ENERGY RATING INDICATING MEANS FOR EACH MODE OF OPERATION
Leonard L. Frederick, Whippany, N.J., assignor to MKT Corporation, Dover, N.J., a corporation of New Jersey
Filed Nov. 28, 1966, Ser. No. 597,412
10 Claims. (Cl. 173—20)

1. A diesel hammer convertible to either a gravity or gravity and air spring action, comprising the combination of
- a cylinder and a ram operating as a piston in said cylinder,
- said cylinder having an anvil block at the lower end cooperative with the ram for effecting compression ignition of injected fuel,
- the upper end of said cylinder having means adapted to extend above and beyond the upward travel of the ram into an air compression chamber for applying accumulated pressure downward on the ram,
- said means comprising an extension head closing the upper end of said air compression chamber for gravity and air spring action operation of the hammer,

means securing said head in readily removable relation on said cylinder and enabling removal of the head for operation of the hammer as a single stroke hammer, with the ram then free to project beyond the open upper end of the cylinder and providing visible means for disclosing the stroke of the ram in gravity action operation,

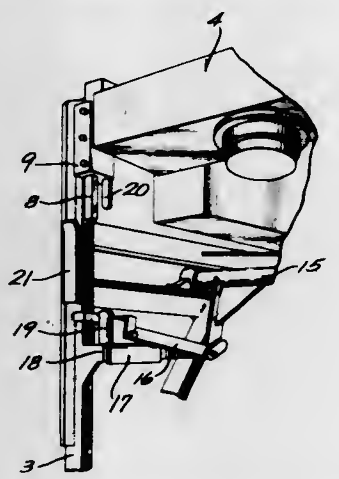


said means for securing the head being re-engageable with the cylinder for securing the head in position closing the upper end of the cylinder for conversion of the hammer back to gravity and air spring action operation, and

gauge means on the hammer subjected to the pressure generated in said air compression chamber when the cylinder is closed, for indicating effective energy of the hammer operating as a gravity and air spring action hammer.

3,401,756
DRILL HEAD RETRACT MECHANISM

Walter W. Svendsen, Gaastra, Mich., assignor to Odgers Drilling Inc., Iron River, Mich., a corporation of Michigan
Filed Dec. 22, 1966, Ser. No. 604,059
8 Claims. (Cl. 173—44)



1. In a drill rig, the combination comprising:

(a) a mast,

(b) a track on said mast with said track having a terminus portion,

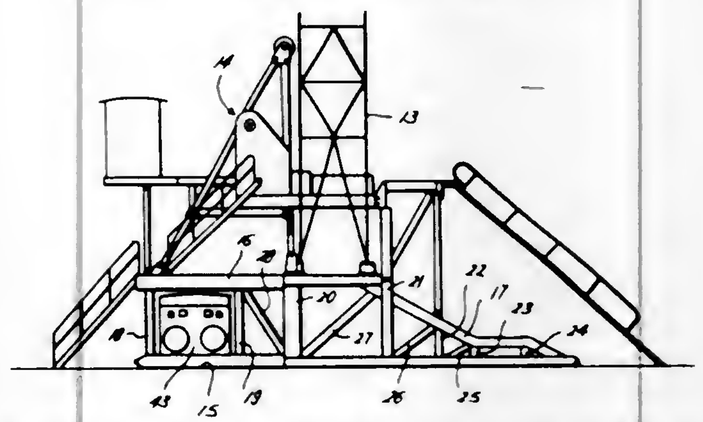
(c) a drill head mounted for movement along said track,

(d) motively actuated head retract means spaced from said track terminus portion and operable when said head is released from said track to pivot said head relative to said mast,

(e) and automatically mutually engageable means on said head and said retract means for providing a connection therebetween as said head is released from said terminus so that said head may be retracted away from said track.

3,401,757
DRILLING RIG TRANSPORTABLE IN SECTIONS

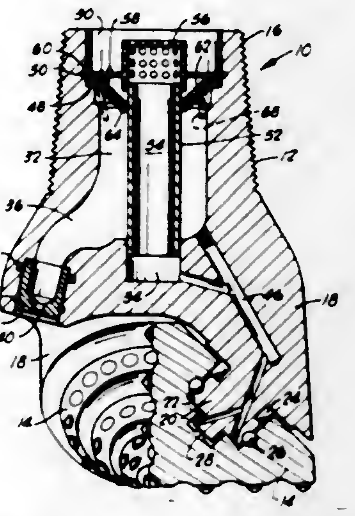
Charles W. Gwaltney, Jack A. Amerman, and Henry F. Olexa, Houston, Tex., assignors to The Youngstown Sheet and Tube Company, Youngstown, Ohio, a corporation of Ohio
Filed Dec. 27, 1966, Ser. No. 604,691
2 Claims. (Cl. 175—203)



A substructure and drawworks, plus drive means therefor, wherein the drawworks skid provides a part of the substructure, and the drawworks and drive means are incorporated into the substructure which is formed in suitable transportable sections.

3,401,758
FLOW CONTROL VALVE FOR JET TYPE BITS

Milton L. Talbert, China Spring, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Oct. 10, 1966, Ser. No. 585,490
8 Claims. (Cl. 175—318)



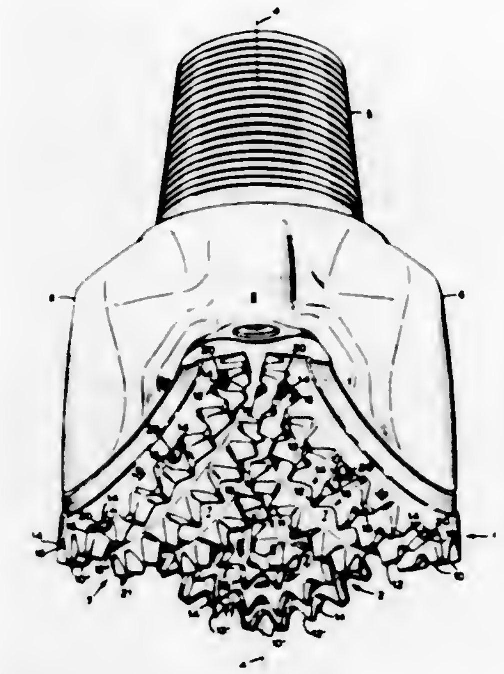
1. In a drill bit having a body, a plurality of cutter means journalled on said body, a recess in said body forming upper and lower chambers, a plurality of jet passageways extending therethrough intersecting said upper chamber and oriented to direct a jet of air between adjacent cutter means, and a cooling passageway extending therethrough for each of said cutter means intersecting said lower chamber and arranged to discharge air into the journals for said cutter means, the improvement comprising:

flow control means located in the upper chamber of said recess relatively above the intersections of said jet passageways with said upper chamber, said flow control means including means for substantially preventing flow from said jet passageways therethrough while permitting flow in the opposite direction; and

a hollow member located in said recess and extending through said flow control means, said hollow member having an open lower end located in said lower chamber in communication with said cooling passageways and a perforated upper end portion above said flow control means.

3,401,759
HEEL PACK ROCK BIT

Anderson D. White, Houston, Tex., assignor to Hughes Tool Company, Houston, Tex., a corporation of Delaware
Filed Oct. 12, 1966, Ser. No. 586,251
10 Claims. (Cl. 175—341)

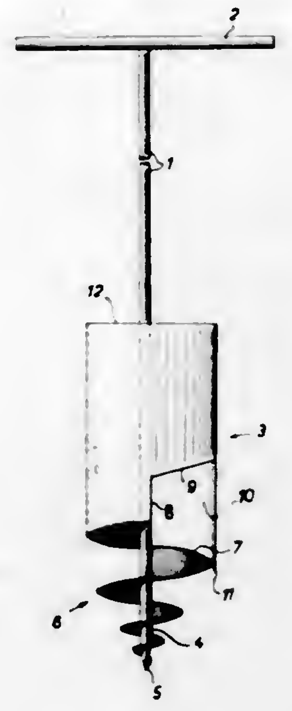


8. In a rolling cone cutter for rock bits having a conical main-bottom cutting surface, a conical heel cutting surface and a conical gage surface, and annular rows of steel teeth extending from the cutter with their crests forming said cutting surfaces, including a row of elementally crested heel teeth, the improvement comprising dividing said heel teeth into a first substantial number which extend to said gage surface and are there provided with a welded-on hardfacing of tungsten carbide, and a second substantial number having at least their portions adjacent said gage surface cut away to define spaces adjacent such surface, and wear resistant inserts of tungsten carbide secured in the cutter at such spaces so that their cutting tips extend toward said gage and heel surfaces, said cutting tips extending from the cutter and terminating short of said heel cutting surface and being ground flush with the gage surface.

3,401,760
HAND-OPERATED POSTHOLE BORER FOR POSTS, SAPLINGS, VINES AND SIMILAR PLANTS, PROVIDED WITH A SCREW, AND WITH A CUTTING EDGE

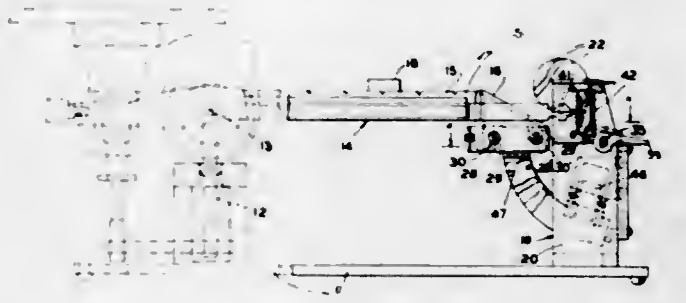
Giuseppino Balliano, Via Mombarcaro 92, Turin, Italy
Filed Mar. 8, 1966, Ser. No. 532,686
Claims priority, application Italy, Nov. 13, 1965, 25,686/65
3 Claims. (Cl. 175—308)

A hand-operated posthole border for posts, saplings, vines and similar plants, consisting of a shaft pointed at one end and having a handle at the opposite end, a soil cutting screw arranged adjacent the pointed end of the shaft and having spirals decreasing in diameter and pitch toward the pointed end, and a tubular cylinder disposed above the cutting screw, surrounding the shaft and serving to receive the extracted soil. The shell of the cylinder is provided with an opening adjacent the uppermost spiral of the cutting screw to facilitate the introduction of the extracted soil into the cylinder. The lowermost circumferential edge of the cylinder is provided with a downwardly extending cutting blade adjacent the opening in the cylinder shell to cut the posthole with a smooth circumferential wall. The distance of this cutting blade from the axis of the cylinder is slightly greater than that of the opposed cylinder wall to provide a posthole slightly larger in diameter than the overall diameter of the cylinder to facilitate the extraction of the cylinder filled with soil from the posthole.



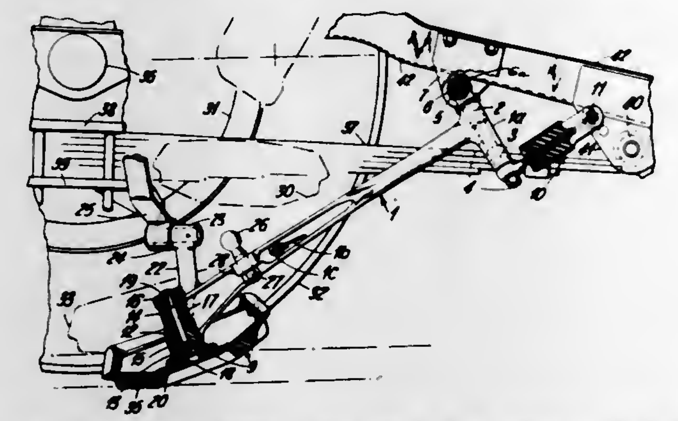
3,401,761
DEVICE FOR LOADING ADDITIONAL COUNTERBALANCE WEIGHT TO BEAM BALANCE WEIGHING SCALES

John H. Landvater, South Berkley Heights, N.J., assignor to Ohaus Scale Corporation, Union, N.J., a corporation of New Jersey
Filed Jan. 13, 1966, Ser. No. 520,327
3 Claims. (Cl. 177—248)



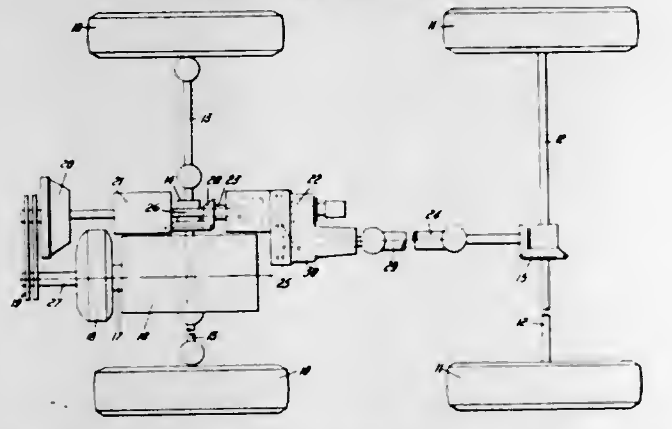
Beam balance weighing scales which are provided with additional counterbalance weights and means to move them between an out-of-use position in a storage rack and an in-use position in a weight receiving means located on the beam at its outer end; the weight receiving means on the beam being capable of automatically positioning the added weight at a precise predetermined distance from the fulcrum with means for adjusting the distance of the added weight from the fulcrum to calibrate the scale.

3,401,762
SIDEWAYS PARKING DEVICES FOR MOTOR VEHICLES AND THE LIKE
Archibald James Butterworth, Frimley, England, assignor to Sidler Limited, Frimley, England, a British company
Filed Aug. 25, 1965, Ser. No. 482,530
Claims priority, application Great Britain, Aug. 27, 1964, 35,114/64
16 Claims. (Cl. 180—1)



A device for sideways parking of a motor vehicle, comprising a pair of ground-engaging rollers mounted on swinging arms, and a hydraulic ram for swinging the arms to lower the ground-engaging rollers into positions close to a pair of the vehicle road wheels. Cam follower rollers on the swinging arms engage cam tracks on the unsprung part of the vehicle to lift the road wheels so that the adjacent end of the vehicle can be moved sideways on the ground-engaging rollers, the construction enabling the rollers, swinging arms and hydraulic ram to be carried on the sprung part of the vehicle to avoid any appreciable addition to the unsprung weight of the vehicle.

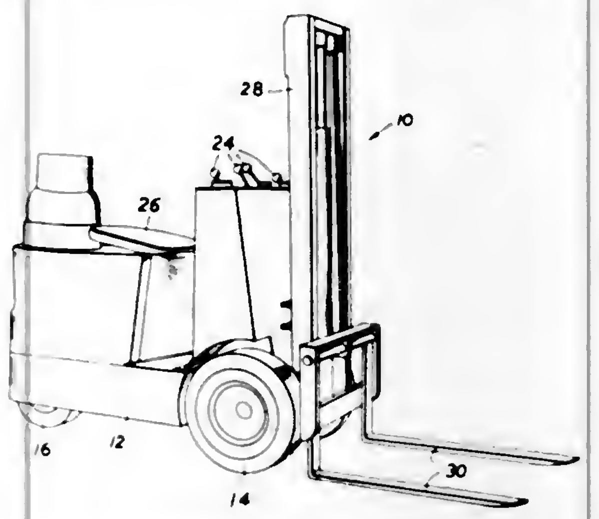
3,401,763
MOTOR VEHICLE DRIVE SYSTEM
Anthony P. R. Rolt, Stratford-on-Avon, England, assignor to Harry Ferguson Research Limited
Filed Oct. 18, 1965, Ser. No. 497,329
Claims priority, application Great Britain, Oct. 20, 1964, 42,675/64
11 Claims. (Cl. 180—44)



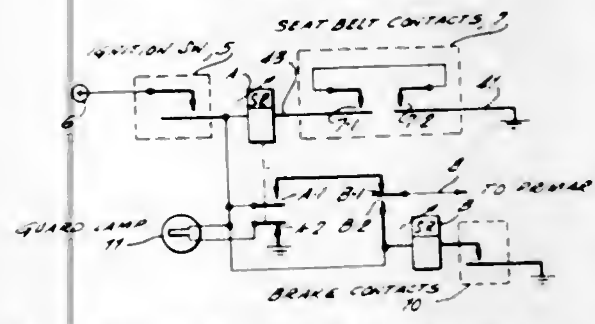
A four-wheel drive vehicle with the engine output end being the forward end of the engine and a drive path including clutching, gearing and a torque convertor for conveying engine power laterally from the engine and subsequently rearwardly to a driving connection with front and rear wheels with a controlled differential being provided on the drive path between the front and rear wheels.

3,401,764
HYDRAULIC CONTROL FOR FORK LIFT TRUCKS
Loren C. Schafer, 245 Willow Drive, South Bend, Ind. 46637
Filed Dec. 20, 1965, Ser. No. 514,823
3 Claims. (Cl. 180—66)

A hydraulic control for fork lift trucks having hydraulic wheel drive motors arranged in parallel circuits and each in series with a valve having a spool shiftable endwise relative to circuit-controlling ports, wherein a land of said spool has a narrow circumferential part at one end having slight clearance in the valve housing and said spool has means for rotating it and a helical cam track engaging a part of said housing to advance said spool endwise by rotation thereof.

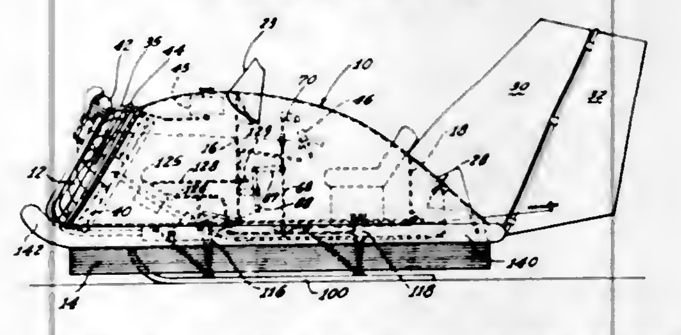


3,401,765
VEHICLE SAFETY DEVICE
John D. Hagon, 36 Washington Place, Northport, N.Y. 11768
Filed July 11, 1966, Ser. No. 564,258
5 Claims. (Cl. 180—82)



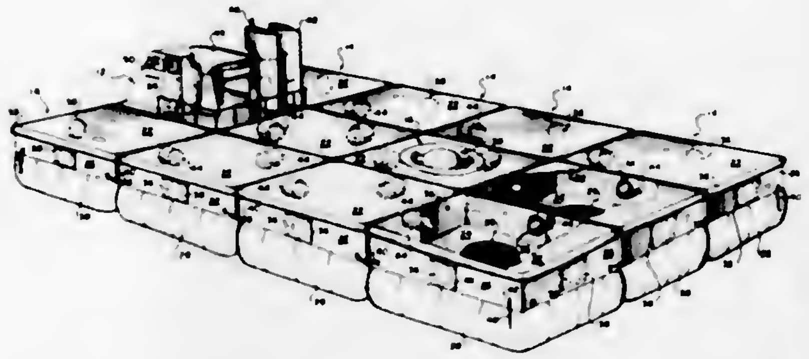
A safety circuit for use in an automobile. The ignition system can be energized only if the driver is wearing his seat belt. At least one position-responsive switch is attached to the belt and included in the ignition circuit. The ignition circuit can be completed if the seat belt is worn, the switch being mounted such that it operates to complete the ignition circuit when the belt is properly positioned around the driver. If the belt is not worn, the position-responsive switch will normally be in a position such that the ignition circuit cannot be completed.

3,401,766
AIR-CUSHION VEHICLE
Harry A. Laufman, Los Angeles, and Donald W. Stillman, Playa Del Rey, Calif., assignors to Aircars Incorporated, Los Angeles, Calif., a corporation of California
Filed Nov. 2, 1964, Ser. No. 408,240
13 Claims. (Cl. 180—119)



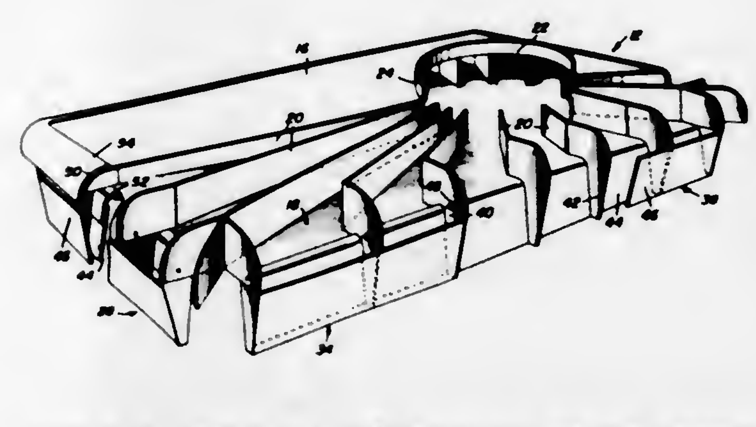
The body of the ground effect vehicle is a single large air-cushion chamber into which air is delivered by a forward fan. A portion of the air is discharged through two rearward ports on opposite sides of the longitudinal axis of the vehicle towards an upright rudder for forward propulsion and steering is accomplished both by the rudder and by variable controlled flaps at the two ports.

3,401,767
ARTICULATED GROUND EFFECT MACHINE SYSTEM
Charles Barr, Amherst, N.Y., assignor to Bell Aerospace Corporation, Wheatfield, N.Y.
Filed Mar. 17, 1967, Ser. No. 623,867
11 Claims. (Cl. 180—121)



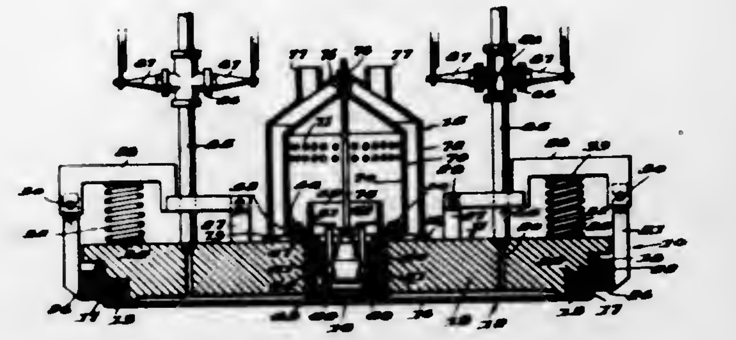
A plurality of different type ground effect machine modules are provided with means for interconnecting them in universally articulated relationship in any preferred plan view arrangement, to provide a novel ground effect machine system capable of carrying loads in improved manner over a variety of terrain conditions. The invention features improved overall efficiency of operation and improved versatility with respect to coping with a large variety of transport problems.

3,401,768
GROUND EFFECTS MACHINE WITH AIRFLOW DIRECTING NOZZLES
Joseph D. Cull, 3508 Longview Ave., Bloomington, Ind. 47401
Filed Sept. 21, 1966, Ser. No. 580,986
13 Claims. (Cl. 180—122)



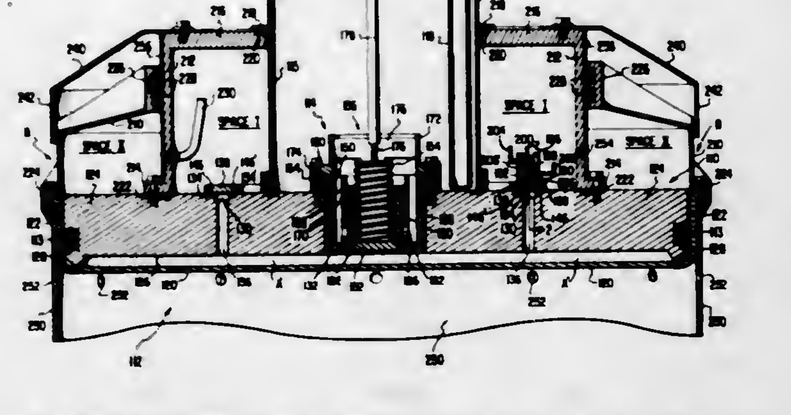
A G.E.M. utilizing a diffuser-nozzle system wherein pressurized air is directed outwardly through a series of increasing area passages to the periphery of the vehicle and subsequently discharged downwardly through aligned nozzle air passages of rapidly decreasing cross-sectional area thereby producing, in addition to a vehicle lifting pressure, a substantial thrust to effect a greater lift. The nozzles are of a rigid fixed area and shape construction with selected one of the nozzles being pivotally adjustable so as to vary the direction of the constant thrust being discharged therefrom for use of this thrust as a balance and guidance control.

3,401,769
UNDERWATER GAS EXPLOSION SEISMIC WAVE GENERATOR
Lauren G. Kilmer, Tulsa, Okla., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 22, 1966, Ser. No. 544,442
8 Claims. (Cl. 181—.5)



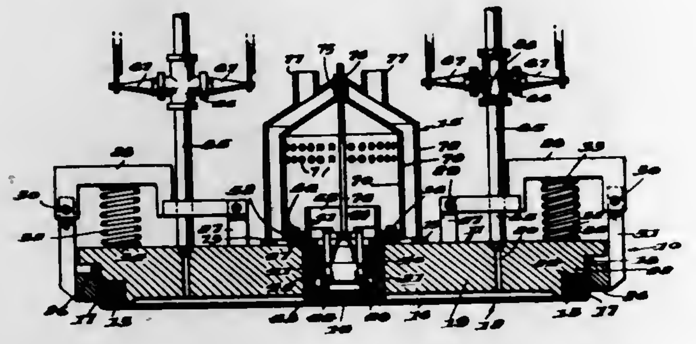
A highly effective gas exploder or impulse generator for underwater use having a rigid top and a rigid bottom which when at rest are so constructed as to form a chamber between them in which a gas explosion can take place but which are joined together such that relative vertical separating movement can take place between them. Such vertical movement is, however, also limited by a resilient fastening holding the top and bottom biased together. Internally a dynamic seal is provided positioned on the inner side of and adjacent the clearances at the joint between the top and bottom of the gas exploder. Also, in order that the resilient fastening which biases the top and bottom of the exploder together be not overly strained, a valving arrangement is employed to release the force of the exploded gas simultaneously as relative movement between the top and bottom of the exploder occurs.

3,401,770
GAS EXPLODER APPARATUS FOR PROPAGATING SEISMIC WAVES
Lauren G. Kilmer and Phil W. Wise, Tulsa, Okla., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 6, 1967, Ser. No. 614,289
8 Claims. (Cl. 181—.5)



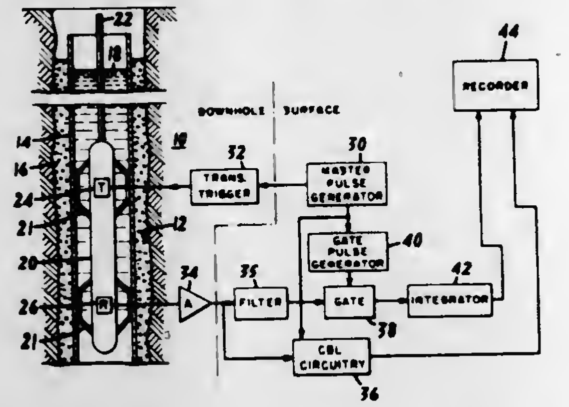
A seismic prospecting device comprising a gas exploder adapted for underwater use including an expansible explosion chamber having a rigid top and a rigid bottom connected together by an extensible sidewall and resilient fastening means including air cushion spring means arranged above the chamber for attaching the top and bottom together and for normally biasing the top and bottom together, resilient sealing means inside of the joint formed between the top and bottom, gas charging and ignition means for the chamber, exhaust means for the chamber, and bubble cap means above the air cushion spring means to protect it against cavitation.

3,401,771
GAS EXPLODER APPARATUS FOR PROPAGATING SEISMIC WAVES
Lauren G. Kilmer, Tulsa, Okla., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 544,442, Apr. 22, 1966. This application Feb. 3, 1967, Ser. No. 613,792
11 Claims. (Cl. 181—.5)



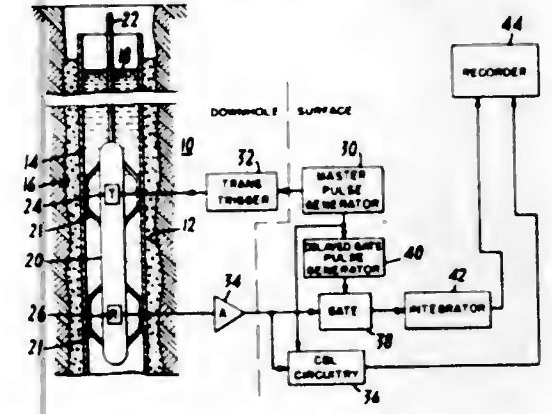
A seismic prospecting device comprising a gas exploder adapted for underwater use including an expansible explosion chamber having a rigid top and a rigid bottom connected together by an extensible sidewall and resilient fastening means including spring means, e.g. mechanical springs or air cushions, arranged on the top above the chamber for attaching the top and bottom together and for normally biasing the top and bottom together.

3,401,772
METHOD FOR LOGGING CASED BOREHOLES
Frank P. Kokesh, Seabrook, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Continuation-in-part of application Ser. No. 534,310, Mar. 15, 1966. This application June 27, 1967, Ser. No. 653,299
6 Claims. (Cl. 181—.5)



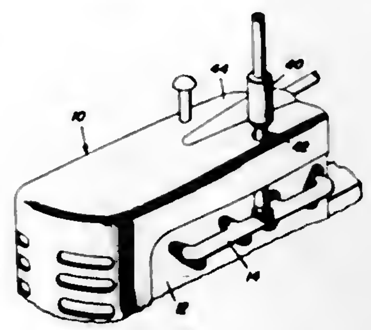
A technique and apparatus for obtaining a log of the condition of the cement annulus between the casing and earth formations surrounding a borehole are described. An acoustic pulse is generated at a first point along the borehole and the acoustic energy reaching a second point therealong is converted into a corresponding electrical signal. The signal is filtered to remove low frequency components and gated to delete the early portion of the signal which includes direct compressional and shear wave transmission between the transmitting and reception points. The remainder of the signal, representative mainly of reverberatory energy in the liquid column, is integrated to give a measure of its energy content, which varies according to the presence or absence of hard cement or material around the casing between the two points. The resultant log, when correlated with a cement bond log, provides a full picture of the cement condition. The logging apparatus, including the filtering and gating arrangement, is described.

3,401,773
METHOD AND APPARATUS FOR CEMENT LOGGING OF CASED BOREHOLES
Judson Bruce Synnott III, Atlantic Highlands, N.J., assignor, by mesne assignments, to Schlumberger Technology Surveying Corp., Houston, Tex., a corporation of Texas
Continuation of application Ser. No. 534,392, Mar. 15, 1966. This application Dec. 4, 1967, Ser. No. 687,921
6 Claims. (Cl. 181—.5)



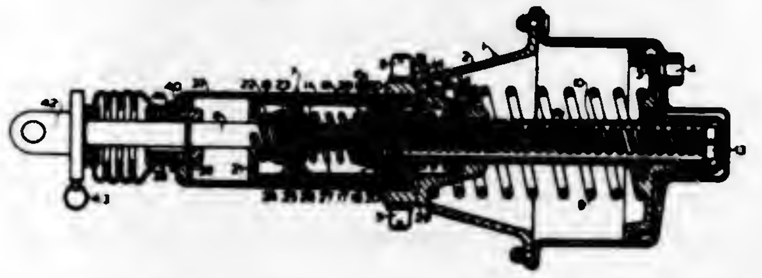
A method and apparatus for obtaining data relative to existence and thickness of the cement annulus between a well casing and surrounding formations are described. Acoustic energy impulses are transmitted from a transmitter transducer to a receiver transducer spaced along the borehole and the nature of the received signal gives the desired information. The amplitude of the initial portion of the received signal indicates whether or not cement is bonded to the casing and the energy content of a later arriving portion of the received signal, obtained by integrating that portion of the signal, indicates the presence or absence of cement behind the casing, irrespective of the condition of the bond. Correlation of the two indications provides a complete definition of the cement annulus.

3,401,774
READILY REMOVABLE EXHAUST MUFFLER FOR HIGH VERTICAL EXHAUST STACKS
Alfred R. Krahn, Box 140, Rte. 2,
Edgar, Wis. 54426
Filed Apr. 26, 1966, Ser. No. 545,479
5 Claims. (Cl. 181—72)



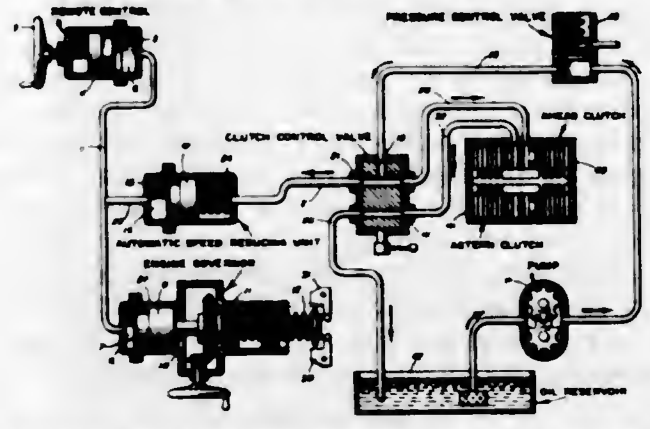
An upstanding exhaust stack assembly for a tractor of the type including a horizontally disposed engine cover spaced above the exhaust manifold of the tractor, the engine cover having an opening formed therethrough through which the exhaust stack assembly extends and the exhaust stack assembly including a lower section whose lower end is supported from and communicated with the interior of the exhaust manifold and an upper section which extends through the opening in the engine cover and is telescopingly engaged with the upper end of the lower section. The telescoped end portions of the upper and lower sections include frusto-conical seatingly engaged opposing inner and outer surfaces and the lower end portion of the upper section disposed below the cover being upwardly axially displaceable through the opening.

3,401,775
SLACK ADJUSTER
Woldimar Sobol and Horatio Leslie Higgins, London, England, assignors to Westinghouse Brake & Signal Company, Ltd., London, England
Original application Jan. 21, 1965, Ser. No. 426,807, now Patent No. 3,338,356, dated Aug. 29, 1967. Divided and this application May 29, 1967, Ser. No. 642,063
Claims priority, application Great Britain, Jan. 31, 1964, 4,195/64, 4,196/64, 4,197/64
10 Claims. (Cl. 188—196)



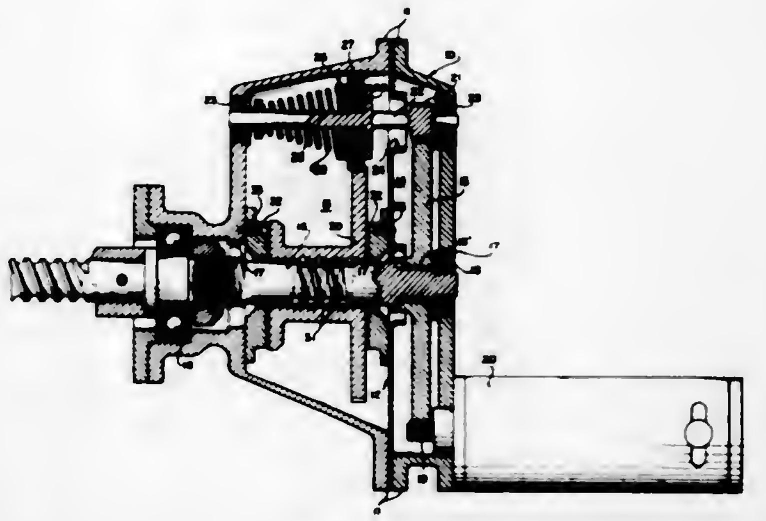
A slack adjuster of the double acting type in which a sensing member on one of a pair of telescoping members normally clutches a pair of nuts on a second of the pair of telescoping members to hold the telescoping members in predetermined telescoped position for no-slack operation. To take up slack, the sensing member engages a stop, thereby declutching one nut to provide movement of the one nut along the second member to extend the second member relative to the first member during brake application, and on brake release clutches the first nut and declutches the second nut to provide corresponding movement of the second nut on the second member. To let out slack, the sensing means, which is normally clutched to the second member during no-slack operation as a unit relative to the second member to provide retrac- and also during slack take-up operation, is declutched to provide rotation of the sensing means and the pair of nuts tion of the telescoping members.

3,401,776
TRANSMISSION CLUTCH AND THROTTLE CONTROL
Michisuke Nagasaki, Toyonaka-shi, Japan, assignor to Tadao Yamaoka, Ashiya-shi, Japan, a national of Japan
Filed Dec. 9, 1965, Ser. No. 512,704
5 Claims. (Cl. 192—.084)



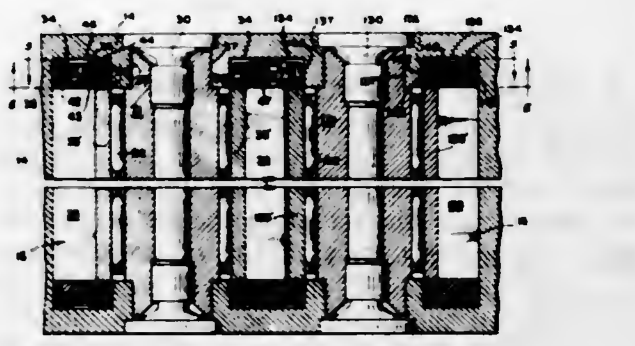
An automatic engine-speed control device, operable by a handle of a clutch control valve of a hydraulic reversing gear, for changing the direction of rotation of a propeller shaft to be driven by a marine propulsion engine. The device comprises hydraulic means operable to act upon a governor spring to thereby regulate the speed of the marine engine, the means being connected with an operating cylinder of the governor spring and the clutch control valve and operable upon positioning the control handle of the reversing gear for forward or reverse rotation of the propeller shaft to automatically reduce the engine speed and subsequently to restore the normal engine speed.

3,401,777
BI-DIRECTIONAL NO-BACK COUPLING
William W. Williams, Atlanta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed July 28, 1966, Ser. No. 568,661
5 Claims. (Cl. 192—8)



This device employs clutch, gear, spline, ball nut and ball screw elements to prevent the tractive effort of a driven load from feeding back to the prime mover or motor. When the device is holding against an opposing torque on the output shaft, none of the output shaft torque feeds back through the device to the prime mover. When the device is driving or holding a torque on the output shaft which is in a direction to aid the output shaft rotation, it prevents the aiding torque on the output shaft from exerting any torque at the prime mover or motor shaft. In this case, the output aiding torque will not cause the motor to over-speed when running and it will not cause the motor shaft to turn when the motor is stopped.

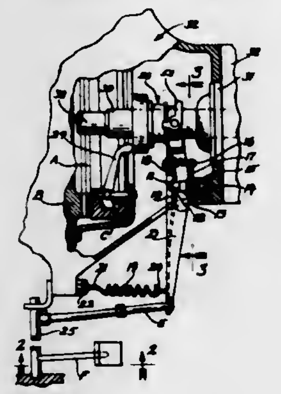
3,401,778
GEAR TYPE PUMP OR MOTOR
Karl G. Ahlen, Stockholm, Sweden, assignor to S.R.M. Hydromekanik AB, Stockholm, Sweden
Filed Nov. 29, 1966, Ser. No. 597,631
Claims priority, application Great Britain, June 28, 1966, 28,876/66
19 Claims. (Cl. 192—61)



1. A pump or motor comprising a casing, a low pressure chamber and a high pressure chamber, a pair of rotary intermeshing gears mounted in the casing for carrying fluid from one of said pressure chambers to the other pressure chamber, at least one pair of end plates mounted in said casing at least one end of said pair of gears, and in sealing engagement with the ends of the gears, means for mounting said end plates in said casing for universal movement whereby the said end plates are capable of maintaining their axes perpendicular to the said ends of its meshing gears as the position of the axes of the said gears change with respect to the casing.

3,401,779
CLUTCH OPERATOR WITH BEARING CLIP

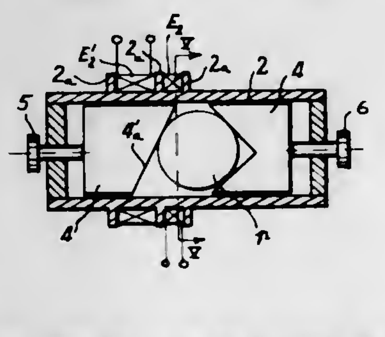
Stanley V. Puidokas, Kenosha, Wis., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland
Filed May 15, 1967, Ser. No. 638,312
4 Claims. (Cl. 192—98)



A vehicle clutch of the type in which clutch releasing is accomplished via manually operated means. The clutch throw-out bearing assembly is fabricated of sintered iron and has an annular flange against which the pins carried by the throw-out lever act to effect reciprocatory movement of the throw-out bearing in accomplishing clutch release. A clip has appropriate ears overhanging the bearing flange and ties the throw-out lever relative to the flange so that reciprocatory movement of the bearing in clutch engaging direction is accomplished.

3,401,780
ELECTRICAL COIN TESTER

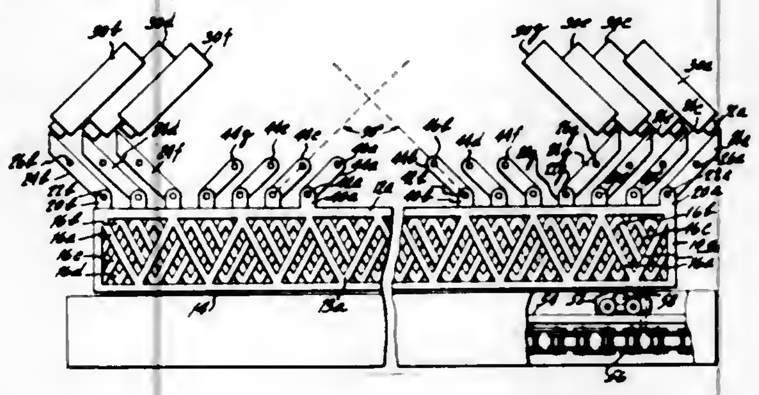
Jean Jullien-Davin, Valence, France, assignor to Crouzet, Paris, France, a French company
Filed Dec. 19, 1966, Ser. No. 602,992
Claims priority, application France, Dec. 31, 1965, 715
9 Claims. (Cl. 194—100)



A coin selector having coin-switching means for conveying the coins in either of two directions, two coin-exit channels disposed downstream of said coin-switching means, and test means disposed upstream of said coin-switching means for actuating the latter and comprising means responsive to a variation of impedance produced by a coin to be tested and control means responsive to the motion of each coin to be tested as said coin passes through a test location, so as to actuate said impedance variation responsive means.

3,401,781
PRINTER EMPLOYING PARALLEL PRINTER BARS, AND IMPROVED MOUNTING MEANS THEREFOR

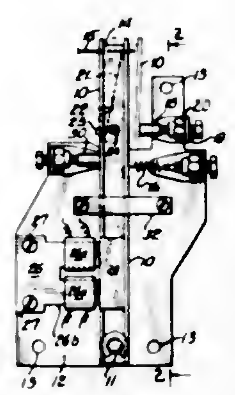
Everett J. West, Collingswood, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 13, 1966, Ser. No. 550,055
10 Claims. (Cl. 197—1)



A support structure for the print bars in a bar printer using selectively actuable arms for moving the print bars. Each of the actuating arms are arranged to induce a movement of a corresponding print bar in a direction which is substantially normal to the direction of movement induced by an associated arm to an adjacent print bar.

3,401,782
PAPER-SHIFTING MECHANISM

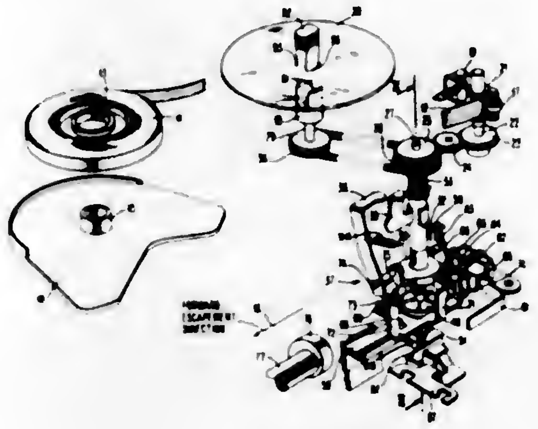
Francis H. Shepard, Jr., Berkeley Heights, N.J., assignor to Shepard Laboratories, Inc., Summit, N.J.
Filed Oct. 11, 1965, Ser. No. 494,840
5 Claims. (Cl. 197—133)



Paper-shifting mechanism in which a lightweight pivoted arm which forms one pole of an electromagnet has a right-angle extension or shoulder at its outer end beneath which is positioned a thin flat leaf spring. The upper end of the leaf spring and the underside of the extension comprise a pair of grippers by which a strip or sheet of paper, for example, is advanced in one direction. In operation the force of inertia when the arm is suddenly moved forward causes the spring to pinch against the extension and, conversely, when the arm is suddenly retracted by the electromagnet, inertia causes the spring to move away from the extension. A further feature is in the provision for allowing the arm, when it moves forward, to bounce against a stop and as it bounces back to "cock" it against the electromagnet. This prevents spurious bouncing and provides for very high speed operation, for example, about 100 strokes per second.

3,401,783
PROPORTIONAL RIBBON FEED MECHANISM

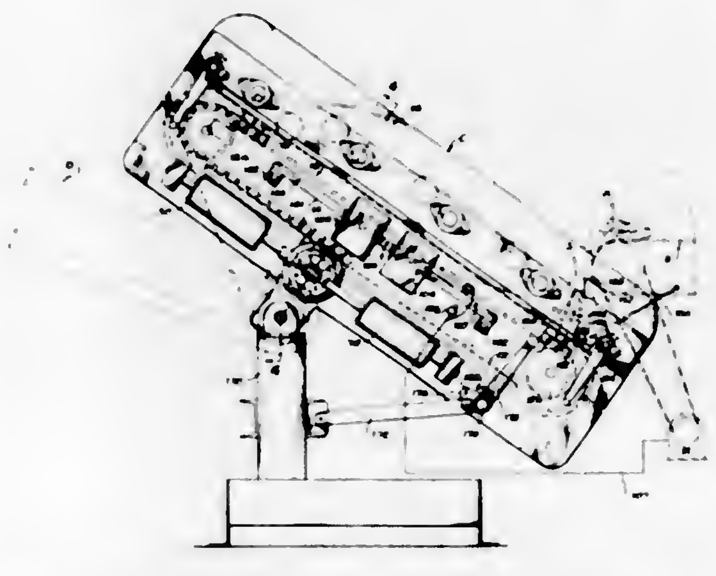
James R. Norwood and Joseph S. Morgan, Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 30, 1965, Ser. No. 517,551
11 Claims. (Cl. 197—151)



A ribbon feed mechanism for a proportional escapement typewriter which incrementally feeds printing ribbon by lengths proportional to the widths of the printed characters is disclosed. The mechanism comprises a drive shaft which is interconnected by a one way clutch to ribbon changing operation required during typing. Also the shaft and is moved in the overrunning direction of the one way clutch to an initial position in response to movement of the typewriter escapement apparatus. Later in the cycle the sensing member is driven back to its home position in the driving direction of the overrunning clutch to advance the ribbon.

3,401,784
APPARATUS FOR ORIENTING ARTICLES

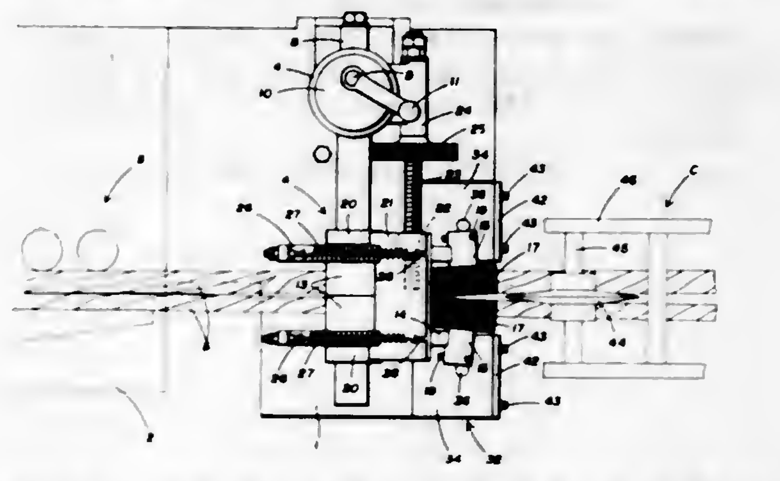
Paul F. Good, Lutherville, Md., assignor to Speedco, Inc., Baltimore, Md., a corporation of Maryland
Filed Aug. 10, 1966, Ser. No. 571,580
6 Claims. (Cl. 198—33)



In an apparatus for orienting articles, particularly sausages, a mass of unoriented articles is haphazardly dumped on top of a conveyor having flights and grooves between the flights. As the conveyor moves, the articles fall by gravity into the grooves and are not necessarily aligned in rows. The conveyor moves the articles past means for shifting each article in its groove so that all the articles are placed in aligned rows.

3,401,785
SEPARATOR UNIT FOR LUMBER STRIPS

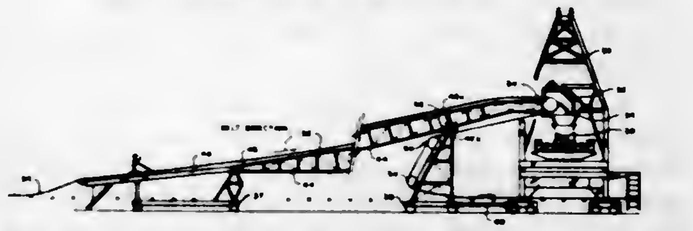
Arthur M. Ferrari, P.O. Box 315,
Corning, Calif. 96021
Filed Jan. 30, 1967, Ser No. 612,413
5 Claims. (Cl. 198—34)



A separator unit for lumber strips being advanced while in side-by-side contact with each other, the unit comprising support for the strips as advanced, rollers mounted in connection with the support to engage the upper faces of the advancing strips and arranged to exert lateral force thereon to cause said strips to spread apart in forwardly diverging relation to each other.

3,401,786
COLLAPSIBLE TRIPPER TRAILER

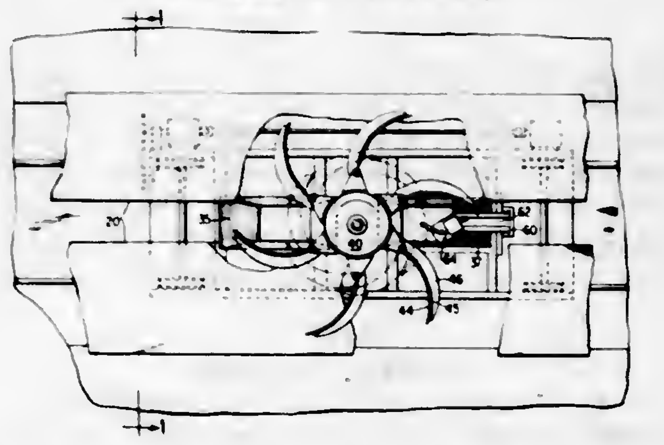
Ignazio J. D'Agati, Pines Lake, N.J., assignor to Hewitt-Robins Incorporated, Stamford, Conn.
Filed Feb. 28, 1967, Ser. No. 619,305
4 Claims. (Cl. 198—36)



The invention pertains to a tripper trailer for a bulk material stacker which has a section for elevating the belt and the conveyed material up to the stacker boom conveyor. According to the invention the elevating and tripping section of the tripper trailer can be moved out of association with the stacker boom conveyor and then lowered to approximately the level of the belt conveyor with which the tripper trailers is associated. Bulk material on the latter conveyor can then continue along the conveyor over the elevating and tripping section without being elevated or tripped by the tripper trailer. Thus, there is provided a tripper trailer the tripping function of which can be bypassed while it still carries the loader belting of the conveyor it is associated with.

3,401,787
ACTUATING MECHANISM FOR RETRACTABLE PLOW FEEDER BLADES

Gregory A. Vaka, Montville, N.J., assignor to Hewitt-Robins Incorporated, Stamford, Conn.
Filed Mar. 22, 1967, Ser. No. 625,186
7 Claims. (Cl. 198—36)



This invention relates to an actuating mechanism on a rotary plow feeder which will open or close the pivotal plow blades of the rotary plow element.

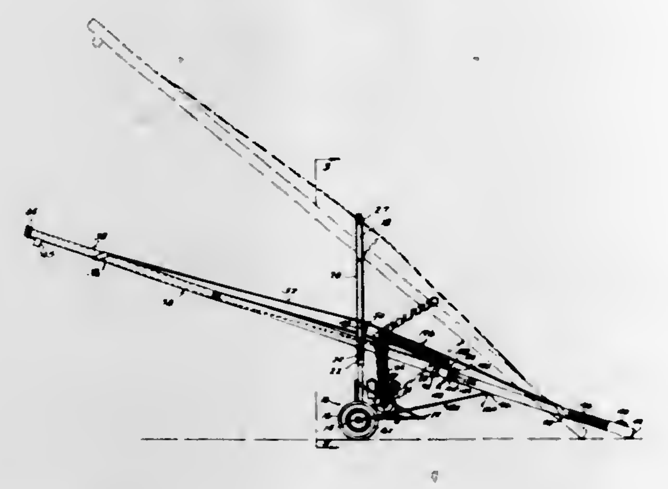
3,401,788

MOTOR MOUNT AND DRIVE ASSEMBLY FOR UPRIGHT GRAIN AUGERS

Harley H. Reese, R.F.D., Logan, Kans. 67646

Continuation of abandoned application Ser. No. 479,455, Aug. 13, 1965. This application Jan. 23, 1967, Ser. No. 621,383

4 Claims. (Cl. 198—121)



Means for driving an elongated, inclined conveyor of variable inclination from a fixed power source, said means comprising: a first pair of arms, a second pair of arms, the arms of one pair being joined to the arms of the other pair on a mutual pivot pin, said pulley forming a journal for a double pulley lying between mutually adjacent ends of both pairs of arms; the opposite ends of the arms of each pair converging to a common pivot pin and containing between them a single pulley keyed to said pin.

3,401,789

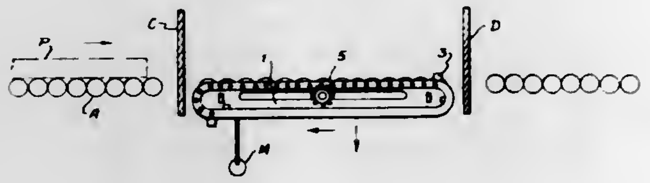
CONVEYOR FOR HEAT TREATING CHAMBERS

Rolf Schuster, Hanau am Main, Germany, assignor to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

Filed Sept. 22, 1966, Ser. No. 581,363

Claims priority, application Germany, Sept. 25, 1965, D 48,295

5 Claims. (Cl. 198—173)



Between the outer rollers of a conveyor for transferring hot workpieces is an endless conveyor roller chain carrying a thrust member. This chain can be lowered, moved longitudinally and then raised to bring the thrust member up to engage the workpiece. The chain is then driven to push the workpiece across the conveyor.

3,401,790

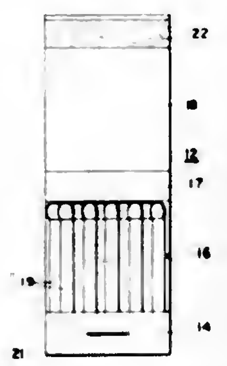
MATCH FOLDER

Henry J. Herzog, Green Township, Ohio (3907 Powner Road, Cincinnati, Ohio 45211)

Filed June 2, 1967, Ser. No. 643,239

2 Claims. (Cl. 206—29)

A match folder having a striking surface on a flap thereof, pressure sensitive adhesive for attaching the flap to a lower edge of the folder, and adhesive on a rear panel, the match folder being attached to a face of a cigarette pack by means of the adhesive on the rear panel.



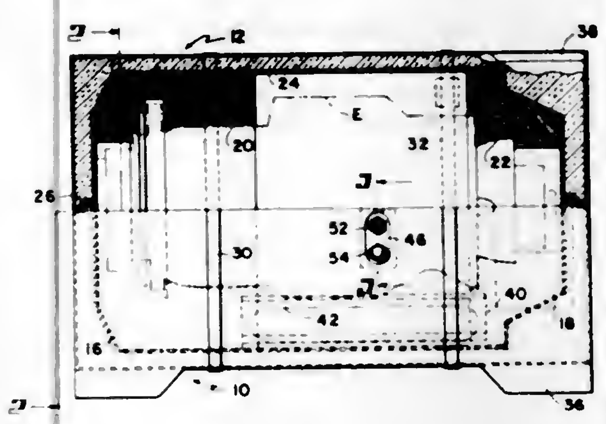
3,401,791

REUSABLE SHIPPING AND STORAGE CONTAINER

William A. Stott, Shelton, Conn., and Mitchell Carter, Jr., Titusville, N.J., assignors to Avco Corporation, Stratford, Conn., a corporation of Delaware

Filed Nov. 30, 1965, Ser. No. 510,578

6 Claims. (Cl. 206—46)



A reusable container for gas turbine engines is provided with a rigid foam plastic exterior casing, a flexible foam rubber interior casing, and a sealed moistureproof, vaporproof bag positioned between the rigid and flexible casings.

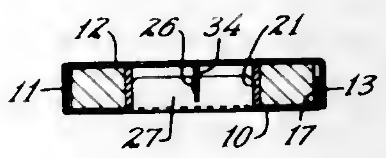
3,401,792

TAPE ROLL HOLDER

William M. Tolaas, St. Paul, Minn., assignor to Hoerner-Waldorf Corporation, St. Paul, Minn., a corporation of Minnesota

Filed July 20, 1967, Ser. No. 654,805

4 Claims. (Cl. 206—52)



A tape roll holder including a sleeve of rectangular tubular form adapted to snugly accommodate an object having a hollow core such as a roll of tape. The face panels of the sleeve overlie the ends of the tape roll. Each face panel includes a foldable tab substantially equal in width to the diameter of the hollow core, and of a length greater than one-half the axial length of the roll core but less than the full length thereof. The fold lines connecting the flaps to the face panels are in right angular relation so the flaps intersect when folded inwardly. The ends of the flaps are notched, and interengage when in roll supporting position.

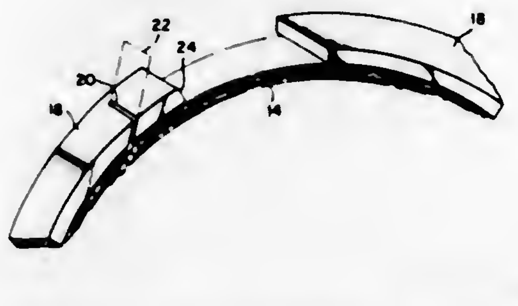
3,401,793

TAPE HOLDING DEVICE

Emil John Hess, 130 W. 10th St., New York, N.Y. 10014

Filed Mar. 23, 1965, Ser. No. 442,123

2 Claims. (Cl. 206—53)



1. A tape holding device comprising, in combination, a split resilient ring having slot means for holding one end portion of a tape, said slot means comprising at least one transverse slot extending almost across the width of said split resilient ring, the length of said slot being substantially equal to the width of the tape end portion, in which said split resilient ring comprises a translucent plastic member having a thickness greater than the thickness of said tape, said transverse slot being located near the split portion of said ring, said slot extending at an angle across the thickness of said translucent plastic member.

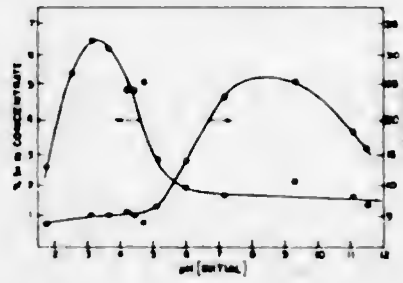
3,401,794

BENEFICIATION OF TIN-BEARING ORES

Joseph R. Farnand, Frederick W. Meadus, and Ira E. Puddington, Ottawa, Ontario, Canada, assignors to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada

Filed July 12, 1965, Ser. No. 471,073

3 Claims. (Cl. 209—5)



There is added to an aqueous suspension of crushed tin bearing ore a conditioning agent consisting of at least one of water soluble salts of fatty alcohol sulfates, petroleum sulfonates, naphthenic acids, fatty acids and their hydroxylated, halogenated and branched chain derivatives and esters thereof, arsonic acids and their aryl derivatives, oxidized and sulfonated hydrocarbon oils, fish oils, inedible tallow, tall oils, resin acids, dichloroacetic acid, chlorobenzoic acid, non-ionic compounds of fatty acids, thiourea, and aliphatic mercaptans, and a bridging liquid consisting of a petroleum base oil. The suspension is then subjected to an agitation step to condition the tin particles. Prior to or during the agitation step, the suspension is subjected to a milling step in order to grind the crushed ore to mineral release size. The suspension is further agitated to produce a bridging liquid phase loaded with the mineral and this phase is removed from the suspension for recovery of tin therefrom.

3,401,795

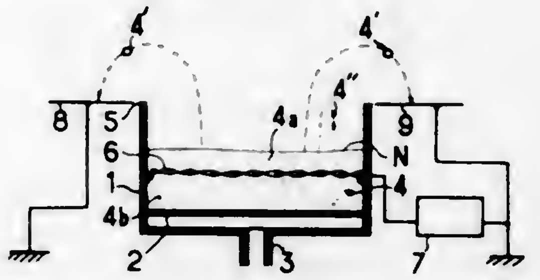
FLUIDIZED BED AND ELECTROSTATIC FIELD TYPE SEPARATOR

Pierre Jean Marie Tauveron, Grenoble, Isere, France, assignor to SAMES, Societe Anonyme de Machines Electrostatiques, Paris, France, a joint-stock company of France

Filed Mar. 17, 1965, Ser. No. 440,478

Claims priority, application France, Mar. 27, 1964, 4,669

19 Claims. (Cl. 209—12)



A mixture to be separated into its individual components is formed into a fluidized bed upon the perforate false bottom 2 of container 1. A grid electrode 6 connected to a high voltage source 7 charges to a common polarity only an uppermost layer of the fluidized bed, which predominantly contains a ligher fraction of the mixture. This charged lighter fraction is extracted along the lines of force 4′ of an upwardly directed electric field created between electrode 6 and electrodes 8–9 (FIG. 1).

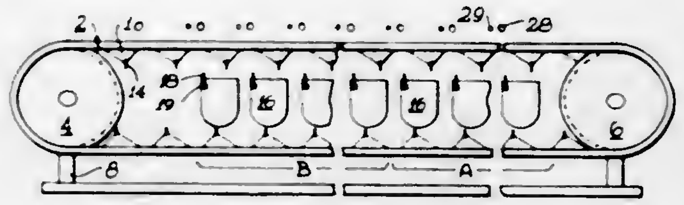
3,401,796

APPARATUS FOR SORTING ARTICLES ACCORDING TO LENGTH

Yehuda Hagiz, Hashoshan 5, Ramat Gan, Israel

Filed Feb. 13, 1967, Ser. No. 615,498

8 Claims. (Cl. 209—73)



Apparatus for sorting articles, such as cut flowers, according to length comprises a conveyor having a plurality of trays for transporting the articles to be sorted, a plurality of sort bins for receiving the articles as they are sorted, and a plurality of length sensing devices, such as photocells, disposed to sense the ends of the articles and to cause the articles to be unloaded into their respective bins. Each tray includes a vertical end wall for registering one end of the article and a pair of side walls converging toward the tray bottom throughout the complete length of the tray occupied by the article to cause the article to assume a position in the tray parallel to the tray longitudinal axis.

3,401,797

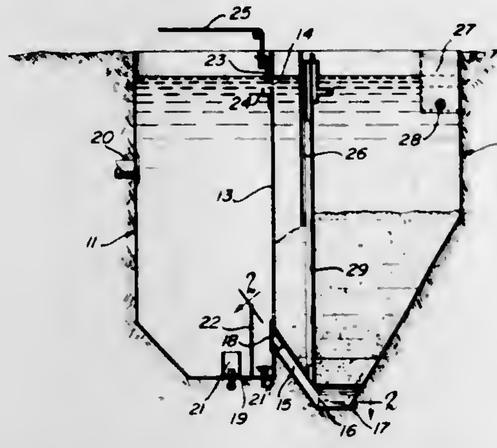
APPARATUS FOR TREATING AQUEOUS WASTE

Raymond Edmond Dufournet, 92–94 Rue Petit, Paris 19, France

Filed June 9, 1966, Ser. No. 556,368

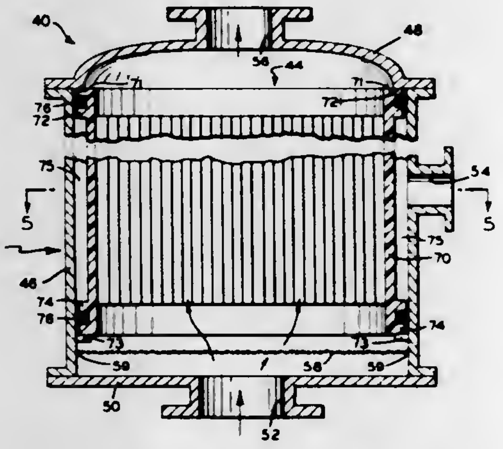
8 Claims. (Cl. 210—195)

This invention deals with apparatus for control of liquid flow in sewage treatment plants of the type having gasification and settling tanks communicating through direct liquid flow links, the first link being for transfer of mixed liquor from the upper portion of the gasification tank to the lower half of the settling chamber and the second link being an upwardly directed passage for transfer of settled sludge leading from the bottom portion of the settling tank to the gasification tank, and flow between the tanks is induced by the hydraulic head of liquid in the gasification tank, the apparatus for control of liquid flow consisting of diaphragm means insertable at the discharge end of the upwardly directed passage for transfer of settled sludge to the gasification tank whereby the cross-sectional area of the transfer port may be varied relative to the discharge opening of the upwardly directed passage so that smaller hydraulic head losses are dissipated in moving mixed liquor than are dissipated in moving sludge.



3,401,798
CYLINDRICALLY STACKED AND SPIRALLY CONFIGURED SEMI-PERMEABLE MEMBRANE LAMINATE APPARATUS

Per Nyrop, Norwalk, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Filed Jan. 4, 1965, Ser. No. 423,173
1 Claim. (Cl. 210—321)

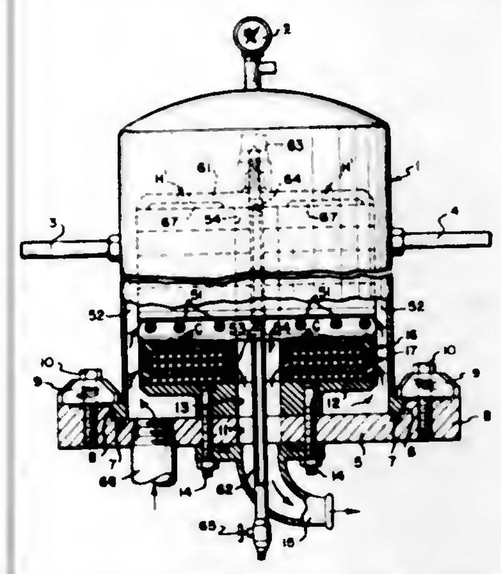


A selectively-permeable membrane separation unit having a plurality of spaced-apart laminates extending in fluid communication through a wall of the unit, each laminate including a porous fluid-conducting central support lamina with selectively-permeable membranes disposed on its respective opposite surfaces.

3,401,799
STACKED FILTER PLATES HAVING PREFILTERS AND FINAL FILTERS

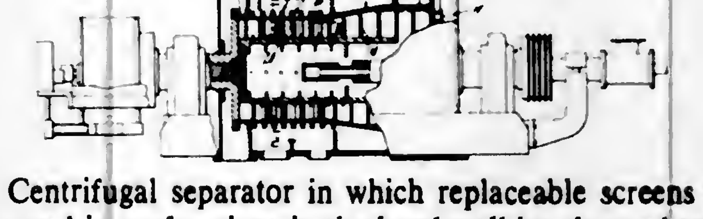
John E. Weyand and John H. Bush, Needham, and Per L. F. Feyling, Belmont, Mass., assignors to Millipore Filter Corporation, Bedford, Mass., a corporation of Massachusetts
Filed Mar. 21, 1966, Ser. No. 535,946
8 Claims. (Cl. 210—344)

A filter plate unit having an inlet-outlet filter plate and a filter transfer plate disposed in stacked relation with the inlet-outlet plate having first passageways therethrough from one edge to the side facing the transfer plate and second, distinct passageways therethrough from another edge to the opposite side thereof, and filters disposed on both sides of the inlet-outlet plate.



3,401,800
CENTRIFUGE BOWL

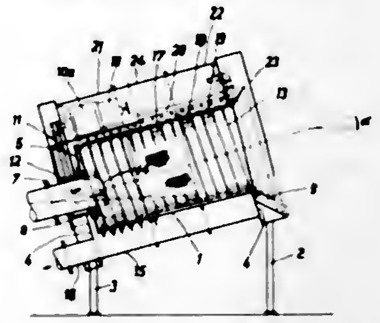
Irwin Russell Stock, Walpole, Mass., assignor to Bird Machine Company, South Walpole, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 492,562, Oct. 4, 1965. This application Aug. 31, 1967, Ser. No. 664,885
4 Claims. (Cl. 210—380)



Centrifugal separator in which replaceable screens are secured in perforations in the bowl wall by clamps having clamping surfaces that can be tightened from the exterior against flanges on the screens to press the flanges against the exterior bowl surface.

3,401,801
APPARATUS FOR SEPARATING THE LIQUID PHASE AND THE SOLID PHASE IN MIXTURES OF LIQUID MATTER AND SOLID MATTER

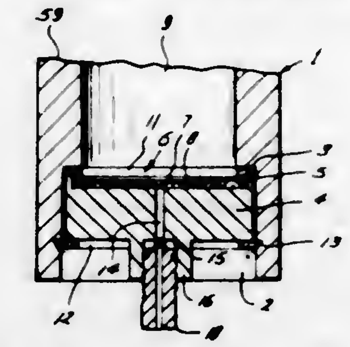
Heinrich Wedemeyer, Michelbach, and Willi Kreikenbaum, Naensen, Germany, assignors to Passavant-Werke, Michelbach, Nassau, Germany
Filed Aug. 22, 1966, Ser. No. 575,218
Claims priority, application Germany, Aug. 20, 1965, P 37,503
2 Claims. (Cl. 210—394)



Disclosed below is an improved apparatus of the above description wherein separation of liquid and solid matter is effected by means of an inclined, rotating, perforated drum including a worm conveyor rotating with the drum for transporting solid matter from one end of the drum to the other end thereof, and for lifting solid matter from the lower to the upper lateral side of the drum. The apparatus includes also auxiliary drum-cleaning means.

3,401,802
FILTER PRESS

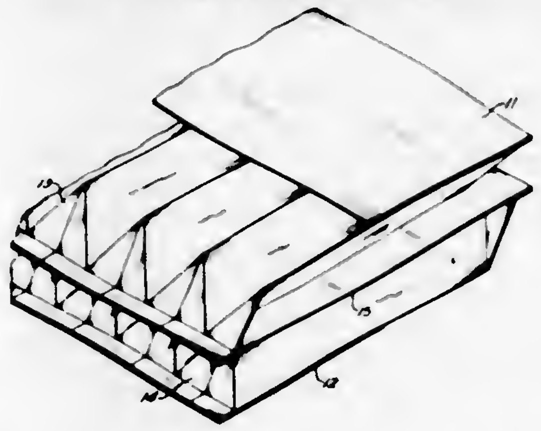
James D. Fann, 3202 Argonne,
Houston, Tex. 77006
Original application Feb. 1, 1965, Ser. No. 429,397, now Patent No. 3,371,786, dated Mar. 5, 1968. Divided and this application Aug. 8, 1967, Ser. No. 659,066
2 Claims. (Cl. 210—446)



A filter press apparatus of the type wherein filter media is held in position over an end of a filter chamber and liquid within the filter chamber is filtered outwardly from the filter chamber through the filter media, the apparatus including seal means at the filter media and receiver means for the filtrate.

3,401,803
FILTER FORMED FROM CORRUGATED AND FLAT SHEETS

Robert A. Bub, Gibsonia, Pa., assignor to Mine Safety Appliances Company, a corporation of Pennsylvania
Filed Dec. 6, 1965, Ser. No. 511,737
6 Claims. (Cl. 210—488)

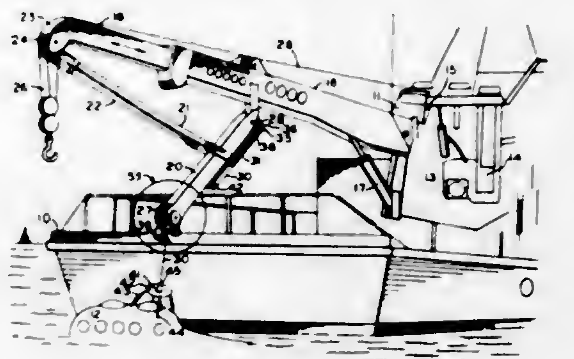


A filter body is assembled from a stack of filter units, each of which is formed from flat filtering sheets attached to opposite sides of corrugated filtering sheets. Each corrugated sheet forms between the adjoining flat sheets two groups of parallel passages, with the ends of the passages in one group closed at one edge of the sheet and the ends of the passages in the other group closed at the opposite edge of the sheet. The top and bottom flat sheets of each unit extend lengthwise of the passages only part way across the unit, and the two flat sheets between each pair of filter units overlap only along their inner marginal areas.

3,401,804
CRANE

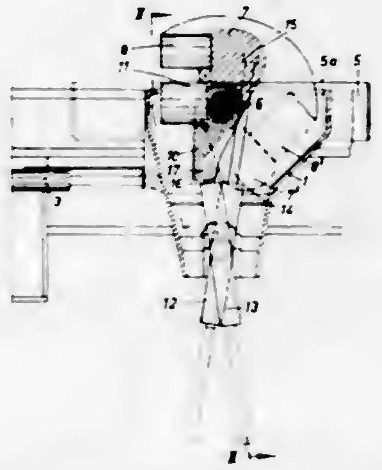
Edwin A. Link, Binghamton, N.Y., assignor to Ocean Systems, Inc., a corporation of New York
Continuation of application Ser. No. 504,265, Oct. 23, 1965. This application Sept. 7, 1967, Ser. No. 666,219
7 Claims. (Cl. 212—58)

An improvement in a crane which is particularly valuable for use aboard ships for controllably constraining the swaying of a load. The improvement consists of a gimballed load adapter and controllable braking means for constraining the movement of the adapter, the load adapter including means for guiding a painter.



3,401,805
TONGS TURNER FOR ROLLED MATERIAL

Otto Karl Buchheit, St. Ingbert (Saar), Germany, assignor to Verwaltungsgesellschaft Moeller and Neumann offene Handelsgesellschaft, St. Ingbert (Saar), Germany
Filed Aug. 22, 1966, Ser. No. 574,211
Claims priority, application Germany, Aug. 25, 1965, V 29,183
2 Claims. (Cl. 214—1)

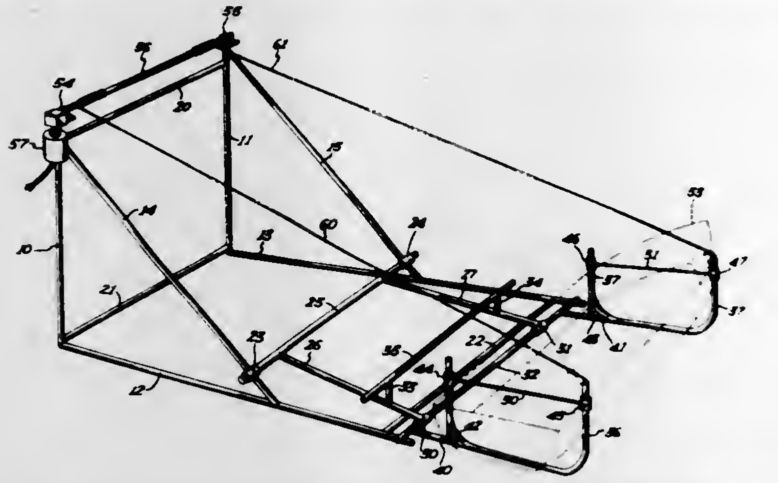


A tongs-type turner for rolled material having a pair of pivot levers pivotally mounted on a common shaft supported on a movable carriage below the upper surface of a roller table and provided with turning rollers for clamping rolled material therebetween and fluid pressure actuated cylinders pivotally mounted on the carriage for pivotally moving the levers to move the rollers in a common vertical plane between a clamping position and a position below the roller table upper surface.

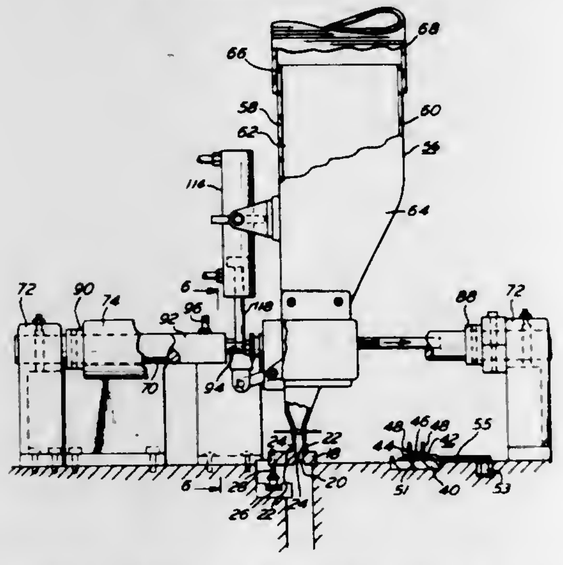
3,401,806
BOAT HANDLING DEVICE

Nic C. Schmit, Paynesville, Minn., assignor to Ranier L. Weis, Paynesville, Minn.
Filed Feb. 23, 1967, Ser. No. 617,986
6 Claims. (Cl. 214—1)

The present disclosure is directed to a frame mechanism that is foldable and is used to pick-up a boat from the water in a cradle at the end thereof through the use of cables and a winch, controlling the frame. The frame mechanism rotates about two different parallel axes and folds "upon itself" to bring the boat to a semi-inverted position. By restricting the rotational movement at each axis at a point short of having the center of gravity of the boat and frame pass through a vertical plane extended from each axis, the boat and frame mechanism will automatically "uncoil" itself and return the boat to its position of resting in the water when the cable is unwound. The frame is portable and may be removed from the water.



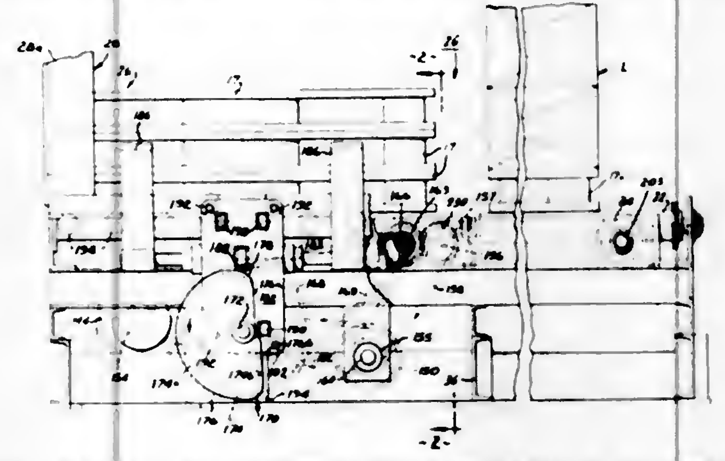
3,401,807
TRANSFER MECHANISM
Joseph F. Larkin, Holland, Pa., assignor to
IRC, Inc., Philadelphia, Pa.
Filed Mar. 21, 1967, Ser. No. 624,867
6 Claims. (Cl. 214—1)



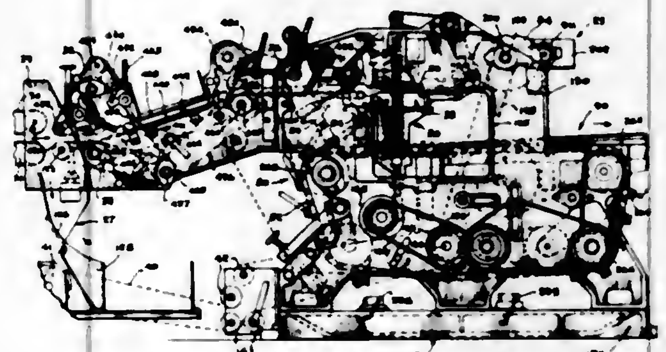
The transfer head reciprocates from a position over conveyor feeding elongated electrical components to a position directly over a rack. The transfer head has an opening in one of its walls near the pick-up nozzle and a flipper valve is pivotally mounted at the opening. Air is continuously drawn through the transfer head and the flipper valve quickly creates suction at the nozzle for rapid transfer action.

3,401,808
APPARATUS FOR STACKING PALLETS
John H. Kemp, Jr., 140 Greenoaks Drive,
Atherton, Calif. 94025
Original application Aug. 10, 1962, Ser. No. 216,100.
Divided and this application Aug. 23, 1965, Ser.
No. 481,763
3 Claims. (Cl. 214—6)

The pallet-stacking machine includes a conveyor for delivering a pallet into a storage magazine. A cam-operated, vertically movable carriage is arranged on each side of the magazine, each carriage being equipped with cam operated, horizontal pivotal support arms for engaging and supporting a stack of pallets. The machine is synchronized in operation to receive a delivered pallet beneath a stack of pallets in the magazine when the stack is supported vertically by the support arms. The stack is then set down upon the delivered pallet and the support arms pivoted to an outward position. The carriage is then lowered to a point where the arms may be pivoted inwardly to engage the delivered pallet and the carriages are then raised to elevate the stack for receiving the next pallet in the magazine.

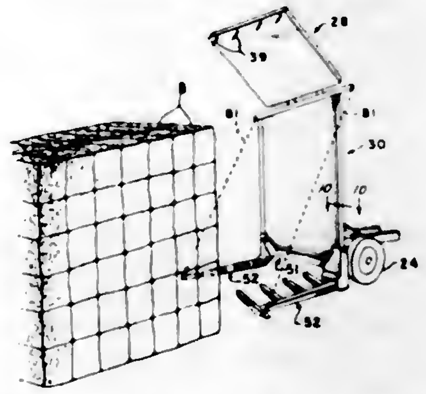


3,401,809
BOOK HANDLING APPARATUS
William B. McCain, Hinsdale, James F. Cosgrove, Western Springs, and Ronald W. Weller, Chicago, Ill., assignors to Chicago Machinery Laboratory, Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 20, 1965, Ser. No. 498,894
8 Claims. (Cl. 214—6)



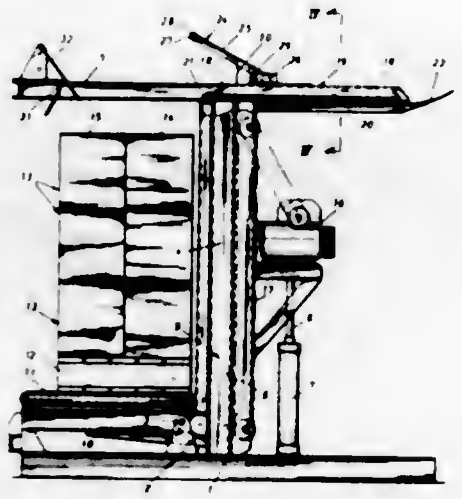
Signatures and the like are pressed while being stacked to produce a generally flat or level stack, and after a stack of predetermined nature has been achieved the stack is transferred to another station. This may be accomplished while registering the signatures to assure alignment during stacking, and in order that the stack will not be disturbed means are afforded to assure that transfer takes place at a rate slower than delivery of the signatures during stacking. Also at the time of transfer, the register means is displaced, the presser means is disabled, and a temporary support is presented to enable a new stack to be started.

3,401,810
BALE WAGON
Donald M. Grey, Fresno, Calif., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed May 9, 1966, Ser. No. 548,658
12 Claims. (Cl. 214—6)



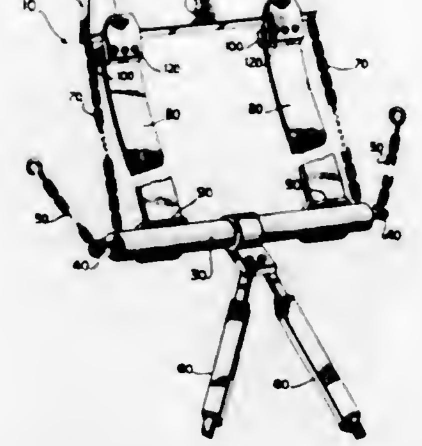
The invention is directed to a bale wagon which will vertically stack bales on the wagon, discharge the bales in stack form and will retrieve the stack of bales.

3,401,811
DEVICE FOR UNLOADING PIECES OF GOODS FROM A PALLET AND THEIR TRANSFER TO A CONVEYOR
Halvor Grüsvoll, Goteborg, Sweden, assignor of one-third each to Gustav Gilbert Magnusson and Karl Ingvar Weiner, both of Goteborg, Sweden
Filed July 20, 1967, Ser. No. 654,740
Claims priority, application Sweden, Sept. 5, 1966,
11,912/66
8 Claims. (Cl. 214—8.5)



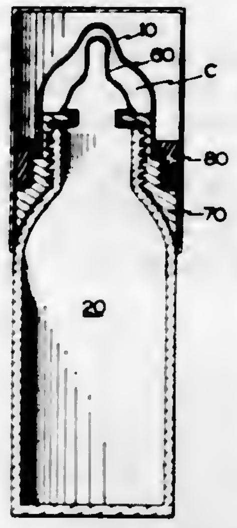
The present invention has reference to a device for unloading pieces of goods from a pallet and the transfer of the same to a conveyor, this device ensuring a careful treatment of the pieces of goods thereby that it is provided with a specially shaped means for separating the pieces of goods to be transferred.

3,401,812
LIFTING AND TOWING APPARATUS
Edward E. Wegener and Thure H. Wegener, both of Cranbury-South River Road, Cranbury, N.J. 08512
Filed Jan. 3, 1967, Ser. No. 606,812
8 Claims. (Cl. 214—86)



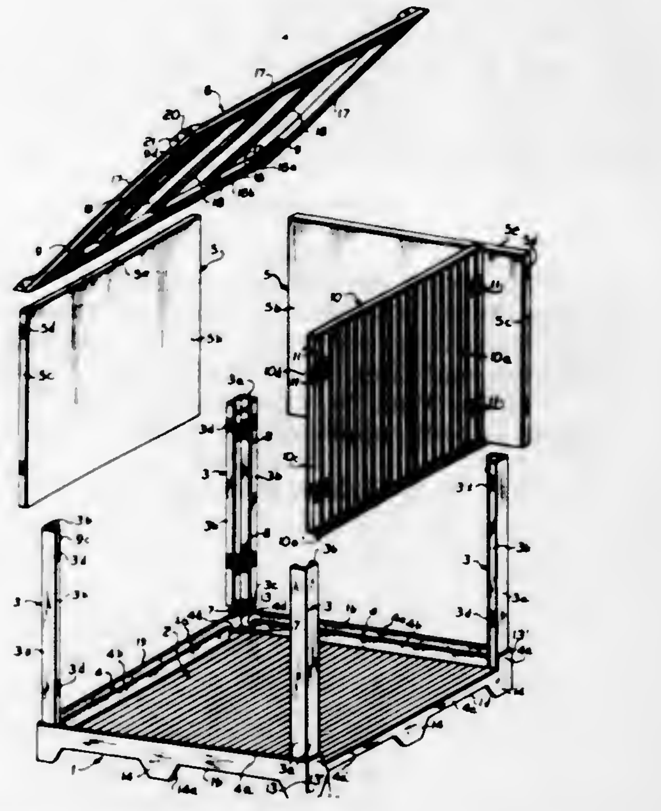
The disclosure is of vehicle towing apparatus which includes upper and lower bars between which are secured a pair of chains and a pair of flexible belts. The belts can be detached from the upper bar and they can be wrapped around or unwrapped from the lower bar so that they can be made either longer or shorter than the chains. The shorter members, the chains or belts, cradle the vehicle being raised and towed.

3,401,813
NURSING UNIT
Sigrid C. Sherwood, 21 Edgar Place,
San Francisco, Calif. 94112
Filed Feb. 13, 1967, Ser. No. 615,853
1 Claim. (Cl. 215—11)



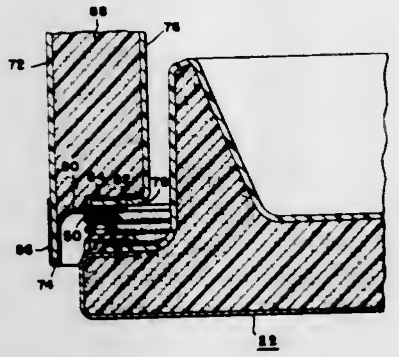
A nursing unit having a first nipple held to a bottle by a first member threadably secured to the bottle. A second nipple, encompassing the first nipple, is held to the first member by a second member threadably secured to the first member.

3,401,814
COLLAPSIBLE SHIPPING CONTAINER
Alfred Patrick Chiswell, Brooklyn, N.Y., and Michael Lombardi, Jackson, N.J., assignors to Collapsible Container Corp., Newark, N.J., a corporation of New Jersey
Filed Mar. 7, 1967, Ser. No. 621,261
15 Claims. (Cl. 220—4)



A collapsible shipping container having a base frame supporting a decking panel, which inturn releasably supports elongated corner posts positioned complementally to limited vertically extending peripheral corner walls of the base frame. The base frame includes channels for supporting side panels which abut flange members of the corner posts and which are detachably connected thereto, and which together support in complementary releasable engagement a roof frame having limited downwardly extending walls forming a roof channel. A door panel completes the assembly and is locked from the outside. When collapsed, the base frame and the roof frame complementally engage, defining a reduced space therebetween, in which the corner posts and panels are disposed.

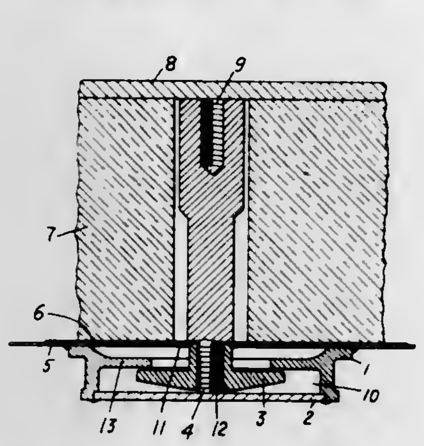
3,401,815
REFRIGERATOR CABINET TRIM
Keith K. Kesling, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Feb. 20, 1964, Ser. No. 346,149, now Patent No. 3,338,451, dated Aug. 29, 1967. Divided and this application Mar. 21, 1967, Ser. No. 624,903
5 Claims. (Cl. 220—9)



In the preferred form, the refrigerator cabinet has an outer shell with the edges at the front of the side and top walls receiving and being covered by the folded U-shaped ornamental sheet metal trim strip which has its other leg formed by a double reverse fold into a U-shaped section receiving the outturned front edges of the sheet plastic inner liner.

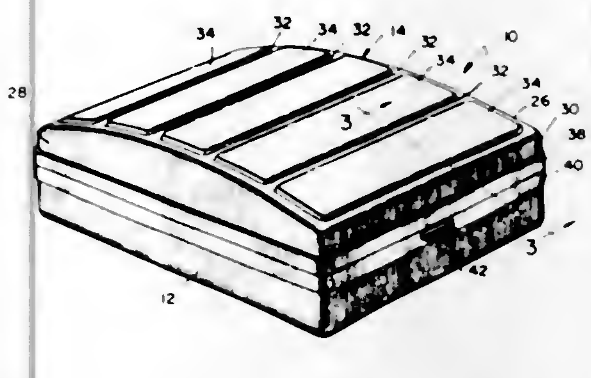
In another form, the sheet plastic inner liner is provided with an outwardly displaced offset at the front which enters into a U-shaped section formed by folding over the second time the folded edges at the top and side walls of the outer shell. These edges are provided with an additional 90° bend to form a flange at the side of the U-section which overlays the laterally extending portion at the front of the inner liner.

3,401,816
CONTAINER WITH A FASTENING DEVICE
Johannes Witt, Kiel-Dietrichsdorf, Germany, assignor to Howaldtswerke-Deutsche Werft Aktiengesellschaft Hamburg und Kiel, Kiel-Dietrichsdorf, Germany
Filed Mar. 16, 1966, Ser. No. 534,701
Claims priority, application Germany, Apr. 2, 1965, K 55,708
6 Claims. (Cl. 220—15)



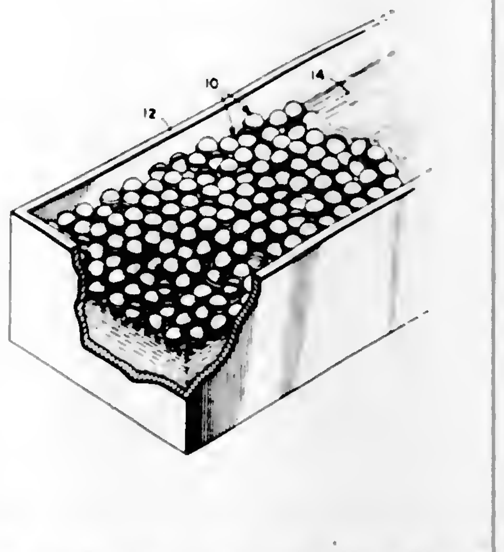
A container having a fastening device for attaching said container to a supporting structure. The fastening device comprises a cylindrical holder portion, a bolt portion composed of an elastic, insulation material and a sliding, head portion. There is an opening in the wall of the container over which the holder portion is located. The holder portion includes an inner, annular flange forming an opening which is registered with the opening in the wall of the container. The bolt portion of the fastening device includes a securing means at one end for a fixed attachment to a supporting structure.

3,401,817
DISPLAY BOX
Richard C. J. Palson, Medfield, Mass., assignor to International Packaging Corporation, Central Falls, R.I., a corporation of Rhode Island
Filed May 1, 1967, Ser. No. 635,203
7 Claims. (Cl. 220—24)



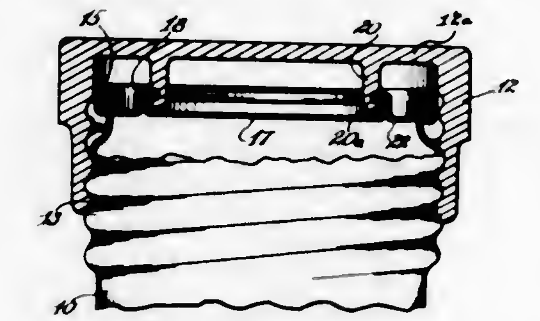
A display box having a top section that includes an ornamental covering thereon that is formed of a plastic material, the ornamental covering having surface impressions formed therein prior to the mounting thereof on the display box, wherein the surface impressions as formed in the ornamental covering define a design for the upper surface of the display box.

3,401,818
OPEN TOP TANK AND COVERING FOR THE CONTENTS THEREOF
Reinhold Hagen, Siegburg, Rhineland, Germany, assignor to Allplas A.G., Zug, Switzerland, a Swiss body corporate
Continuation of application Ser. No. 379,962, July 2, 1964. This application May 15, 1967, Ser. No. 640,438
Claims priority, application Great Britain, July 15, 1963, 27,953/63
5 Claims. (Cl. 220—26)



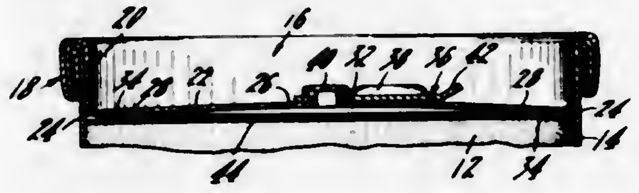
The covering of an open tank containing liquid utilizing a plurality of spheres which are floated on the surface of the liquid to substantially cover same. A circumferential bead, or the like, is formed on each of the spheres to prevent rotation of the spheres in the liquid.

3,401,819
CONTAINER OPENING CAPS
Joseph P. Salamone, 1405 Wentworth Ave., Chicago Heights, Ill. 60411
Filed Mar. 22, 1967, Ser. No. 625,238
5 Claims. (Cl. 220—48)



A container which receives a screw cap at the top. Within the cap the container has a top sealed to the container after the same has been filled. Such top is formed in a manner to be opened as the cap is screwed down. The top formation is a circular scoring line around the inner portion, the material of the top being raised along the scoring line with an annular L-flage. The cap head depends with a pair of diametrically-positioned hooks which are spaced to lie above the L-flange and yieldable to snap into engagement with the bill thereof when the cap is mounted on the container with downpressure. A turn of the cap in the downscrewing direction causes the hooks to impinge on the L-flange and break the inner portion of the container into the same from the scoring circle. Such portion therefore become separable with the cap when the latter is unscrewed, and may be removed from the cap if the latter is returned to the container as a closure.

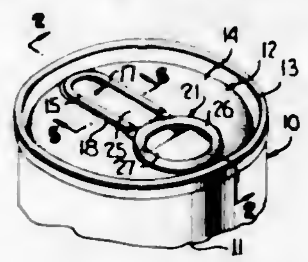
3,401,820
TEAR STRIP OPENER WITH VENTING MEANS
William Edward Taylor, Fairfield, Conn., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed June 26, 1964, Ser. No. 378,142
17 Claims. (Cl. 220—54)



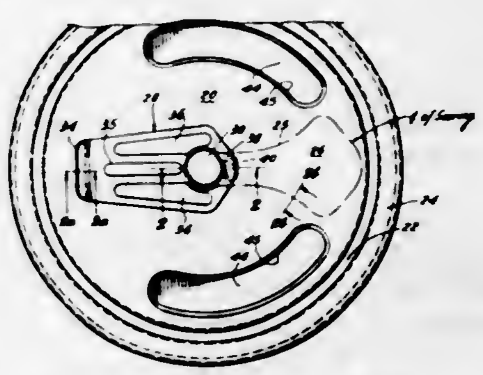
1. In a container for a gas generating granular product:
a top end member having a removable section therein, and
a gas permeable membrane disposed within said container adjacent the point of initial opening of said removable section, said membrane being so constructed as to prevent the passage of the granular product therethrough.

3,401,821
CONTAINER HAVING TEAR-OUT OPENING MEANS
John S. Bozek, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed May 3, 1966, Ser. No. 547,239
14 Claims. (Cl. 220—54)

This disclosure relates to an easy opening container panel construction wherein an opening is provided and an insert, preferably formed of plastic, is sealed to the panel in a position to close the opening. The portion of the panel surrounding the opening is formed to define a seat in which the insert is readily positioned with the seat cooperating to define a tear out portion of the insert. The insert may have either an integral or a separately formed pull tab.

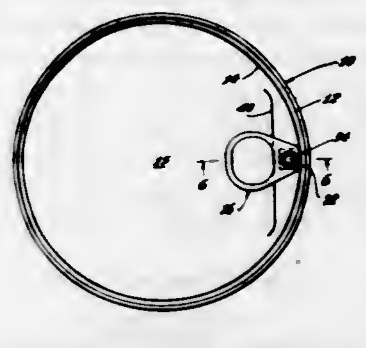


3,401,822
CONTAINER OPENING DEVICES
Ermal C. Fraze, 355 W. Stroop Road, Dayton, Ohio 45429
Continuation-in-part of application Ser. No. 348,150, Feb. 28, 1964. This application May 16, 1966, Ser. No. 556,531
14 Claims. (Cl. 220—54)



This disclosure describes an easy opening container wall in which a line of weakness in the container wall defines a tear strip having a leading end and a tab is joined to the leading end of the tear strip by a rivet formed integrally with the material of the tear strip. The tab has an aperture therein through which the rivet protrudes and the sheet material of the tab surrounding the rivet is offset downwardly toward the leading end of the tear strip.

3,401,823
EASY OPEN CAN END
Ermal C. Fraze, 355 W. Stroop Road, Dayton, Ohio 45429
Filed June 7, 1967, Ser. No. 644,145
11 Claims. (Cl. 220—54)

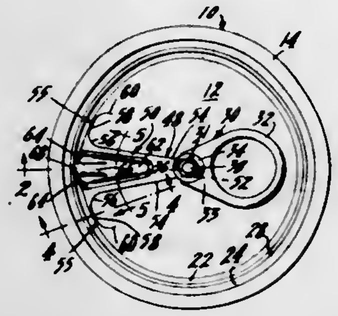


A tab for manual severance of a tear-panel of a can lid is divided into a main upper lever section and a lower folded-under section with the fold of the metal forming the forward working end of the lever section. The upper lever section is lanced to form a rearwardly extending tongue overlying the folded-under section and the tab is attached to the tear-panel by a rivet that extends through both the tongue and the folded-under section of the tab.

3,401,824
FULL-OPEN CAN

John Wilson Rouse, Ramsey, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Sept. 7, 1967, Ser. No. 666,030
10 Claims. (Cl. 220—54)

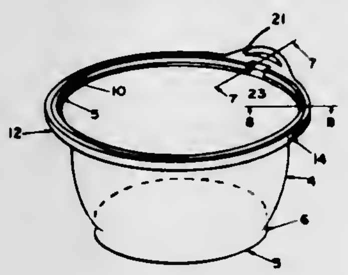


A can end having a primary score defining a removable section therein and an opening tab which is secured to the removable section by a rivet which is spaced radially inwardly of the primary score is formed with an ancillary score located closely adjacent the rivet to permit the portion of the end which contains the rivet to be broken away from the balance of the end when the opening tab is lifted to facilitate manipulation of the opening tab to exert a downward pressure against the removable section immediately adjacent the primary score to effect rupture of the primary score.

3,401,825
PACKAGE FOR SOFT MELTABLE SOLIDS

Hugh R. Weiss, Montclair, N.J., assignor to The Pantasote Company of New York, Inc., New York, N.Y., a corporation of New York

Filed Aug. 14, 1967, Ser. No. 660,459
5 Claims. (Cl. 220—60)



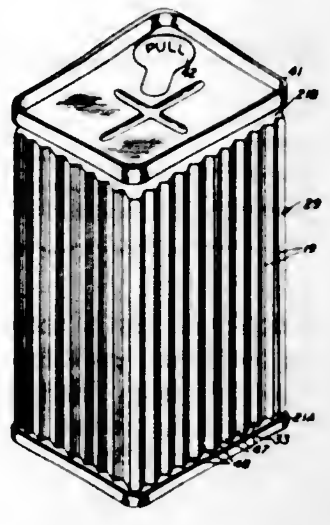
A plastic container for margarine and the like nestable in the empty state and stackable and interlockable in the filled state has a tub portion with outwardly inclined sidewalls with a peripheral seat at the upper edge portions thereof for receiving a cover. The said seat is formed by an inwardly inclined wall and an outwardly extending flange. The cover has a plate-like central portion that has, disposed about its periphery, a hollow-rib groove arrangement with an outer inclined face to be received in said seat. The rib-groove arrangement forms a spring that permits a temporary reduction in size of said cover so it can be sprung into the opening in said seat to effect a seal therewith, even though said cover is larger than said seat.

3,401,826
PACKAGING SYSTEM

Myron L. Anthony, La Grange, Ill., assignor of twenty-five percent each to George W. Butler and Gladys A. Butler, both of River Forest, and five percent to Thomas E. Dorn, Clarendon Hills, Ill.

Filed Jan. 5, 1965, Ser. No. 423,497
13 Claims. (Cl. 220—72)

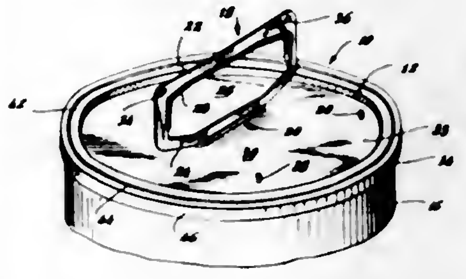
High-strength thin-wall metal can blanks and cans, and methods of forming and sealing the can blanks and cans. The can blanks, in one embodiment, are fabricated in substantially completely flattened tubular form with either longitudinal or transverse flat-faced corrugations throughout most of the surface area of the blank. The longitudinal edges of the can blanks terminate in relatively flat reverse bends. For longitudinally corrugated cans, the blanks have an even number of corrugation facets and an odd integral number of pairs of facets to permit expansion of the blank into a rectangular can body symmetrical about a transverse longitudinal plane. Commercial messages or other identification data are printed or otherwise reproduced on the corrugations, in registry therewith, to display messages of variant form depending on the angle from which the can is viewed. The longitudinal ends of the cans are left free of corrugations to permit effective hermetic sealing.



3,401,827
REMOVABLE CONTAINER LID WITH INTEGRAL FOLDING HANDLE

William A. Messina, Stamford, Conn., assignor to Atlantic Plastics, Inc., Stamford, Conn.

Filed July 3, 1967, Ser. No. 650,831
3 Claims. (Cl. 220—94)



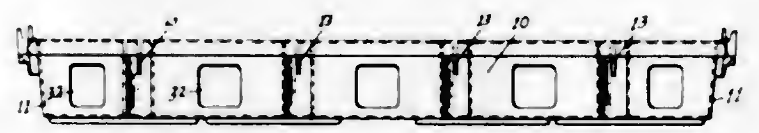
Disclosed herein is an integrally molded, removable plastic lid for containers such as vacuum sealed containers for coffee, shortening or the like. A handle is integrally molded with the lid to aid in handling heavy or bulky containers, and a flexible hinge permits the handle to fold flat against the lid to facilitate container stacking; apertures on the handle frictionally engage with protrusions on the lid top to secure the handle in its flat, folded condition. Means are also provided to cushion the user's hand from sharp plastic edges of the handle.

3,401,828
BAKERY TRAY OR THE LIKE

Kenneth R. Bockenstette, Cincinnati, Ohio, assignor to MS Industries, Inc., Cincinnati, Ohio, a corporation of Ohio

Filed May 19, 1967, Ser. No. 639,795
7 Claims. (Cl. 220—97)

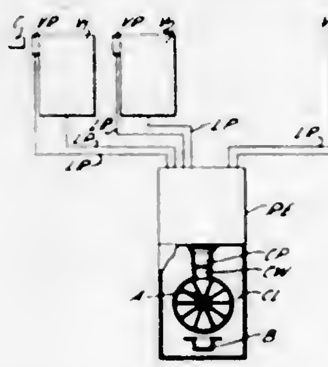
A bakery tray and the like of rectangular configuration having a bottom and sloping side walls such that a plurality of like trays may be nested one within the other and capable of stacking in inverted position on top of a like tray to serve as a cover therefor. Stacking elements are provided on the bottom such that a tray in obverse position may be stacked on top of the bottom of a like tray which is in inverted position serving as a cover. Trays of one-half size may be covered by a single tray of full size and vice versa.



3,401,829
CARD SORTING APPARATUS

Yukio Mizuta, 68–101 Ninomaru-cho, Mukojima, Fushimi-ku; Takeo Asada, 22–5 Taikoyama, Okukaiinji, Nagaoka-cho, Otokuni-gun; Hisao Tanaka, 10 Shimobanba, Kotari, Nagaoka-cho, Otokuni-gun; and Shoji Morishita, 57–9 Ishizuka-cho, Hinooka, Higashiyama-ku, all of Kyoto, Japan

Filed Dec. 27, 1966, Ser. No. 604,906
Claims priority, application Japan, Dec. 29, 1965, 40/81,870
3 Claims. (Cl. 221—2)



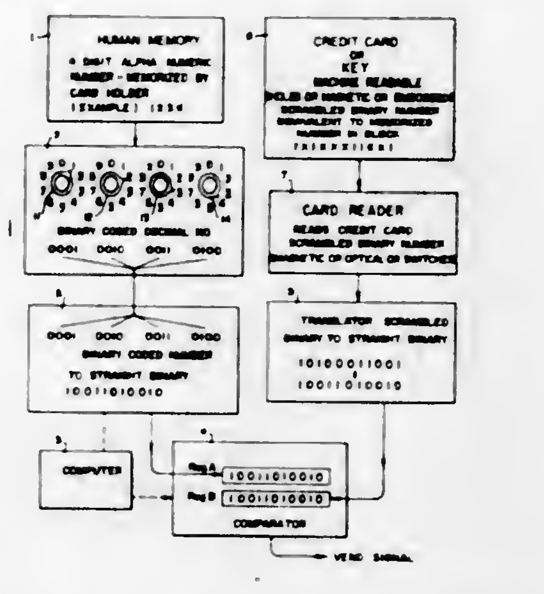
A system as shown in FIGURE 1 for automatically sorting credit card operated vending machine sales record cards. The customer's credit card identification number is read by the vending machine which transmits to a central recording device a signal for the customer group identification number and another signal indicating the price of the vended product or service. The recording device prints this information on record cards which are conveyed to an exit. A receptacle divided into customer group compartments includes a position signal generator for indicating which particular group compartment is in position to receive record cards from the exit. A drive system is controlled by means responsive to the group identification and position signals to position the specific compartment for receiving record cards of a specific customer group in registry with the exit.

3,401,830
VENDING MACHINE FOR CREDIT CARD PURCHASING

Harry A. Mathews, Walnut Creek, Calif., assignor to San Francisco Bay Area Rapid Transit District, San Francisco, Calif., a rapid transit district of California

Filed Jan. 19, 1967, Ser. No. 610,256
10 Claims. (Cl. 221—2)

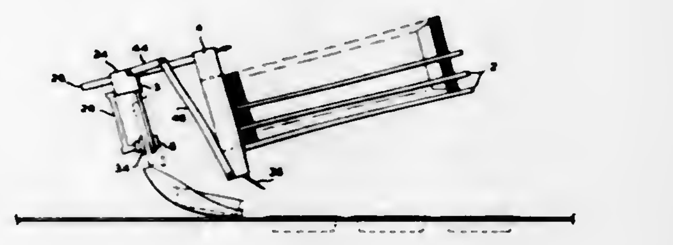
A vending machine for credit-card purchasing. The credit card has a scrambled or otherwise non-visually-decipherable code number, and the machine reads and unscrambles that code number. The user also manually introduces into the machine a memorized second code number, which may be identical to the first one or having some relationship to it. The machine compares said first and second code numbers and enables delivery of an article from said machine when said code numbers coincide or correspond, the machine also records billing confirmation from the credit card. A thirty-two digit system with five binary bits for each digit place thereof is preferably used for the code numbers.



3,401,831
DENESTER

William T. Saurenmann, deceased, late of Whittier, Calif., by Margaret P. Saurenmann, executrix, Whittier, Calif., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed May 11, 1966, Ser. No. 549,374
9 Claims. (Cl. 221—36)



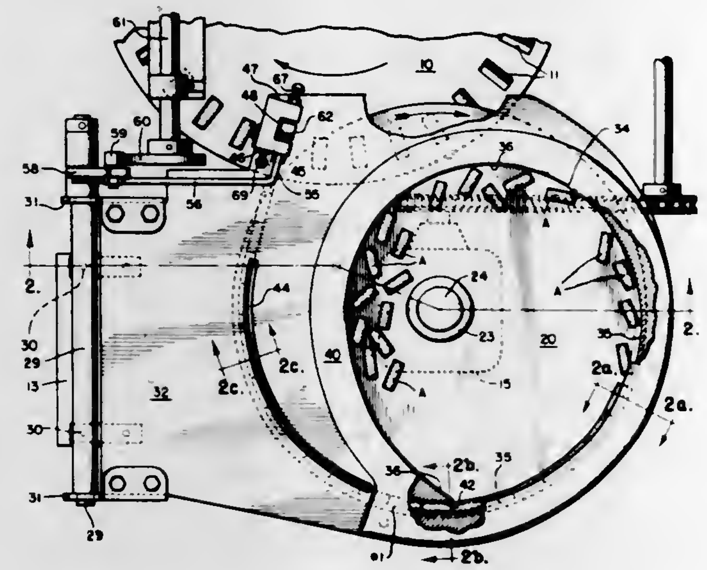
A stack of open end up, flexible, thermoformed, thermoplastic, dish-like containers having an outwardly extending flange around the top of each container is denested by the application of a vacuum to the flange of the lowermost container to peel the flange away from the flange of the next container, air is blown between the peeled away flange and the adjacent flange to break the vacuum between the two containers, and the application of a vacuum cup to the bottom of the lowermost container to pull the lowermost container from the stack. Air jets can be used to push the detached container along a chute and into a pocket of a conveyor.

3,401,832
ARTICLE SORTING AND FEEDING APPARATUS

George V. Cremieux, Elkhart, Ind., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 5, 1966, Ser. No. 599,197
10 Claims. (Cl. 221—175)

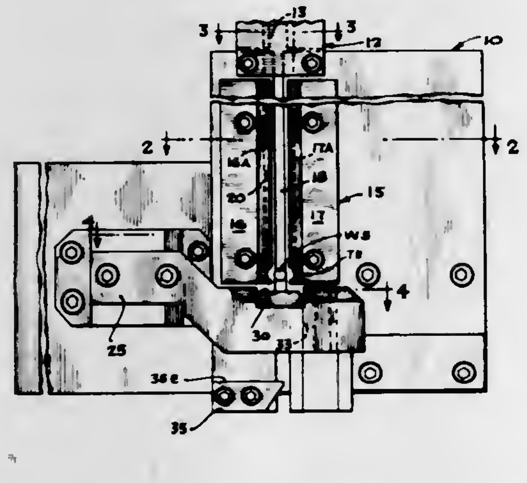
Article sorting and feeding apparatus in which a rotating turntable drives articles against a retaining wall in non-concentric relation to the axis of rotation of the turntable so as to cause said articles to enter a guideway leading to a discharge station while the articles are supported on a portion of the turntable travelling outside the confines of said wall and having means for controlling



release of said articles, one at a time, upon arrival at said discharge station.

3,401,833
MACHINE TOOLS

Adolph V. Klancnik, 1020 Glenview Road,
Glenview, Ill. 60025
Filed July 8, 1966, Ser. No. 563,894
1 Claim. (Cl. 221—268)

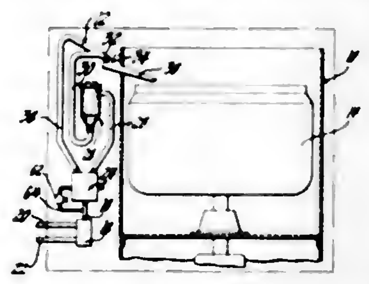


A reciprocal work piece supporting and work piece releasing jaw in a machine tool is so configured and operated as to afford the following functions: In its supporting position, a supporting shoulder on the jaw supports the lowermost work piece in a guideway, in position to be worked on; in its releasing position a gate or slot in the jaw presents the finished work piece to a stop, while the finished work piece at the same time supports the next work piece; and as the jaw returns from its releasing to its supporting position, the finished work piece is moved off the stop with the next work piece eventually reposing on the support shoulder of the jaw.

3,401,834
LAUNDRY CONDITIONER DISPENSER SYSTEM

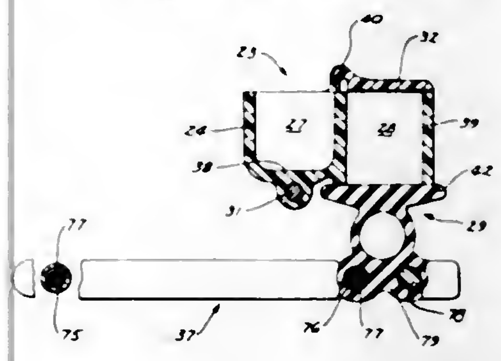
Donald C. Siegla, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 17, 1967, Ser. No. 631,461
1 Claim. (Cl. 222—62)

In preferred form, a system for directing a conditioning agent into a washer apparatus including a fluid amplifier having its inlet connected to the supply conduit of the laundry apparatus and a first outlet directly connected to the air gap inlet to the laundry apparatus and a second outlet connected through fluid dispensing means and thence to the air gap inlet; means responsive to a washer controller to produce a power jet controlling pressure differential within the amplifier to divert flow through one or the other of the outlets of the amplifier without any mechanical means being movably interposed in the fluid flowing through the supply conduit to the apparatus.



3,401,835
DISPENSER FOR A WASHING APPARATUS

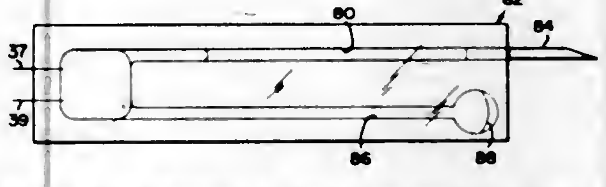
William H. Stouder, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed May 12, 1967, Ser. No. 643,006
11 Claims. (Cl. 222—70)



A dispenser for a dishwasher in which a multicompartment additive container includes a portion pivotally mounted within the washing chamber and wherein one compartment is openable at the top and bottom. The material from a first compartment is dispensed into the chamber by spray action of the washing fluid while the container is in a first position. The material from a second compartment is dispensed into the chamber upon pivotal movement of the container to a second position in which the second compartment is open at both top and bottom ends.

3,401,836
COULOMETRIC DISPENSING DEVICE

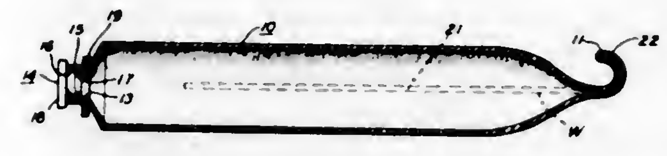
Lester Corrsin, 18 Wurts Ave.,
New Paltz, N.Y. 12561
Original application Oct. 22, 1965, Ser. No. 502,066, now Patent No. 3,316,376, dated Apr. 25, 1967. Divided and this application Nov. 17, 1966, Ser. No. 595,237
1 Claim. (Cl. 222—76)



A coulometric dispensing device including an electrolytic cell for electrolytically transferring mercury from a reservoir to an elongated passageway, typically a capillary. The end of the passageway opposite from the cell is open to receive a material to be dispensed. As the electrolysis progresses, mercury transferred through the cell into the passageway forces the material out of the open end.

3,401,837
SELF-COLLAPSING CONTAINER

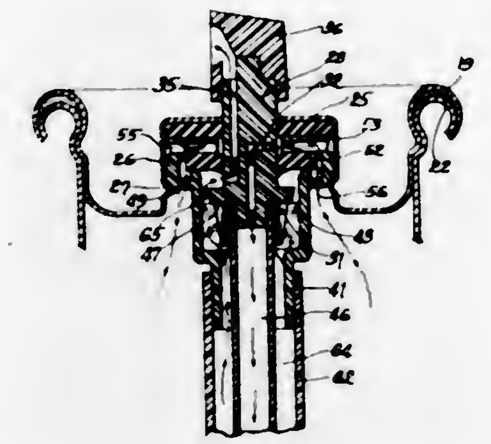
John A. Wiedeman, 11520 SW. 43rd Terrace,
Miami, Fla. 33165
Filed Oct. 18, 1966, Ser. No. 587,571
2 Claims. (Cl. 222—99)



A self-collapsing thermoplastic container is constructed in such a manner that the walls thereof exert an internal pressure upon the contents in such a manner that upon opening of the discharge outlet the content material may be disposed.

3,401,838
AEROSOL DISPENSER CONSTRUCTION

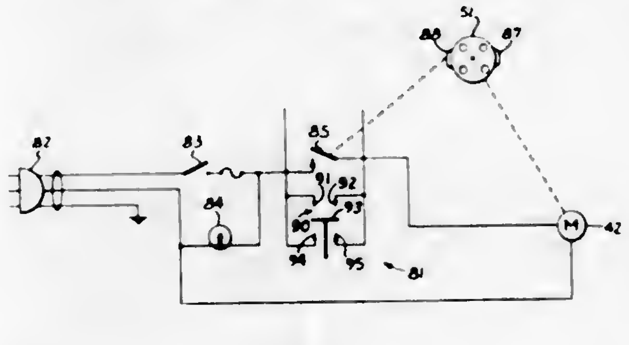
Harvey Hanson, Jr., Summit, Ill., assignor to Valve Corporation of America, a corporation of Delaware
Filed June 9, 1967, Ser. No. 644,982
11 Claims. (Cl. 222—136)



The disclosure illustrates and describes a dispensing device having an outer receptacle and an inner pressurized receptacle, which upon actuation of the valve assembly discharges the contents of the inner receptacle into the outer receptacle for dispensing to atmosphere from the outer receptacle through the valve assembly. The outer receptacle contains a flowable material which is relatively incompatible during periods of extended contact with the contents of the inner pressurized receptacle.

3,401,839
LIQUID SAMPLING AND DISPENSING DEVICE

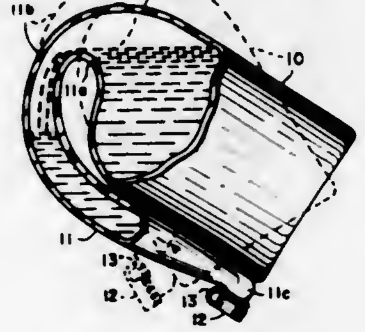
Theodore Christie, Chicago, Ill., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed May 29, 1967, Ser. No. 641,760
8 Claims. (Cl. 222—137)



An automatic diluter having a pair of motor driven plunger-type syringes for picking up precisely predetermined quantities of sample and diluent from separate supplies and for dispensing these quantities in common to form a diluted sample. Both plungers are driven by a single unidirectional electrical motor which is coupled to the plungers through a motion converting mechanism which changes the rotary output of the motor to the reciprocating motion necessary for plunger operation. Respective adjustable lost motion connections are provided between the motor and each of the plungers so that the stroke length of each of the plungers may be selected according to the respective portions of sample and diluent desired in the diluted sample. A control switch is provided in the motor supply circuit and is operated by a pair of camming surfaces which are rotated by the motor to interrupt motor operation when the plungers are at each limit of their respective reciprocations in order to automatically provide a hiatus between the pick-up and dispensing operations. A manually operable mode selector switch is connected in parallel with the control switch and has one position for interrupted operation in which it momentarily closes the motor supply circuit to permit the control switch to reclose and another position for continuous operation in which it maintains the motor supply circuit closed to override the operation of the control switch.

3,401,840
BLOW MOLD DISPENSING CONTAINER

John A. McConnell and Everett Wayne Williamson, Newark, Calif., assignors to McConnell, Inc., Newark, Calif., a corporation of California
Filed Mar. 27, 1967, Ser. No. 626,294
1 Claim. (Cl. 222—158)

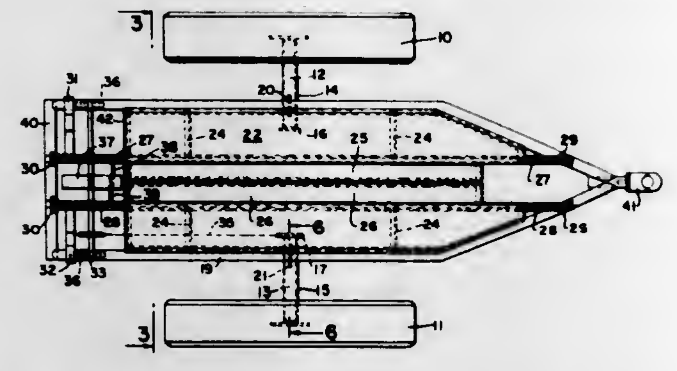


A liquid dispensing container which is provided with a liquid measuring tube that is attached to the top of the container so that the interior of the tube communicates with the interior of the container. The top part of the tube is of generally arcuate shape and this part is arched over the top of the container and spaced therefrom to provide a handle for the container. The bottom part of the tube is positioned parallel to the side of the container and terminates in an elbow which is substantially at the level of the bottom of the container and which is provided with a mouth having a snap-on closure attached thereto, said mouth facing away from the container. The tube is adapted to be filled with liquid to different levels by tilting the container so that liquid flows into the tube over a barrier whereby the tube is adapted to be filled with liquid to different calibrated levels.

3,401,841
SUGAR CANE PLANTING MACHINE

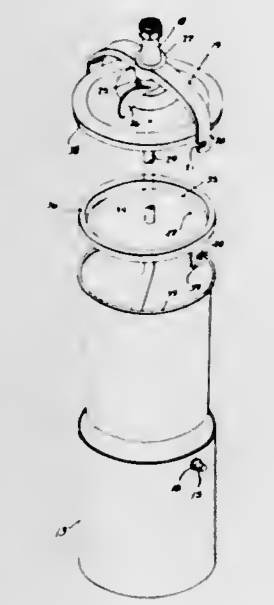
Denis A. Thibodeaux, Rte. 2, Napoleonville, La. 70390
Filed Feb. 8, 1966, Ser. No. 525,886
2 Claims. (Cl. 222—177)

The disclosure of this invention pertains to an apparatus operative to deposit sugar cane in furrows in lengthwise substantially horizontal position through trap doors actuated to open and closed positions in definite time sequence influenced by the rotation of a ground wheel of the apparatus.



3,401,842
COMBINATION PAINT CUP AND FILLER FOR SPRAY GUNS

Lester G. Morrison, West Palm Beach, Fla., assignor to Betty L. Morrison, West Palm Beach, Fla.
Filed Nov. 28, 1966, Ser. No. 597,470
8 Claims. (Cl. 222—181)

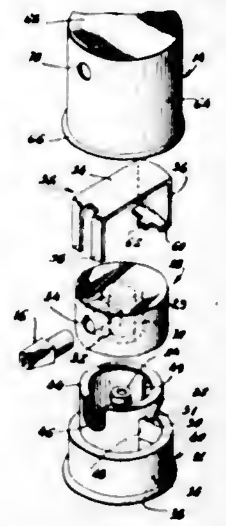


Paint receptacle for a spraying assembly employing a disposable inner paint cup. The receptacle has a clamping cover provided with an outlet conduit, the cover exerting sealing pressure on the peripheral channel-shaped rim of an inner cover on the inner paint cup. The clamping means for the covers includes a bail having notched arms and diametrically-opposite pins on the receptacle engaged by the notched arms. The inner cover has diametrically-opposite notched depending tabs lockingly-engageable with the pins to ensure correct positioning of the inner cover on the rim of the inner cup.

3,401,843
DECORATIVE DISPENSING CAP ASSEMBLY

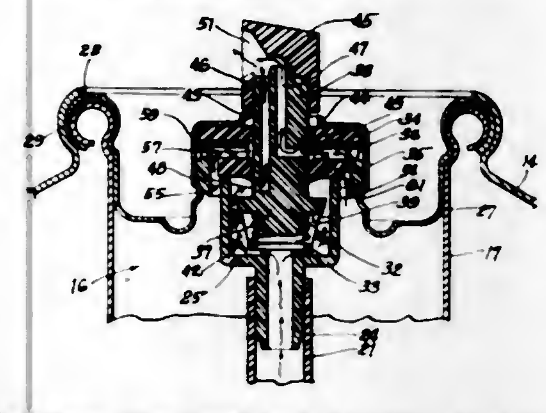
Warren S. Ahrens, Milford, and Daniel A. Viera, Monroe, Conn., assignors to The Bridgeport Metal Goods Manufacturing Company, Bridgeport, Conn., a corporation of Connecticut
Continuation-in-part of abandoned application Ser. No. 578,537, Sept. 12, 1966. This application Oct. 31, 1967, Ser. No. 691,080
16 Claims. (Cl. 222—182)

A decorative locking type dispensing cap assembly having a rotatable and reciprocable pump head securable on a pumping plunger, to dispense a solution from a container and a stationary keying and locking member mounted on the container and operationally connected to the pump head to allow the pump head to be reciprocated when in one angular position relative to the container and to be securely locked in an inoperative second angular position.



3,401,844
LEAKPROOF AEROSOL CONSTRUCTION

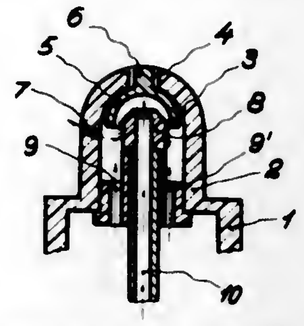
Harvey Hanson, Jr., Summit, Ill., assignor to Valve Corporation of America, a corporation of Delaware
Filed June 9, 1967, Ser. No. 644,983
9 Claims. (Cl. 222—193)



The disclosure illustrates and describes an aerosol container having an inner receptacle for a pressurized propellant and an outer receptacle for a flowable material to be dispensed and having a valve assembly with separate passageways for the propellant and for the flowable material to be dispensed. Two sealing gaskets encircle the valve stem to seal the entrance to each passageway when the valve assembly is closed. When the valve stem is depressed, the entrances are opened for simultaneous dispensing.

3,401,845
DISPENSING CAP FOR ATOMIZERS

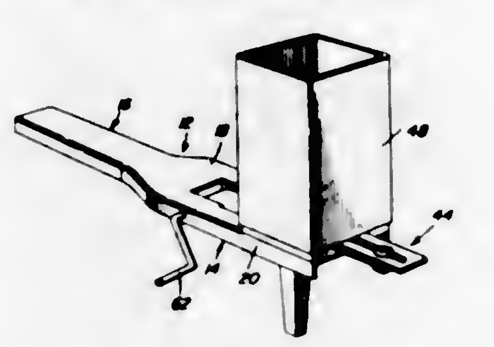
José Cervelló Bach, Barcelona, Spain, assignor to Industrias Cervelló, S.A., Barcelona, Spain
Filed July 22, 1966, Ser. No. 567,177
Claims priority, application Spain, July 23, 1965, 115,321
6 Claims. (Cl. 222—211)



This invention relates to a novel dispensing cap particularly adapted for use with atomizers of the type having collapsible walls, and is concerned primarily with means for providing rapid recovery or recuperation of the distorted atomizer walls caused by manual squeezing during an atomizing or dispensing operation.

3,401,846
SEEDER WITH DISCHARGE ASSISTANT HAVING DISCHARGE VOLUME VARYING MEANS

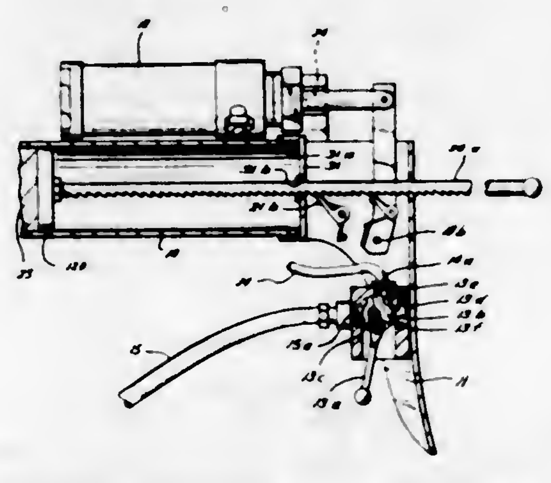
Bennie F. Delaney, Rte. 2, Box 42, Rusk, Tex. 75785
Filed Mar. 13, 1967, Ser. No. 622,711
5 Claims. (Cl. 222—282)



A hand held and manipulated seeder wherein an even discharge of seed in predetermined amounts is effected through a continuous reciprocation of a flow discharge regulating member between a seed containing hopper and a discharge spout. The reciprocation of the discharge regulating member is effected through a continuous rotational driving of a shaft which incorporates a crank for a translation of the rotation of the shaft into a reciprocal driving of the discharge regulating member.

3,401,847
PNEUMATICALLY POWERED APPLICATOR

Kenneth G. Downing, Houston, Tex., assignor to Thermon Manufacturing Company, a corporation of Texas
Filed Apr. 3, 1967, Ser. No. 628,079
6 Claims. (Cl. 222—327)



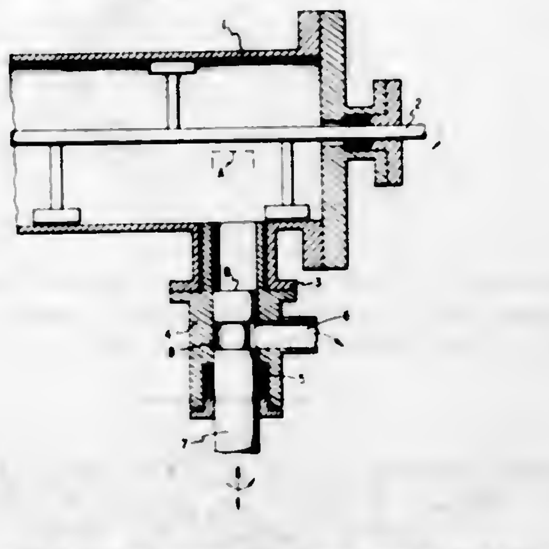
A pneumatically powered applicator having a manually activated valve to utilize compressed air to successfully move an applicator plunger or piston to extrude the contents of the cylinder through an output nozzle.

3,401,848
APPARATUS FOR DISCHARGING FLUID MATERIAL FROM A CONTAINER

Hans Kletschke, Essen-Kupferdreh, Germany, assignor to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany
Filed June 2, 1966, Ser. No. 554,848
Claims priority, application Germany, June 5, 1965, K 56,321
5 Claims. (Cl. 222—363)

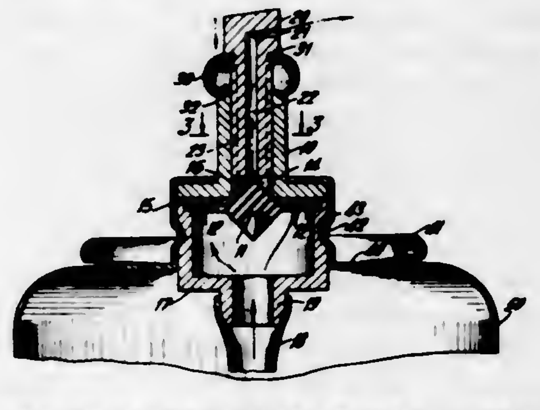
This invention relates to improvements in apparatus for discharging material in fluid form from a container. By "material in fluid form" is meant a fluid or a finely divided solid or a mixture thereof.

The apparatus comprises a reciprocatable piston, which partially rotates during reciprocation, and which has a recessed portion protruding into a container when the piston is at the top of its stroke and being aligned with an outlet in a cylinder, in which the piston reciprocates, when the piston is at the bottom of its stroke. Material is fed from the container into the recess, and from the recess into the outlet, by the action of pressure prevailing in the container or, in the absence of pressure in the container, by the action of gravity.



3,401,849
LOW FORCE METERING VALVE

Robert L. Weber III, 49 Clapboard Hill Road, New Canaan, Conn. 06840
Filed May 24, 1966, Ser. No. 552,524
12 Claims. (Cl. 222—402.1)

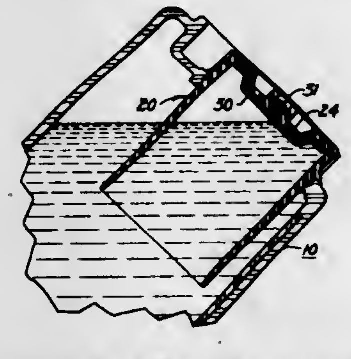


A dispenser is provided for an aerosol container comprising a housing having a chamber therein, the chamber having a retactable valve-actuating discharge member and nozzle coupled to one end thereof. The other end of the chamber has a fluid coupling means for fluidly communicating with the contents of an aerosol container. An annular chamber is located between the chamber and the fluid coupling means, the annular chamber supporting a diaphragm valve comprising a disc having a centrally located protrusion adapted to extend into and seal off the opening of the chamber.

3,401,850
CHECK VALVE FOR VENT HOLE OF A CONTAINER

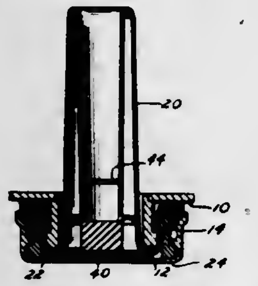
James Anderson, Montreal, Quebec, Canada, assignor to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware
Filed Dec. 6, 1966, Ser. No. 599,578
7 Claims. (Cl. 222—482)

A check valve to prevent the escape of liquid through a vent hole of a container. The check valve defines a chamber located between the inner wall of a container and the adjacent surface of the check valve. The vent hole of the container communicates with this chamber so that atmospheric pressure acts on an area of the check valve which is much larger than the area of the vent hole, as a result, the check valve operates to vent the tank when only a small differential pressure exists.



3,401,851
DISPENSING CLOSURE FOR RECEPTACLES

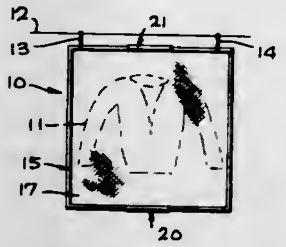
Sidney M. Newcomb, Box 41, R.F.D. 1,
East Stroudsburg, Pa. 18301
Continuation-in-part of application Ser. No. 498,592,
Oct. 20, 1965. This application Feb. 17, 1967, Ser.
No. 632,124
4 Claims. (Cl. 222—527)



A sanitary dispensing closure to be attached to the outlet opening of a liquid container, especially a bulk milk container, to provide a discharge nozzle of desired length that is sealed against loss or contamination of contents until discharge is desired and which is concealed within the discharge opening during shipping. The closure is made of rubber or like elastic material and comprises a thick ring to secure it to the container and a nozzle portion having one or more weakened areas near the sealed end that can be broken off at the desired weakened area by merely pulling the closed end beyond the elastic limit of the rubber at that point, or by cutting it when extended where the weakened area is easily visible.

3,401,852
GARMENT DRYER AND SHAPING APPARATUS

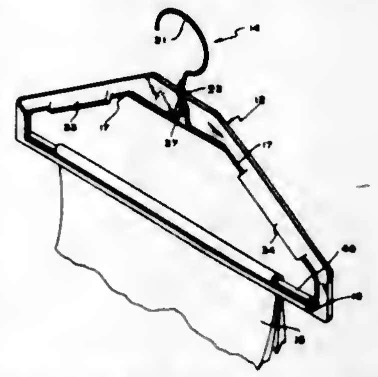
Helene B. Gruver, North Hollywood, Calif.
(186 S. Gina Ave., El Cajon, Calif. 92021)
Filed June 6, 1966, Ser. No. 555,300
8 Claims. (Cl. 223—69)



The garment drying and shaping apparatus disclosed herein includes a pair of panels arranged in releasable engagement wherein each of the panels includes a screen member carried thereon so as to define a garment holding area between the screen members of the panels when the panels are engaged whereby opposite sides of the garment are captured in an area between the screen members and further including means releasably engageable with the pair of panels to hold the panels together so that the garment is held in place by the screen members.

3,401,853
GARMENT HANGER ATTACHMENT

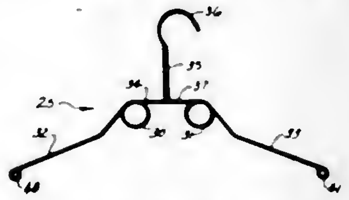
Stuart E. Lane, 750 Chipper Lane,
Wichita, Kans. 67212
Filed Mar. 20, 1967, Ser. No. 624,523
3 Claims. (Cl. 223—87)



A wire garment hanger attachment comprising a plastic sheet-like body having downwardly divergent arms and an interconnecting crossbar with wire garment engageable structure on one side of the arms and crossbar to releasably retain the attachment to the wire garment hanger.

3,401,854
GARMENT HANGER

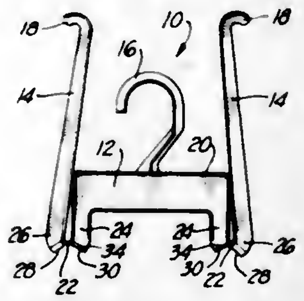
Steven J. Dodulik, Milwaukee, Wis., assignor to Dodco, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 6, 1966, Ser. No. 577,258
1 Claim. (Cl. 223—92)



A garment hanger in which the garment supporting arms are resiliently supported relative to the hook of the hanger so that they yield to pressure for movement toward each other for permitting the garment to pass over the arms to remove the garment from the hanger. The arms return to their normal garment supporting position after the pressure has been removed.

3,401,855
CLOTHES HANGER

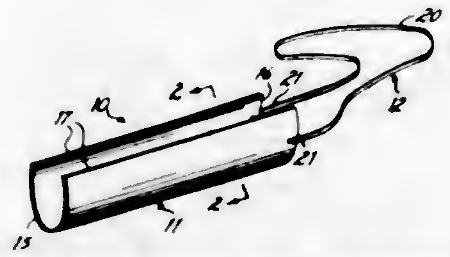
Rudolf Balzer, 14258 Aztec, Sylmar, Calif. 91345, and Rolf J. Stensrud, 15015 Parthenia, Sepulveda, Calif. 91343
Filed Aug. 8, 1966, Ser. No. 570,972
4 Claims. (Cl. 223—94)



Normally oppositely depending arm portions are pivotally mounted on a central supporting portion through flexible strips between upper edges of each of the arm and supporting portions for pivotal movement of the arm portions from the normally oppositely depending positions vertically upwardly to vertically extending collapsed positions adjacent the supporting portion. Mating edges of the supporting and arm portions are formed with interengaging projections and grooves having flanges engageable in generally horizontal directions when the arm portions are in the normally oppositely depending positions providing extreme stability against bending in the horizontal directions between the supporting and arm portions. The entire hanger is preferably of an integral plastic construction.

3,401,856
HOSIERY-DONNING DEVICE

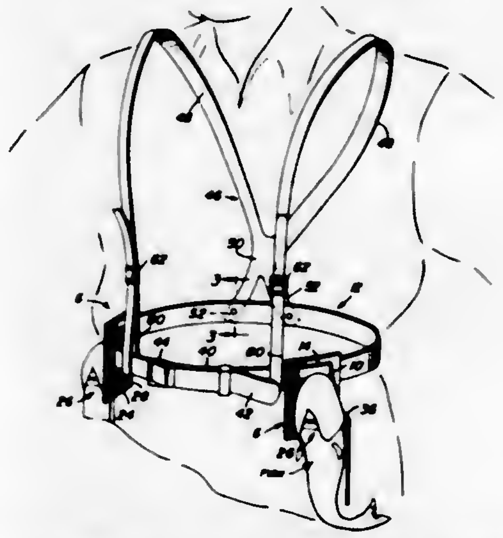
Abe Berlin, 2843 W. Girard Ave.,
Philadelphia, Pa. 19130
Filed Dec. 28, 1965, Ser. No. 516,874
6 Claims. (Cl. 223—111)



1. A hosiery-donning device comprising a relatively stiff elongate upwardly opening trough having at least one end open and adapted to receive therein the foot of a user, and handle means extending from said trough remote from said one end for grasping by a user, whereby an article of hose engaged over said one trough end is placed on the user's foot by withdrawal of said trough to pass the foot through said one trough end.

3,401,857
BODY ENCIRCLING BELT WITH FISH CARRIER MEANS

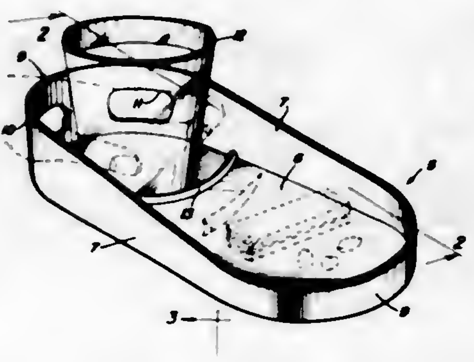
Russell R. Wilson, 131 W. 13th St., and William G. Wilder, 920 S. I St., both of Port Angeles, Wash. 98362
Filed Oct. 5, 1966, Ser. No. 584,528
1 Claim. (Cl. 224—7)



The hereindisclosed equipment has to do with a suitable body encircling belt, an optionally usable harness, and fish carriers detachably and adjustably hung on the belt. Each carrier comprises a leather or an equivalent apron-like flap whose upper half-portion is slotted to accommodate the belt. Primarily, the flap is unique in that its lower half-portion has a fixed strap which encircles and secures the fish atop the flap in a manner which does not hamper walking, wade fishing, angling or other activities of the angler.

3,401,858
SERVICE TRAY

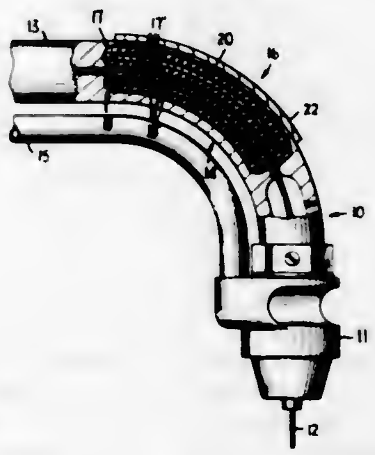
Donald C. White and Mary Lee White, both of 5382
Shadow Lawn Drive, Sarasota, Fla. 33581
Filed Aug. 25, 1967, Ser. No. 663,382
8 Claims. (Cl. 224—48)



A service tray having a bottom which is bounded by a substantially vertical, peripheral wall. At one end of the tray the wall is provided with a pair of transversely spaced, oval openings for respectively receiving the thumb and index finger of a user's hand so as to embrace a beverage container resting on the bottom adjacent the openings. The remainder of the tray bottom is designed to receive hors d'oeuvres and the like.

3,401,859
LOW FRICTION WIRE SUPPORT FOR CONSUMABLE ELECTRODE TORCH

Frits Rienks, Groton, and Reinhold Koch, Old Saybrook, Conn., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 27, 1966, Ser. No. 523,322
5 Claims. (Cl. 226—196)

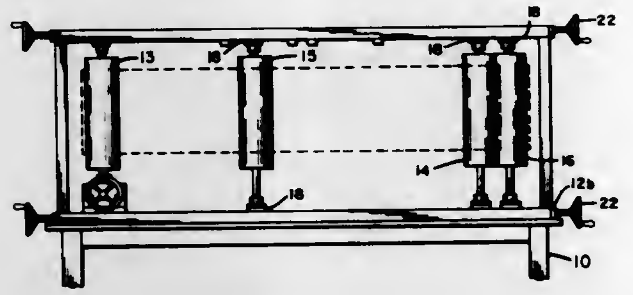


In the particular embodiments of the invention described herein, a guide for directing wire through the curved neck of a consumable electrode welding torch includes three sets of recirculating balls disposed along the curved portion of the wire path in angularly equidistant relation. In one embodiment, two of the sets are movable toward and away from each other and from the path of the wire by motion of a sleeve surrounding the sets, the sleeve being urged by a spring in the direction causing the sets to move together.

3,401,860
COMPENSATOR STAND

John J. Frantzen, St. Paul, Minn., assignor to Buckbee-Mears Company, St. Paul, Minn., a corporation of Minnesota
Filed Apr. 13, 1966, Ser. No. 542,378
5 Claims. (Cl. 226—199)

A set of at least three vertical rollers, two of them mounted in one horizontal rail and the third mounted in a second coplanar, parallel spaced-apart rail, are individually movable along their respective rails to provide compensating adjustments for a length of webbing which is threaded amongst the rollers. At least one of the rollers is provided with a tilting adjustment to permit raising and lowering the webbing on the rollers to some controllable limited degree.

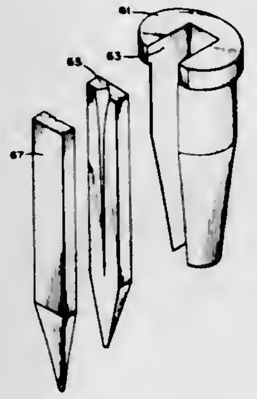


3,401,861
APPARATUS FOR JOINING METALS

Lee E. Folk, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Oct. 22, 1965, Ser. No. 501,606

6 Claims. (Cl. 228—1)



A holding member has a tapered groove facing a replaceable pressure member having an elongated smooth groove facing the tapered groove and releasably held against the holding member. The pressure member extends downwardly beyond the holding member for engaging a wire to perform a bonding operation. A back plate prevents longitudinal movement of the two members and has a funnel-shaped aperture for receiving and guiding a wire between the facing grooves which have an opening much greater than the diameter of the wire such that it may be easily threaded toward the tip of the pressure member.

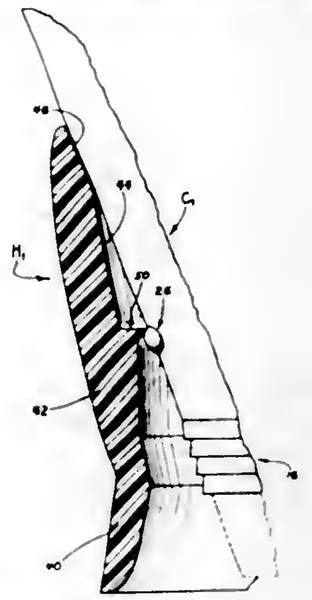
3,401,862
DISPOSABLE CONTAINER

Herbert J. Wanderer, Elmhurst, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Continuation of application Ser. No. 366,081, May 8, 1964, now Patent No. 3,232,512. This application Aug. 3, 1966, Ser. No. 579,443

13 Claims. (Cl. 229—1.5)

A thin wall thermoplastic container for use with a supporting holder, and the combination thereof, wherein the container and supporting holder are provided with cooperating means for releasably retaining the container within the supporting holder.

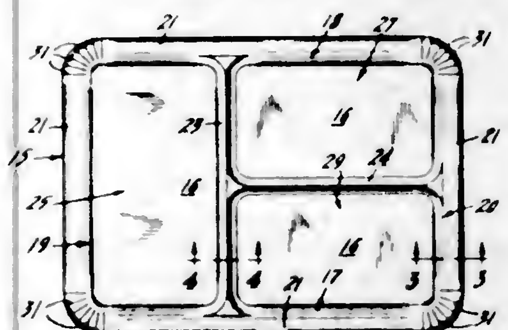


3,401,863
COMPARTMENTED TRAY

Lee Wall Earl, Easton, Pa., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 12, 1966, Ser. No. 600,940

6 Claims. (Cl. 229—2.5)



A fiberboard compartmented tray having a plurality of rib elements in the tray bottom dividing the tray into a plurality of compartments. The bottom of the tray and a peripheral ridge are of less thickness, having been compressed, than the rib elements, thus increasing the tray's resistance to bending under load.

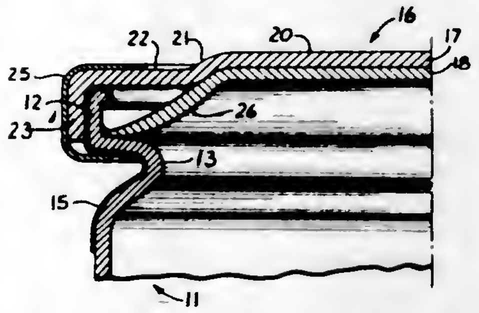
3,401,864
LID SEAL FOR SHIPPING CONTAINERS

Jan Harm Schuringa, Badhoevedorp, Netherlands, assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware

Filed Sept. 22, 1967, Ser. No. 669,751

Claims priority, application Great Britain, Sept. 29, 1966, 43,664/66

8 Claims. (Cl. 229—5.7)



A cover closure for shipping containers is described in which a separate inner member forms a resilient peripheral lip which presses against a corresponding internal circumferential rib of the container body to effect a seal.

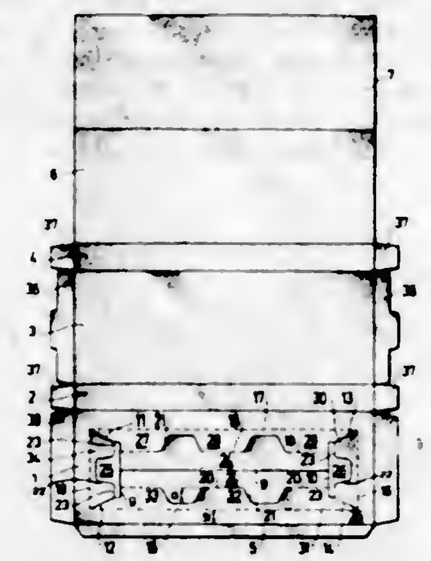
3,401,865
PACKAGE BLANK FOR A DOUBLE-WALLED CARTON

Kjell Ingvar Holstrom, Lund, Sweden, assignor to AB Akerlund & Rausing, Lund, Sweden, a Swedish joint-stock company

Filed Dec. 5, 1966, Ser. No. 599,275

Claims priority, application Sweden, Jan. 17, 1966, 554/66

3 Claims. (Cl. 229—34)



A package blank is provided for forming a rectangular carton having a single-wall bottom and double-wall sides, the walls forming the four sides being spaced from each other.

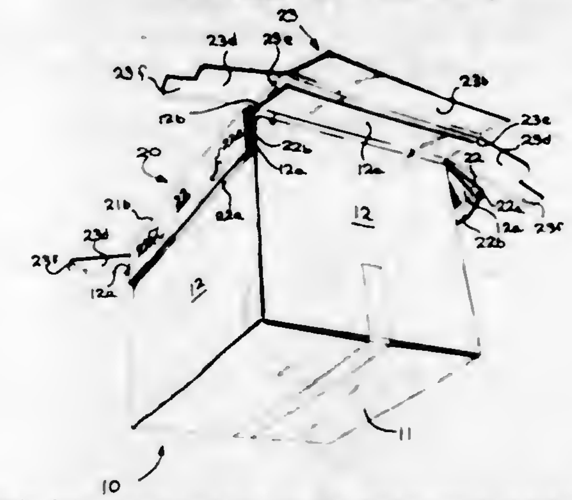
The innermost walls of double-wall sides are established by providing a main field in the blank which, when the blank is partly erected, lies parallel to and spaced from the bottom wall of the carton. This main field is provided with a lay-out of cut and fold lines which enable parts thereof to be folded so as to establish the innermost of the side walls and also establish a border wall parallel to the bottom wall and which forms a frame for the interior of the carton. The outermost walls of the double-wall sides of the carton are established by other fields adjoining this main field as well as the field which forms the bottom wall of the carton.

3,401,866
CONTAINER WITH SELF-LOCKING LID

Everett C. Johnson, North Riverside, and Donald G. Meier, Tinley Park, Ill., assignors to Owens-Illinois, Inc., a corporation of Ohio

Filed Nov. 10, 1966, Ser. No. 593,468

2 Claims. (Cl. 229—45)



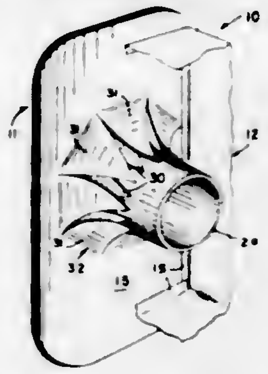
This invention relates to an improved folding box-type container and a self-locking lid for such container which may be releasably locked in assembled relationship to the container. The top edge of the container is provided with downwardly folded flaps and the lid is provided with corresponding downwardly-projecting flaps which flaps are respectively foldable around the container flaps to effect the securement of the lid to the container. The lid is further retained in assembled relationship to the container by the provision of lateral projections on the downwardly-extending flaps of the lid which respectively fold around the external vertical corners of the lid and are detachably secured to the adjacent lid flaps.

3,401,867
SELF-CLOSING DUST VALVE FOR A DISPOSABLE VACUUM CLEANER BAG

Florren E. Long, La Grange, and Max R. McKee, Chicago, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Mar. 16, 1967, Ser. No. 623,738

11 Claims. (Cl. 229—62.5)



A rigid end plate structure for a disposable paper vacuum cleaner dust bag having a self closing dust valve. The end plate includes two sheets of thin flexible and resilient plastic coated paperboard positioned face-to-face and heat sealed together around their edges. Each sheet is provided with a number of equally spaced apart slits extending radially outwardly from a common center an equal distance to provide a number of flexible and resilient triangular closure flaps encircling the center. The slits in one sheet are located half-way between the slits in the other sheet so that the closure flaps of one sheet are positioned half-way between the closure flaps of the other sheet in dust sealing relationship.

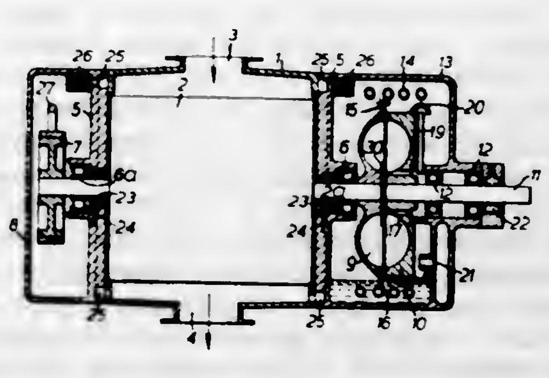
3,401,868
ROTARY VACUUM PUMPING EQUIPMENT

Basil Dixon Power, Horsham, England, assignor to Edwards High Vacuum International Limited, Crawley, England, a British company

Filed Oct. 6, 1966, Ser. No. 584,855

Claims priority, application Great Britain, Oct. 19, 1965, 44,192/65

5 Claims. (Cl. 230—15)



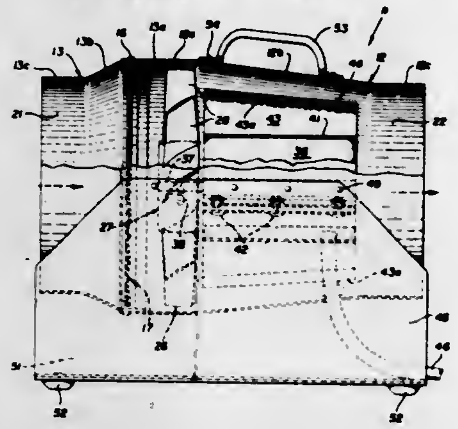
Rotary vacuum pumping equipment in which a rotary vacuum pump is driven through a fluid coupling and both the pump and coupling are housed in a single casing with a common sump for lubricating and coupling drive fluid. The arrangement enables economies to be made in relation to bearings, oil cooling arrangements, etc.

3,401,869

MANHOLE VENTILATOR

Robert L. Doyle, Palo Alto, Calif., assignor to Western Progress, Inc., Palo Alto, Calif., a corporation of Nevada

Filed Sept. 19, 1966, Ser. No. 580,246
8 Claims. (Cl. 230—117)



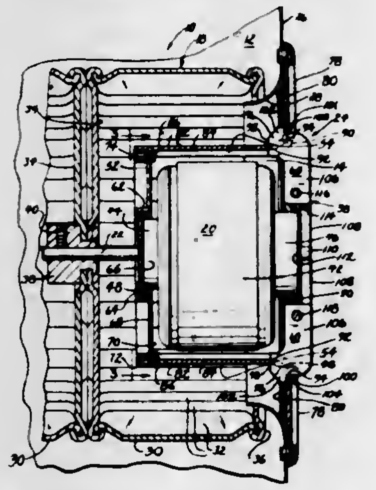
Manhole ventilator for moving air relative to a manhole having a housing with front and rear openings and a flow passage extending therethrough, the housing having front end portions, a generally cylindrical portion adjoining the front end portion, a tapered portion adjoining the cylindrical portion and a rear portion adjoining the tapered portion with an axial flow fan disposed in the cylindrical portion and motor means mounted in the housing for driving the fan with straightening vanes mounted within the housing and serving to support the motor means.

3,401,870

BLOWER ASSEMBLY

Kenneth G. Crowe, Rhode-Ste.-Genese, Belgium, assignor to The Torrington Manufacturing Company, Torrington, Conn., a corporation of Connecticut

Filed Dec. 9, 1966, Ser. No. 600,573
13 Claims. (Cl. 230—117)



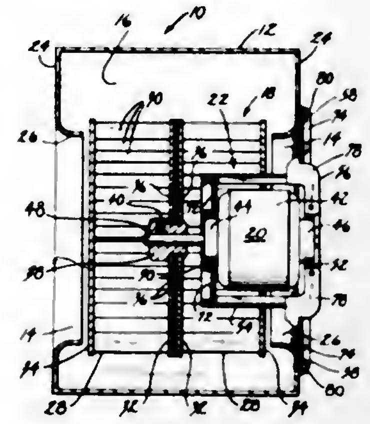
1. A blower assembly comprising a blower housing having an air inlet and an air outlet, a motor having a casing and including a rotatable shaft axially forwardly projecting from said casing, an air impeller supported on said shaft for rotation within said housing, and a motor support bracket including a cradle receiving and supporting a forward end portion of said motor, and having a radially outwardly spaced body portion secured thereto and extending generally axially rearwardly therefrom, said body portion having a generally axially extending portion and a rearward generally radially extending portion secured to a wall of said housing and including a plurality of openings therethrough axially spaced from said cradle, said motor support bracket further including a spider adapted to be secured at a central portion to said casing in rearwardly and axially spaced relation with said cradle and having a plurality of angularly spaced legs generally radially outwardly projecting from said central portion, each of said legs engaging said body portion and including a locking tab, each said tab being received in an associated one of the said openings, said legs and said tabs being brought into locking engagement with said body portion to secure said motor against axial, radial and rotational movement relative to said blower housing when said central portion of said spider is secured to the casing as aforesaid.

3,401,871

METHOD FOR MAKING BLOWER ASSEMBLY

Kenneth G. Crowe, Rhode-Ste.-Genese, Belgium, assignor to The Torrington Manufacturing Company, Torrington, Conn., a corporation of Connecticut

Filed Dec. 12, 1966, Ser. No. 601,155
9 Claims. (Cl. 230—117)



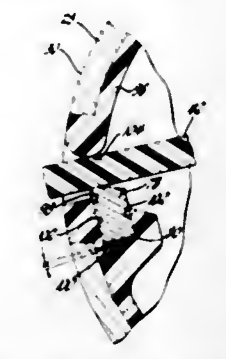
6. A blower sub-assembly adapted for assembly with a blower drive motor having an axially projecting drive shaft and comprising a blower housing having an air outlet opening and including at least one wall having an air inlet opening therethrough, a motor support bracket secured to said one wall extending forwardly into said housing in general coaxial alignment with said inlet opening, said support bracket including a forward end portion spaced from said one wall and being adapted to receive and support the motor with the shaft thereof extending forwardly beyond said forward end portion, a rotor disposed within said housing having a circumaxially spaced series of axially elongated air moving blades and including a hub adapted to receive the motor shaft, said motor in an operational position being normally supported by the motor shaft in radially and axially spaced relation to the walls of said housing, and fastening means temporarily connecting said rotor and said support bracket to maintain said rotor in said operational position in said sub-assembly in the absence of the motor.

3,401,872

FLUID FLOW CONTROL MECHANISM

Norman L. Adsit, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 9, 1966, Ser. No. 556,492
1 Claim. (Cl. 230—157)



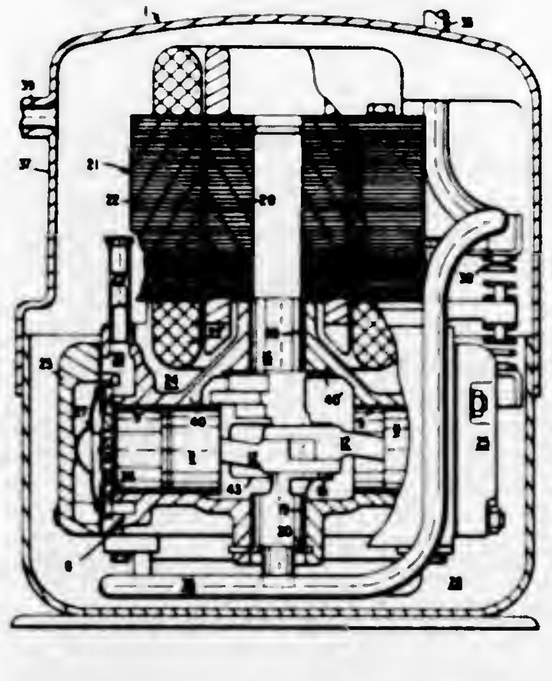
A vane pump supplies air for injection into the exhaust gases of an internal combustion engine. The pump rotor has a metal body formed by extrusion and includes a molded-in-place reinforced thermo-plastic liner providing a vane driving surface and a support for a vane bearing follower shoe.

3,401,873

COMPRESSOR CYLINDER BLOCK

George T. Privon, Camillus, N.Y., and Dwight L. Tothero, York, Pa., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Jan. 13, 1967, Ser. No. 609,134
9 Claims. (Cl. 230—238)



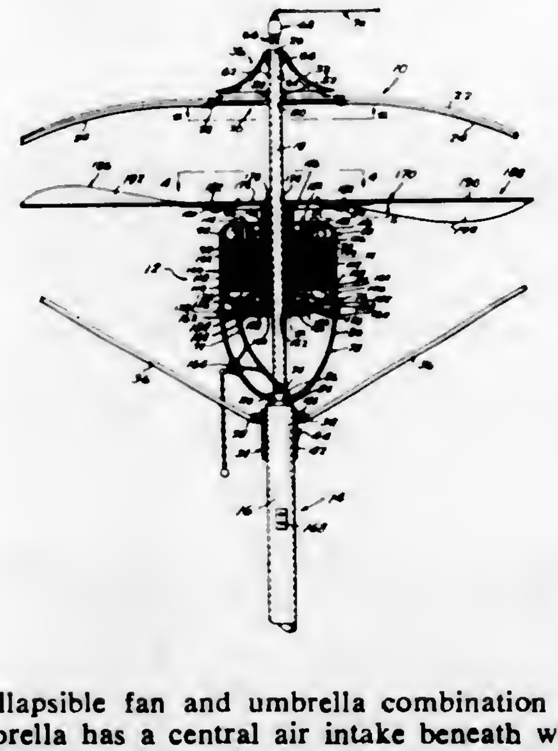
A compressor cylinder block is formed of two sections. One section forms a cylinder for a compressor. The other section may be a blank or form another cylinder for the compressor. This arrangement provides an assembly for either a one or a two cylinder compressor.

3,401,874

UMBRELLA AND FAN COMBINATION

Charles H. Covington, 1020 Malvern Ave., Hot Springs, Ark. 71901

Filed Nov. 4, 1966, Ser. No. 592,085
9 Claims. (Cl. 230—241)



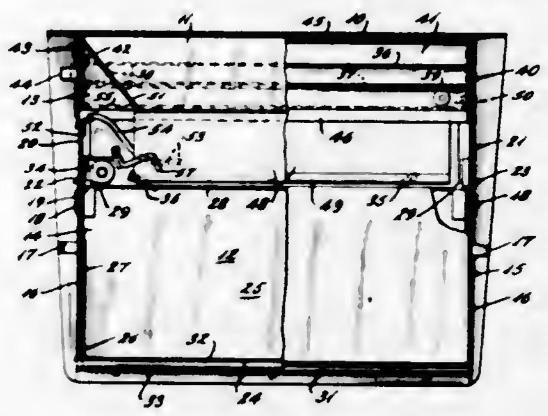
A collapsible fan and umbrella combination wherein the umbrella has a central air intake beneath which the fan rotates about the umbrella stick. Air is continuously drawn downwardly through the intake and rotated beneath the umbrella to provide effective cooling.

3,401,875

MAILBOX

Robert Bruhns, R.R. 1, Box 32–B, Leesburg, Fla. 32748

Filed Nov. 20, 1967, Ser. No. 684,213
10 Claims. (Cl. 232—34)



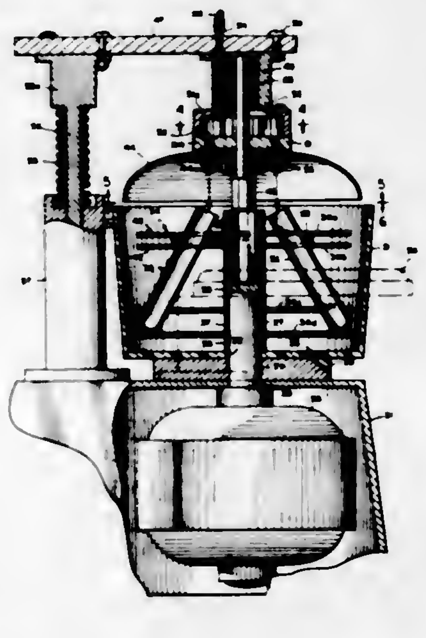
A mailbox having multiple compartments for receiving and holding against pilferage mail or other valuables.

3,401,876

MIXING AND DECANTING CENTRIFUGE

Victor Grifols Lucas, Barcelona, Spain, assignor to Dade Reagents, Inc., Miami, Fla., a corporation of Florida

Filed July 25, 1966, Ser. No. 567,437
17 Claims. (Cl. 233—26)

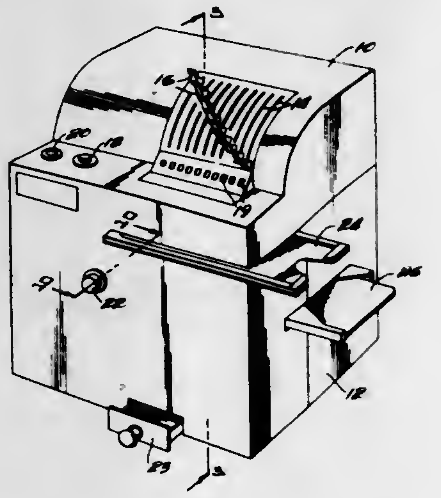


A centrifuge, and method of centrifugation, wherein a plurality of open-topped sample tubes are carried by a holder for rotation about a central vertical axis. The tubes are supported adjacent their lower ends for outward and inward pivotal movement of the open upper ends thereof. Normally such tubes extend upwardly and inwardly towards the vertical axis of centrifugation and are held in such positions by a cover which engages the upper ends of the tubes. The cover is rotatable with the holder and is mounted for independent vertical movement with respect to the holder. When discharge of fluid from the sample tubes is to take place, as in a decanting step following mixing and centrifuging of the tubes' contents, the cover gradually rises to permit the pivotally supported tubes to swing outwardly into generally vertical positions under the influence of centrifugal force. Means are provided for automatically lifting the cover in timed relation with respect to other operational steps.

3,401,877

DATA PUNCH

John J. Brett, Cleveland, Ohio, and Albert Hohmann, Brooklyn, N.Y.; said Brett assignor to Universal Time Punch, Inc., Cleveland, Ohio, a corporation of Ohio, and said Hohmann assignor to Taller & Cooper, Inc., Brooklyn, N.Y., a corporation of New York
Filed Apr. 13, 1966, Ser. No. 542,299
28 Claims. (Cl. 234—2)



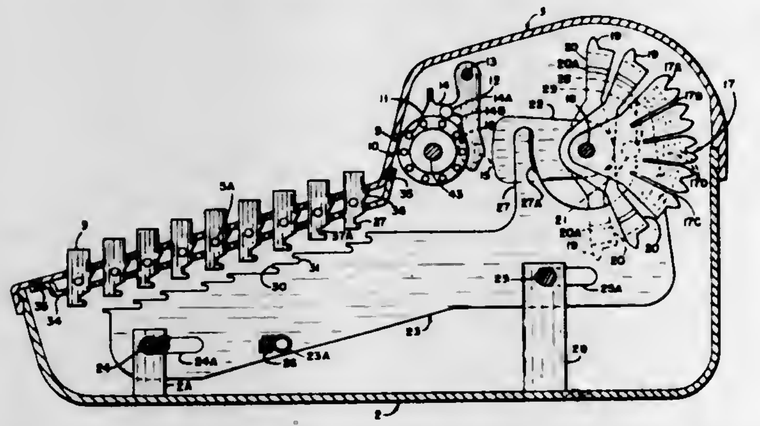
A data recording unit having a die block and punches slidably mounted in a stripper perpendicular to the plane of the die but spaced therefrom in order to form a slot in which a punch card may be inserted. A solenoid through appropriate connections causes the die block and punches to impulsively converge upon an appropriate signal. Some of the punches are prohibited from any substantial movement during the convergence of the die and the punches. These relatively stationary punches punch the card. The punches are selectively prohibited from movement by an interposer on a data input module according to information supplied to the module.

The data input module may be combined with a timed rotary cam system in order to make the data input system a time punch. Alternately, the die and punch module may be connected with a means for storing information from a manual input and a master card. Appropriate actuating means detect the information on the master card and the manual input system and transmit it to the punch card.

3,401,878

ACTUATOR MEANS FOR CALCULATING MACHINES

Gerald D. Cushman and Eugene E. Reynolds, Orangeburg, S.C., assignors to SCM Corporation, a corporation of New York
Filed Oct. 5, 1966, Ser. No. 584,481
15 Claims. (Cl. 235—9)

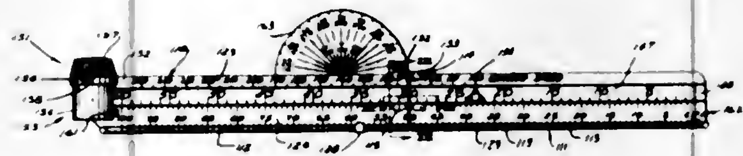


1. In a calculating machine, an actuator means therefor comprising an integral segment including a series of flexible integrally formed projecting fingers with registering teeth formed on the outer ends thereof.

3,401,879

NAVIGATIONAL COMPUTER

Garth Close, 3215 29th St., Lubbock, Tex. 79410
Filed May 14, 1965, Ser. No. 455,774
2 Claims. (Cl. 235—61)

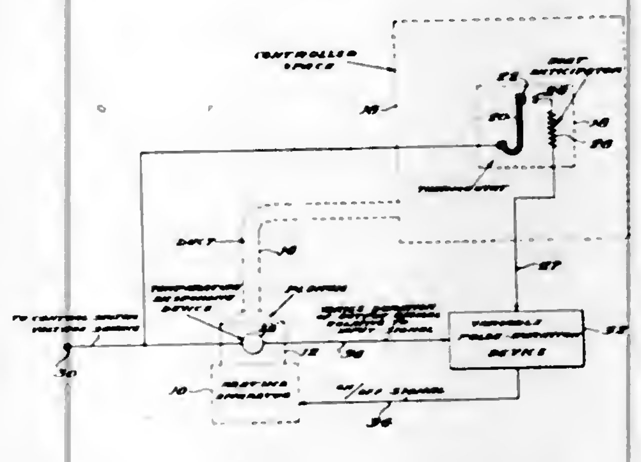


A small navigational computer having a substantially rigid support upon which an elastic band is mounted. A control device such as a manual reel with a brake is secured to one end of the support for engaging one end of the band, the other end of the band being anchored on the opposite end of the support. Operation of the control device permits the band to be stretched whereby visible speed, time and distance markings on the support and on the band permit the desired computation to be performed. The support may be foldable and when folded engage the brake.

3,401,880

COMPENSATED TEMPERATURE CONTROL SYSTEM

James A. Verden, 9152 Knight Ave., Des Plaines, Ill. 60016
Filed Jan. 9, 1967, Ser. No. 608,204
10 Claims. (Cl. 236—68)



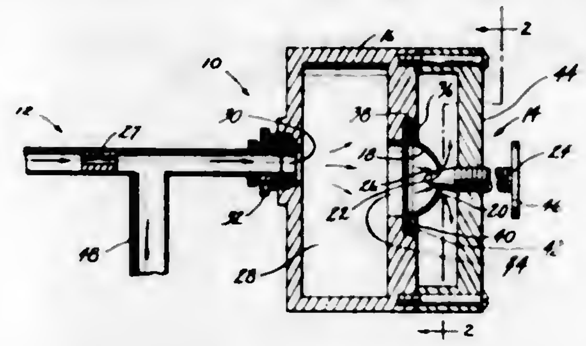
Compensation is provided for the normal calibration-change of thermostatic temperature-control systems of the type used in household heating, wherein the closing-temperature of the thermostat is affected by the time since the last previous operation. The magnitude of the average heat-transfer demand is independently sensed and employed to vary the relation between the on-time of each cycle of operation of the heat-input device and the corresponding closed-contact time of the thermostatic switch.

3,401,881

TEMPERATURE-RESPONSIVE FLUID CONTROL SYSTEM AND VALVE THEREFOR

Neil W. Brouder, 54 Cedar Ridge Drive, Glastonbury, Conn. 06033
Filed Nov. 2, 1966, Ser. No. 591,628
13 Claims. (Cl. 236—86)

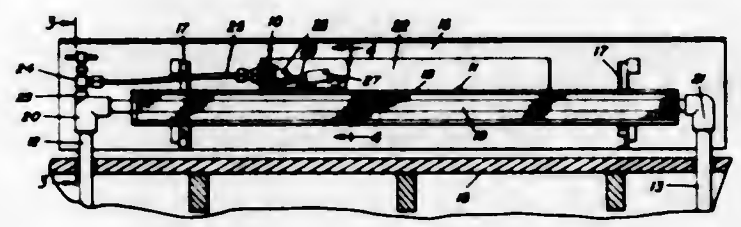
A temperature-responsive fluid control system has a valve which includes a dome-shaped diaphragm with a central orifice. A valve member extends into the orifice and has a cross-sectional shape in the vicinity of the orifice which varies axially thereof. The diaphragm is temperature sensitive so that its central portion moves relative to the valve member to vary the effective orifice area and thereby controls fluid flow therethrough in response to temperature change.



3,401,882

HUMIDIFIER FOR HOT WATER HEATING SYSTEMS

Walter Neuber, Estherville, Iowa, assignor to Central Manufacturing Company, Inc., a corporation of Iowa
Filed Apr. 29, 1966, Ser. No. 546,338
2 Claims. (Cl. 237—78)

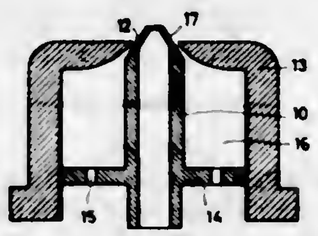


A baseboard hot water heater in combination with a humidifier. The humidifier includes an elongated evaporation pan sitting directly on the fins of the heater and being supplied with water directly from the hot water line which supplies the heater whereby preheated water will be introduced into the pan for a humidifying evaporation thereof by the heat being directly conducted thereto through the pan.

3,401,883

SPRAY PISTOL

Otto Gebhardt, Fellbach, and Manfred Luderer, Schwaikheim, Germany, assignors to Messrs. Ernst Mueller, Wennenden, Wurttemberg, Germany, a corporation of Germany
Filed Aug. 23, 1966, Ser. No. 574,345
Claims priority, application Germany, Aug. 26, 1965, M 66,460
1 Claim. (Cl. 239—15)

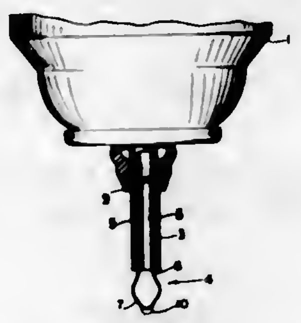


A spray gun nozzle having an air chamber housing with a pipe therein which narrows conically toward a spraying end and the pipe being coaxial with an air chamber in which there is provided a backwall having angularly arranged bores therein to set up turbulence in the chamber.

3,401,884

NOZZLE EVACUATOR FOR GAS PRESSURE CONTAINERS

Frederick B. Vanderveer, Grand Rapids, Mich., assignor to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Oct. 24, 1965, Ser. No. 504,877
9 Claims. (Cl. 239—106)

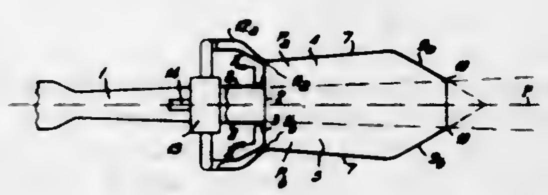


A pressure container nozzle evacuating and declogging device, with a wire-like member placed in the nozzle. The member extends outwardly beyond the nozzle to form a loop. Droplets of material in the nozzle will run down the legs of the member and onto the loop.

3,401,885

JET DEFLECTOR

Cyrille François Pavlin, Val d'Albian, Yvelines, and François Charles Oudin, Noisy-le-Roi, Yvelines, France, assignors to Societe Bertin & Cie, Paris, France, a corporation of France, and Engins Matra Societe Anonyme, Paris, France, a French body corporate
Filed Mar. 20, 1967, Ser. No. 624,271
Claims priority, application France, Mar. 22, 1966, 54,511
4 Claims. (Cl. 239—127.3)



The deflector according to the invention comprises mainly in combination: a nozzle delivering the propelling jet, and a deflection chamber which follows the nozzle and which terminates at its downstream end as spaced convergent walls between which the jet issues. The nozzle is divergent at least in a portion near the nozzle exit orifice, and that end of the chamber via which the same is connected to the nozzle projects on either side of the nozzle exit orifice, the chamber narrowing in the vicinity of such orifice so that free spaces are left on each side of the jet in the chamber, and control passages are connected to the chamber near the ends thereof to enable the pressure in such spaces to be varied.

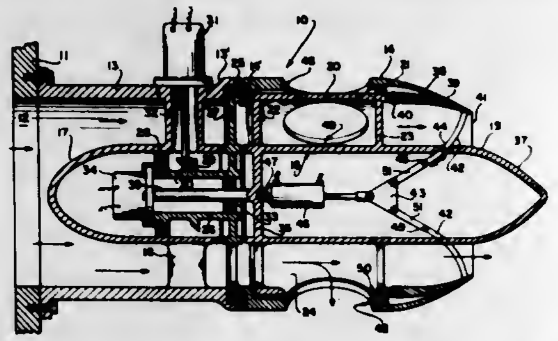
3,401,886

THRUST VECTOR CONTROL DEVICE

Melvin N. Osborn, Marietta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed May 12, 1966, Ser. No. 549,540
8 Claims. (Cl. 239—265.25)

1. A thrust vector control device comprising a pair of substantially coextensive sleeves adapted to be disposed in and define a jet stream, ports located in a common transverse plane in the wall of each of said sleeves, a rotary

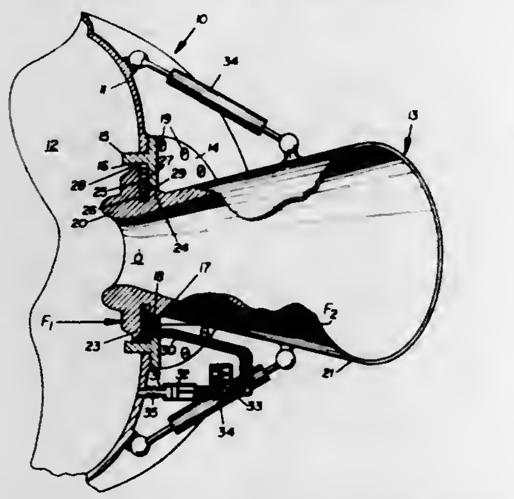
drive individual to each of said sleeves for the independent rotation thereof whereby the relative positions of said ports are adjusted, the drive of one of said sleeves being



carried by the other sleeve for rotation in unison therewith, and a movable closure adjacent the aft end of said sleeves.

3,401,887
CONTROLLABLE ROCKET NOZZLE WITH PRESSURE AMPLIFIER FOR REDUCING ACTUATING FORCE

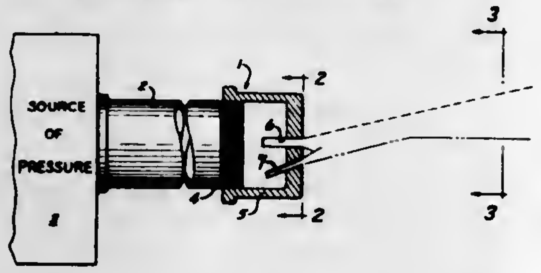
William A. Sheppard, Tucson, Ariz., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed May 2, 1966, Ser. No. 546,697
2 Claims. (Cl. 239—265.35)



A cantable nozzle for a rocket motor mounted in the aft end thereof. The nozzle is mounted in an aft end adaptor and has a pair of peripheral, radial projections terminating in spherical surfaces which contact similar surfaces on the adaptor. The adaptor and nozzle projections define an annular cavity which is pressurized by means of hydraulic fluid to balance the force imposed on the nozzle by the combustion gas pressure of the motor, thereby permitting angular movement of the nozzle under reduced actuation force requirement.

3,401,888
SNOW NOZZLE

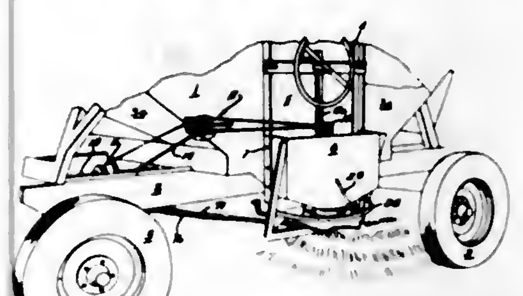
Arthur Sutter, Rte. 1, Mount Horeb, Wis. 53572
Filed Oct. 22, 1965, Ser. No. 500,799
2 Claims. (Cl. 239—568)



A snow nozzle having a flat front face with two coextensive slots. One of the slots is disposed at an angle to the other and is about one-half the thickness of the other.

3,401,889
COMBINATION GRAVITY BED RESERVOIR AND HOPPER-PLUS-SCATTERER

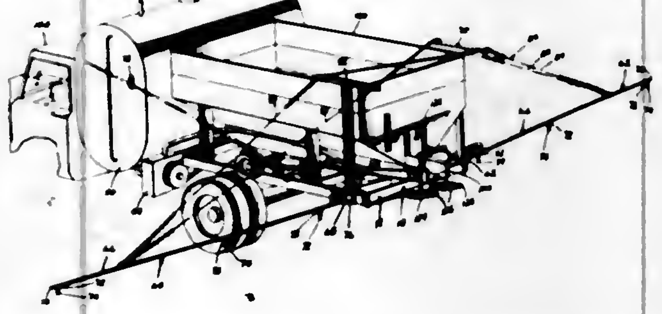
Shirley L. Parker, Warsaw, Ind., assignor to Parker Feeders, Inc., Silver Lake, Ind., a corporation of Indiana
Filed Oct. 21, 1965, Ser. No. 499,818
9 Claims. (Cl. 239—666)



A spreader mechanism for spreading particulate material particularly adapted for use in combination with a standard, side-opening gravity bed. The spreader mechanism has an open-sided hopper adapted to be detachably affixed to the gravity bed over the opening therein. The particulate material flows from the hopper through a valving arrangement onto a rotating spreader fan and is centrifugally hurled sideways of the gravity bed.

3,401,890
SPREADER AND SPRAYER COMBINATION

Billy J. Middlesworth, R.R. 2, Greentown, Ind. 46936
Filed May 10, 1965, Ser. No. 454,384
2 Claims. (Cl. 239—670)



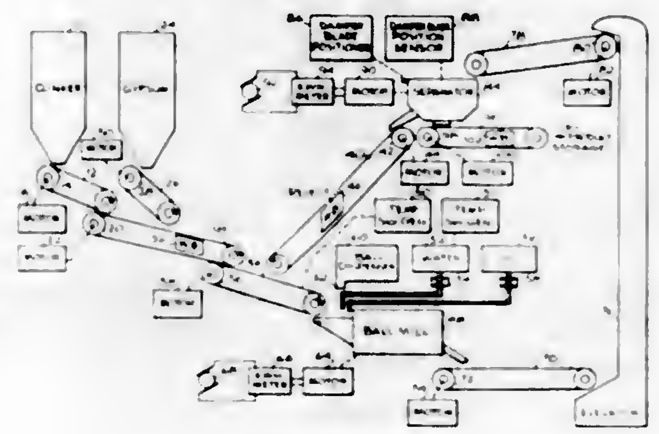
A combined spreader and sprayer mounted on a wheel-supported frame and connected to a common power unit. Means is provided for operating the spreader and sprayer either separately or in combination with each other. The sprayer has two booms extending from the frame in opposite directions and the spreader has a dispersing mechanism. Both the booms and the dispersing mechanism, in a specific embodiment, are positioned rearward of the frame supporting wheels. The sprayer booms are mounted to the frame in a manner allowing universal swivelling movement of the booms with respect to the frame. Storage means for both the material dispersed by the spreader and sprayer are mounted on the frame and respectively connected to the spreader and sprayer.

3,401,891
CONTROL SYSTEM FOR A CLOSED CIRCUIT GRINDING SYSTEM FOR FINISH CEMENT

Philip J. Fleeman, Calabasas, Calif., and Willem Brand, Phoenix, Ariz., assignors, by mesne assignments, to The General Electric Company, New York, N.Y., a corporation of New York
Filed Oct. 25, 1966, Ser. No. 589,346
8 Claims. (Cl. 241—34)

1. Apparatus for optimizing the output product flow rate from a particulate processing system of the type

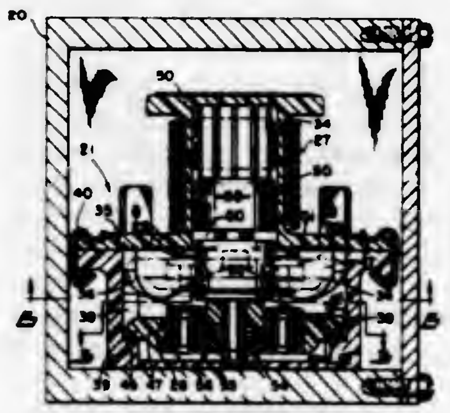
wherein a controllable carrying means carries new material from a source to be mixed with rejected material and then fed to a grinding means the output from which is fed to a controllable means for separating said grinding means output into accepted material having a predetermined range of particle sizes and rejected material having particle sizes outside of said accepted range, said apparatus comprising:
- means for measuring the hardness, H, of the new material and establishing H signals representative thereof;



- means for measuring the particle size distribution, [*i*], of the new material and establishing [*i*] signals representative thereof; and
- means responsive to said H and [*i*] signals for controlling said controllable carrying means and said controllable separating means for optimizing the amount of accepted material within said predetermined range of particle sizes in accordance with specified criteria.

3,401,892
WASTE DISPOSER WITH AUTOMATIC MOTOR REVERSING MEANS

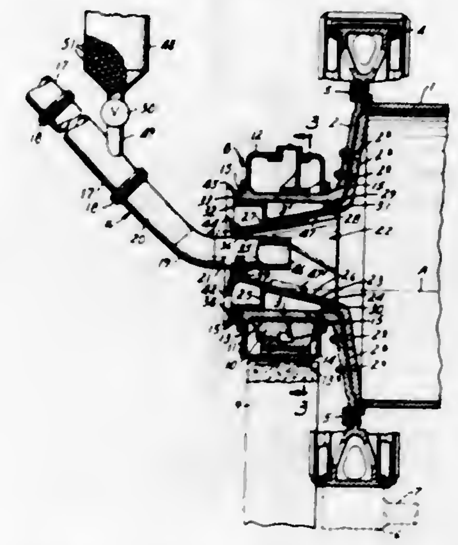
Theodore F. Meyers, Wadsworth, Ohio, assignor, by mesne assignments, to The Hobart Manufacturing Company, Troy, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 299,216, Aug. 1, 1963. This application Apr. 29, 1965, Ser. No. 451,844
15 Claims. (Cl. 241—36)



An automatic motor reversing switch for a waste disposer and the like including a stationary contact plate and a movable contact plate which is progressively rotated by axially spaced cam members during movement of the movable contact plate toward and away from the stationary contact plate alternately to establish contact between two pairs of contacts every time the movable contact plate is brought into engagement with the stationary contact plate.

3,401,893
INFEED AND SEALING MEANS FOR GRINDING MILLS

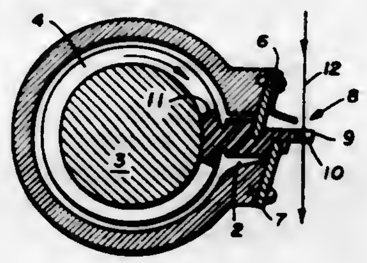
James A. Reynolds, Silver Bay, Minn., assignor to Reserve Mining Company, Silver Bay, Minn., a corporation of Minnesota
Filed July 11, 1966, Ser. No. 564,164
10 Claims. (Cl. 241—171)



1. In a grinding mill comprising, a generally cylindrical wall, a head end wall, a hollow trunnion projecting axially from said head end wall, and means for rotatably supporting said drum on a generally horizontal axis including a bearing at least partially encompassing said trunnion:
- (a) tubular liner means disposed in said trunnion coaxially therewith and having axially inner and outer ends,
- (b) means for releasably locking said liner means within said trunnion for common rotation therewith and against axial movements relative thereto,
- (c) a stationary tubular infeed conduit having a discharge end portion substantially concentric with said liner means and terminating in an open end disposed axially inwardly of the outer end of said liner means,
- (d) flexible sealing ring means disposed within said liner means and encompassing said conduit discharge end portion in sealing engagement therewith in axially spaced relation to said open end,
- (e) and mounting means for removably mounting said sealing ring means in sealing engagement with said liner means and for relative rotation between said sealing ring means and one of said conduit and liner means.

3,401,894
YARN TRAVERSE DEVICE

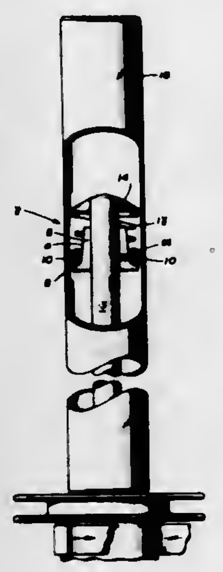
William E. Campbell, Jr., Pensacola, Fla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Dec. 28, 1966, Ser. No. 605,457
2 Claims. (Cl. 242—43)



A yarn traverse device having off-set guide members to protect yarns against lubricant sprays.

3,401,895
SPINDLE ADAPTER

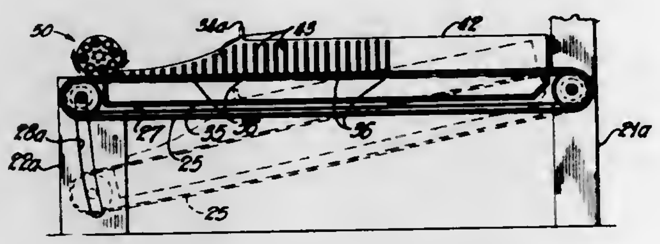
Paul M. Heitmuller, Pensacola, Fla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Jan. 6, 1967, Ser. No. 607,759
5 Claims. (Cl. 242—46.3)



A textile spindle adapter having a frusto-conical element with a toroidal spring encircling the element and retainer means at opposite ends of the element. A helical compression spring is positioned around the element between the toroidal spring and one retainer means for biasing the toroidal spring into engagement with the retainer means at the larger end of the element whereby the toroidal spring is radially expanded into engagement with a bobbin.

3,401,896
METHOD AND APPARATUS FOR PACKAGING MATERIALS

William B. Hullhorst, Granville, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,898
25 Claims. (Cl. 242—55.1)

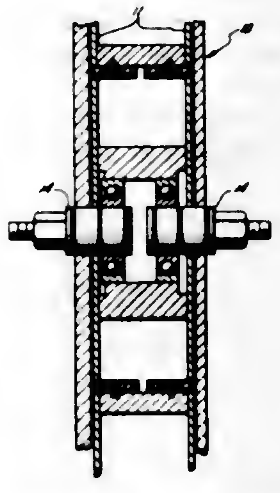


A method and apparatus for packaging a length of porous mat in which the mat is compressed by evacuating air from within and rolled into a package in the compressed and evacuated state. A conveyor having air evacuated state. A conveyor having air evacuating plenums along the edges thereof feeds the mat to a rotating mandrel.

3,401,897
REEL SUPPORT

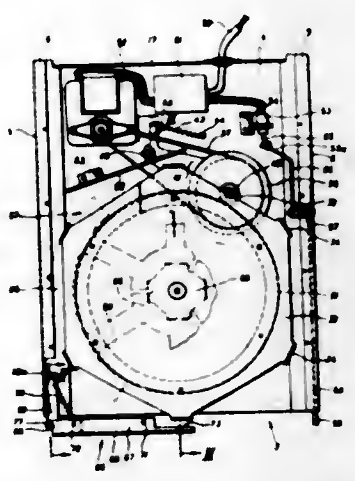
Joseph H. Lancor, Jr., Arcadia, and Patrick J. Cunningham, Fullerton, Calif., assignors to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed Dec. 3, 1965, Ser. No. 511,489
4 Claims. (Cl. 242—55.11)

A support for mounting oversize film reels. The support includes a shaft for receiving a reel provided with a mounting aperture of standard size. In addition, a reel support pedestal is provided on the shaft at an axial position between the support and the reel location. Thrust bearings are provided in the support at a location radially spaced from the shaft such that the thrust bearings contact the interior side of the film reel pedestal.



3,401,898
TAKE-UP MAGAZINE FOR RECORD-CARRYING TAPES

Gustav Haberstroh, Wilhelmshaven, Germany, assignor to Olympia Werke AG, Wilhelmshaven, Germany
Filed Sept. 10, 1965, Ser. No. 486,380
Claims priority, application Germany, Oct. 13, 1964, O 104,371
17 Claims. (Cl. 242—55.13)



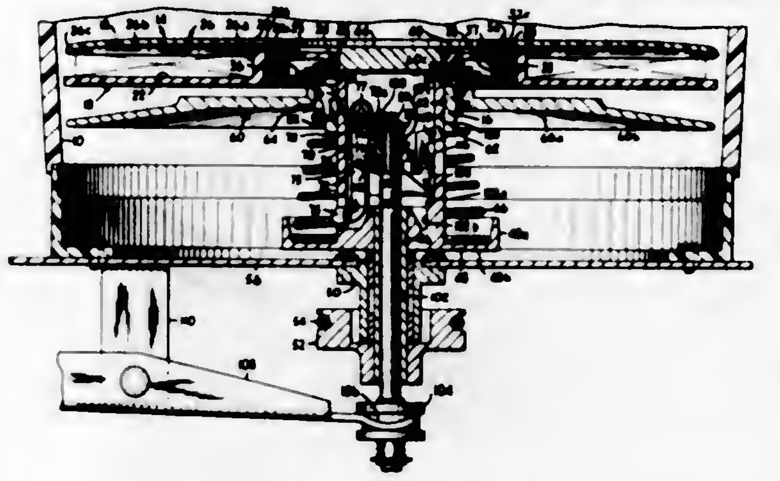
A take-up magazine for record-carrying tapes comprising a shallow housing that is open at one end for receiving a tape-carrying spool by edgewise insertion into the open end and a spool-receiving plate provided with a plurality of spool-centering and spool-driving members projecting only slightly above the upper surface of the plate to engage the bottom of the spool, whereby a spool slightly thinner than the open end is movable onto and removable from the receiving plate along a substantially horizontal path.

3,401,899
CARTRIDGE AND CARTRIDGE CARRIER

Abraham A. Goldberg, Stamford, Conn., assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Dec. 30, 1965, Ser. No. 517,752
14 Claims. (Cl. 242—55.13)

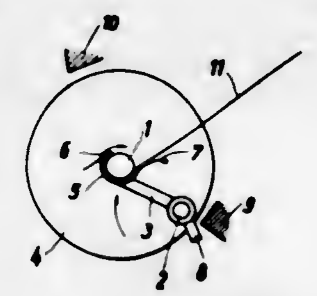
A cartridge and cartridge carrier mechanism for use with recording and reproducing equipment, in which the cartridge includes spaced apart, relatively movable base and cover members defining a space for receiving a

wound coil of strip material carrying the information to be recorded or reproduced. Resilient means carried by the cartridge and mutually reacting with portions of the base and cover members normally holds the cover member in a position in which a rim portion thereof engages the periphery of the coil to prevent the material from unwinding when the cartridge is not in use. The cartridge is engageably supported by a rotatable carrier including a spindle over which the cartridge is slipped, and an elevator platform axially movable with respect to the spindle. When the cartridge is inserted over the spindle and supported by the platform, the cartridge and platform may be manually depressed together to a position in which a releasable latch in the spindle retains the cartridge and platform in its depressed position. At the same time, downward movement of the carrier platform causes arms in the spindle to project radially outwardly to move the base member axially in relation to the cover member and release the cover member from its engagement of the coil to allow it to unwind.



3,401,900
APPARATUS FOR PRODUCING COIL FORMS

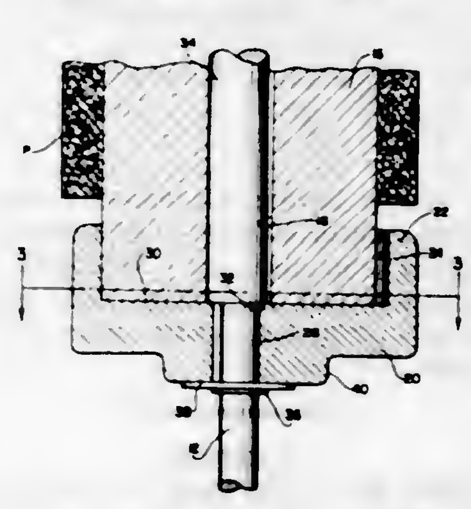
Georg Lutz, Nuremberg, Germany, assignor to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Aug. 28, 1964, Ser. No. 392,881
Claims priority, application Germany, Nov. 12, 1963, T 25,055
14 Claims. (Cl. 242—56.1)



1. Apparatus for producing coil forms of one or more foils, comprising, in combination:
a coiling mandrel for coiling a foil;
feeder means movable with respect to the coiling mandrel for pressing the leading end of a foil to be coiled against said mandrel and wrapping it therearound until the tip of the foil is in the vicinity of the standing portion of the foil, said feeder means including a gripper fashioned to correspond to the circumference of the coiling mandrel and extending approximately half way around said circumference, and a follower surface for resiliently pressing against the coiling mandrel during removal of the feeder means therefrom, the gripper having a thin tip on its end opposite the follower surface;
mounting means rotatable about the axis of the coiling mandrel; and
means pivotally connecting the feeder means to said mounting means at a point displaced from said axis, a stop pin for actuating the feeder means, a first stop member for contacting the stop pin in a starting position, and a second stop member for contacting the stop pin in a finishing position, wherein the feeder means has wrapped the foil around the mandrel so that the foil tip is in the vicinity of the standing portion of the foil.

3,401,901
YARN PACKAGE SUPPORT

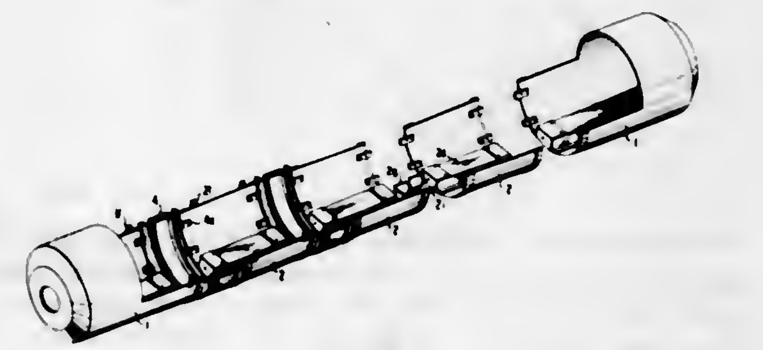
Robert E. Morton, Warwick, and Charles G. Reynolds, Cranston, R.I., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Jan. 25, 1967, Ser. No. 611,748
4 Claims. (Cl. 242—129.5)



A yarn package support having an eccentrically movable support member and an eccentrically movable spindle for gripping and holding the package support in position therebetween.

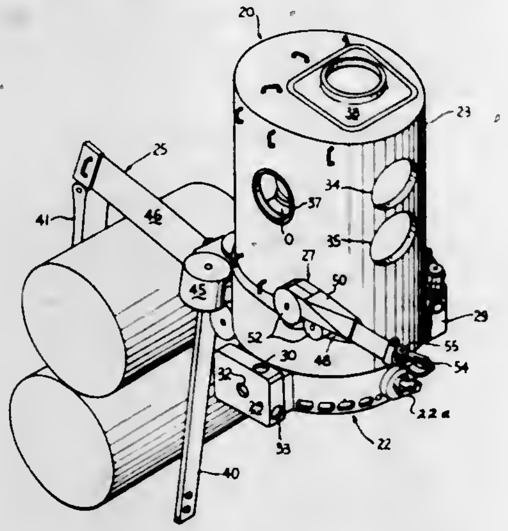
3,401,902
OPEN CARTRIDGE OF LARGE DIMENSIONS FOR PNEUMATIC CONVEYING

Jacques C. Gouyon-Beauchamps, Ville d'Avray, and Simon A. Cynober, Paris, France, assignors to Saunier Duval Setri, Bezons, France, a French company
Filed Feb. 10, 1967, Ser. No. 615,197
Claims priority, application France, Feb. 18, 1966, 50,113
4 Claims. (Cl. 243—34)



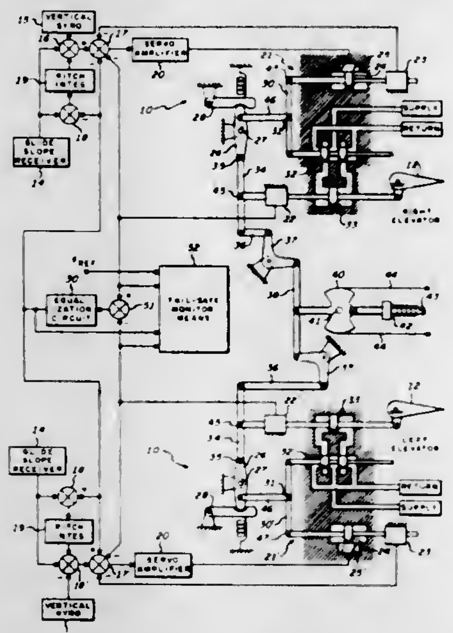
An open cartridge for conveying relatively bulky articles such as mailbags in either direction in a pneumatic pipe, comprising two end members acting as sealed pistons, and a plurality of intermediate members, said end and intermediate members being each composed of an internal rigid frame covered with a resilient cover and a sliding cover, and being interconnected by resilient articulated means including a gimbal ring coupling.

3,401,903
SPACE TRANSPORTATION AND MAINTENANCE VEHICLE
Alexander H. Bohr, Sparta, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Jan. 18, 1966, Ser. No. 521,366
10 Claims. (Cl. 244—1)



A space vehicle having a supporting base including rocket attitude control and propulsion means; a control cabin rotatably mounted on the base; universally mounted, base attached, extensible article gripping jaws; and universally mounted, cabin attached, extensible article gripping jaws.

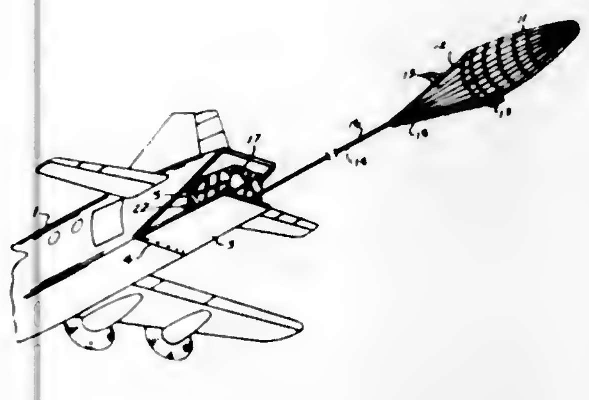
3,401,904
CROSS-CHANNEL MONITORING FOR AIRCRAFT
Raymond A. Nelson, Phoenix, Ariz., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 606,813
4 Claims. (Cl. 244—77)



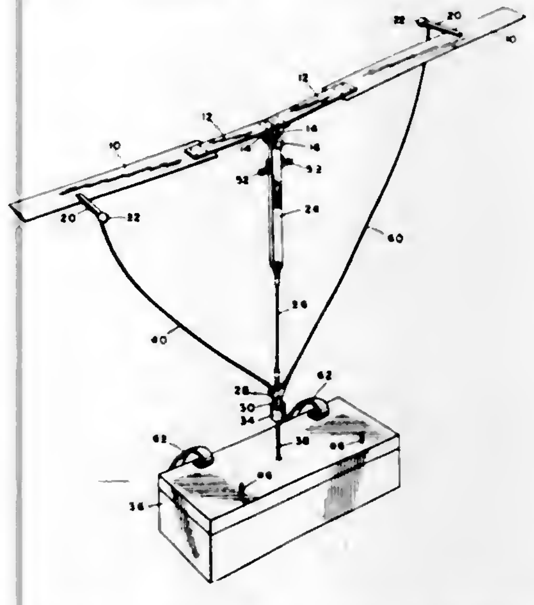
Cross-channel monitoring apparatus for detecting the sustained opposition of two substantially identical automatic control systems for controlling aircraft control surfaces with respect to a single aircraft control axis.

3,401,905
PARACHUTE LOW ALTITUDE DELIVERY SYSTEM
Myles A. Rohrlick, 5 Maume Circle, Hampton, Va. 23366
Filed Oct. 6, 1966, Ser. No. 585,227
9 Claims. (Cl. 244—137)

An aerial cargo delivery system and apparatus for selectively delivering cargo at low levels from a cargo delivery aircraft having a rear cargo receiving and delivery opening and ramp on which the cargo bundle or load is disposed for selective rearward delivery off of the ramp to the ground. Reefed parachute means having a predetermined reefed area is connected to the cargo load by a load suspension line. A first, release means provided in the cargo aircraft for selectively releasing the reefed parachute into the slip stream below and behind the aircraft for deployment in its reefed condition. A "breakaway" retaining connection of predetermined break strength is connected between the load suspension line and the aircraft having a break strength sufficient to resist the pull of the reefed parachute, when deployed but is not sufficient to resist the increased pull on the load suspension line when the chute is subsequently dereefed and expanded to its full drag and load suspension area. A second or parachute dereefing initiating means is provided in the aircraft to selectively dereef the reefed parachute at any selected time to increase the pull on the suspension line and break the "breakaway" connection by the increased pull on the suspension and pull the cargo load off of the ramp for immediate full suspension and lowering by the fully deployed (dereefed) parachute means.

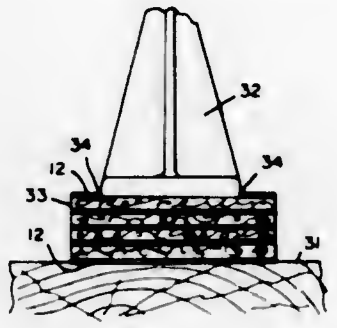


3,401,906
GYROCHUTE
Peter F. Girard, La Mesa, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed May 3, 1966, Ser. No. 547,315
8 Claims. (Cl. 244—138)



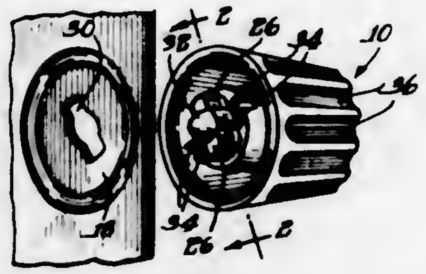
The gyrochute has a single point of attachment to a payload and is easily stowed with the rotor blades in folded condition. When released, the structure is self-deploying to operating position and autorotates to support the payload, the rotor blades having very simple control means to limit their coning angle and pitch angle in relation to the rotational speed and the load, so providing effective constant speed control for a steady rate of descent.

3,401,907
FIBER SURFACE VIBRATION ABSORBING MOUNT
Francis Roland McDermott, Wrentham, Mass., assignor to Clark-Cutler-McDermott Company, Franklin, Mass., a corporation of Massachusetts
Filed Feb. 12, 1965, Ser. No. 432,102
4 Claims. (Cl. 248—22)



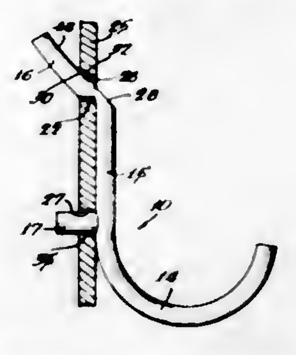
1. A vibration absorbing mount for fixedly securing a machine to a floor comprising a central vibration absorbing core of fibers dispersed in cured vinyl and surface layers of fiber fabric with the fibers of said fabric bonded to the surface of said central core by an adhesive and extending outwardly therefrom, the outer surfaces of said fiber fabric comprising a substantial pile layer of fibers free of said adhesive but firmly bonded to said central core by the adhesive extending from said core to bond with the bases of said pile layers whereby a machine may be fixedly secured to a floor by adhesively bonding one of said surface layers to said machine and the other of said surface layers to said floor.

3,401,908
ONE-PIECE PLASTIC FOOT DEVICE
George M. Rapata, Park Ridge, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Dec. 14, 1966, Ser. No. 601,765
10 Claims. (Cl. 248—188.8)



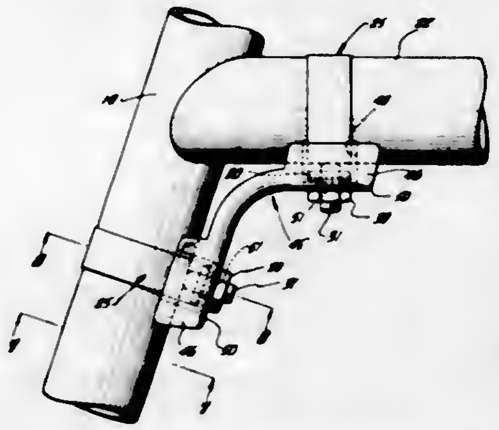
This invention relates generally to improvements in foot devices of the type adapted for attachment to the bottom of cabinets and the like, and more particularly to a one piece plastic foot device of simple and practical design which may be applied with facility to a protuberance extending downwardly from the under side of cabinets or the like.

3,401,909
SUPPORT FIXTURE
Thomas L. Kalahar, Park Ridge, Ill. (% Perfix Manufacturing Co., 10363 Franklin Ave., Franklin Park, Ill. 60131)
Filed Dec. 30, 1966, Ser. No. 606,289
15 Claims. (Cl. 248—225)



A supporting fixture adapted to be mounted in either a standard one quarter inch perforated board or a standard one eighth inch perforated board including an article supporting member having two rearwardly extending projections, one of which is arranged to snugly engage the lower surface of the perforations in either the one eighth inch or one quarter inch boards, and the other of which is constructed to fit in either the one eighth inch or one quarter inch board perforations and having an upper surface shaped such that it engages the rear upper edge of the associated perforation in both the one eighth inch and one quarter inch boards forcing the one projection against one side of the perforations in either the one eighth inch or one quarter inch boards.

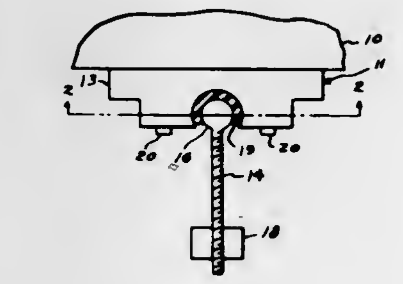
3,401,910
GUARD RAIL MOUNTING
Raymond C. Rude, % Arcadia Air Products, 383 N. Altadena Drive, Pasadena, Calif. 91107
Filed Sept. 13, 1965, Ser. No. 486,897
6 Claims. (Cl. 248—251)



A guard rail structure in which a rail is seated against a cradle-shaped portion of an anchored bracket. A band is formed in a loop around the rail and extends into a recess in the cradle-shaped portion of the bracket. A threaded member is secured to the band by a nut, and the member extends through the recess to be secured to the bracket by a second nut.

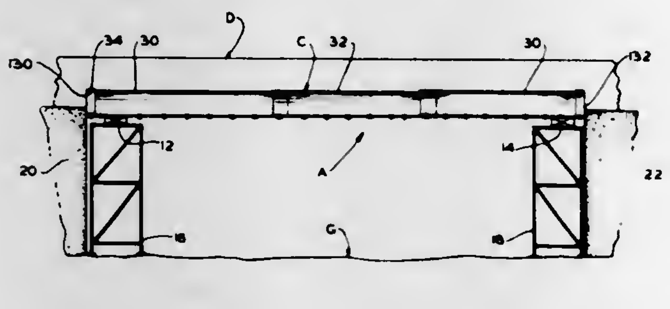
3,401,911
ADJUSTABLE VISCOELASTIC VIBRATION ENERGY DISSIPATOR
Benjamin J. Lazan, deceased, late of St. Paul, Minn., by Jeannette W. Lazan, special administratrix, St. Paul, Minn., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Dec. 13, 1966, Ser. No. 603,706
5 Claims. (Cl. 248—358)

A vibration energy dissipator having an inertial mass secured to a support through a viscoelastic material is adjustable to change the natural frequency of the system. The natural frequency of the energy dissipator is adjusted either by changing the position of the inertial mass of a pendulum or by changing the tension is a wire supporting an inertial mass.



3,401,912
FORM ASSEMBLY FOR ERECTING CONCRETE SPANS

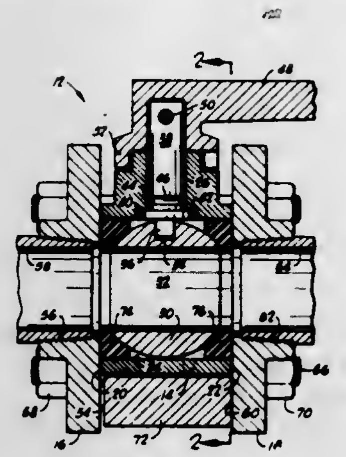
John H. Nichols, 2472 Arnold Tenbrook Road, Arnold, Mo. 63010
Filed Mar. 31, 1966, Ser. No. 541,466
13 Claims. (Cl. 249—1)



The disclosure relates to a self-supporting form assembly of adjustable length and variable width for use between spaced pylons, and parallel support beams in the erection of large concrete structures. The assembly utilizes component parts which make it capable of being readily disassembled and afford it a high degree of portability from job to job.

3,401,913
BETWEEN FLANGE VALVE STRUCTURE

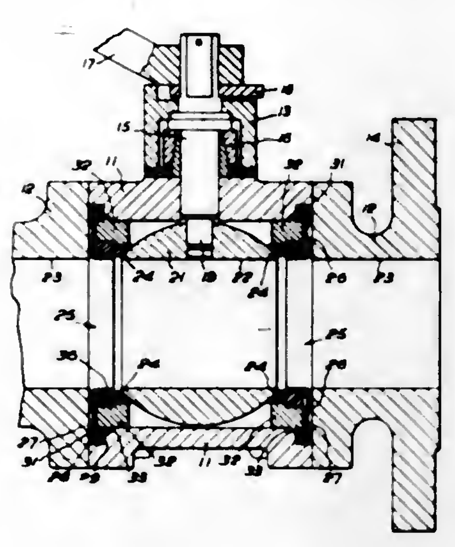
Domer Scaramucci, Oklahoma City, Okla., assignor to Balon Corporation, Oklahoma City, Okla., a corporation of Oklahoma
Filed Feb. 10, 1966, Ser. No. 526,587
10 Claims. (Cl. 251—151)



A structure for holding the flanges of the between flange valve in alignment and not interfering with the removal of the valve from between the flanges. A support, extending around less than 180° of the valve body, engages at least two of the bolts connecting the flanges and holds the flanges aligned.

3,401,914
FLUID CONTROLLING VALVES

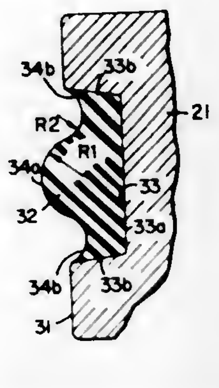
Stanley Grapes Shand, Hereford, England, assignor to Saunders Valve Company Limited, Monmouthshire, England, a British company
Filed Feb. 23, 1965, Ser. No. 434,350
Claims priority, application Great Britain, Feb. 25, 1964, 7,841/64
16 Claims. (Cl. 251—172)



In a valve having seating rings cooperating with an obturating member such as a ball plug or gate, the seating rings (suitably of PTFE) are sealed each to a flexible metallic diaphragm (suitably of stainless steel) by an O-ring (suitably of "Viton") and the margin of the diaphragm is sealed to the valve casing by a similar O-ring. The former O-ring is disposed so that the seating ring and diaphragm protect it from the controlled medium. The seating ring is pressed against the obturating ring by the spring action of the diaphragm and the controlled fluid which has access to the back of the diaphragm.

3,401,915
RESILIENT MATERIAL VALVE SEAL RING

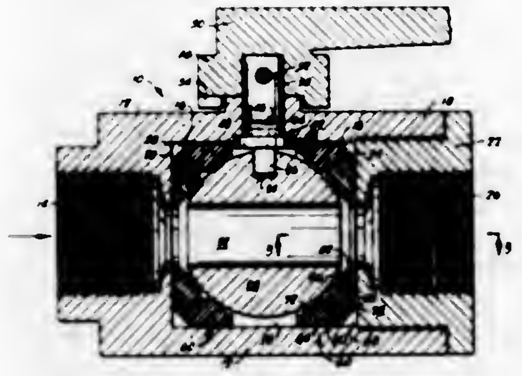
Kee W. Kim, Houston, Tex., assignor to M & J Valve Company, Houston, Tex., a corporation of Delaware
Filed May 10, 1966, Ser. No. 548,936
1 Claim. (Cl. 251—174)



A valve having a spring pressed metal seal ring with an insert of resilient material. The configuration of the insert in section is such as to form a convex surface portion for sealing contact with an adjacent valve working surface. This convex surface is intermediate of concave portions. When the insert is fully compressed annular spaces exist between the concave surface portions and the adjacent valve working surface.

3,401,916
DUAL RING VALVE SEAT

Domer Scaramucci, Oklahoma City, Okla., assignor to Balon Corporation, Oklahoma City, Okla., a corporation of Oklahoma
Filed Oct. 17, 1966, Ser. No. 587,125
32 Claims. (Cl. 251—175)



1. A valve, comprising:

a body having a valve chamber therein and inlet and outlet openings communicating with the valve chamber, said valve chamber having a seat receiving socket therein around the outlet opening defined by an annular end wall extending substantially normal to the axis of the outlet opening and a cylindrical outer wall projecting from the end wall;

a valve ball mounted in the valve chamber for movement downstream toward said outlet when in a closed position and subjected to a pressure differential; and

a seat assembly in said socket, comprising:

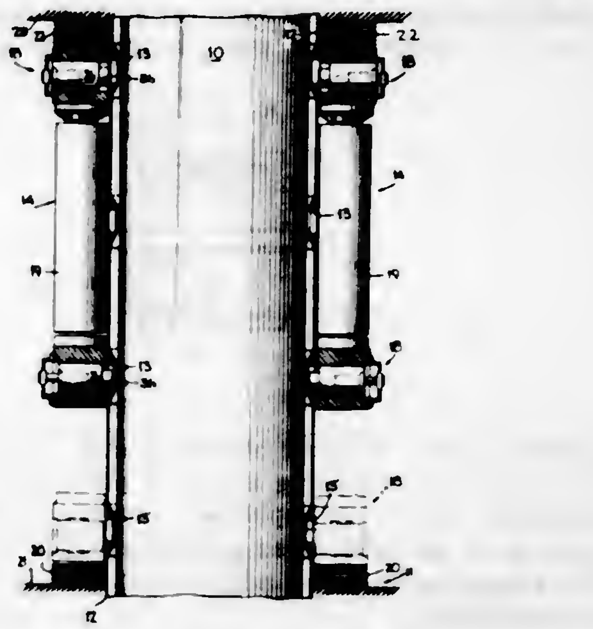
  a smaller diameter ring immediately surrounding the outlet having a tapered seating surface facing the valve ball and having the outer end thereof facing the socket end wall and tapered to only partially engage the socket end wall when the valve ball is centered in the valve chamber, said smaller diameter ring being flexible to be twisted by the valve ball until the outer end thereof is in full engagement with the socket end wall when the valve ball is forced downstream; and

  a larger diameter ring surrounding the smaller diameter ring having a tapered seating surface facing the valve ball and having a tapered outer periphery only partially engaging the socket outer wall when the valve ball is centered in the valve chamber, said larger diameter ring being flexible to be twisted by the valve ball until the entire outer periphery thereof is in engagement with the socket outer wall when the valve ball is forced downstream.

3,401,917
HYDRAULIC CYLINDER APPARATUS

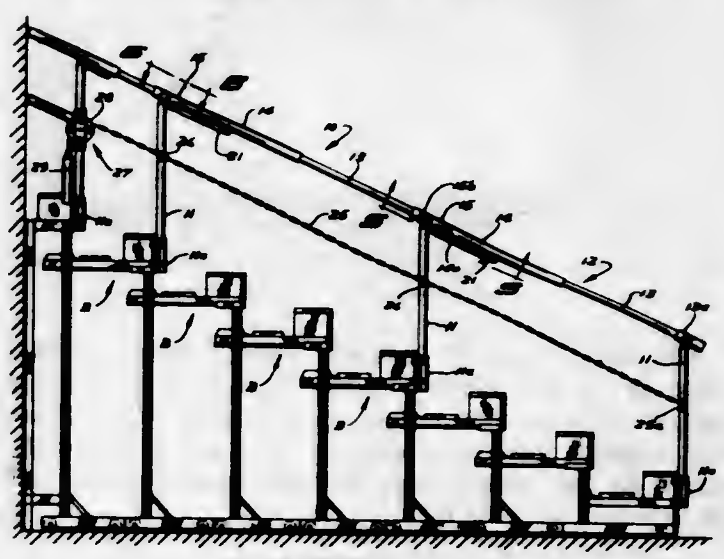
Robert E. Bradbury, Jr., Houston, Tex., assignor to The Offshore Company, Houston, Tex., a corporation of Delaware
Filed July 1, 1966, Ser. No. 562,400
17 Claims. (Cl. 254—106)

The hydraulic cylinder apparatus includes a pin cylinder assembly secured within the pin engaging the support leg of the marine platform and fixed to the pin housing. The pin cylinder assembly operates to reciprocate the pin relative to the pin housing within a limited amount of space. Also, the components of the apparatus are of such weight as to be handled manually.



3,401,918
FOLDABLE HAND RAIL

Harold Wiese, Madison, S. Dak. 57042
Filed Jan. 30, 1967, Ser. No. 612,392
8 Claims. (Cl. 256—59)



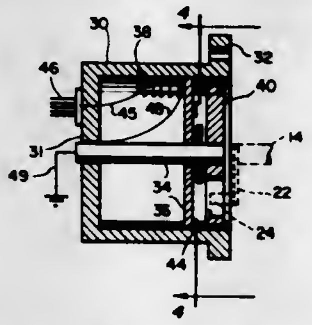
A hand rail, guard rail or section defining device designed for attachment to folding seating structures providing upright supports for attachment to spaced seat portions thereof having a first pivotally connected member on one of the supports directed toward the other support and a telescoping member on the other support directed toward the first support to be received into the first member for longitudinal collapsing therebetween when the seats are shifted into folded relation.

3,401,919
REMOTE CONTROLLED VEHICLE CARBURETOR CHOKE

Helmut Seufert, Salina Star Rte., and Donald L. Colbenson, 2693 4th St., both of Boulder, Colo. 80302
Filed Nov. 28, 1966, Ser. No. 597,445
5 Claims. (Cl. 261—64)

1. A control for an air inlet valve of the carburetor of an internal combustion engine comprising a housing mountable on the carburetor of an internal combustion engine; lever means arranged to be associated with the shaft of the air inlet valve of such a carburetor and to rotate the same for opening and closing the air inlet; elec-

tromagnetic means mounted in said housing arranged to apply a magnetic effect at a series of preselected positions; a magnetic follower mounted on said lever arranged to be moved sequentially through said preselected positions under the influence of said electromagnetic means and



thereby rotate the shaft of the air inlet valve; and means for selectively activating at least a portion of said electromagnetic means to apply said magnetic effect through said series of preselected positions which correspond to full closed to full open positions of the air inlet valve of the carburetor.

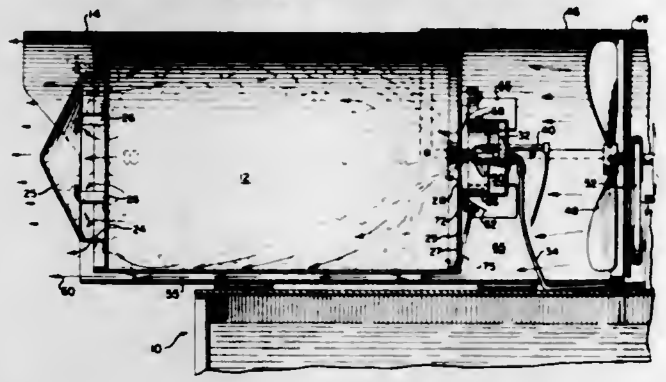
3,401,920

SPACE HEATING DEVICE

John G. Berkhoudt, Lakeview, and John M. Melisz, Springville, N.Y., assignors to Lisk-Savory Corporation, Buffalo, N.Y.

Filed June 27, 1966, Ser. No. 560,526

4 Claims. (Cl. 263—19)



The burner unit of a space heating device is held in place by air flow control vanes which position the burner unit in spaced relationship to the combustion chamber inlet opening and an adjustable collar is telescopically received in the burner unit housing selectively to control the effective area of the air inlet.

3,401,921

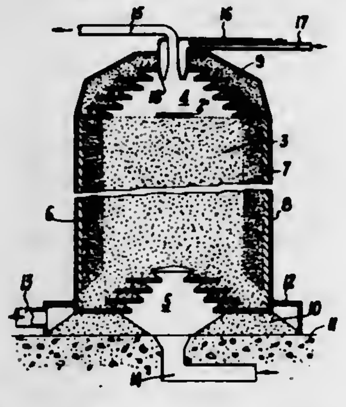
GASEOUS HEAT EXCHANGER

Jean Comte, 148 rue du General de Gaulle, Longeville-les-Metz, Moselle, France

Filed Oct. 3, 1966, Ser. No. 583,825

Claims priority, application France, Oct. 4, 1965, 33,584

7 Claims. (Cl. 263—19)



A heat exchanger of Cowper type with a tubular envelope containing a filling of fragmentary material permeable to gaseous currents. The filling material has at least one free space adjacent one of the ends of the casing which communicates with an external conduit. The free space is of sawtooth shape as formed by vertically superimposed coaxial rings separated from one another by layers of the fragmentary material.

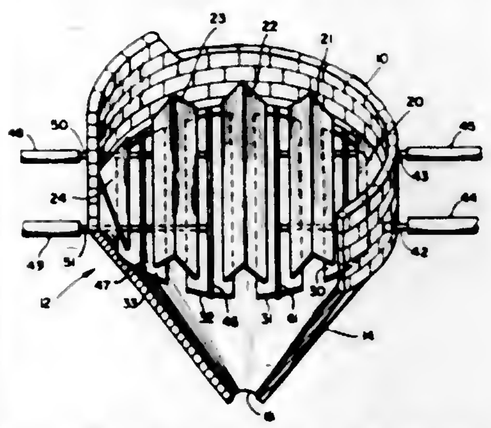
3,401,922

LINEAR GRATE FOR SHAFT KILNS

John B. Jones, Jr., Denver, Colo., assignor, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware

Continuation-in-part of application Ser. No. 498,892, Oct. 20, 1965. This application Oct. 24, 1966, Ser. No. 589,091

13 Claims. (Cl. 263—29)



A discharge grate for circular shaft kilns has at least one generally rectangular opening with a retarder plate juxtaposed below the opening therein, and a linear pusher bar is mounted in the space above the retarder plate so that on reciprocating motion it moves material off the edges of the retarder plate. The bar configuration is such that material discharged from the kiln is uniform across the lateral extent of the kiln.

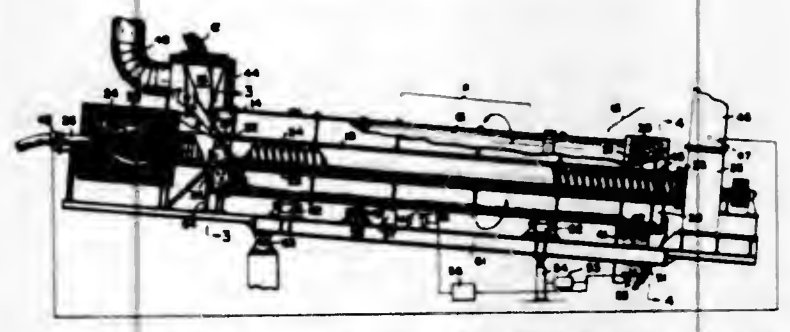
3,401,923

DRYER

Wendell E. Bearce, St. Clairsville, Ohio, assignor to Wilmot Engineering Company, White Haven, Pa., a corporation of Pennsylvania

Filed Feb. 17, 1966, Ser. No. 528,261

10 Claims. (Cl. 263—32)



A dryer for wet granular material comprising a rotatable drum or container into which is fed the wet granular material at its feed end. Heated particles are introduced through the feed end into the wet granular material and mixes with it to transfer heat thereto to dry the material. The drum slopes downwardly and is rotated so as to move the mixture of particles and material in concurrent flow through the drum to a discharge end where the dry material is discharged and the particles are recovered and deposited in a heating chamber or housing where the particles are moved in a direction countercurrent to the flow of the mixed particles and are reheated and reintroduced to the wet granular material at the feed end of the container. A perforated screw conveyor advances the particles through the reheating housing and a fan pulls the heating gases from a heating source located at the feed end of the drum through the advancing particles.

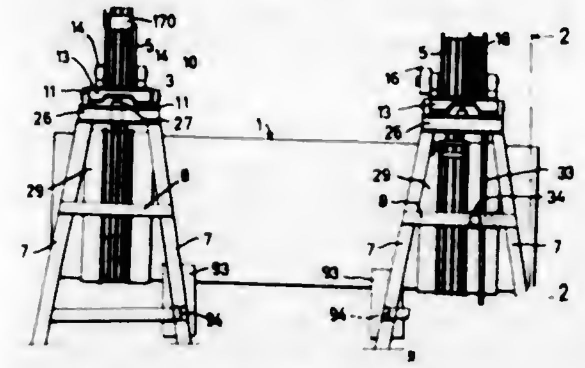
3,401,924

WIRE ROPE CONNECTOR AND KILN DRIVE STRUCTURE

George P. Hurst, 719 Northampton Ave., Palo Alto, Calif. 94303

Filed Apr. 14, 1967, Ser. No. 636,233

16 Claims. (Cl. 263—33)



A rotary, generally horizontally extending dryer, kiln, trommel, ball mill, or the like, suspended by sets of wire ropes from overhead sheaves for rotation about an axis that is inclined relative to horizontal for passage of material therethrough or for processing material.

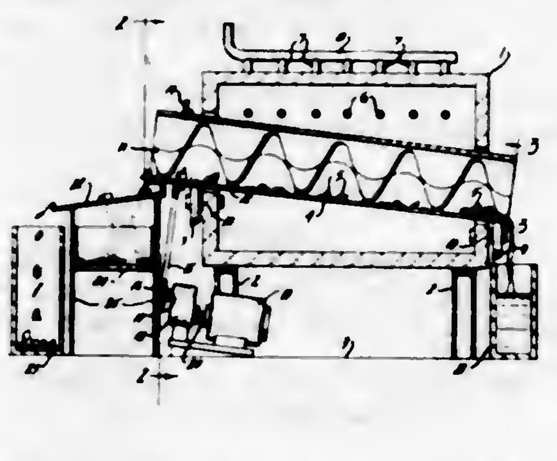
3,401,925

APPARATUS FOR SEPARATING MATERIALS

Marvin Evans, Bayside, and David H. Miller, Whitefish Bay, Wis., assignors, by mesne assignments, to College Research Corp., Whitefish Bay, Wis., a corporation of Wisconsin

Filed Sept. 29, 1965, Ser. No. 491,139

6 Claims. (Cl. 266—37)



The disclosure relates to an apparatus for separating metals and comprises an inclined tube or retort which is mounted for rotation about its axis within a furnace. A spiral flight is secured within the retort and scrap material is fed into one end of the retort and is carried through the retort by the spiral flight. As the material moves within the retort, the lower melting point alloy is melted and flows downwardly along the inner wall of the retort through openings or slots in the periphery of the spiral flighting and is collected in a container at the low end of the retort. The unmelted higher melting point alloy is moved through the retort by the spiral flight and is collected in a separate container.

3,401,926

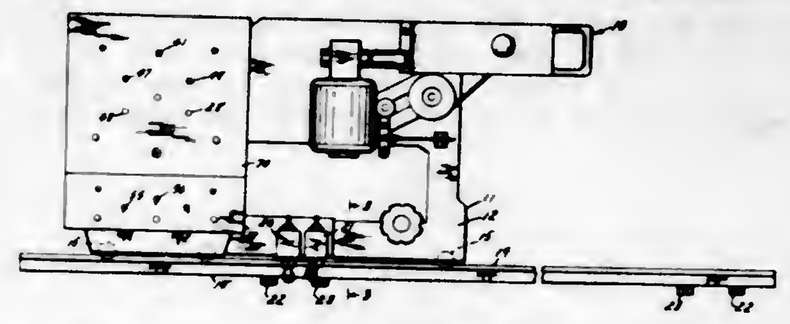
CARRIAGE CONTROL MEANS FOR CLOTH LAYING MACHINES

Gerard J. Wendelken, Harrington Park, N.Y., assignor to Cutting Room Appliances Corp., New York, N.Y.

Filed May 9, 1966, Ser. No. 548,553

1 Claim. (Cl. 270—31)

A motor driven carriage for a cloth laying machine, including clutch means interconnecting the motor and the driven mechanism, and means for disengaging the clutch means in serial relation to the interruption of current flow to the motor, whereby the clutch means will remain engaged until the carriage has come to a stop, and the automatic disengagement of the clutch means permits manual positioning of the carriage before resumption of current flow to the motor.



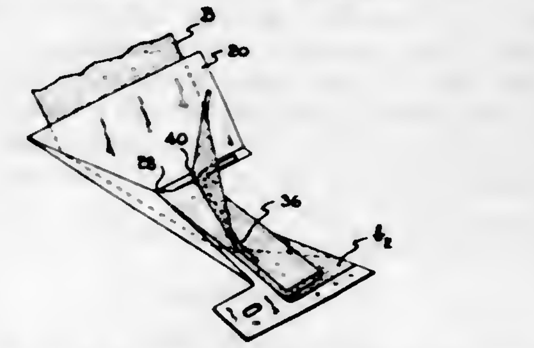
3,401,927

LONGITUDINAL WEB FOLDING BOARD

Richard H. Frick and Herbert H. Scholz, Neenah, Wis., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed July 25, 1966, Ser. No. 567,440

6 Claims. (Cl. 270—40)



A folding device for both overfolding and underfolding lateral strips of a web of sheet material with respect to a central zone of the web including first, second and third folding edges disposed in a single plane and joining at a single point, a fourth folding edge extending from said point at obtuse angles to said first and second folding edges so that the central zone of the web may be passed over the first folding edge while a lateral edge strip of the web passes successively over the fourth, second and third folding edges to be folded underneath the central zone of the web, said folding device also including a fifth folding edge extending from a second point on said first folding edge spaced from said first point and extending obliquely with respect to said first folding edge and being disposed in the same plane as said fourth folding edge and a sixth folding edge substantially in said first named plane and extending from said second point to said second folding edge so that a lateral edge strip of the web may successively pass over said fifth and sixth folding edges to be folded over said central zone of the web.

3,401,928

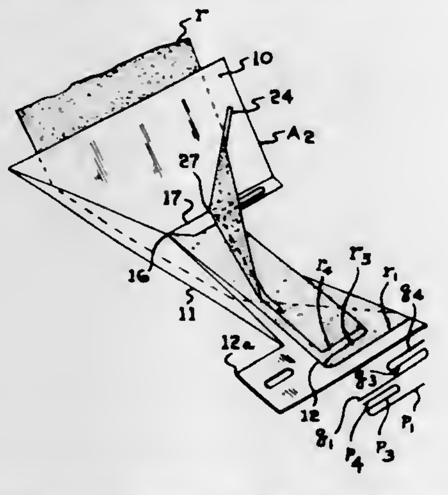
MACHINE FOR PRODUCING A LONGITUDINALLY FOLDED STACK OF WEBS

Richard H. Frick, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed Aug. 19, 1966, Ser. No. 573,585

5 Claims. (Cl. 270—40)

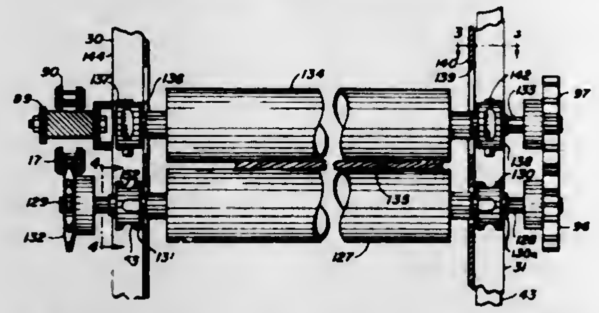
A machine for folding uniform width webs of sheet material into a stack with each web being folded to have two quarter folds on the top surface and a half width fold on the bottom, the machine comprising a series of folding devices each of which overfolds the top quarter width fold and underfolds the bottom half width fold with respect to the intermediate quarter width fold and each folding device having first, second and third folding edges disposed in a single plane and joining at a single point, a fourth folding edge extending from said point at obtuse angles to said first and second folding edges so that the central zone of the web may be passed over the first folding edge while a lateral edge strip of the web passes successively over the fourth, second and third folding edges to be folded underneath the central zone of the web, each said folding device also including a fifth folding edge extending from a second point on said first folding edge spaced from said first point and extending obliquely with respect to said first folding edge and being disposed in the same plane as said fourth folding edge and a sixth folding edge substantially in said first named plane and extending from said second point to said second folding edge so that a lateral edge strip of the web may successively pass over said fifth and sixth folding edges to be folded over said central zone of the web.



3,401,929

BEARING MEMBER FOR SHEET MATERIAL ROLLER FEED

August Stock, Alsfeld, Hesse, Germany, assignor to Moore Dry Kiln Company, Jacksonville, Fla., a corporation of Florida
Original application July 29, 1964, Ser. No. 385,883, now Patent No. 3,324,571. Divided and this application Mar. 24, 1967, Ser. No. 632,491
3 Claims. (Cl. 271—50)



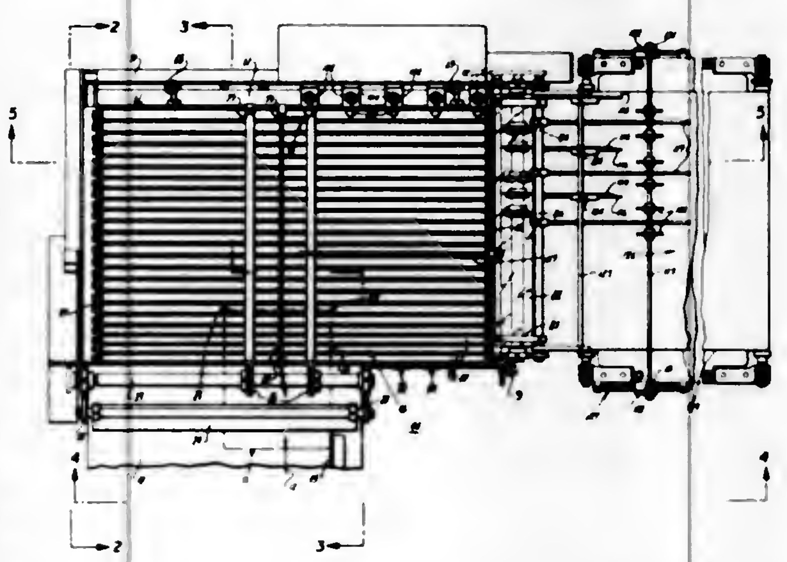
A self-aligning bearing member for feed rolls of a sheet material dryer, the block having exterior grooves and channels cooperating with mounting knobs and guides of the dryer frame. The block is interchangeable between lower supporting feed rolls and upper floating rolls.

3,401,930

MACHINE FOR RECEIVING AND TRANSLATING SHEET MATERIAL FOR TRIMMING, SLICING, SCORING OR PERFORATING

Lewis H. Bishop, San Carlos, Calif., assignor to Pierce Specialized Equipment Company, San Mateo, Calif., a corporation of California
Filed Oct. 24, 1965, Ser. No. 504,732
4 Claims. (Cl. 271—52)

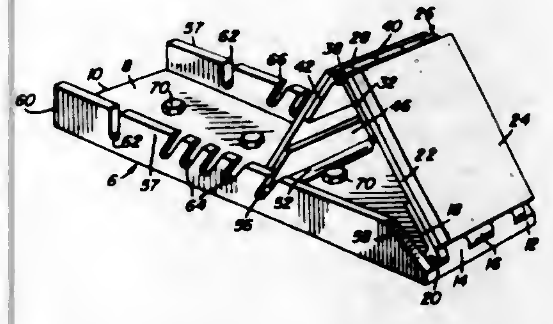
A machine for receiving and translating sheet material for trimming, slicing, scoring, or perforating the paper includes a feed table formed of rotating rods serving to accelerate paper received thereon and moving in a given direction. A guide member engages the leading edge of the paper and rotating canted wheels positively engage the leading edge of the sheet being fed and urge it into registration with the alignment guide while feeding the sheet unit into sheet treating means, such as a rotary cutting blade. The leading edge of the sheet unit so engaged by the rotating feeding wheels is positively engaged between the lowermost of a stack of rotating balls disposed above an associated one of the feed wheels. As the sheets are fed through the sheet slicing means, such as the rotary blade, the subdivided parts of each sheet unit are cammed laterally apart and carried forward on a creeper table. The accelerating rollers of the feed table operate at a speed and include a path length whereby each sheet unit fed is quickly advanced away from the next succeeding sheet unit whereby sheets are fed one at a time across the feed table and through the sheet slicing blades. Above the sheet units a jet blast of air serves to retain the sheet units adhered to the rollers of the feed table.



3,401,931

ADJUSTABLE STARTING BLOCK

George R. McCafferty, 1057 Seymore Place, and James T. Underhill, Jr., 25350 Cypress St., both of Hayward, Calif. 94544
Filed Sept. 13, 1965, Ser. No. 486,939
3 Claims. (Cl. 272—59)

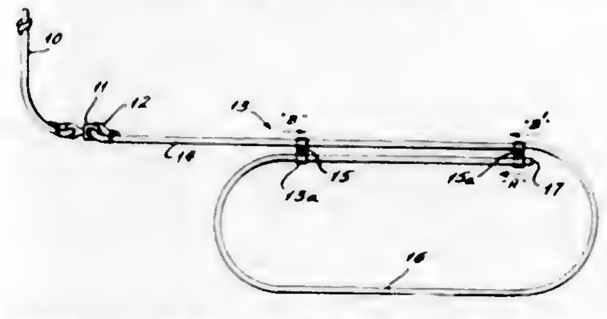


A track runner's starting block usable indoors or outdoors. It comprises an elongated portable base channel-shaped and whose channel has open ends. A first panel has a lower end hinged between forward ends of the side walls and is provided with an anti-skid pad. The upper end of this first panel is hinged to an upper end of a second like panel which tilts and props the first panel up. When not in use both panels fold down and can be compactly stored flatwise in the channel. The prop-forming panel is provided at a lower free end with outstanding keeper pins seatable and retained in selectively usable keeper notches provided therefor in the side walls.

3,401,932

SPINNING LARIAT

William O. Schweitzer, 10342 Old Olive Street Road, St. Louis, Mo. 63141
Continuation-in-part of application Ser. No. 264,186, Mar. 11, 1963. This application Apr. 29, 1966, Ser. No. 546,368
8 Claims. (Cl. 272—75)

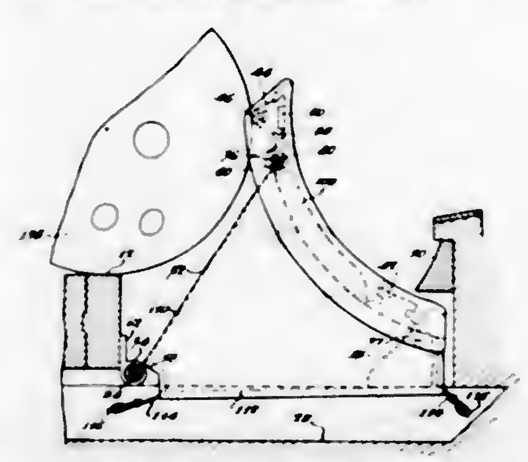


A spinning rope including a hand hold and a main rope body connected thereto by a swivel. The main rope body is adjustable by repositioning a number of keepers so as to provide corresponding adjustments in the sizes of the spindle portion of the rope and the spinning loop. As the loop is made larger, the spindle increases in length. It is necessary in learning how to spin a rope that the beginner start with a small loop and gradually increase it in size, so that the spindle must begin with a short length and also increase in length as the spinning loop increases in size.

3,401,933

CAROM BOWLING GAME

Robert M. Conklin, Robert Torresen, and Anthony J. Gretzky, Muskegon, Mich., assignors to Brunswick Corporation, a corporation of Delaware
Filed Feb. 23, 1965, Ser. No. 434,430
15 Claims. (Cl. 273—37)



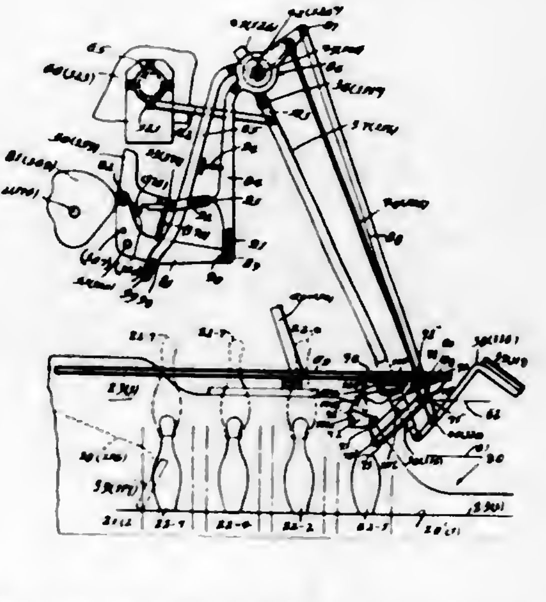
A convertible bowling lane including a bowling lane bed, at least one gutter extending along the side of the bed and including a ball receiving surface on one side thereof and ball deflecting means on the opposite side thereof together with means movably mounting the gutter for alternate movement between a position wherein the ball receiving surface is disposed to catch balls leaving the bed and a ball deflecting position wherein the ball deflecting means is disposed along the side of the bed to deflect balls coming in contact therewith, means for moving the gutter between the two positions and means for detecting and indicating when a ball has contacted the deflecting means.

3,401,934

PIN DETECTING APPARATUS

Donald E. Roop, Columbus, Ohio, assignor, by direct and mesne assignments, to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 22, 1961, Ser. No. 161,654
40 Claims. (Cl. 273—54)

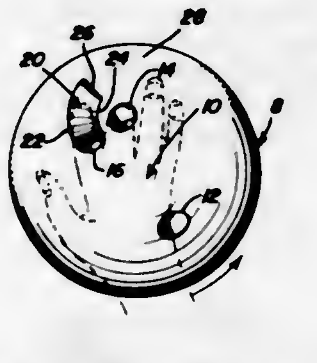
19. Apparatus for detecting pins left standing at triangularly arranged pinspots on a bowling alley adjacent the pit end thereof following the rolling of a ball, comprising, a sensing beam having a length to span the pattern of pins in one direction, means mounting the beam for movement in a direction transverse to its length to scan the pins in the other direction of the pattern, sensors disposed along the beam at positions corresponding to the disposition of pinspots longitudinally of the beam and mounted to engage the pins as the beam moves past the pins, and means associated with the sensors for producing a signal corresponding to each pin encountered by the sensors.



3,401,935

BOWLING BOWL

Robert R. Dietz, P.O. Box 245, Winterhaven, Calif. 92283
Filed Dec. 14, 1965, Ser. No. 513,807
5 Claims. (Cl. 273—63)



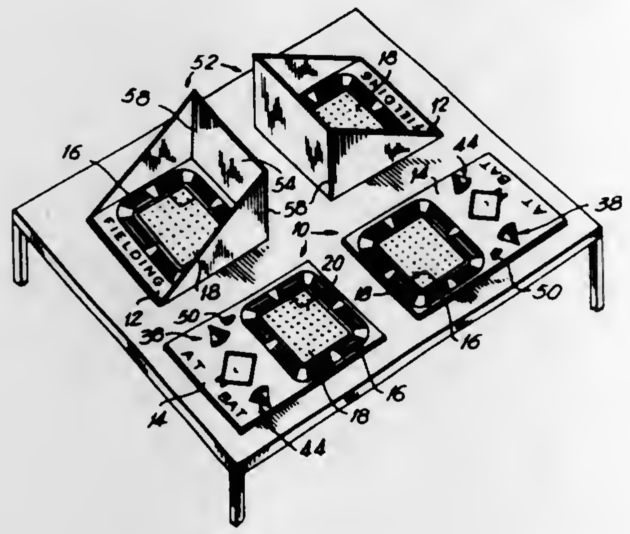
A bowling ball having a thumb hole, an index finger hole and a middle finger hole. An index finger accomodating groove opens into the index finger hole. The depth of said groove gradually decreases in a direction away from the thumb hole.

3,401,936

TOY BASEBALL GAME

Melvin Greenberg, 745 E. 31st St., Brooklyn, N.Y. 11210
Filed Aug. 16, 1965, Ser. No. 479,746
1 Claim. (Cl. 273—88)

A toy baseball game composed of two sets of playing sections. The game is to be played by two players each having a different set. Each set includes two sections. Each section has a pattern of playing locations on it and includes indicia identifying each playing location. The locations on all the sections are the same. Each player has an identical group of playing pieces, the playing pieces of each group bearing different playing directions, including singles, doubles, triples, home runs, walks, double plays and outs, the proportion of playing directions and number of playing pieces being such as to yield a realistic number of hits and outs in any inning of play and a realistic score after nine inninings of play, the number of playing pieces in each group equaling the number of playing locations of one section. Each playing location removably receives one playing piece. One playing section of each set initially has no playing pieces. The other section of each set initially is filled with playing pieces and is concealed from the view of the opponent. The game also has a miniature baseball field and movable pieces for recording the progress of a baseball game during the course of play in accordance with playing directions on playing pieces blindly selected by the opponent from the concealed section.

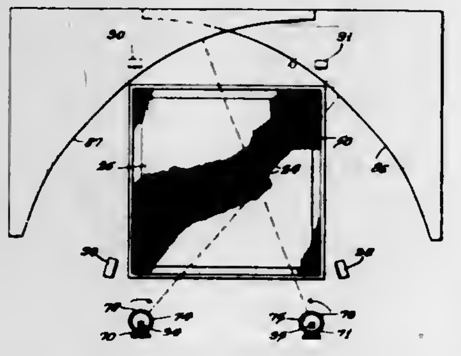


3,401,937
TARGET WITH SCANNING PROJECTILE SENSORS

Albert M. Rockwood, North Muskegon, Jack A. Russell and Anthony J. Gretzky, Muskegon, and Bradford J. Baldwin, Fruitport, Mich., assignors to Brunswick Corporation, a corporation of Delaware

Filed Feb. 15, 1965, Ser. No. 432,787

18 Claims. (Cl. 273—102.2)



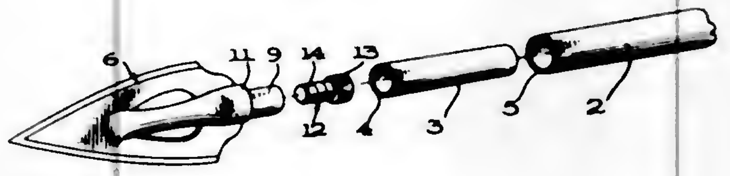
Sensing apparatus for targets adapted to be hit by missiles within a pre-determined pattern including first and second coordinates of a missile within the pattern, each system including means for sweeping a beam of light across the pattern, timing means for timing the sweep of the beam of light across the pattern, means responsive to the beginning of the sweep of the beam of light across the pattern to actuate the timing means, means responsive to the disruption of the light beam by a missile in the pattern to deactuate the timing means and means responsive to the termination of the sweep of the light beam across the pattern for resetting the timing means.

3,401,938
ARROWHEAD ATTACHING MEANS

Fred B. Bear, Grayling, Mich., assignor, by mesne assignments, to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois

Continuation-in-part of application Ser. No. 495,835, Oct. 14, 1965. This application Nov. 2, 1966, Ser. No. 595,312

5 Claims. (Cl. 273—106.5)



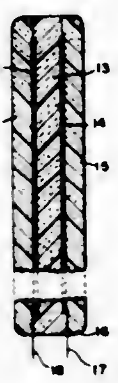
A hollow arrow shaft and arrowhead assembly including an anchor member insertable within the shaft and having means thereon frictionally engaging the member to the interior of the shaft and also providing a threaded connection for the releaseable attachment of the arrowhead.

3,401,939
POLYMER FOAM PROJECTILE-SHORTING TARGET WITH HIT RECORDER

Joseph L. La Mura, West Caldwell, N.J., assignor to Joanell Laboratories, Inc., a corporation of New Jersey

Filed Oct. 21, 1966, Ser. No. 588,350

10 Claims. (Cl. 273—102.2)



1. A target for electrically recording the perforations caused by projectiles comprising; a flat supporting insulator composed of polypropylene foam to form a central flexible panel, an electrode cemented to each side of said insulator, each of said electrodes composed of a metal conducting foil; two additional flat insulator panels bonded to said electrodes by a cement for waterproofing the target and for increasing its mechanical strength, said additional panels also formed of polypropylene foam, and a recorder circuit coupled to said target electrodes for recording each current pulse caused by a projectile penetrating the two metal foil electrodes.

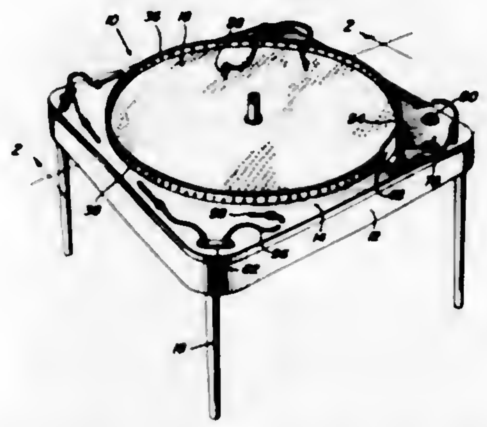
3,401,940
GAME WITH ROTATABLE COMPONENT

George W. Abram, 320 Higuera,
San Luis Obispo, Calif. 93401

Filed Nov. 8, 1965, Ser. No. 506,683

8 Claims. (Cl. 273—139)

A game device comprising a supporting structure with a stationary contact grid thereon. A rotatable member, overlying and turnable relative to the grid, having a plurality of apertures extending therethrough. The rotatable member is indexed by an upstanding flange around its periphery having spaced holes through which an indexing pin can be inserted so as to turn the rotatable member until the pin hits a stop plate mounted on the supporting structure. When thus indexed, a playing pin is insertable by a player through one of the apertures extending through the rotatable member. An electric circuit is connected to the stationary contact grid, preferably poultry netting, and playing pin together with a signal device which is energized when the playing pin, inserted through an aperture of the rotatable member, contacts the conducting portion of the contact grid. Depending upon the aperture through which the playing pin is inserted, it may not contact the conducting portion of the grid so as to not energize the signal device.

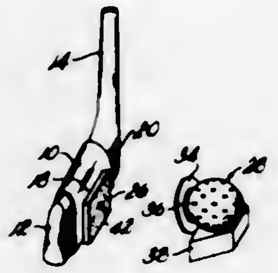


3,401,941
GOLF SWING TRAINING DEVICE

Arthur J. Hesidence, 369 Crosby St.,
Akron, Ohio 44303

Filed Sept. 15, 1966, Ser. No. 579,742

8 Claims. (Cl. 273—186)



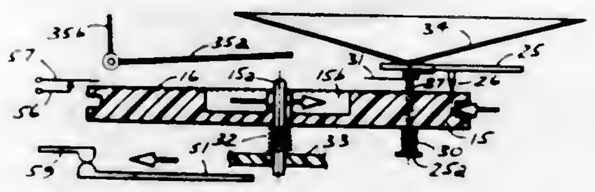
A cushioned first sheet is tangentially secured by a grommet to a practice golf ball and is adapted to adheringly engage a cushioned second sheet secured by an elastic band to the striking face of a golf club head.

3,401,942
TOY RECORD PLAYER

Walter L. Strauss, 1107 Broadway,
New York, N.Y. 10010

Filed June 23, 1965, Ser. No. 466,162

12 Claims. (Cl. 274—1)



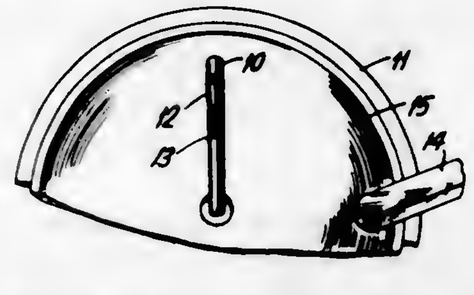
A toy record player for playing back sound recorded on a rotatably and axially mounted turntable which is spring-biased against the stylus arm of the record player which in turn is biased into sound-transmitting contact with a loudspeaker cone. Means are provided for releasably retaining the stylus arm in an OFF position separated from the sound track to prevent damage to the sound track and the stylus arm when the player is not in use. In addition, safety means are provided which are movable between the OFF position in which the sound track on the turntable, the stylus arm and the loudspeaker cone are held in tight mutual engagement and the ON position in which the sound track on the turntable, the stylus arm and the loudspeaker cone are held in yieldable sound-transmitting engagement. These safety means permit storage shipment of the record player in any position without danger to the components of the record player. Moreover, the safety means when in the OFF position disconnect the battery of the record player thereby preventing drainage on the same.

3,401,943
METHOD OF OPERATING AN AUTOMATIC PHONOGRAPH

Edward F. O'Brien, 86—10 34th Ave.,
Jackson Heights, N.Y. 11372

Filed Mar. 17, 1967, Ser. No. 623,904

3 Claims. (Cl. 274—1)



1. The method of automatically replaying a record, comprising the steps of,

placing a flat record disk to be replayed on the spindle of an automatic phonograph record playing machine having a turntable, the said record having a record groove terminating in an innermost groove,

placing a small thin flat blank, having a hole, on the spindle on top of the said record with the spindle within said hole, the outer circumference of said blank being of a size to fit within the said innermost groove on said record, and said blank having a thickness of about 1/16 of an inch, and

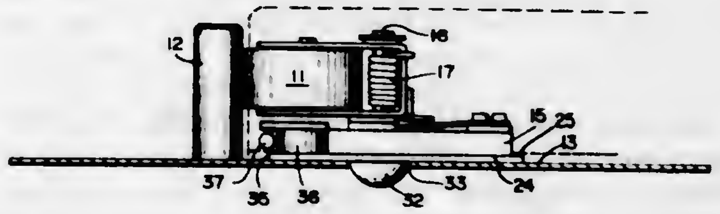
operating said record player to drop said record on its turntable and play the said record and to then drop the said blank on top of the said record and to replay the said record.

3,401,944
TAPE CARTRIDGE INSERT

John S. De Metrick, Lexington, Mass., assignor to Automatic Radio Manufacturing Co., Inc., Melrose, Mass., a corporation of Massachusetts

Filed Feb. 17, 1967, Ser. No. 616,962

6 Claims. (Cl. 274—4)



In insertable pressure roller for insertion into the opening of a conventional 2-track or 4-track endless tape cartridge is arranged with a locking catch that mates with an opening in a conventional 8-track tape player chassis plate. With the adapter in the cartridge and the locking catch in the mating opening of the 8-track tape player chassis plate, the pressure rollers urges the tape against the tape player capstan while the adapted further includes an element for releasing the cartridge brake relief spring so that the capstan may drive the tape, thereby permitting the 2-track or 4-track cartridge to be played on the 8-track player.

3,401,945

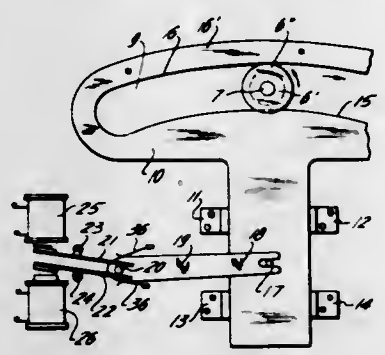
SOUND-REPRODUCING APPARATUS

Walter Kriebel, Kiel, Karl-Heinz Tiedtke, Kiel-Elmschenhagen, and Walter Eggers, Kiel, Germany, assignors to Electroacustic Gesellschaft mit beschrankter Haftung, Kiel, Germany, a corporation of Germany

Filed June 28, 1966, Ser. No. 561,120

Claims priority, application Germany, June 29, 1965, E 29,599

22 Claims. (Cl. 274—11)



1. In a device for reproducing recorded sounds of the type wherein the recorded signals are arranged along arcs of a plurality of concentric circles and a tone arm swings back and forth through a predetermined angle so as to reproduce said recorded sounds during both directions of said swing, a swingable tone arm, support means supporting said arm for swinging movement back and forth through a predetermined angle, a driving motor rotating only in one direction and carried by said support means at a predetermined fixed located space from said tone arm, transmission means driven by said motor and operatively connected to said tone arm for transmitting a drive from said motor to said tone arm and for swinging said tone arm back and forth at the same angular speed in both directions of swinging movement, said transmission means having one position in which said tone arm swings in one direction and another position in which said tone arm swings in the opposite direction, displacing means operatively connected to said transmission means for displacing the latter between its positions when said tone arm reaches the ends of its swinging movement through said predetermined angle, and said transmission means comprises a first rotary transmission unit driven in only one direction of rotation by said motor and including a pair of coaxial circular motion transmitting members of different diameters which turn together and a second transmission unit having a pair of coaxial motion transmitting portions extending respectively along circles of different diameters and adapted respectively to engage said members of said first unit and said positions, respectively, of said transmission means, said motion transmitting portions of said second unit defining between themselves an elongated gap through which the axis of said first unit extends and said displacing means displacing one of said units between one position where the portion of said second unit which is of larger diameter engages the motion transmitting member of said first unit which is of larger diameter and another position where the portion of said second unit which is of smaller diameter engages the motion transmitting member of said first unit which is of smaller diameter, the ratios between the diameters of said members of said first unit respectively with respect to the diameters of said portions of said second unit being equal so that irrespective of the position into which said one unit is displaced by said displacing means said arm will swing at the same speed.

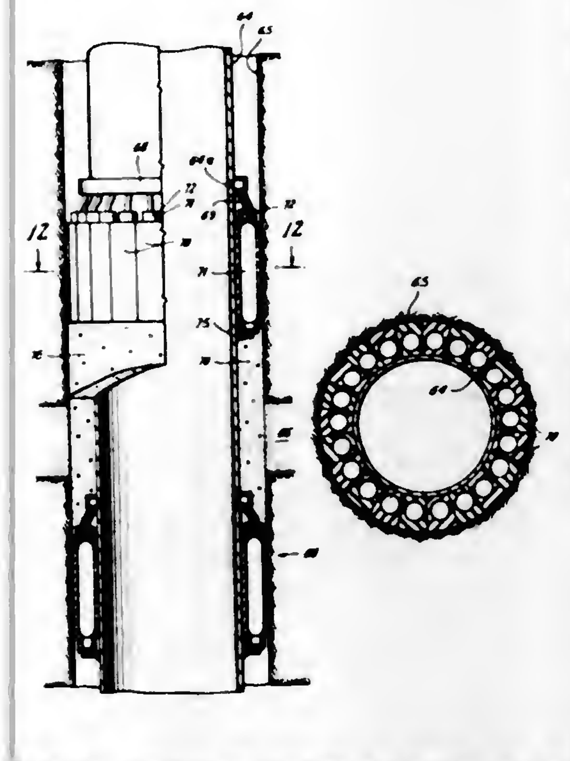
3,401,946

INFLATABLE DEVICE

Billy C. Malone, Houston, Tex., assignor to Lynes, Inc., a corporation of Texas

Continuation-in-part of application Ser. No. 400,510, Sept. 30, 1964. This application Aug. 7, 1967, Ser. No. 666,224

28 Claims. (Cl. 277—34.6)



An inflatable device including a body of generally annular configuration for positioning adjacent a tubular member, the body including a plurality of circumferentially spaced openings for receiving reinforced inflatable elements that extend longitudinally through the body and conduit means for inflating the reinforced elements to thereby expand the body.

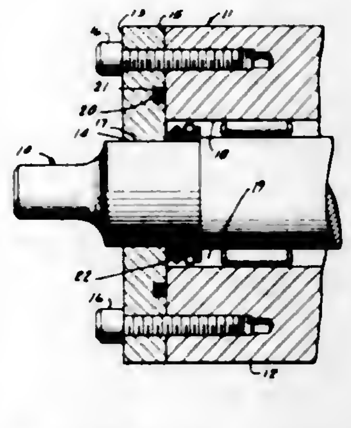
3,401,947

RING SEAL COROTATIVE WITH A SHAFT

Rollin Douglas Rumsey, Buffalo, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan

Filed Sept. 22, 1965, Ser. No. 489,325

13 Claims. (Cl. 277—84)



A ring seal for a shaft having a static sealing toe and a dynamic sealing head. The static sealing toe has an inner sealing surface which contacts the surface of a shaft being sealed thereby, and the dynamic sealing head has a sealing nose for contacting a relatively moving surface which is being sealed relative to the shaft. Means are provided for maintaining the corotative relationship between the inner sealing surface of the sealing toe and the shaft, while maintaining the dynamic relationship between the sealing nose and the relatively moving surface being sealed with respect to the shaft.

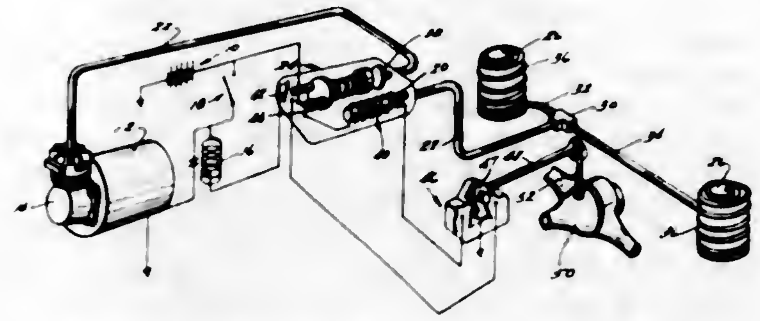
3,401,948

VEHICLE LEVELING SYSTEM AND CONTROL VALVE

Forrest O. E. Schultz, Owosso, Mich., assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Jan. 21, 1966, Ser. No. 522,111

7 Claims. (Cl. 280—6.1)



A levelizing system for automotive vehicles utilizing a mechanical spring system coacting with a variable rate pneumatic spring system in which the rate of the pneumatic spring is varied by directly supplying pressure only when pressure is needed to support the load and in which pressure is reduced when the pressure is in excess of that required to support a given load.

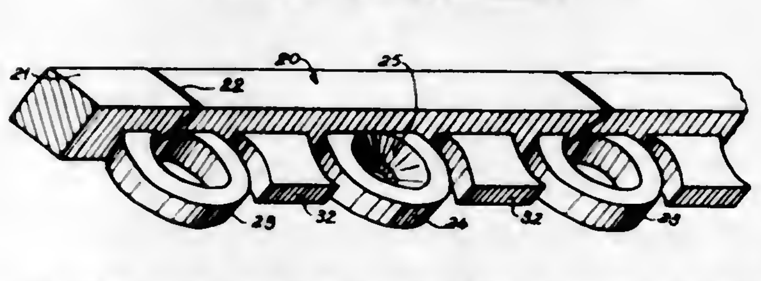
3,401,949

METALLIC EDGE MEMBERS FOR SKIS

Bernard Fouillet, Sillans, Isere, France

Filed Sept. 16, 1966, Ser. No. 579,886

2 Claims. (Cl. 280—11.13)



An edge member for skis comprises successive straight sections of rectangular cross-section disposed in line with each other with narrow slit-like gaps, and connected with each other by resilient lateral arcuate sections each bridging a gap in the succession, these arcuate members, also of substantially rectangular cross-section but of smaller height than the straight section, being disposed laterally on one vertical side of the successive straight sections with one of their horizontal sides flush with the adjacent horizontal side thereof so as to obtain a substantially L-shaped cross-sectional profile. Lateral lugs may be provided between the successive arcuate sections.

3,401,950

HOLDING PART FOR SKI BINDINGS

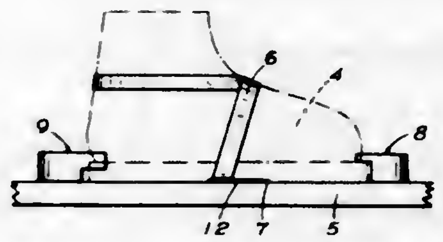
Thomas G. Smolka and Ernst Franz, Vienna, Austria, assignors to Wiener Metallwarenfabrik Smolka & Co., Schwechat, Austria, a corporation of Austria

Filed May 16, 1966, Ser. No. 550,380

Claims priority, application Austria, May 19, 1965, A 4,566/65

3 Claims. (Cl. 280—11.35)

A holding member for ski bindings which comprises a first base plate part adapted to be secured to the top face of a ski and below a ski boot sole and a second part freely hingedly secured to and swingable relative to the first base plate. The latter is disposed parallel to the second part in its normal position and angularly disposed relative to each other in emergency position. A belt member extends through the second part and is adapted to surround and to secure a ski boot, thereby permitting a swinging of the second part without displacement of the first base plate part.



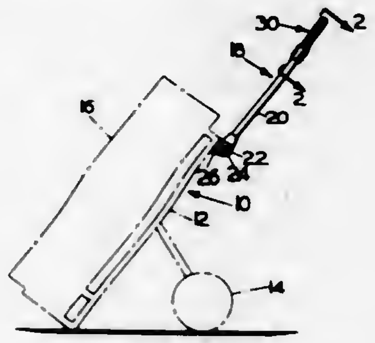
3,401,951

SWIVELED GOLF CART HANDLE

Leslie C. Bloom, Portland, Oreg., assignor to Product Engineering Company, Portland, Oreg., a corporation of Oregon

Filed Sept. 19, 1966, Ser. No. 580,293

9 Claims. (Cl. 280—47.17)



A handle is swiveled on an arm between horizontal and vertical positions so that the hand of the user can move to its most natural position as the cart is pushed or pulled. The handle is slotted and a pin limits turning movement of the handle and retains the handle on the arm. The handle is split for assembly on the arm and the pin, and a retaining sleeve snaps onto the handle to hold the lower end of the handle together.

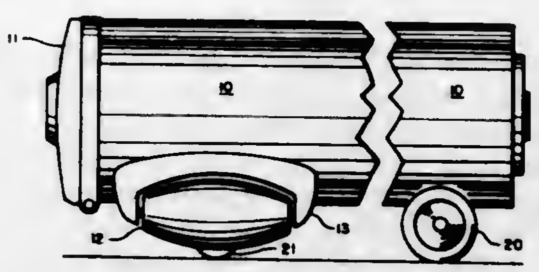
3,401,952

ANTI-TIPPING ROLLERS

Ralph A. W. Johanson, Armonk, and Jacques L. Le Baigue, Westbury, N.Y., assignors to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware

Filed Sept. 21, 1966, Ser. No. 581,073

3 Claims. (Cl. 280—150)



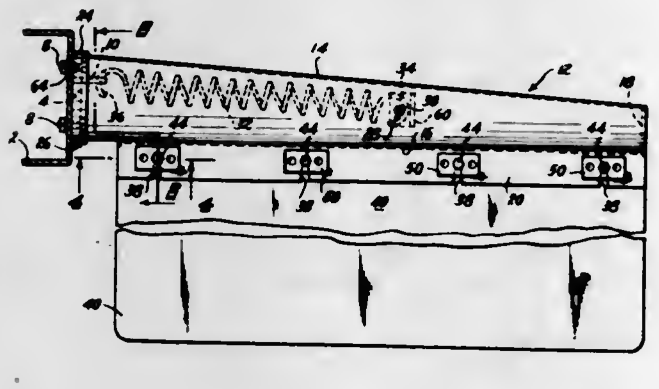
A vacuum cleaner having a castered wheel at one end and a pair of side wheels at the other end for movement of the cleaner as it is pulled from place to place via the suction hose. In addition an outrigger is provided having a pair of longitudinally extending elliptically shaped rollers which are attached to the cleaner body adjacent to the castered wheel to prevent tipping of the cleaner without impeding its movement.

3,401,953
DETACHABLE SUPPORTING ARM ASSEMBLY FOR MUDFLAPS

Robert F. Prohl and Charles F. Leonard, Boise, and Thomas J. Young, Meridian, Idaho, assignors to Pro-Lock Manufacturing Company, Boise, Idaho

Filed June 7, 1965, Ser. No. 461,652

16 Claims. (Cl. 280—154.5)



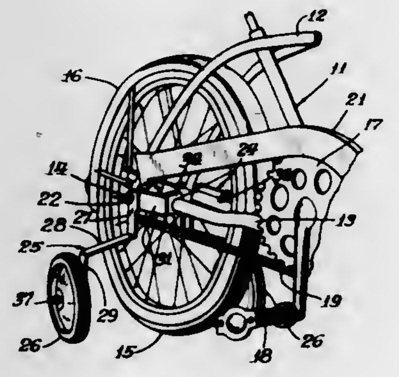
For use on a vehicle, a bracket and a resiliently mounted, universally deflectable, mudflap supporting arm that will automatically be returned to its position after deflection and having a mudflap with resilient attaching means connected with an attaching flange on the support arm designed so that the mudflap will be separated from the support arm instead of damaging the support arm and bracket when an excessive pulling force is applied to the mudflap.

3,401,954
BICYCLE TRAINING ATTACHMENT

Frank P. Brilando, Niles, Ill., assignor to Schwinn Bicycle Company, a corporation of Illinois

Filed Apr. 4, 1966, Ser. No. 540,170

4 Claims. (Cl. 280—293)



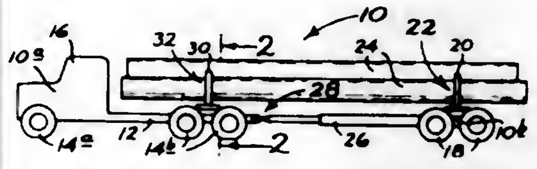
Cycle training aid for each side of bicycle comprising unitary wheel-mounting support with outwardly extending arm mounted at inner end on bicycle axle as sole point of securing same to bicycle and mounting wheel at outer end, with integral arm extending forwardly at about ninety degrees and terminating in inward extension with inwardly extending open-ended slot engaging rear fork of bicycle; the forwardly extending arm offset slightly outstantially U-shaped plastic tip mounted on and enclosing major portion of inward extension to protect rear fork against injury due to engagement of support therewith.

3,401,955
LOGGING VEHICLE WITH ARTICULATED LOAD CARRIER

Harry K. Alton, Portland, Oreg., assignor to Pierce Trailer & Equipment Company, Portland, Oreg., a corporation of Oregon

Filed Sept. 12, 1966, Ser. No. 578,805

5 Claims. (Cl. 280—404)



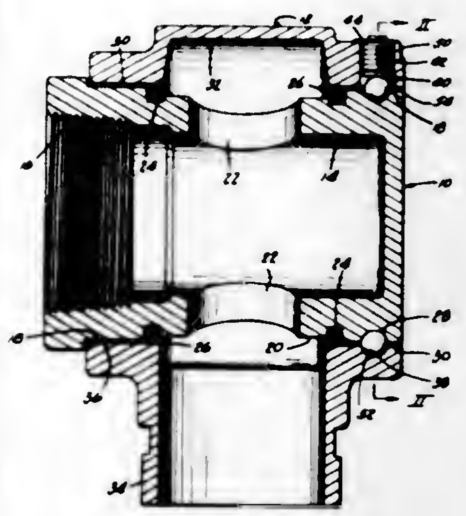
A truck equipped with a bunk having opposed upright stakes, where the bunk is swiveled on an underlying, transversely extending, supporting frame. Each end of such supporting frame, where it extends over frame longitudinals of the frame, is biased by opposed elastomer pads to a position whereby the stakes of the bunk are maintained upright. Trunnion assemblies mount the supporting frame on the vehicle frame longitudinals, which accommodate pivoting of the supporting frame about a generally horizontal axis extending transversely of the vehicle.

3,401,956
SWIVEL JOINTS

Donald G. McCracken, McHenry, Ill., assignor to Aeroquip Corporation, Jackson, Mich.

Filed Oct. 21, 1965, Ser. No. 499,683

1 Claim. (Cl. 285—190)



A fluid conducting balanced pressure swivel joint of low cost design including nonmetallic bearing devices disposed on the unpressurized sides of the joint seals. The use of the inexpensive nonmetal bearing devices is permitted due to the balanced pressure design which eliminates end loading on the bearing devices caused by fluid under pressure in the joint.

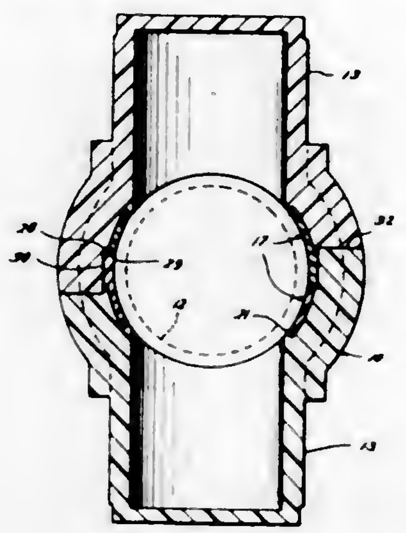
3,401,957
SPLIT T

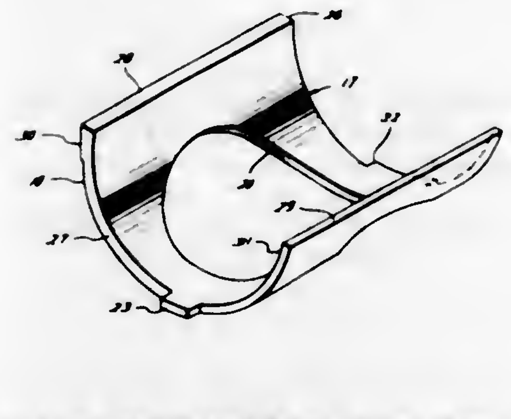
Lester M. McCright, Tulsa, and Burton Ver Nooy, Broken Arrow, Okla., assignors to T. D. Williamson Inc., Tulsa, Okla.

Filed Oct. 7, 1966, Ser. No. 585,092

5 Claims. (Cl. 285—197)

The invention relates to a die-cast split T in which a groove rectangular in cross-section is provided about a side opening from the T. One side wall of the groove is provided by an insert insertable into one portion of the run of the T to be welded therein. The other side wall of the groove is provided by the run portion and both walls are arranged to oppose each other and be substantially perpendicular to the inner surface of the run portion throughout their length. This construction permits the T to be fabricated from pieces that are die-cast using non-collapsing dies, thereby permitting the T to be produced with sufficient economy as to be commercially feasible.



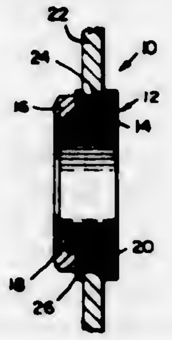


3,401,958
NIPPLE SEAL

Thomas R. Demyon, 1640 Gorsuch Ave.,
Baltimore, Md. 21218

Filed Feb. 19, 1965, Ser. No. 433,882

3 Claims. (Cl. 285—208)



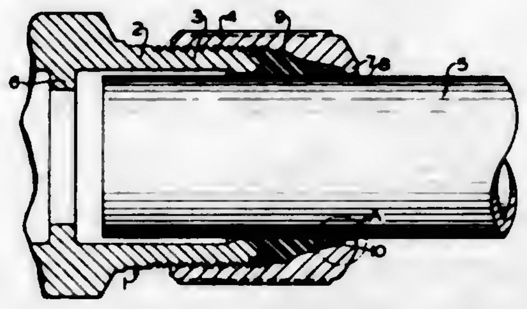
The nipple seal includes an O-ring bearing on and compressed between opposing surfaces about the nipple in both an axial and a radial direction. This balanced orthogonal compression both completely contains the O-ring to prevent it from flowing with age and releasing the seal, and it allows opposed surfaces of the nipple to mechanically lock the nipple to an adjacent wall structure. The nipple is shaped to permit it and the seal to be installed while working from only one side of a wall.

3,401,959
THREADLESS PIPE FITTING WITH COMPRESSION SEAL

John R. Reiss, East McKeesport, and Robert J. Bridigum, Pittsburgh, Pa., assignors to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed Nov. 8, 1966, Ser. No. 592,838

3 Claims. (Cl. 285—343)



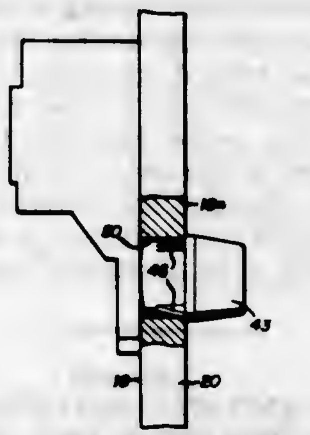
A pipe joint fitting consisting of a body portion in which the end of a threadless pipe is inserted and onto which body portion a lock nut containing a rubber sealing gland and a resilient multi-turn locking helix is screwed for securing the pipe in place. The rubber sealing gland and the locking helix, each turn of which has a sharp edge formed on its inner and outer peripheries, are so arranged in the lock nut and in relation to the pipe that screwing of the lock nut onto the body portion, through cam surfaces complementarily formed on the lock nut and the locking helix, causes at least one turn of the helix to be circumferentially constricted until the sharp edge forming its inner periphery bites into the pipe surface to prevent axial displacement of the pipe from the fitting, while at least another turn of the helix adjacent the sealing gland is caused to be circumferentially expanded until the sharp edge forming its outer periphery makes contact with the inner surface of the lock nut to prevent extrusion or displacement of said sealing member from its sealing position on the pipe. With the locking helix under stress, the resiliency thereof maintains constant sealing pressure on the sealing gland.

3,401,960
ROD END FASTENER

Thomas B. Saunders, St. Clair Shores, Mich., assignor to Robin Products Company, Warren, Mich., a corporation of Michigan

Filed May 31, 1967, Ser. No. 642,518

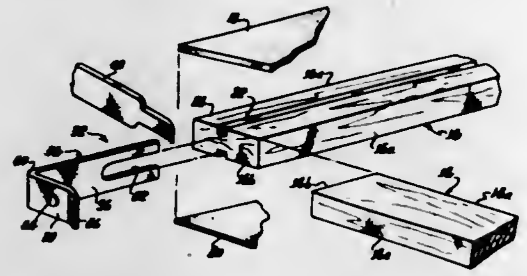
1 Claim. (Cl. 287—20.5)



A rod end fastener for securing a rod to a support structure in a plane substantially parallel to a major surface of the support structure. The fastener is of integral molded, non-metallic material and includes a locking portion received through an aperture in the support structure and locked thereto by a portion of the rod. The fastener also has a clamping portion for locking the rod to the fastener.

3,401,961
FRAME ASSEMBLY AND CLIP THEREFOR

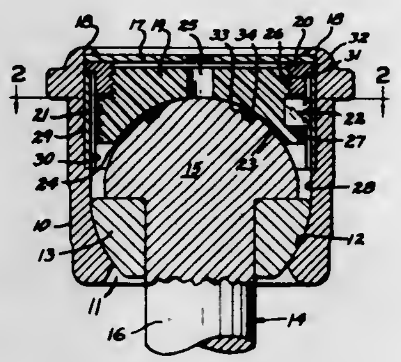
Richard A. Mitchell, 963 E. Dalton, Glendora, Calif. 91740, and Leonard B. Dougherty, 13554 E. Corak St., Baldwin Park, Calif. 91706
Filed Mar. 25, 1966, Ser. No. 537,341
12 Claims. (Cl. 287—20.92)



The combination of a pair of corner forming members disposed with a longitudinal edge surface of one member abutting an end surface of the other member, and a removable L-shaped corner clip having a first leg seating against the opposite longitudinal edge surface of the one member and a slotted transverse leg straddling the other member in a longitudinal plane of and releaseably secured to the latter member for joining the members in corner forming relation while the members are being adhesively bonded or otherwise permanently joined.

3,401,962
WEAR-COMPENSATING MOVABLE JOINT DEVICE

William A. Scheublein, Jr., Ballwin, and Louis P. Fister, St. Louis, Mo., assignors to Moog Industries, Inc., St. Louis, Mo., a corporation of Missouri
Filed Dec. 6, 1965, Ser. No. 511,609
16 Claims. (Cl. 287—87)



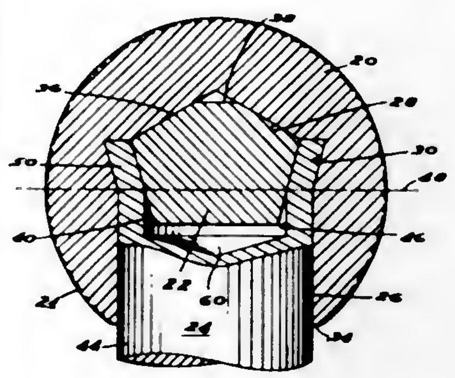
A movable joint device having a stud head bearinged in a housing such that the outside force imposed on the joint during the normal operation thereof causes the stud head to rotate and swivel relative to the housing, and wear-compensating means operably mounted within the joint to make use of the energy in the outside force imposed thereon to energize the operation of the wear compensating means for the purpose of maintaining the movable joint device from displaying looseness because of internal wear.

3,401,963
BALL STUD AND METHOD OF MAKING SAME

William C. Wehner, Detroit, Mich., assignor to Moog Industries, Inc., St. Louis, Mo., a corporation of Missouri
Filed May 16, 1966, Ser. No. 550,243
7 Claims. (Cl. 287—87)

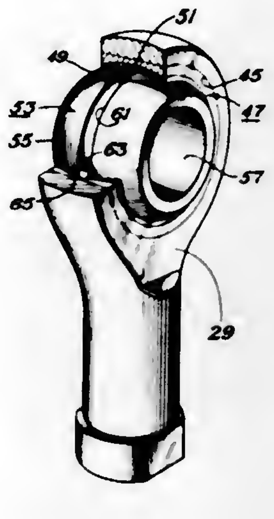
This disclosure relates to a ball stud having a shank portion joined to a spherical ball head. The spherical head has an axial opening terminating in a flaring annular chamber which deformably receives an annular end of the shank. The axial opening terminates in a plane including the major diameter of the spherical head to distribute the force of deformation of the shank.

The spherical ball head may have a hardened case and a relatively softer core. In this embodiment, the spherical head has a flat portion exposing the core, and the aperture is defined in the flat portion, substantially in the axis of the ball head. The ball head thereby provides a frictional resistance bearing surface and a softer core which provides frictional engagement for the shank which is deformably received in the flaring annular chamber.



3,401,964
SPHERICAL BEARING MOTION PROGRAMMING MEANS

Forest Johnson, 501 Oak Park Drive, Hurst, Tex. 76053
Filed May 12, 1966, Ser. No. 549,702
7 Claims. (Cl. 287—88)

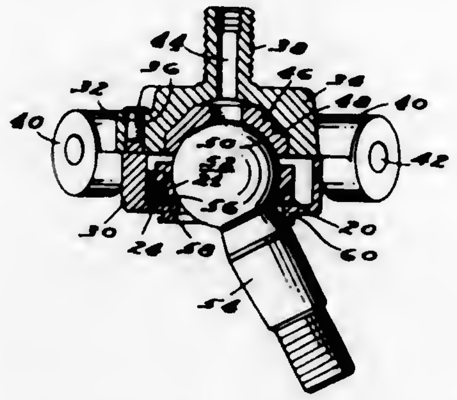


An axial load transmitting linkage with spherical bearings supported on a shaft normal to the longitudinal axis of the linkage, at least one of the surfaces of the bearings having a circumferentially extending groove that receives a stabilizer element positioned normal to the longitudinal axis of the linkage and normal to the shaft.

3,401,965
BALL JOINT

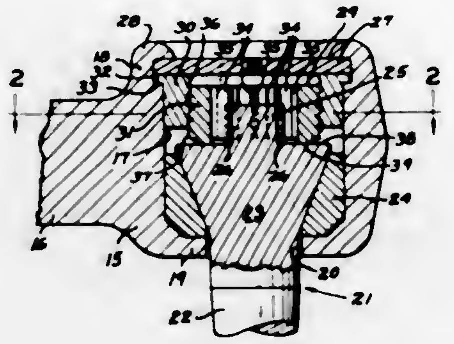
William C. Wehner, Detroit, Mich., assignor to Moog Industries, Inc., St. Louis, Mo., a corporation of Missouri
Filed Jan. 13, 1966, Ser. No. 520,484
5 Claims. (Cl. 287—90)

This disclosure relates to a self-adjustng compression loaded ball joint, having a pair of independently shiftable wedge shaped members disposed in wedging engagement between the shiftable secondary bearing element and the housing, to constantly urge the stud head toward the primary bearing face. The wedge members are substantially diametrically opposed, and are independently urged by a spring means to provide universal adjustment for the joint.



3,401,966
SELF-ADJUSTING MOVABLE JOINT DEVICE

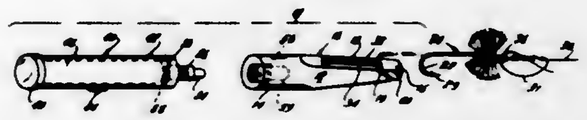
William A. Scheublein, Jr., Ballwin, and Louis P. Fister, St. Louis, Mo., assignors to Moog Industries, Inc., St. Louis, Mo., a corporation of Missouri
Filed June 24, 1966, Ser. No. 560,334
8 Claims. (Cl. 287—93)



1. A self adjusting wear compensating movable joint device comprising:
- (a) a housing providing a socket having an aperture in one end;
- (b) a stud formed with a headed end bearinged in said socket adjacent said aperture, said stud providing a shank projecting outwardly of said aperture,
  - (1) said stud being at least relatively rotatable in said housing socket; and
- (c) wear compensating means of self-adjusting character operably mounted in said socket between a portion of said housing and said stud headed end, said wear compensating means including:
  - (1) a first threaded element mounted in said housing,
  - (2) a second threaded element engaged in said first threaded element, said second element having an internal bore,
  - (3) a wear adjusting actuator carried by said headed end of said stud and positioned within said internal bore of said second element, and
  - (4) a series of circumferentially spaced radially inwardly directed projections in the internal bore of said second element, said actuator and projections being movable past each other in one direction at least of stud rotation whereby said first and second elements are relatively threaded to advance one of said elements toward said headed end of said stud to take-up wear by the relative rotary motion between said housing and stud.

3,401,967
FISHERMAN'S APPARATUS

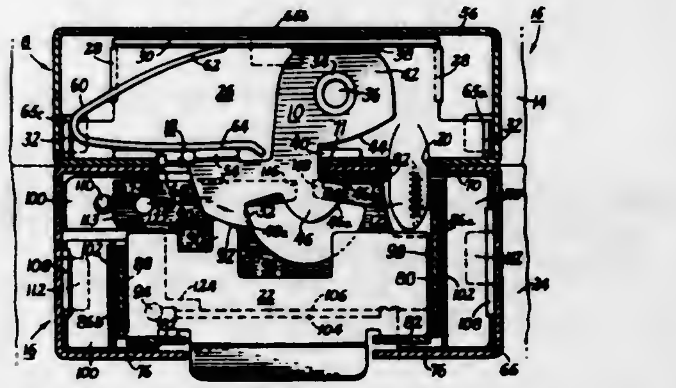
Arthur Glowka, 700 Scarsdale Ave., Scarsdale, N.Y. 10583
Filed Jan. 27, 1966, Ser. No. 523,433
10 Claims. (Cl. 289—17)



A fisherman's implement for facilitating the tying of the leader through the small eye of a fly, which includes a self-contained source of illumination for lighting the region receiving the hooked end of the fly and firmly grasping same while the eye is illuminated, so as to facilitate the tying of the leader in a secure manner.

3,401,968
CAM ACTUATED LATCH

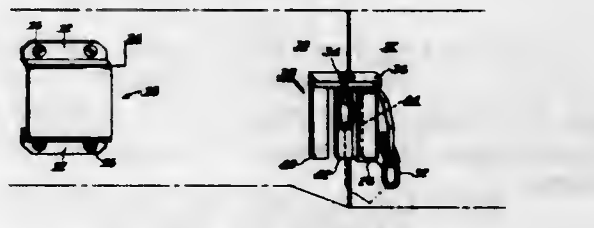
Carmen Testa, Stamford, and William J. Bouton, Jr., South Norwalk, Conn., assignors to The Excelsior Hardware Company, Stamford, Conn.
Filed June 23, 1966, Ser. No. 559,995
4 Claims. (Cl. 292—127)



This invention relates to a latch for securing a cover to an enclosure. It consists of a spring projected pivoted hook mounted on the cover and adapted to engage a keeper on the enclosure. The hook is both held in disengaged position and cammed to disengaged position by a finger operated plunger member.

3,401,969
SAFETY CHAIN LOCKING DEVICE

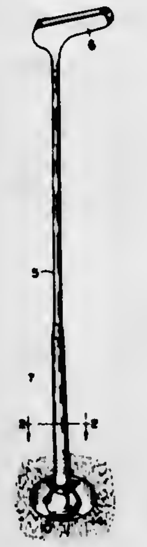
Forest J. Neel, Silver City, N. Mex.
(422 Main St., P.O. Box 5040, Pine Bluff, Ark. 71601)
Filed Oct. 28, 1966, Ser. No. 590,311
4 Claims. (Cl. 292—264)



A safety chain locking device adapted to be secured to a door and its associated jamb having a plurality of adjustments controlling access thereto.

3,401,970
GOLF BALL PICKUP DEVICE

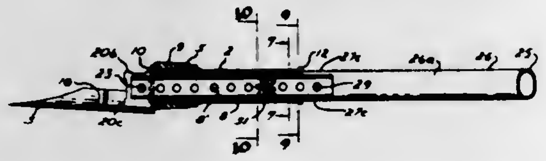
Theodore B. Russell, 2190 NE. 124th St.,
North Miami, Fla. 33161
Filed Aug. 22, 1966, Ser. No. 574,061
3 Claims. (Cl. 294—19)



A golf ball pickup device for mounting directly on the handle of a golf club such as a putter and including two generally U-shaped loops of resilient wire each having two eyes at the base thereof. Two of the eyes are connected together by a first holder and the other two eyes are connected together by a second holder, the holders being wire integral with the eyes in a preferred embodiment. Bolts fasten the holders and loops to the handle with each bolt extending through two of the eyes, and nuts fasten the bolts to the eyes. In another embodiment, two loops of wire are supported by a cup-shaped member which fits on the end of the club handle.

3,401,971
INTRENCHING TOOL

Robert W. Cronquist, Ashtabula, Ohio, assignor, by mesne assignments, to True Temper Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Feb. 21, 1967, Ser. No. 610,835
25 Claims. (Cl. 294—53.5)

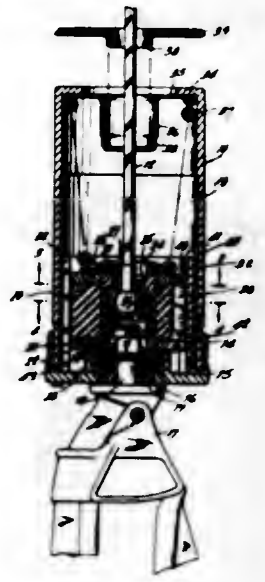


The following description and accompanying drawings disclose an entrenching tool having a blade, a handle, and a grip portion. In one embodiment of the invention, the grip portion is foldable over the handle and in another embodiment, the handle telescopes within the grip portion. In both embodiments, the blade is foldable over both the handle and the grip portion, and a single adjustment means is provided for locking both the blade and grip portion in work operating position.

3,401,972
OVERLOAD PROTECTION DEVICE FOR RESCUE HOIST

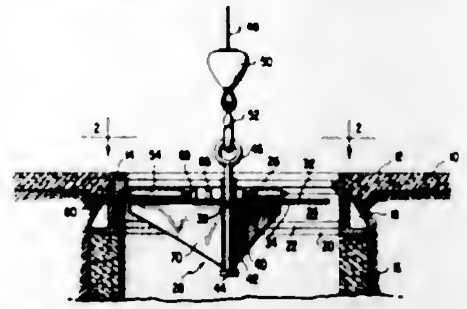
Ralph E. Walsh, Long Branch, N.J., assignor to Breeze Corporation, Inc., Union, N.J., a corporation of New Jersey
Filed Apr. 14, 1967, Ser. No. 630,939
8 Claims. (Cl. 294—82)

An overload protection device is secured between the hook and the cable of a hoist to absorb the destructive forces of sudden impact during loading. Brake members carried within the protection device are forced into contact with the inner walls of the protection device housing to dampen the force applied to the hook by dissipating it through the frictional contact.



3,401,973
MULTIPLE POINT LIFT PLATE

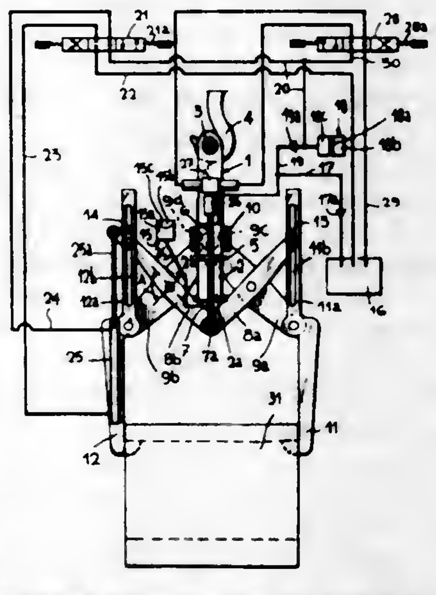
Benson H. Marshall, Fairfax, Va., assignor to Norwood L. Sorrell, Benson, N.C.
Filed Dec. 27, 1966, Ser. No. 605,039
2 Claims. (Cl. 294—93)



A lift plate with plural radially adjustable contact bars, the bars being adapted for positioning in such manner as to be located below an article to be lifted.

3,401,974
TONGS FOR HANDLING HEAVY PRODUCTS

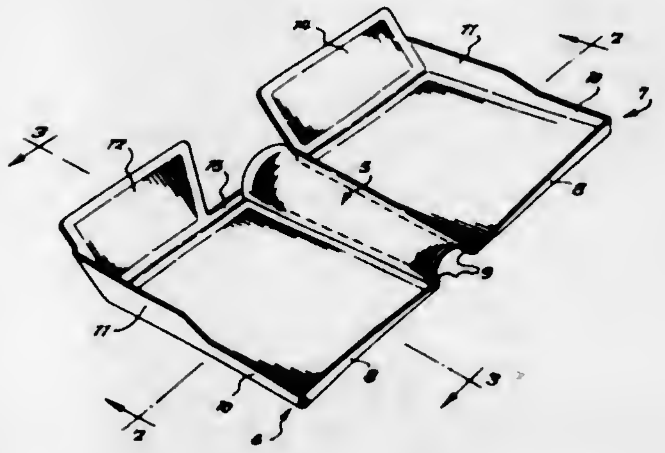
Ghislain Antoine Jean-Marie Martelee, 71 Quai de Rome, Liege, Belgium
Filed July 11, 1967, Ser. No. 652,511
Claims priority, application Belgium Aug. 19, 1966, 41,036, Patent 685,783
8 Claims. (Cl. 294—110)



Tongs for handling heavy products which are inherently rigid or which are placed on a rigid support comprise gripping jaws articulated to scissors-wise crossed arms which are articulated to the piston rod of a principal hydraulic jack and to a collar which is slidable and rotatable on said jack which is connected to a first pressure gas accumulator, the closing and opening of said arms being effected by means of an auxiliary jack the feed of which is controlled by a first electro-valve and comes from a second pressure gas accumulator which is also connected to said principal jack and possibly to a rotating jack via a second electro-valve which is telecontrolled by radio-electric signals like as said first electro-valve.

3,401,975
FLOOR COVERING FOR AUTOMOBILES

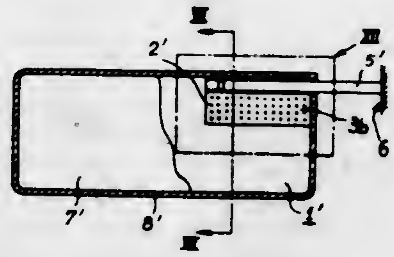
Martin H. Oger, 131 Leroy Ave.,
Buffalo, N.Y. 14214
Filed June 28, 1966, Ser. No. 561,136
1 Claim. (Cl. 296—1)



The disclosure shows flexible floor covering for automobiles constructed so as to retain water and other foreign materials in the side parts of the floor covering, which are constructed to retain the water so that it can be removed when the side parts are removed from the automobile.

3,401,976
SUN VISORS FOR VEHICLES

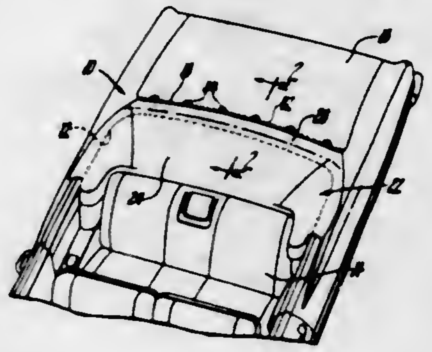
Gaetan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, Hauts-de-Seine, France
Filed July 1, 1966, Ser. No. 562,184
Claims priority, application France, July 21, 1965, 25,440; June 2, 1966, 63,879
5 Claims. (Cl. 296—97)



A shock absorbing sun visor for motor vehicles including an articulation spindle mounted on the vehicle with a plate-like frame member of substantially rigid material. One side of the frame member is pivotally attached to the spindle and the opposite side is constructed so as to be readily detachable by application of a small force to thereby form a shock absorber for passengers.

3,401,977
CONVERTIBLE BODY DUST BOOT ARRANGEMENT

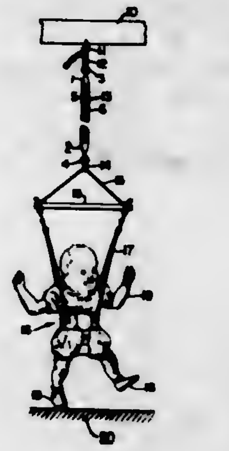
Clyde H. Schamel, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 25, 1966, Ser. No. 589,423
5 Claims. (Cl. 296—136)



A dust boot for the storage well of a convertible vehicle body has its forward and side edge portions releasably mountable to the body at the edges of the well opening and has its rearward edge detachably connectible to the adjacent edge of the swingable deck lid of the body such that the boot is tensed over the well opening when the deck lid is swung to closed position.

3,401,978
BABY JUMPER WITH SAFETY-TYPE SUSPENSION

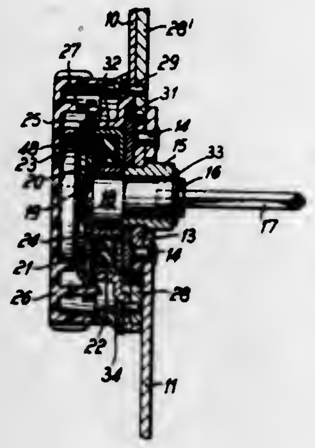
Patricia Wrigglesworth, Spellowgate, Driffield, Yorkshire, England
Filed Dec. 9, 1966, Ser. No. 600,566
Claims priority, application Great Britain, May 27, 1966, 23,998/66
2 Claims. (Cl. 297—274)



A safety-type resilient extensible tension member for use with a conventional baby jumper or exerciser for infants. The tension member of the baby jumper is formed of an elastomeric material, such as rubber, and comprises solid ends interconnected by separate reaches or tension elements integrally formed of the same material. Either one of the reaches is capable of separately and independently supporting the full load of the seat or body supporting portion together with the infant in the event of failure of the other reach. Securing means such as hook or eye members are molded into the solid ends and the configuration of the solid ends merges smoothly into the two laterally spaced separate tension elements.

3,401,979
ARTICULATED MOUNT FOR SEATS, PARTICULARLY MOTOR VEHICLE SEATS

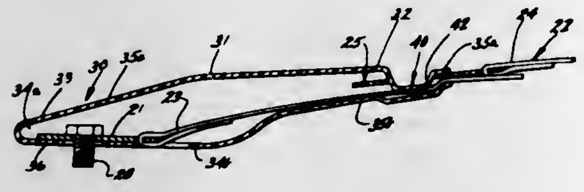
Peter Ulrich Putsch, Remscheid-Hasten, Germany, assignor of one-half to Friedrich W. Putsch, Remscheid-Hasten, Germany
Filed Aug. 1, 1966, Ser. No. 569,431
11 Claims. (Cl. 297—362)



A hinge unit for a seat, especially a motor vehicle seat, having a back rest pivotally adjustable with respect to the seat portion, in which self-locking adjusting means connect a first hinge member connected to the back rest to a second hinge member connected to the seat portion for pivotal movement with respect to each other and in which the self-locking adjusting means include an internally toothed ring gear connected to one of the hinge members, an externally toothed gear meshing with the ring gear and connected to the other of the hinge members and having an outer diameter smaller by at least the height of one tooth than the root diameter of the ring gear, and turnable pivot means including an eccentric portion cooperating with one of the gears for moving the latter relative to the other gear to thereby move the back rest to an adjusted position.

3,401,980
HOUSING WITH PLATE ANCHOR

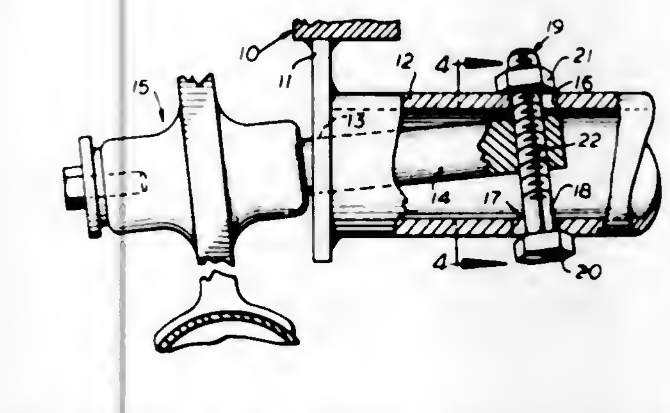
Arthur S. Nicholas, Grand Rapids, Mich., assignor to Leon Chemicals & Plastics, Incorporated, Grand Rapids, Mich., a corporation of Michigan
Filed July 19, 1967, Ser. No. 654,525
7 Claims. (Cl. 297—389)



A safety belt terminal protector having an elongated unitary hollow jacket with a belt receiving portion and an anchor element receiving portion formed integrally, both said portions being oblong in cross section to have narrow edges and relatively wide faces and an open end for protrusion of the belt out of the jacket. One of the faces of the belt receiving portion is provided with a detent formed integrally therein. This detent projects into the space between the faces and serves to engage the aperture in the connector plate of the ordinarily free belt extremity when it is protruded into the opening in generally overlying relationship with respect to the belt.

3,401,981
VEHICLE WHEEL ADJUSTMENT MEANS

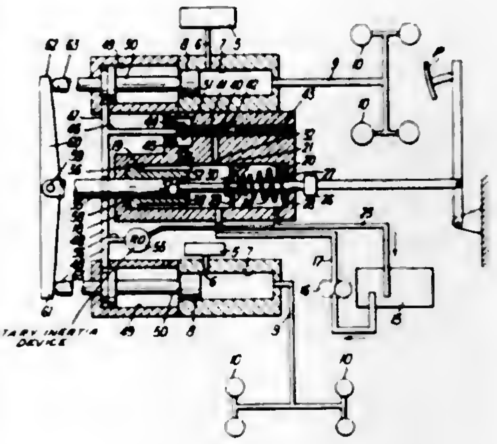
William M. Adams, Stockton, Calif., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 20, 1967, Ser. No. 617,410
4 Claims. (Cl. 301—132)



On a vehicle such as a trailer where the wheel axle is rigid, each wheel is carried on a shaft pivotally mounted in an opening in a hollow axle permitting the inner end of the shaft to be vertically and horizontally adjusted. The shaft has a threaded opening aligned with openings in the hollow axle circumferentially displaced from the vertical, and a bolt extending through the openings in the axle and threaded in the shaft opening can be adjusted to vertically and horizontally adjust the inner end of the axle to simultaneously vary the camber and toe-in of the wheel.

3,401,982
VEHICLE BRAKING SYSTEMS

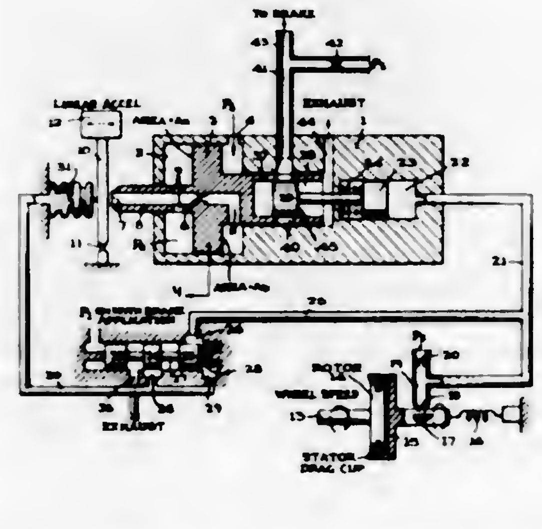
Frederick J. Walker, Kenilworth, England, and William H. Bent, Wantirna, Victoria, Australia, assignors to Harry Ferguson Research Limited, Abbotswood, Stow-on-the-Wold, Gloucestershire, England, a British company
Filed May 11, 1965, Ser. No. 454,934
Claims priority, application Great Britain, May 20, 1964, 20,761/64
12 Claims. (Cl. 303—21)



1. A braking system including wheel brakes, manual means connected to said brakes for manually applying said brakes, a source of hydraulic fluid under pressure, and a servo-mechanism connected to said source interposed between said brakes and said manual means for power application of the brakes, said servo-mechanism including servo valve means movable by said manual means for positioning the brakes into first and second positions in which the brakes are respectively released and applied by said servo-mechanism, said servo-mechanism also including first and second reaction areas connected in lost motion relationship with said servo valve means and in communication with said source, the arrangement being such that said first reaction area resists movement of said servo valve means from said first into said second position, and said second reaction area resists movement of said servo valve means beyond said second position during normal braking of a vehicle in which the braking system is incorporated.

3,401,983
VEHICLE BRAKE CONTROL

Karl N. Reid, Jr., Stillwater, Okla, assignor to Henriette L. Williams, Elizabeth W. Bullard, and Ann W. Flowers, Vicksburg, Miss., executors of Allison R. Williams, deceased
Filed Jan. 24, 1967, Ser. No. 611,275
7 Claims. (Cl. 303—21)



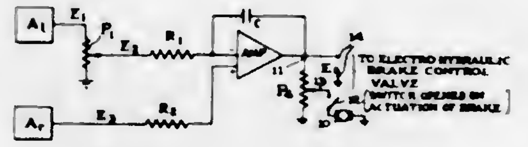
Control of applied fluid braking pressure during braked vehicle deceleration according to the value of the slip ratio

$$\frac{V_t-V_r}{V_t}$$

where V_t is the vehicle translational velocity and V_r is the wheel rotational velocity.

3,401,984
VEHICLE BRAKE CONTROL

Allison R. Williams, deceased, late of Vicksburg, Miss., by Henriette Le Corre Williams, Elizabeth Williams Bullard, and Ann Williams Flowers, executors, Vicksburg, Miss., and Karl N. Reid, Jr., Stillwater, Okla., and Richard H. Frazier, Winchester, and Bruce D. Wedlock, Arlington, Mass., assignors to Henriette L. Williams, Elizabeth W. Bullard & Ann W. Flowers, executors of the last will and testament of Allison R. Williams, deceased
Filed Jan. 24, 1967, Ser. No. 611,479
12 Claims. (Cl. 303—21)



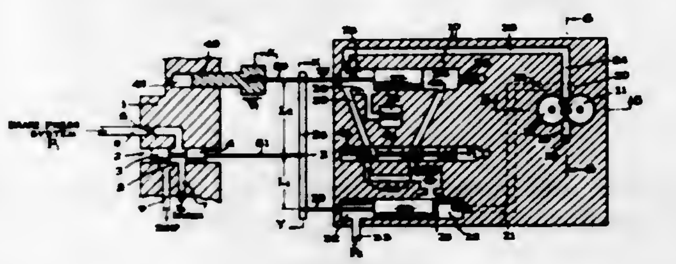
Control of applied fluid braking pressure during braked vehicle deceleration according to the value of the slip ratio

$$\frac{V_t-V_r}{V_t}$$

where V_t is the vehicle translational velocity and V_r is the wheel rotational velocity.

3,401,985
VEHICLE BRAKE CONTROL

Allison R. Williams, deceased, late of Vicksburg, Miss., by Henriette Le Corre Williams, Elizabeth Williams Bullard, and Ann Williams Flowers, executors, Vicksburg, Miss., and John S. Howland and Herbert H. Richardson, Framingham, Mass., assignors to Henriette L. Williams, Elizabeth W. Bullard, and Ann W. Flowers, executors of the last will and testament of Allison R. Williams, deceased
Filed Jan. 24, 1967, Ser. No. 611,480
5 Claims. (Cl. 303—21)



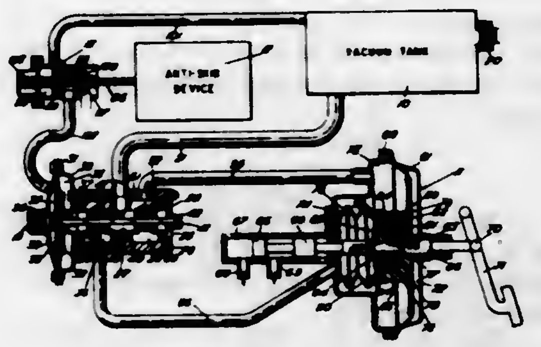
Control of applied fluid braking pressure during braked vehicle deceleration according to the value of the slip ratio

$$\frac{V_t-V_r}{V_t}$$

where V_t is the vehicle translational velocity and V_r is the wheel rotational velocity.

3,401,986
VEHICLE BRAKING SYSTEM

Frederick James Walker, Kenilworth, England, and William Harold Bent, Wantirna, Victoria, Australia, assignors to Harry Ferguson Research Limited, Abbotswood, Stow-on-the-Wold, Gloucestershire, England, a British company
Continuation of abandoned application Ser. No. 411,967, Nov. 10, 1964. This application Jan. 26, 1967, Ser. No. 612,053
Claims priority, application Great Britain, Nov. 16, 1963, 45,518/63
10 Claims. (Cl. 303—21)

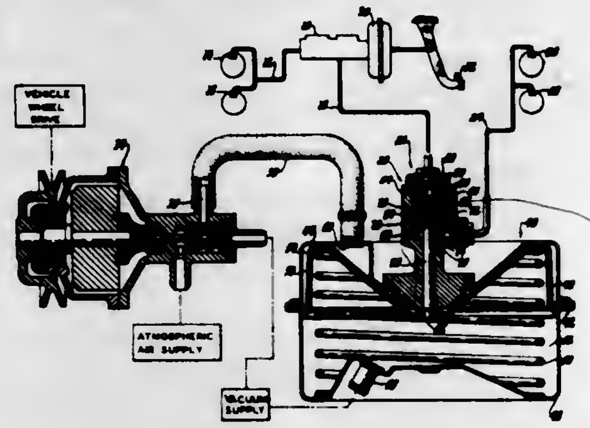


A braking system includes a servo-mechanism, an anti-skid device operable in response to the inertia changes, and valve means operatively connected to said anti-skid device and to said servo-mechanism. When the anti-skid device operates, the valve is operated to reduce, remove and reverse the servo-assistance sequentially in order to decrease the braking effect.

3,401,987
PRESSURE MODULATOR VALVE FOR ANTI-LOCK BRAKE SYSTEM

Robert A. Horvath, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 11, 1967, Ser. No. 674,416
7 Claims. (Cl. 303—21)

A brake apply pressure modulator in a vehicle wheel brake anti-lock system which receives signals from an anti-lock sensor and signal generator and acts to limit,



decrease, and permit increase of the brake apply pressure in accordance with the anti-lock signals.

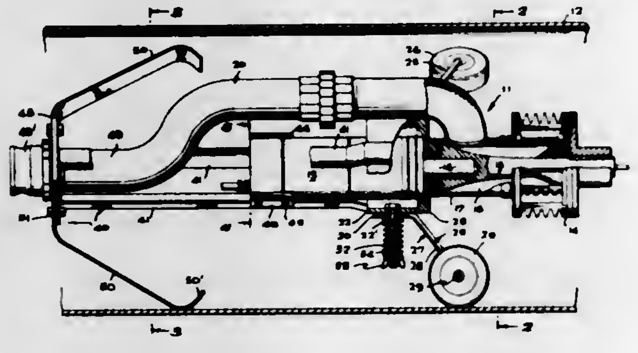
3,401,988

CENTERING AND STABILIZING MEANS FOR A PIPELINE TRAVERSING MACHINE

Robert J. Pingree, Torrance, Calif., assignor to American Pipe and Construction Co., Monterey Park, Calif., a corporation of California

Filed Feb. 8, 1966, Ser. No. 525,879

7 Claims. (Cl. 308—4)



The application discloses an assembly of spring-mounted rockable arms carrying rollers for supporting a pipelining machine or the like centrally of the pipe as it traverses the same and in combination therewith a framework and spring arms for further supporting the machine in the pipe.

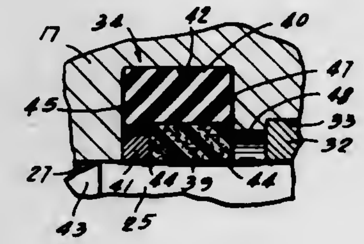
3,401,989

HIGH PRESSURE SHAFT SEALS

Paul E. Gies, Eggertsville, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan

Filed Mar. 30, 1966, Ser. No. 538,738

6 Claims. (Cl. 308—361)



An assembly including a housing having a rotary shaft journaled therein an annular groove in the housing defining a sealed chamber. A seal ring engages the shaft sealingly in the chamber and a combination squeezing and sealing ring engaged in the chamber embraces and presses the seal ring against the shaft. A continuous anti-extrusion backup ring in interference press fit corotative engagement with the shaft is interposed between the seal ring and an axially facing surface of the shaft. In another form backup rings which are not in interference fit with the shaft oppose opposite ends of the sealing ring. The backup ring is continuously and resiliently deformable to be mounted through the housing bore into the seal groove chamber.

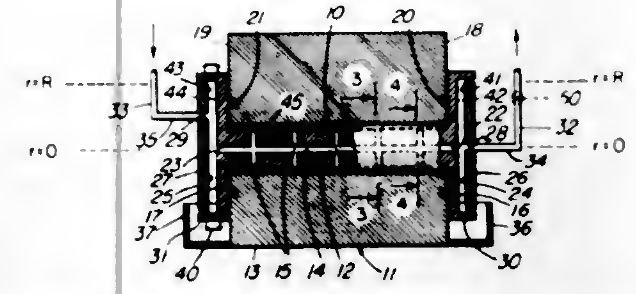
3,401,990

SEALED LUBRICATION SYSTEM

Joseph G. Savins, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed Sept. 14, 1966, Ser. No. 579,378

11 Claims. (Cl. 308—36.3)



A sealed lubrication system having a lubricated rotatable shaft supported by bearing and having a parallel plate arrangement at each end of the shaft comprising a rotatable plate and a fixed plate with a gap therebetween, with a shear-thickening viscoelastic liquid in the gap forming a liquid seal during rotation of the shaft.

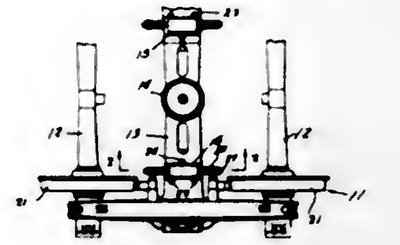
3,401,991

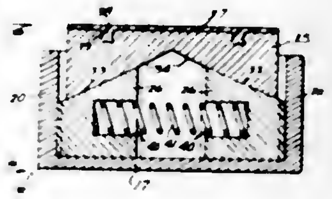
SELF-LUBRICATING SIDE BEARINGS

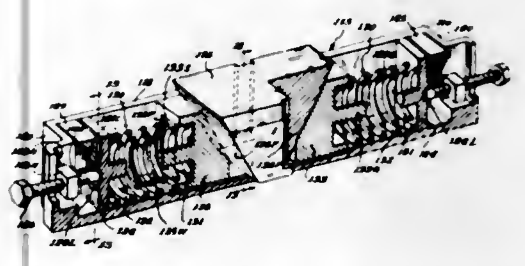
Robert W. MacDonnell, Crete, Ill., assignor to Unity Railway Supply Co., Inc., a corporation of Illinois

Continuation-in-part of abandoned application Ser. No. 417,636, Dec. 11, 1964. This application Oct. 18, 1967, Ser. No. 676,259

18 Claims. (Cl. 308—138)







Pre-loaded side bearing units are disclosed acting between a railway truck bolster and a car body bolster to control body sway by frictional energy dissipation and to prevent wheel lifts by maintaining pressure on the unloaded truck side. The disclosed side bearing units replace existing conventional side bearings or may be integrated with a modified bolster. Each side bearing unit comprises a housing that carries a pair of wedge blocks in sliding engagement therein, with a floating upper wedge block having oppositely inclined faces engageable with correspondingly inclined faces presented by the sliding blocks. Compression spring means react against opposite end walls of the housing to urge the sliding blocks oppositely and establish the level of pre-loading.

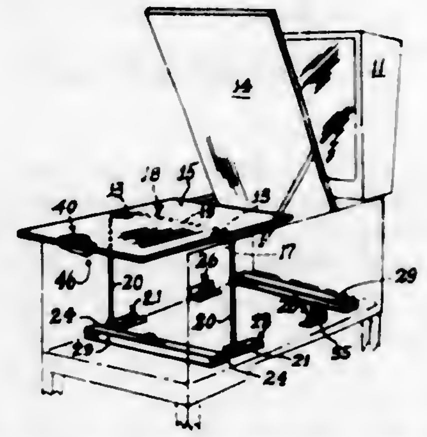
3,401,992

SUBPANEL ELEVATING MEANS FOR APPARATUS CABINETS

Lawrence P. Benson, Franklin Park, and Terrence A. Reedy, Jr., Skokie, Ill., assignors, by mesne assignments, to Bally Manufacturing Corporation, a corporation of Delaware

Filed Mar. 18, 1966, Ser. No. 535,605

18 Claims. (Cl. 312—27)



A lever system for pivotally swinging a stowed device upwardly out of a compartment or the like for support partly by a member of the lever system and partly on a part of the compartment, wherein the lever member is first brought into engagement with a fulcrum abutment by approximately linear translation of the device and a thrust part of the lever member to transform the motion into pivotal upward swinging movement. Supplements to the subject: hold-down and permanent latching means are disclosed for partially or totally securing the device in its lowered stowed condition.

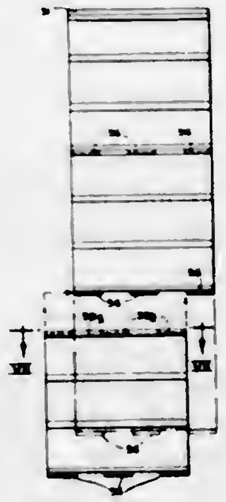
3,401,993

SECTIONAL CABINET

Stanley Overs Fenkel, 4721 Walnut St., Philadelphia, Pa. 19139

Filed Jan. 18, 1967, Ser. No. 610,054

3 Claims. (Cl. 312—111)



Molded plastic interlocking sectional cabinets are provided having grooves along one pair of edges and locking rods along the other. The locking rods of one cabinet are slidingly received and interlocked into the grooves of another adjoining cabinet. In the preferred form, the rods are interrupted, rather than continuous, forming alternate lengths of rod and of open sections.

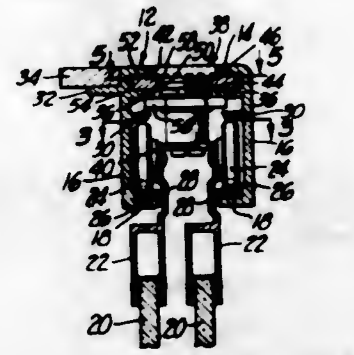
3,401,994

OVERHEAD TRACK AND LOCK ASSEMBLY FOR SHOWCASES

Arthur G. Diack, 1049 E. 65th St., Inglewood, Calif. 90302

Filed Mar. 27, 1967, Ser. No. 626,093

8 Claims. (Cl. 312—138)



A showcase having bypassing sliding doors supported by overhead tracks and locked by a vertically oriented lock carried by the rear top rail of the showcase at approximately waist level and operable from above the top rail. The lock carries stops respectively engageable with hangers for the bypassing sliding doors to prevent opening of such doors.

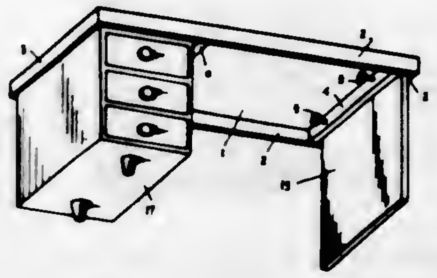
3,401,995

KNOCKDOWN DESKS, TABLES AND LIKE FURNITURE

Bruce Robert Ogden, 127 Mona Vale Road, St. Ives, New South Wales, Australia

Filed June 12, 1967, Ser. No. 645,122

2 Claims. (Cl. 312—195)



Prefrabricated desks, tables or like furniture erected by clamping floor engaging supports to a framed top incorporating means to relieve the end joints of the framed top from the direct effect of clamping pressures.

3,401,996

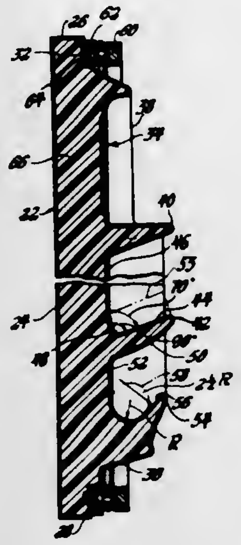
DOOR WITH INTEGRAL INCLINED AND UPWARDLY CURVED SHELVES

Charles E. Rembold and Robert Mueller, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 23, 1967, Ser. No. 625,428

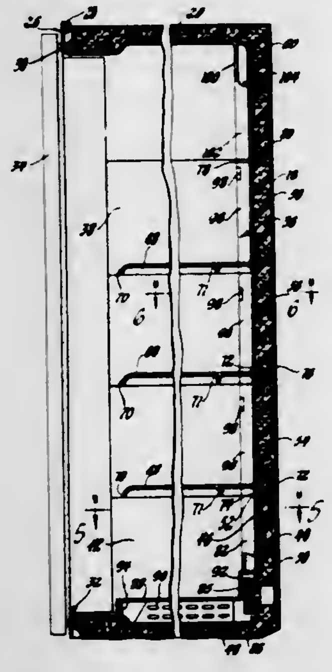
2 Claims. (Cl. 312—214)

In the preferred form, a refrigerator door has a plastic inner door pan having formed therein hollow upper and lower shelves extending substantially from side to side with their upper faces inclined or curved upwardly for retaining articles thereon. The interior of the door and the hollow shelves are reinforced by filling them with foamed plastic resin.



3,401,997
REFRIGERATOR WITH SEGMENTED MODULAR INNER LINER

William A. Hanifan, Southfield, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 15, 1967, Ser. No. 646,257
3 Claims. (Cl. 312—214)

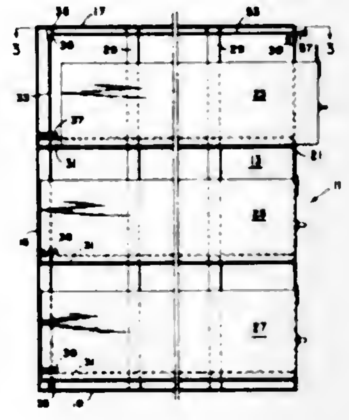


In preferred form, a refrigerator cabinet having an outer shell enclosing a segmented inner liner of modular form with one unit having a vertically oriented upper edge in axial alignment with a vertically oriented lower edge on a second unit, the one unit reinforced by an integrally formed shelf member to prevent inward deflection of the walls of the one unit and misalignment of its vertical edge, a tongue and groove on the aligned edges forming a sealed, expansion joint between the connected units and a vapor barrier to thermal insulation behind the liner.

3,401,998
FILING CABINET SAFETY AND LOCKING DEVICE

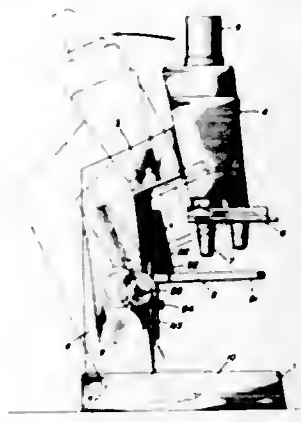
John E. Evans and Calvin W. Fahr, Altoona, Pa., assignors to Small Tube Products, Inc., Duncansville, Pa.
Filed Dec. 7, 1966, Ser. No. 599,805
4 Claims. (Cl. 312—215)

A locking and safety device for file cabinets which prevents file cabinets from toppling over and injuring office personnel by providing that only one drawer may be opened at a time, comprising an operating rod adapted to be vertically mounted in a file cabinet, fork levers mounted on the operating rod with each fork lever being associated with a file cabinet drawer, said fork levers including a forward leg and a rear leg, the operating rod being rotatable to move the fork levers into a lock position and into an unlocked position, and an actuator member adapted to be mounted on each drawer so as to extend outwardly therefrom in order to contact the forward leg of its associated fork lever and rotate the fork lever into locked position when the drawer is being opened, and so as to contact the rear leg of its associated fork lever and to rotate the fork levers into unlocked position when the drawer is being closed. Also included is a reset and locking rod having a knob which is pulled outwardly to move the fork levers to lock position and is pushed inwardly to move the fork levers to unlocked position, a stop member for limiting the rotation of the fork levers, and the lock.



3,401,999
MICROSCOPE

Jack C. Kephart and Ray L. Eigenbrode, Hagerstown, Md., assignors to The Lionel Corporation, a corporation of New York
Filed Dec. 22, 1964, Ser. No. 420,335
8 Claims. (Cl. 350—86)

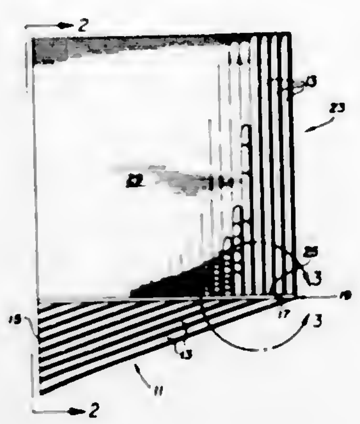


A nonprofessional microscope having a stage and objective carried on a common rigid standard which is rotatable and tiltable relative to a base member about mutually perpendicular axes.

3,402,000
FIBER OPTICAL IMAGE ENLARGER

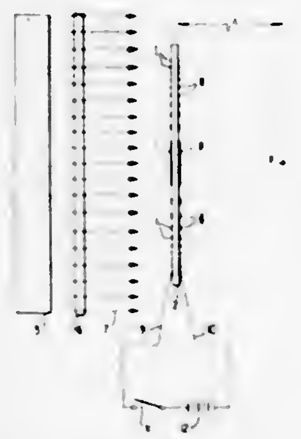
Norman H. Crawford, 830 Escondido Road, Stanford, Calif. 94305
Filed Sept. 10, 1964, Ser. No. 395,526
5 Claims. (Cl. 350—96)

A fiber optical image enlarger including a first optical fiber wedge for expanding an image in a first dimension and a second optical fiber wedge for expanding the image in a second dimension perpendicular to the first dimension, the second optical fiber wedge being coupled to the first wedge and having an input image receiving surface corresponding to the expanded output surface of the first wedge. Particular deflection layers are disclosed for coupling the image from the first to the second wedge and to a diffused viewing screen.



3,402,001
SELECTIVE GATING OF RADIATION

Harold Fleisher, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 6, 1963, Ser. No. 286,087
18 Claims. (Cl. 350—150)

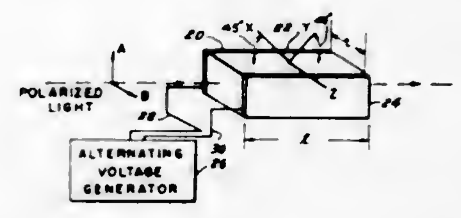


9. An electromagnetic radiation gate comprising: a substance which changes the state of polarization of electromagnetic radiation passing through it only when said substance is activated in the presence of an electric field, a source of parallel, high frequency electromagnetic radiation, and means to selectively impress an electric field across said substance sufficient to activate said substance at locations which define a Fresnel pattern which will diffract said radiation substantially to a point, said means to impress an electric field being transparent to said radiation, said radiation source being directed substantially perpendicular to said pattern, whereby said radiation is focused substantially to said point.

3,402,002
45° CUT LOW VOLTAGE OPTICAL MODULATOR

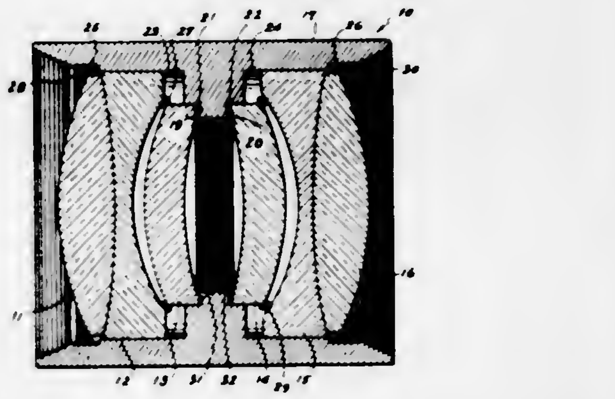
Dayton D. Eden, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed May 28, 1964, Ser. No. 371,053
10 Claims. (Cl. 350—150)

Disclosed herein is an optical modulator of birefringent material cut so that each of the *x* and *y*-axes of the crystal material makes an angle of 45° to one of the surfaces thereof with the *z*-axis being parallel to this surface; a substantial improvement in the light modulation obtainable as well as a substantial reduction in the voltage required to obtain this modulation results from this cut. Furthermore, by joining two similarly cut crystals in a predetermined manner, changes in phase caused by temperature variations are cancelled.



3,402,003
MOUNT FOR LENS ASSEMBLY

Harry R. McFarland, Peekskill, N.Y., assignor to The Ednalite Corporation, Peekskill, N.Y., a corporation of New York
Filed Apr. 27, 1965, Ser. No. 451,248
5 Claims. (Cl. 350—252)



A lens mount is provided with an inward facing circumferentially grooved surface oriented between the elements of an optical system to reduce internal reflection.

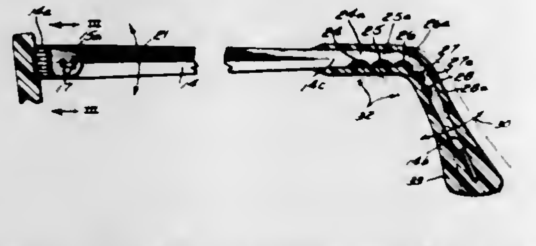
3,402,004
PRISMATIC MIRROR

John G. Warhol, Oak Park, Mich., assignor, by mesne assignments, to Nelmor Corporation, Harper Woods, Mich., a corporation of Illinois
Filed Oct. 12, 1964, Ser. No. 403,102
1 Claim. (Cl. 350—281)

A non-shatterable mechanically strong rear view mirror for automotive use is provided by having flat pieces of glass in non-parallel relationship and maintained in position by having cast therebetween a thermosetting transparent plastic. The plastic is a mixture of polyester and acrylic compounds including a catalyst hardening agent to promote setting.

3,402,005
MULTI-FIT TEMPLE HAVING A NOTCHED, BENDABLE EAR PORTION AND PLASTIC COVER MEMBER

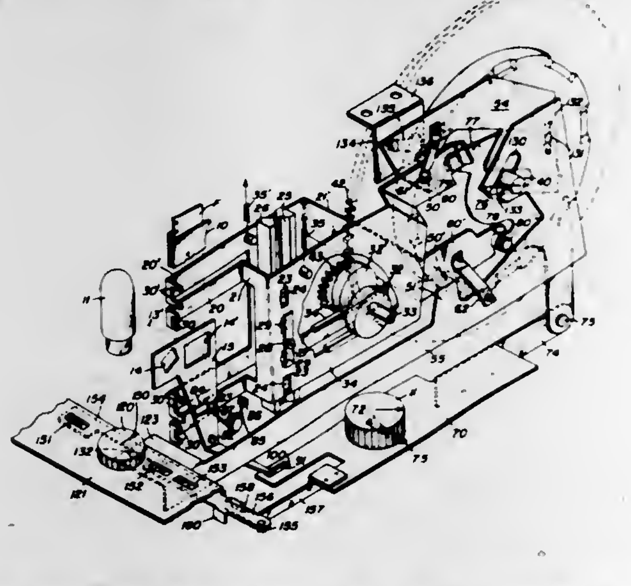
John N. Liautaud, Glenview, and Willy A. Mundt, Chicago, Ill., assignors to Fendall Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 12, 1965, Ser. No. 432,293
4 Claims. (Cl. 351—122)



Construction of eyeglass temples wherein a hardened, essentially stiff, temple portion is provided adjacent the spectacle hinge and wherein the temple portion adjacent the wearer's ear is softened and otherwise constructed for adjustable bending. A plurality of spaced notches are provided for co-operation with a plastic cover member and indicia are applied to the temple to visually indicate selectable areas of bending.

3,402,006
MOTION PICTURE PROJECTOR

John J. Bundschuh, Penfield, and Leonard F. Kamp, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 434,494, Feb. 23, 1965. This application July 17, 1967, Ser. No. 654,004
7 Claims. (Cl. 352—79)

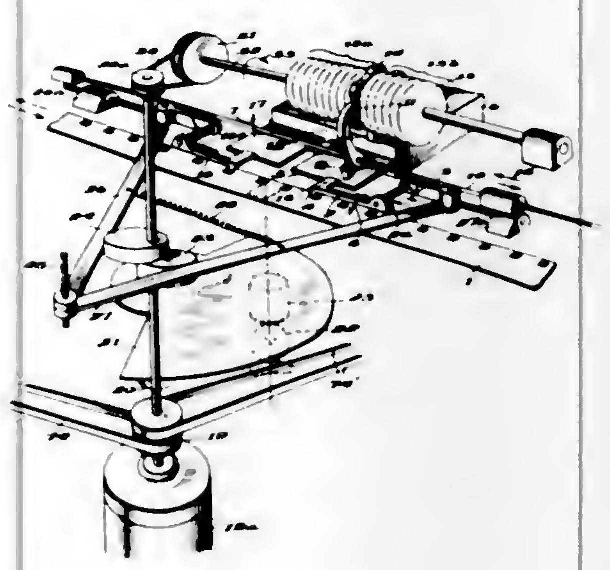


A motion picture projector for both regular 8 and super 8 motion picture film has a single control for changing the advancing means, which may be one or more film claws, so that it will selectively advance one or the other of the film sizes and simultaneously change the aperture size to correspond to the film size being advanced.

3,402,007
FILM FEEDING MECHANISM

Erwin Gerlach, Stockholm, Sweden, assignor, by mesne assignments, to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Continuation of abandoned application Ser. No. 125,583, July 20, 1961. This application July 8, 1965, Ser. No. 480,218
Claims priority, application Sweden, June 15, 1955, 5,619/55
26 Claims. (Cl. 352—180)

1. A film projector comprising in combination:
(1) a source of light;
(2) means for intermittently moving a motion picture film past said source of light;
(3) and shutter means for interrupting the light beam between the source of light and the film at a fixed frequency;
(4) said means for intermittently moving the film comprising
  (a) a film catcher,
  (b) means mounting said catcher for back-and-forth reciprocation in a film advancing direction and in-and-out movement in a film engaging and disengaging direction,
  (c) drive means for reciprocating said catcher in said back-and-forth direction at said fixed frequency,
  (d) in-and-out cam means,

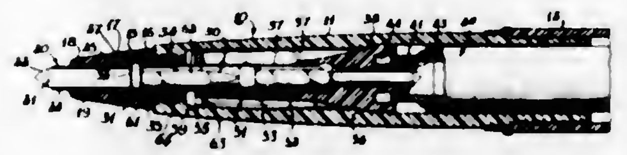


  (e) means for rotating said in-and-out cam means in synchronism with said drive means,
  (f) follower means for effecting in-and-out movement of said catcher in response to rotation of said cam means,
  (g) said in-and-out cam means comprising a plurality of groups of camming surfaces for actuating said follower means in selectively different time relations with the back-and-forth movement of said catcher to vary the intermittent rate of film frame advance selectively between at least three frequencies selected from the group consisting of zero frequency and frequencies which are aliquots of said fixed frequency.
  (h) and means for relatively positioning different ones of said groups of camming surfaces into operative relationship with said follower means.

3,402,008
WRITING INSTRUMENT

Homer T. Green, Milton, Wis., assignor to The Parker Pen Company, Janesville, Wis., a corporation of Wisconsin
Filed Dec. 18, 1964, Ser. No. 419,463
5 Claims. (Cl. 401—199)

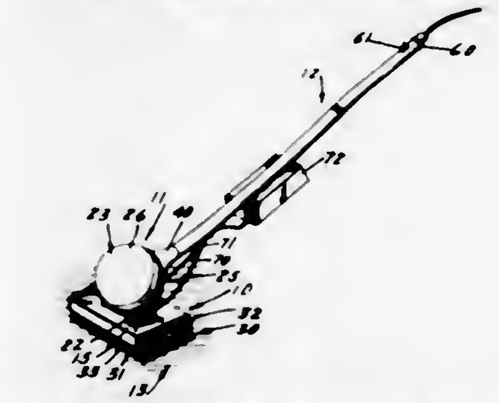
1. A fountain pen comprising,
a housing,
an ink reservoir disposed in said housing,
a writing nib having a plurality of capillary passageways therein mounted in one end of said housing,
a feed bar disposed in said housing and extending between said nib and said reservoir,
said feed bar having a capillary passageway connected from said reservoir to said nib,
said feed bar being mounted for reciprocation relative to said housing and said reservoir,
a tubular member surrounding said feed bar intermediate its ends and defining therewith a weir chamber of capillary of said weir chamber being less than the capillary of the portion of said feed passageway extending therethrough,
said tubular member defining a collector chamber and having a passageway therein interconnecting said weir chamber and said collector chamber, and



means defining a passageway of greater than capillary dimension connected from the exterior of said housing to said weir chamber.

3,402,009
PLUG-IN SPONGE

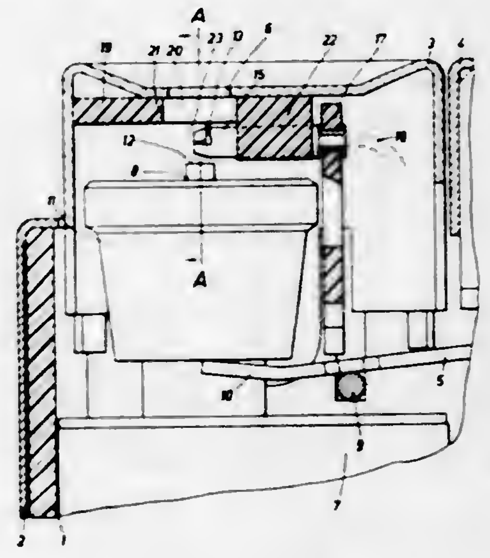
Harold T. Sawyer, Los Angeles, Calif., assignor of seventeen and one-half percent to Vernon D. Beehler, Los Angeles, Calif.
Continuation-in-part of application Ser. No. 480,310, Aug. 17, 1965. This application Aug. 30, 1965, Ser. No. 483,463
6 Claims. (Cl. 401—266)



In a disclosure in which the invention is embodied there is provided a receptacle for retention of a composite sponge by means of which the sponge can be manipulated in one position or another over the surface upon which work is to be performed. The sponge has two different effective working surfaces, namely a relatively thick sheet of substantially conventional absorbent spongy material on one side and a relatively thin sheet of abrasive material on the opposite side. The composite sponge or pad is removable from the holder and reversible in position so that the different sheets can be used alternatively. The sheets are fastened together by a special adhesive and the adhesive selected is one which forms a barrier between the sheets so that liquid cannot pass from one sheet to the other. Consequently, if some sort of liquid cleaner can be advantageously used between the abrasive sheet and the surface being cleaned, the liquid cleaner will not be absorbed into the sponge on the opposite side. On those occasions where liquid cleaner is supplied from a reservoir, a liquid passage is provided extending entirely through the entire pad so that the liquid cleaner can pass from the reservoir to the surface being cleaned without being absorbed into the absorbent sheet when the abrasive sheet is in contact with the surface being cleaned. The liquid cleaner moreover can reach the surface being cleaned even though the abrasive sheet is nonabsorbent, because of the hole passing also through the abrasive sheet. In order to keep the pad from shifting in position in the holder, the illustrative disclosure makes use of bosses on the interior of the holder extending into holes in the pad and the engagement thus provided functions no matter which side of the pad faces upwardly.

3,402,010
GAS LIGHTER

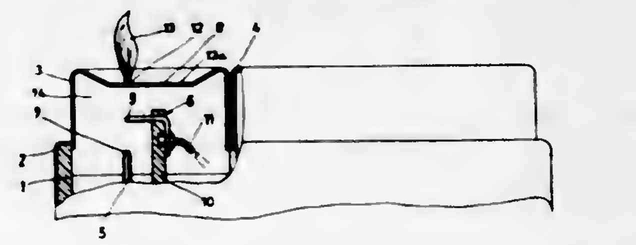
Peter Rabe, Muhlheim (Main), Germany, assignor to Heinrich Mattner GmbH., Offenbach am Main, Germany
Filed May 25, 1966, Ser. No. 552,852
Claims priority, application Germany, May 29, 1965, M 65,400
10 Claims. (Cl. 431—142)



A gas lighter comprises a housing having a wall with a lighter opening therein. A gas tank is arranged in the housing and associated with a burner which can be opened for discharging a stream of gas along a path directed towards the lighter opening. Electric ignition means is located along the path spaced from the lighter opening. A guiding and blocking wall is arranged about the path so as to guide the once-ignited gas and effect passage of the flame outwardly through the lighter opening immediately after formation of the flame, as well as to prevent flash-back of the flame into the interior of the housing through the lighter opening.

3,402,011
LIGHTER WITH ELECTRICAL IGNITING MEANS

Peter Rabe, Muhlheim (Main), Germany, assignor to Heinrich Mattner GmbH., Offenbach am Main, Germany
Filed May 5, 1966, Ser. No. 547,922
Claims priority, application Germany, May 6, 1965, M 65,135
9 Claims. (Cl. 431—263)



In a lighter, a burner has an outlet through which combustible gas may issue. Electrodes are positioned to define a spark gap in the path of issuing gas for igniting the same when the electrodes are energized. A shield member is located above the outlet and the electrodes, and is provided with an opening registering with the path of the gas stream. The cross-section of the opening is so dimensioned that a flame resulting from ignition of the gas below the shield member is permitted to pass through the opening so that the flame will burn only upwardly of the shield member, and that flash-back of the flame downwardly through the opening is prevented. This precludes overheating of the electrodes.

CHEMICAL

3,402,012
DYEING NICKEL-CONTAINING POLYOLEFIN FIBERS WITH O-ALKYLMERCAPTOAZO DYES

Visvanathan Ramanathan, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed Mar. 2, 1965, Ser. No. 436,654
Claims priority, application Switzerland, Mar. 5, 1964, 2,848/64
15 Claims. (Cl. 8—42)

The present invention concerns a process for dyeing or printing nickel-containing polyolefin fibers, which process is characterized by the use of water-insolbule monoazo-dyes, which are obtained by coupling an aminobenzene having in o-position to the amino group an alkylmercapto, phenylmercapto or phenalkylmercapto group, with a heterocyclic coupling component, especially a pyrazolone. Yellow dyeings of excellent fastness to light, washing and dry-cleaning are obtained.

3,402,013
PROCESS FOR DYEING NICKEL-MODIFIED POLYOLEFIN MATERIALS

Hiroshi Sugiyama, Ashiya-shi, Takuo Ikeda, Amagasaki-shi, Takashi Chinuki, Toyonaka-shi, and Hideo Otsuka, Nishinomiya-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan
No Drawing. Filed Apr. 16, 1965, Ser. No. 448,889
Claims priority, application Japan, Apr. 17, 1964, 39/21,704
10 Claims. (Cl. 8—42)

The invention is dyeing polyethylene and polypropylene fibers with nickel compounds blended therein by applying an O-hydroxy-O′-alkoxybenzeneazonaphthol dye to the fibers. The benzene nucleus is further substituted with methyl, chloro, and alkoxy groups. 2-methoxy-5-methylaniline, 2,5-dimethoxyaniline, 2,5-diethoxyaniline, 2,4-dimethoxyaniline and 2-methoxy-4-methylaniline are used for coupling with beta-naphthol to form the O-hydroxy-O′-alkoxyazonaphthol. The electron donor groups, such as alkyl and alkoxy groups, particularly the alkoxy-group in the para-position on the benzene ring, increase the electron density on the oxygen atom of the ortho-to-the-azo-bond alkoxy group to assist and enhance the coordinate bonding of the fiber occluded nickel atom in a chelate structure and, thus, increase dye fastness.

3,402,014
PREPARATION OF DYEABLE ACRYLIC FIBERS AND FILAMENTS

Pompelio A. Ucci, Pensacola, Fla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 238,781, Nov. 10, 1962. This application June 19, 1967, Ser. No. 647,241
6 Claims. (Cl. 8—100)

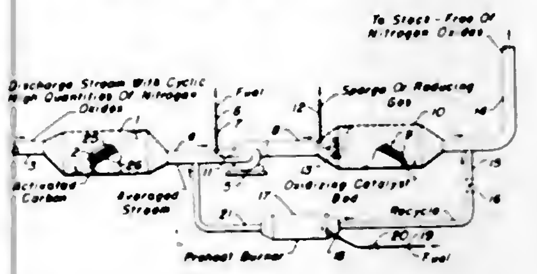
Acrylonitrile polymer fibers having improved basic dye acceptance are produced by contacting the acrylonitrile polymer fibers in the gel state with a compound of the general formula

$$(R)_x\text{—}X\text{—}(SO_2O\text{—}Y)_y$$

wherein R is hydrogen, hydroxyl or methyl, X is a phenylene radical, a naphthylene radical, or an aliphatic chain of 1 to 4 carbon atoms, Y is hydrogen or an alkali metal and *x* and *y* are integers of 1 to 2.

3,402,015
MULTIPLE STAGE TREATMENT OF A NOXIOUS STREAM WITH CYCLIC HIGH QUANTITIES OF NITROGEN OXIDES

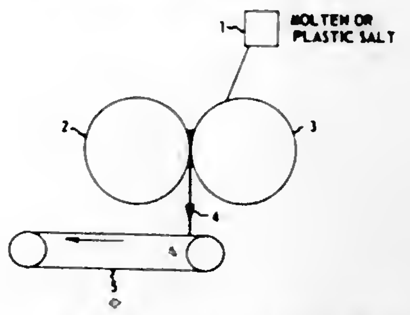
Leslie C. Hardison and James M. Barr, Bloomer, Wis., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 496,115
8 Claims. (Cl. 23—2)



1. A method for treating a noxious discharge stream having a cyclic high quantity of nitrogen oxides content therein to eliminate air pollution, which comprises, passing such stream prior to any catalystic decomposition into contact with a bed of nitrogen oxides adsorption material provided in an amount effecting controlled adsorption of a major portion of the nitrogen oxides content released during periods of maximum nitrogen oxides concentrations in such stream, maintaining continued flow of said discharge stream through the adsorption bed and providing for nitrogen oxides release and desorption from the bed during periods of low nitrogen oxides concentrations, and subsequently continuously passing the thusly contacted stream with a resulting averaged nitrogen oxides concentration substantially less than said maximum nitrogen oxides concentrations into contact with at least one stage of oxidizing catalyst in the presence of an aded reducing fuel, whereby to discharge a non-noxious treated stream.

3,402,016
FUSED SODIUM CHLORIDE FLAKES

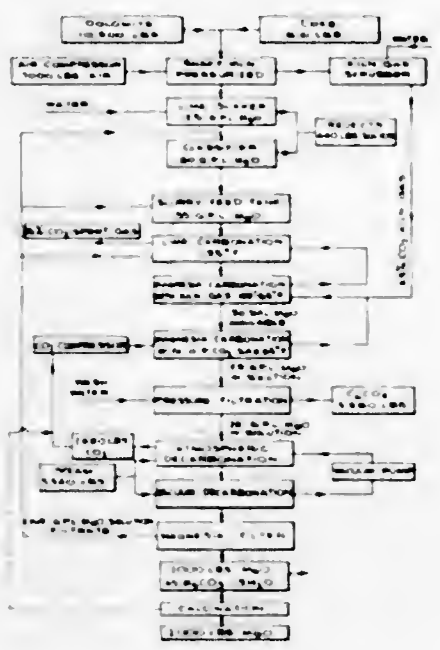
Gilbert Martin Josephson, Westmount, Quebec, Canada, assignor to Domtar Limited, Montreal, Quebec, Canada, a Canadian company
Continuation-in-part of application Ser. No. 303,102, Aug. 19, 1963. This application Aug. 25, 1966, Ser. No. 575,158
Claims priority, application Great Britain, Aug. 29, 1962, 33,093/62
6 Claims. (Cl. 23—89)



The present invention relates to forming molten sodium chloride into thin flakes by solidifying same in contact with the surfaces of a pair of nip forming rolls, to form a pair of films of solid salt separated by a molten layer, and solidifying said molten layer after the salt leaves the nip. The present invention also relates to a fused salt flake, formed by the above described method.

3,402,017
PROCESS FOR RECOVERY OF MAGNESIUM COMPOUNDS FROM MAGNESIUM CARBONATE AND CALCIUM CARBONATE BEARING MATERIALS

Joseph J. Ruiz, Cleveland, Ohio, assignor to Basic Incorporated, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 22, 1965, Ser. No. 500,999
18 Claims. (Cl. 23—67)



Magnesium carbonate trihydrate is produced from calcined dolomitic minerals by slaking the calcine and carbonating in steps to precipitate calcium carbonate and then magnesium carbonate trihydrate which is carbonated to dissolve as magnesium bicarbonate. The latter solution after separation of calcium carbonate is decarbonated to precipitate magnesium carbonate trihydrate which is calcined to form magnesium oxide.

3,402,018
REMOVAL OF POTASSIUM AND SODIUM SULFATE FROM BRINES AND BITTERNS

Oscar B. Waters, Jr., Simpsonville, and Murrell L. Salutsky, Silver Spring, Md., assignors, by direct and mesne assignments, of one-half each to the United States of America as represented by the Secretary of the Interior and to W. R. Grace & Co., New York, N.Y.
No Drawing. Filed Feb. 14, 1967, Ser. No. 616,444
10 Claims. (Cl. 23—121)

Gypsum ($CaSO_4 \cdot 2H_2O$) is digested in brine or bittern heated to 75°–105° C. and having an NaCl content of at least 134 g./l. whereby alkali sulfates form insoluble double salts with calcium sulfate which can be separated from solution.

3,402,019
PREPARATION OF PHOSPHORIC ACID, PHOSPHORUS OXYFLUORIDE, AND RELATED COMPOUNDS

Herbert L. Bowkley, Boone, N.C., and Robert B. Thurman, Conley, Ga., assignors, by mesne assignments, to Armour Agricultural Chemical Company, a corporation of Delaware
Filed Nov. 18, 1965, Ser. No. 508,538
10 Claims. (Cl. 23—165)

Phosphate rock and a metal fluoride are reacted with SO_3 at a temperature of at least 200° C. and a volatilized gaseous product is recovered as phosphorus oxyfluoride. The non-volatilized product may be calcined to remove additional volatilized gases and the gaseous products are then hydrolyzed to produce H_3PO_4.

3,402,020
PROCESS FOR THE MANUFACTURE OF ALKALI METAL BORIDES

Alfred Lipp, Heising, Germany, assignor to Elektroschmelzwerk Kempten G.m.b.H., Munich, Germany
No Drawing. Filed Dec. 1, 1965, Ser. No. 510,979
Claims priority, application Germany, Dec. 24, 1964, E 28,425
4 Claims. (Cl. 23—204)

1. Process for the production of alkali metal borides which comprises reacting alkali metals with boron carbide in the presence of a nonoxidizing atmosphere at a temperature ranging from 500° to 1400° C.

3,402,021
FLUIDIZED PROCESS FOR PRODUCING CARBON DISULFIDE

Yoshio Moriwake, Waki-gun, Japan, assignor to Kurashiki Rayon Company Limited, Kurashiki, Japan, a corporation of Japan
Filed Nov. 30, 1964, Ser. No. 414,526
1 Claim. (Cl. 23—206)

A method of producing carbon disulfide wherein coarsely crushed charcoal is fed into the top of a reaction apparatus having an upper reaction chamber and a lower reaction chamber, the cross sectional area of said upper chamber being larger than that of the lower reaction chamber, and feeding sulfur as vapors to the lower part of the lower reaction chamber. The rate of feed of the reactants is regulated so as to form a fixed reaction bed in the upper reaction chamber and a fluidized reaction bed in the lower reaction chamber.

3,402,022
METHOD FOR PRODUCING HYDROGEN AND A CATALYST THEREFOR

John C. Hayes, Palatine, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Jan. 4, 1965, Ser. No. 423,319
8 Claims. (Cl. 23—212)

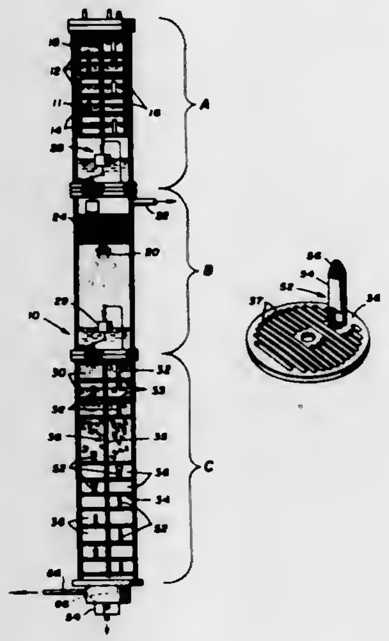
Production of hydrogen by decomposition of gaseous hydrocarbons in contact with fluidized nickel-alumina catalyst containing barium or lithium to provide continued high catalyst activity and to reduce clinker formation.

3,402,023
POLYMERIZATION LEVEL CONTROL APPARATUS

Emerick J. Dobo, Cary, N.C., assignor to Monsanto Company, a corporation of Delaware
Original application June 11, 1963, Ser. No. 287,065, now Patent No. 3,359,074, dated Dec. 19, 1967. Divided and this application June 1, 1966, Ser. No. 554,527
3 Claims. (Cl. 23—285)

3. In a finisher chamber for use in polycondensation systems, at least one pair of superposed finisher stages, said stages being partitioned by a perforated plate means, at least one stage overflow control device communicating between said stages through said plate means, said control device comprising a vertically extending, tubular-shaped, open-ended body portion having an upper gas inlet end disposed within the upper of said stages and a lower gas discharge end communicating with the lower of said stages, a cap portion enclosing the inlet end of said body portion and extending upwardly therefrom, said cap portion being constructed of a gas-permeable, substantially liquid-impermeable material and diminishing upwardly in horizontal cross-sectional area whereby, upon rising of a fluid level within said upper stage beyond the level of said inlet end, a progressively smaller gas inlet area is de-

fined by said cap portion, to thereby generate an increased pressure within said upper stage, resulting in increased interstage flow with concomitant reduction in upper stage liquid level.



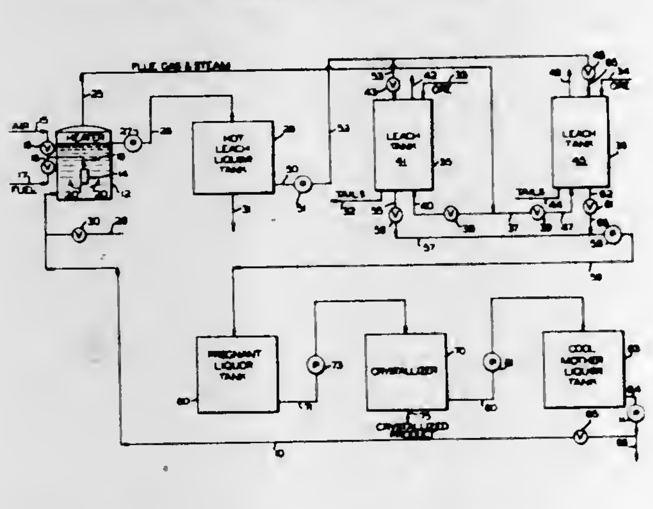
3,402,024
METHOD OF TREATING ALUMINA

Paul A. Marshall, Jr., Boalsburg, Paul A. Rishel, Centre Hall, Harry Roman, Boalsburg, Pa., assignors to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Nov. 22, 1963, Ser. No. 391,822
3 Claims. (Cl. 23—293)

A polycrystalline alumina ceramic is treated with hydrofluoric acid to soften the ceramic and render it machineable. This treatment allows penetration into the ceramic to a depth necessary for machining. The softened ceramic is then ground to the desired tolerances, and the shaped product refired at temperatures within the range of 1400 to 1600° C.

3,402,025
POTASSIUM CHLORIDE RECOVERY FROM POTASH ORES USING SUBMERGED COMBUSTION HEATING

Donald E. Garrett, Pomona, Calif., John A. Hermann, Oklahoma City, Okla., and Mayer B. Goren, Golden, and Adolph E. Meyer, Wheatridge, Colo. (all % Kerr-McGee Oil Industries, Inc., Kerr-McGee Bldg., Oklahoma City, Okla. 73102)
Filed Oct. 14, 1964, Ser. No. 403,724
6 Claims. (Cl. 23—312)



Carlsbad-type potash ore is leached with heated aqueous leach liquor containing potassium chloride and sodium chloride. A submerged combustion heater is immersed in the leach liquor to heat it and produce a hot gaseous mixture containing combustion gases and steam which is used in heating the ore.

3,402,026
PRECIPITATION OF PHOSPHORUS VALUES FROM AQUEOUS MEDIA

Mayer B. Goren, Golden, Colo., assignor to Kerr-McGee Corporation, a corporation of Delaware
No Drawing. Filed Apr. 13, 1965, Ser. No. 447,862
17 Claims. (Cl. 23—321)

Dissolved phosphorus values are precipitated from an acidic aqueous medium which has a pH value less than 2 and contains a gram atomic weight ratio of dissolved ferric iron to dissolved phosphorus greater than 1.75:1 by reducing sufficient ferric iron to lower the said ratio to between 0.75:1 and 1.5:1, and addition of sufficient base to raise the pH value to between 2 and 3. The precipitated phosphorus values are separated from the aqueous medium, thereby allowing vanadium values, when present in the aqueous medium, to be recovered with less phosphorus contamination. The invention is also useful in controlling phosphorus in the leaching of ores containing uranium and vanadium values.

3,402,027
METHOD OF SEPARATING BERKELIUM FROM CERIUM

Fletcher L. Moore, Knoxville, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Feb. 23, 1968, Ser. No. 707,466
4 Claims. (Cl. 23—338)

A method of separating berkelium values from an aqueous solution containing said values together with cerium values comprising making said solution 5 to 9 molar in nitric acid, oxidizing berkelium and cerium to the tetravalent oxidation state, and passing the resulting solution through an anion exchange column. The cerium is sorbed while the berkelium passes through.

3,402,028
PREPARATION OF TRIHYDRAZINE DECABORANE $[(N_2H_5)_2N_2H_4B_{10}H_{10}]$

Daniel Grafstein, Morristown, and Jack Bobinski, Rockaway, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Original application May 7, 1963, Ser. No. 278,785, now Patent No. 3,269,803, dated Aug. 30, 1966. Divided and this application Oct. 4, 1965, Ser. No. 521,467
4 Claims. (Cl. 23—358)

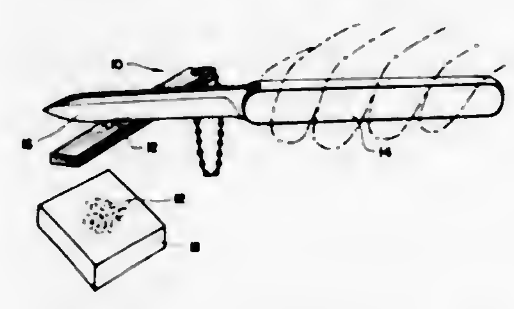
1. A process for the production of trihydrazine decaborane comprising dissolving tetrahydrazine decaborane in a solvent, causing the dissolved material to recrystallize, and recovering the recrystallized material.

2. A process for the production of trihydrazine decaborane comprising subjecting tetrahydrazine to a vacuum and removing therefrom a molecule of hydrazine to form trihydrazine decaborane.

3. A process for the production of trihydrazine decaborane comprising stoichiometrically reacting a bis(dialkylsulfide)decaborane with hydrazine, and recovering the trihydrazine decaborane product.

3,402,029
FIRE KINDLING METHOD

William S. Sampson, Jr., III, Joe A. Ulibarri, and John A. Watson, Grand Junction, Colo., assignors to Ute Mountain Supply Company, Grand Junction, Colo., a corporation of Colorado
Filed Dec. 12, 1966, Ser. No. 601,076
1 Claim. (Cl. 44—39)

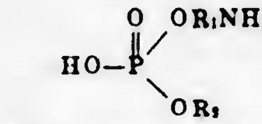


A fire kindling device comprising a metal alloy of misch metal and magnesium.

3,402,030
STABILIZED FUEL ADDITIVE CONCENTRATES CONTAINING ALKYL AND/OR ALKYL ARYL PHOSPHATES

Edward R. Morrison, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Dec. 29, 1964, Ser. No. 421,996
8 Claims. (Cl. 44—72)

1. A fuel additive concentrate adapted to be diluted many times upon addition to a fuel, which concentrate contains a phosphate material selected from the group consisting of alkyl and alkyl aryl phosphates, an anti-icing additive consisting essentially of (1) a saturated acyclic polyhydroxy alcohol containing from 3 to 5 carbon atoms, from 2 to 5 OH groups each attached to different carbon atoms and wherein the ratio of OH groups to carbon atoms is in the range of 0.66:1 to 1:1, and (2) a glycol ether having the formula $R(OCH_2CH_2)_xOH$, wherein: R is selected from the group consisting of a hydrogen atom, methyl, ethyl, propyl, butyl, phenyl, and tolyl groups; where R is hydrogen, x is an integer of from 2 to 4; and when R is other than hydrogen, x is an integer of from 1 to 4, wherein the concentration of said alcohol in said anti-icing additive is in the range from about 0 to about 49 weight percent of said anti-icing additive and the concentration of said ether is in the range from about 100 to 51 weight percent of said anti-icing additive, and a surfactant consisting essentially of an aminoalkyl alkyl phosphate having the following structure:



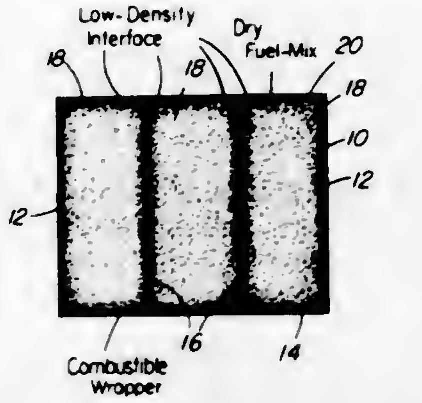
$$HO-P(=O)(OR_1NH_2)(OR_2)$$

wherein R_1 is an alkylene group containing from 4 to 22 carbon atoms per molecule and R_2 is an alkyl group having 4 to 22 carbon atoms per molecule, and the sum of the carbon atoms in both the R_1 and R_2 radicals is in the range of 20 to 30.

3,402,031
FUEL COMPOSITIONS

John W. Schick and John H. Stockinger, Cherry Hill, N.J., assignors to Mobil Oil Corporation, a corporation of New York
Continuation-in-part of abandoned application Ser. No. 508,829, Nov. 19, 1965, and continuation of application Ser. No. 519,798, Jan. 10, 1966. This application Apr. 5, 1967, Ser. No. 628,786
6 Claims. (Cl. 44—14)

A fuel composition is provided comprising a combustible wrapper containing a plurality of nonseparable adjoining sections, each section comprising a mixture of petroleum coke, wood-sawdust, charcoal, an oxidizing agent capable of supporting combustion and a heat-sensitive binder, wherein the interface areas between these sections have relatively lower densities than the remaining areas of the sections.



3,402,032
FUEL COMPOSITIONS

John W. Schick, Cherry Hill, N.J., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Continuation of application Ser. No. 471,720, July 13, 1965, which is a continuation-in-part of application Ser. No. 401,665, Oct. 5, 1964. This application June 20, 1967, Ser. No. 647,568
13 Claims. (Cl. 44—17)

A process is provided for the manufacture of fuel compositions comprising specified proportions of petroleum coke, wood-sawdust, charcoal, an oxidizing agent and a binder, comprising forming a mixture of petroleum coke, wood-sawdust and charcoal components, forming another mixture comprising an aqueous solution of the oxidizing agent and binder, combining these mixtures, forming from the combined mixture a fuel composition of desired shape, and drying the fuel composition thus formed at a temperature from about 200° F. to about 275° F. in an atmosphere having an absolute humidity value from about 0.12 to about 0.20 pound of water per pound of said atmosphere, to obtain a dehydrated fuel composition.

3,402,033
SOLID FUEL COMPOSITIONS

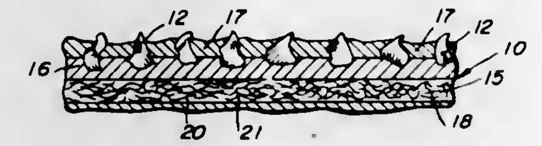
William C. Starr, Wilmington, Del., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Continuation of application Ser. No. 526,077, Feb. 9, 1966. This application Aug. 28, 1967, Ser. No. 663,899
4 Claims. (Cl. 44—17)

3. In a method for preparing a fuel composition comprising a major proportion of petroleum coke and minor proportions of wood-sawdust, charcoal, an oxidizing agent capable of supporting combustion and a binder; and wherein said composition is subjected to an extrusion operation, the improvement which comprises incorporating in said composition, prior to extrusion, a non-hydratable clay in an amount sufficient to prevent plugging of the die face during extrusion of said fuel composition.

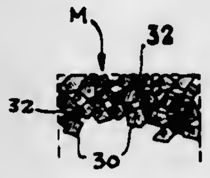
3,402,034
COATED ABRASIVE PRODUCTS

Herbert W. Schnabel, Alliance, Ohio, assignor to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 19, 1965, Ser. No. 497,644
3 Claims. (Cl. 51—295)

Coated abrasive products in sheet form which are resistant to heat build-up and curling having a backing consisting of a flexible sheet of self-bonded linear polyethylene fibers, the backing being impregnated with either a copolymer of vinyl chloride and vinylidene choride or a combination of an epoxy resin, polyamide and long chain polyester. Abrasive grains are bonded to the impregnated backing by means of a polyurethane elastomeric adhesive and with a top-sizing of an epoxy novolac resin.



3,402,035
ABRASIVE WHEEL HAVING A METAL COATED GRAPHITE LUBRICANT THEREIN
Thomas J. Martin, 97 Dover St.,
La Grange, Ill. 60525
Filed Dec. 7, 1965, Ser. No. 523,237
10 Claims. (Cl. 51—298)

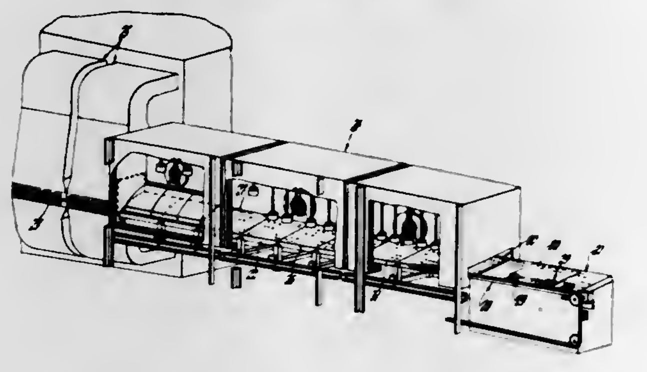


A diamond abrasive wheel wherein the diamond particles are dispersed in a bonding matrix and wherein a compound solid lubricant material for said wheel is defined by graphite particles having a metallic coating bonded thereto is dispersed within the wheel in the voids between the diamond abrasive particles whereby, in use, the graphite lubricant particles are dispensed to permit flow of graphite over the surface of the wheel.

ERRATUM

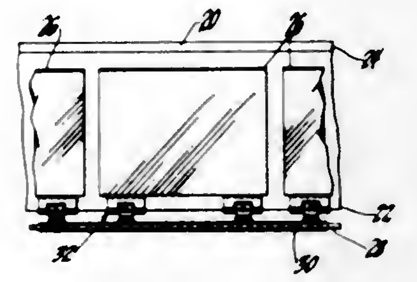
For Class 65—1 see:
Patent No. 3,401,536

3,402,036
METHOD AND APPARATUS FOR CONVEYING AND CURVING GLASS SHEET MATERIAL ON A GAS SUPPORT BED
Dexter H. McMaster, Genoa, Ohio, assignor to Permaglass Inc., Woodville, Ohio, a corporation of Ohio
Filed Jan. 8, 1965, Ser. No. 424,331
6 Claims. (Cl. 65—25)



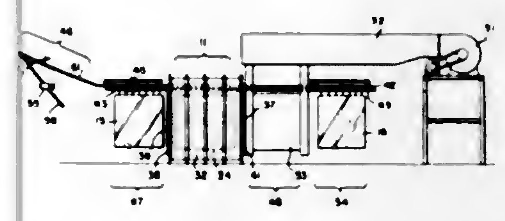
A method and apparatus for curving a sheet of thermoplastic material, such as glass, wherein a sheet of glass is floated on gas above a support bed which has a varying degree of transverse curvature therealong and is tilted so that an edge of the sheet of glass contacts a conveying means adjacent one longitudinal edge of the bed, and wherein the angle of tilt of the bed is varied therealong commensurately with the degree of transverse curvature to maintain the component of force, which is due to the weight of the sheet and which urges the sheet against the conveyor means, substantially constant.

3,402,037
PIVOTAL CONVEYOR ATTACHMENT FOR MOVING GLASS SHEETS OVER A HOT GASEOUS SUPPORT BED
Harold A. McMaster, Woodville, Ohio, assignor to Permaglass, Inc., Woodville, Ohio, a corporation of Ohio
Filed Mar. 26, 1965, Ser. No. 443,028
13 Claims. (Cl. 65—182)



An apparatus for conveying articles and, more particularly, to a conveyor attachment having means engageable with an article to be moved including a link pivotally connected at one end to the conveyor for pivotal movement in a plane transverse the direction of movement of the conveyor and operatively connected at the other end to the means for engaging the article so that the means may pivot relative to the link in a plane transverse the movement of the conveyor, so that as the means moves the article, the article may be disposed at various different vertical distances relative to the conveyor without slippage occurring between the means and the article being moved.

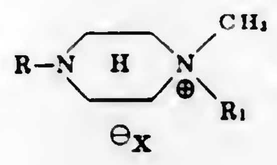
3,402,038
APPARATUS FOR HEATING AND TEMPERING GLASS SHEETS
Victor A. Hordis, Riverton, N.J., assignor to Hordis Bros., Inc., Pennsauken, N.J., a corporation of Pennsylvania
Filed Apr. 2, 1965, Ser. No. 445,103
17 Claims. (Cl. 65—350)



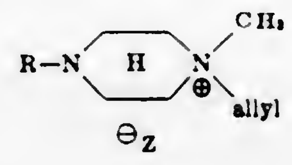
Apparatus for tempering a glass sheet, a conveyor track, four racks which ride the conveyor track and carry a sheet of glass, a loading station where a sheet of glass is attached to one of the racks, an oven station where the sheet of glass is heated to a tempering temperature, a quenching station where the glass is suddenly chilled by cool air, and an unloading station where the temperature glass sheet is removed from the rack, and pusher means for pushing the racks from one station to the next along the conveyor track. The pusher means includes a crank and a pusher arm which pushes the racks from station to station with nearly uniform acceleration and deceleration. The racks are returned from the unloading station to the loading station by a cross-over conveyor, a return conveyor, and another cross-over conveyor. The oven includes opposed plenum chambers having a multiplicity of tubes through which hot air is blown on each side of the glass sheet by a fan. A heat sensor controls the temperature of the air in the plenum chambers.

3,402,039
PIPERAZINIUM SALTS AS PLANT STUNTING AGENTS
Dorsey R. Mussell, Midland, and Elton K. Morris, Clare, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Dec. 5, 1966, Ser. No. 598,914
6 Claims. (Cl. 71—76)

Method of retarding plant growth by the application of a 1-methyl-1-(substituted)-4-(polychlorophenyl)-piperazinium salt compound corresponding to at least one of the formulae



and



to the plant or its habitat. In the above formulas, R represents pentachlorophenyl or 2,4,5-trichlorophenyl, R_1 represents methyl, 2-fluoroethyl, cyanomethyl, ethyl, octadecyl or hydroxyethyl, X represents chloride, iodide, bromide, dichloroiodate, bromochloroiodate, tetrachloroiodate, sulfate, nitrate, formate, acetate, propionate or butyrate, and Z represents chloride, iodide, bromide, sulfate, nitrate, formate, acetate, propionate or butyrate.

3,402,040
WEED CONTROL WITH 1-(TETRAHYDRODICYCLOPENTADIENYL)-3,3-DIMETHYL UREA AND 2-CHLORO-4-ETHYLAMINO-6-ISOPROPYLAMINO-1,3,5-TRIAZINE
Walter W. Fassig, Newark, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 1, 1966, Ser. No. 554,347
1 Claim. (Cl. 71—93)

Weeds in sorghum fields are inhibited in growth by applying a mixture of 1-(tetrahydrodicyclopentadienyl)-3,3-dimethyl urea and 2-chloro-4-ethylamino-6-isopropylamino-1,3,5-triazine in the ratio of from 3:1 to 1:1 to the sorghum field at a rate of 1 to 6 pounds per acre.

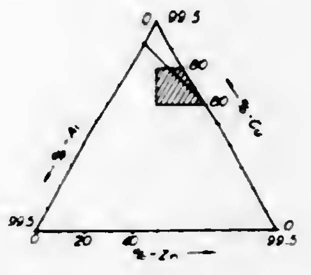
3,402,041
PROCESS FOR REMOVING PHOSPHORUS FROM IRON ORES
Ignatz L. Feld, Tuscaloosa, Ala., and Thomas W. Franklin and William M. Lampkin, New Orleans, La., assignors to the United States of America as represented by the Secretary of the Interior
No Drawing. Filed May 6, 1966, Ser. No. 548,823
11 Claims. (Cl. 75—7)

High phosphorus iron ore is roasted in the presence of alkaline earth metal halides, particularly calcium chloride, or halides of ammonia, manganese, zirconium, copper or lithium. After cooling, the ore is leached with acid to remove phosphorus.

3,402,042
RECOVERY OF NICKEL AND COBALT FROM AN AQUEOUS SOLUTION
Lyall J. Lichty, Phoenix, Ariz., assignor to Northfield Mines, Incorporated, a corporation of Delaware
No Drawing. Filed Mar. 24, 1965, Ser. No. 442,509
18 Claims. (Cl. 75—119)

Nickel and cobalt are extracted from a dilute aqueous solution of these metals at a pH between about 3 and 6 with a substantially water insoluble organo hydrogen phosphate ester in which at least one and not more than two of the hydrogen atoms of the phosphoric acid are replaced by an organic radical containing at least eight carbon atoms.

3,402,043
COPPER BASE ALLOYS
Richard Dale Smith, Madison, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Mar. 1, 1966, Ser. No. 530,873
8 Claims. (Cl. 75—157.5)



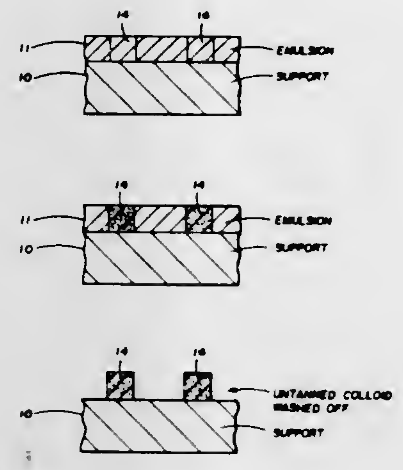
1. A copper base alloy consisting essentially of copper from 67 to 80% by weight, zinc from 15.0 to 31% by weight, aluminum from 1.0 to 5.0% by weight, cobalt from 0.1 to 3.0% by weight.

3,402,044
LIGHT-SENSITIVE NAPHTHOQUINONE DIAZIDE COMPOSITION AND MATERIAL CONTAINING AN ALKALI INSOLUBLE POLYMER
Thomas L. Steinhoff, South Natick, Charles R. Shipley, Jr., Newton, and John A. MacDonald, Westwood, Mass., assignors to Shipley Company, Inc., Wellesley, Mass., a corporation of Massachusetts
No Drawing. Continuation-in-part of application Ser. No. 329,278, Dec. 9, 1963. This application Nov. 23, 1964, Ser. No. 413,286
14 Claims. (Cl. 96—91)

1. In an alkali-developable photo-sensitive coating composition comprising a liquid dispersion of a naphthoquinone-(1,2)-diazide-sulfonic acid ester as photo-sensitizer and an alkali soluble resin, the improvement characterized in that said composition includes means in an amount not greater than the weight amount of the alkali soluble solids content for increasing the thickness, chemical and electrical resistances of the coating, said means comprising an electrically insulating film-forming material which is alkali resistant, substantially insensitive to light at a wave length between 3000 and 5000 angstroms, forms a non-tacky dried film within 10 minutes at 100° C., is compatible with the photo-sensitizer composition and has a molecular weight in the range of 500 to 12,000, said means being selected from the group consisting of polystyrene; copolymers of alpha-methyl styrene and vinyl toluene; the polymeric reaction product of melamine, formaldehyde and a lower alkyl monoalcohol; the polymeric reaction product of benzoguanamine, formaldehyde and a lower alkyl monoalcohol; and sucrose benzoate, said composition being especially adapted for use as a resist in electroplating and metal etching.

3,402,045
LITHOGRAPHIC PRINTING PLATE
Robert N. Woodward, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 27, 1964, Ser. No. 385,364
19 Claims. (Cl. 96—33)

A lithographic printing plate comprises a support having a hydrophobic surface which may be a polymeric material such as polyethylene, polypropylene, cellulose acetate, polyester, etc., and having thereon an unhardened light sensitive silver halide emulsion containing a water soluble substituted hydroquinone silver halide developing agent such as bromohydroquinone, chlorohydroquinone, toluhydroquinone, morpholinemethyl hydroquinone, etc., which forms hydrophilic areas upon development.



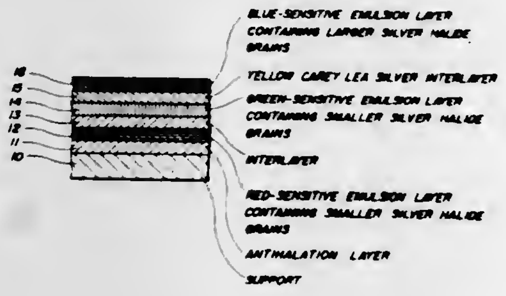
3,402,046

MULTILAYER COLOR PHOTOGRAPHIC ELEMENTS

Daan M. Zwick, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Sept. 23, 1963, Ser. No. 310,824

7 Claims. (Cl. 96—74)


16
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10
BLUE-SENSITIVE EMULSION LAYER CONTAINING LARGER SILVER HALIDE GRAINS
YELLOW CAREY LEA SILVER INTERLAYER
GREEN-SENSITIVE EMULSION LAYER CONTAINING SMALLER SILVER HALIDE GRAINS
INTERLAYER
RED-SENSITIVE EMULSION LAYER CONTAINING SMALLER SILVER HALIDE GRAINS
ANTIHALATION LAYER
SUPPORT

This invention relates to multicolor photographic elements having lower emulsion layers containing color couplers and fine grain silver halide of .3 micron and a top emulsion layer containing a color coupler and coarse grain silver halide of .7 to 1.5 microns for the purpose of improving image sharpness and sensitivity.

3,402,047

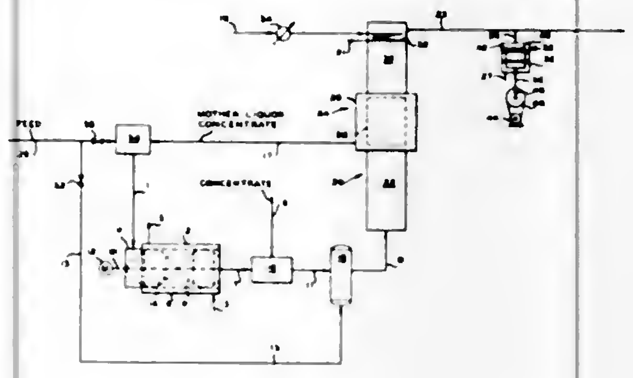
CRYSTALLIZATION SEPARATION AND PURIFICATION UTILIZING FRESH FEED TO RESLURRY CRYSTALS

Duane D. Shaul, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 14, 1964, Ser. No. 389,601

12 Claims. (Cl. 99—31)

Mother liquor concentrate from a fractional crystallization column is passed to a chiller wherein it is cooled to produce a first slurry of crystallized material. This slurry is passed to a separation vessel, such as a filter or a centrifuge, wherein the crystallized material is separated from the noncrystallized material. The separated crystallized material is reslurried with at least part of the fresh feed to the process. This second slurry is passed to the fractional crystallization column. Part of the fresh feed can be admixed with the mother liquor concentrate going to the chiller.



3,402,048

PROCESS FOR PRODUCING BEER OF THE VOLLBIER TYPE

Theo Hank, St. Ingbert (Saar), Germany, assignor to Bierbrauerei Becker OHG, St. Ingbert (Saar), Germany, a German company

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,782

Claims priority, application Germany, Sept. 1, 1964, B 78,344

8 Claims. (Cl. 99—31)

1. In a process of producing a stable beer of the "Vollbier" type, the steps which comprise
- (a) subdividing the wort into a first wort and a second wort,
- (b) boiling the first wort with an amount of hops and acidified malt as required for the entire wort,
- (c) fermenting the boiled first wort,
- (d) boiling the second wort without addition of hops and acidified malt,
- (e) treating the second wort with an adsorbent,
- (f) mixing the fermented first wort with the adsorbent-treated second wort, and
- (g) subjecting the mixture to final fermentation.

3,402,049

PROCESS FOR PREPARING LOW FAT POTATO CHIPS

John J. Mancuso, Astoria, and Anthony C. Capossela, North Tarrytown, N.Y., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 2, 1964, Ser. No. 408,395

4 Claims. (Cl. 99—100)

Potato chips having a total fat content of 20% to 30% by weight are prepared by soaking raw potato slices in an edible fat, draining the potato slices to remove excess fat and subjecting the potato slices to an elevated temperature to surface-fry and dehydrate the potato slices.

3,402,050

ALL PURPOSE-SHORTENING

Norman Bratton Howard and James Bruce Martin, Hamilton, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed June 11, 1965, Ser. No. 463,379

10 Claims. (Cl. 99—118)

1. An all-purpose plastic shortening composition for frying and baking having a smoke point greater than about 375° F. and capable of producing cakes of high volume and fine texture comprising fatty glyceride having admixed therein from 0.5 to about 10 parts per million of methyl silicone having a viscosity of from about 50 to 1,000,000 centistokes and from about 0.25% to about 4%, by weight, of material selected from the group consisting of
- (a) condensation products of dicarboxylic acid and fatty acid monoester of straight chain aliphatic diol containing from 3 to 5 carbon atoms,
- (b) condensation products of dicarboxylic acid and partial fatty acid glyceride containing an average of from 1 to 2 fatty acid radicals,
- (c) acid anhydrides of said condensation products in (a) and (b), and
- (d) mixtures thereof,

said dicarboxylic acids having from 3 to 6 carbon atoms and said fatty acid radicals having from about 12 to about 22 carbon atoms.

3,402,051

PROCESS OF IMPARTING A POPCORN-LIKE FLAVOR AND AROMA TO FOODSTUFFS AND TOBACCO BY INCORPORATING PYRAZINE DERIVATIVES THEREIN AND THE RESULTING PRODUCTS

Donald L. Roberts, Winston-Salem, N.C., assignor to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 388,289, Aug. 7, 1964. This application Apr. 10, 1967, Ser. No. 629,357

19 Claims. (Cl. 99—140)

Flavoring of tobacco and foodstuffs by incorporating therewith a small amount of a compound selected from 2-acetyl-pyrazine, 2-acetyl-6-methylpyrazine and 2-acetyl-5-methylpyrazine.

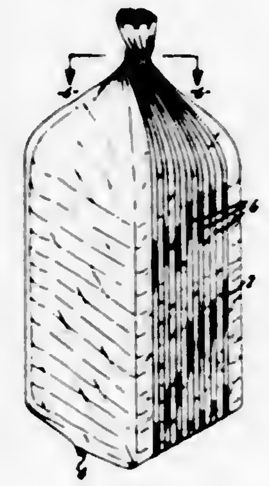
3,402,052

OPENABLE AND RECLOSABLE CONTAINER

Robert J. Walker, 2942 Linden Ave., Berkeley, Calif. 94705

Filed Mar. 29, 1967, Ser. No. 626,777

11 Claims. (Cl. 99—172)



An openable and recloseable container of relatively thin flexible sheet material, especially adapted for packaging of bread, has spaced apart strips of inelastic bendable material capable of assuming a set position and which are secured to opposite side walls. The strips extend generally longitudinally and their spacing is such that by twisting and untwisting the container about a longitudinal axis its mouth can be repeatedly closed and opened. In closed twisted position, a substantially airtight plug is formed by the tight intertwisting of the strips.

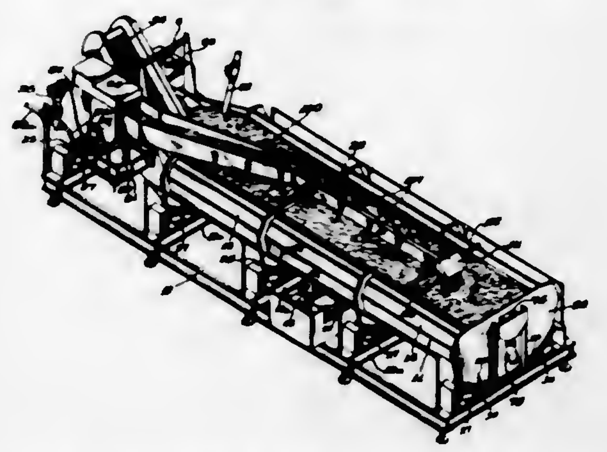
3,402,053

METHOD OF DEFROSTING A FROZEN BLOCK OF FOOD PIECES

Patrick J. Longe and William A. Root, Ottumwa, Iowa, assignors to International Agri-Systems, Inc.

Filed Mar. 1, 1965, Ser. No. 436,231

1 Claim. (Cl. 99—192)



Method of defrosting frozen food products while in a free, partially buoyant state in a continuously moving body of heated water of a temperature for insuring practical control of bacterial growth.

3,402,054

FRICTION MATERIAL

Frank Wood, New Mills, near Stockport, and Eric Clark, Newton, New Mills, near Stockport, England, assignors to Ferodo Limited, Manchester, England, a British company

No Drawing. Filed Nov. 29, 1965, Ser. No. 510,373

Claims priority, application Great Britain, Nov. 30, 1964, 48,670/64

9 Claims. (Cl. 106—36)

A friction material comprising an inorganic fiber, such as asbestos, and a binder in which the binder is wholly or substantially wholly composed of copper sulphide formed in situ. The copper sulphide may be formed from copper power and sulphur. Additional materials such as metallic powders, mineral fillers, antioxidants and friction modifiers may be included in the friction material. The material may be formed by a method which comprises compacting and curing a mixture of ingredients which contains copper powder and sulphur. Curing may be carried out under a pressure of from 2 to 20 tons per square inch in the temperature range of 80 to 220° C.

3,402,055

GLASS COMPOSITION

Ransom S. Harris, Tiffin, and George R. Machlan, Newark, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 197,575, May 25, 1962. This application July 12, 1965, Ser. No. 471,407

8 Claims. (Cl. 106—50)

High-strength, high-temperature resistant glass fibers used as a reinforcement for plastics. Magnesium aluminosilicate glass compositions provide fibers for aerospace and other demanding applications.

3,402,056

METHYL CELLULOSE AS STARCH SUBSTITUTE

John W. Ehrmantraut, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 502,415, Oct. 22, 1965. This application Oct. 18, 1967, Ser. No. 676,026

4 Claims. (Cl. 106—170)

As a substitute for starch to be employed as a gas propelled spray from a pressurized can, a water dispersion of a methyl ether of cellulose of standard viscosity from 5 to 25 centipoises and, thermal gelation temperature in water not above 100° C., together with a foam breaking agent and, optionally, other additives.

3,402,057
LIQUID ACRYLONITRILE-BUTADIENE COPOLYMER MODIFIED NITROCELLULOSE LACQUER FOR FINISHING BOWLING LANES

William D. Coder, Jr., Barrington, Milton A. Glaser, Winnetka, and Alex H. Stein, Waukegan, Ill., assignors, by mesne assignments, to The Dexter Corporation, a corporation of Connecticut
No Drawing. Filed Mar. 20, 1964, Ser. No. 353,587
9 Claims. (Cl. 106—195)

Disclosed is a nitrocellulose lacquer bowling lane finish containing from about 2 to 20 parts by weight of an acrylonitrile butadiene copolymer of about 25 to about 30% of acrylonitrile content per 100 parts of nitrocellulose. This finish provides improved ball control on bowling lanes.

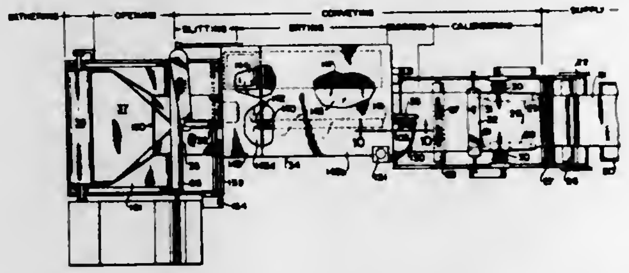
3,402,058
PIGMENT MANUFACTURE

Kiyoshi Hashizume, Chiba, and Takane Miyake and Munehisa Yagiu, Tokyo, Japan, assignors to Tokyo Ink Manufacturing Co. Ltd., Tokyo, Japan
No Drawing. Filed Jan. 20, 1966, Ser. No. 521,818
Claims priority, application Japan, Apr. 8, 1965, 40/20,316
3 Claims. (Cl. 106—309)

A highly dispersible organic pigment is produced by blowing an inert gas into an aqueous slurry during the manufacture of the pigment, and the pigment thus floated onto the surface of the slurry is recovered.

3,402,059
METHOD AND APPARATUS FOR APPLYING ADHESIVE AND SLITTING TUBULAR FABRIC

Samuel Cohn, deceased, late of New York, N.Y., by Eugene Cohn, Great Neck, N.Y., and Jean Rothenberg, Richmond, Va., executors, and Frank Catallo, Elmont, N.Y., assignors to Samcoe Holding Corporation, Woodside, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 229,861, Oct. 11, 1962. This application Jan. 5, 1967, Ser. No. 614,379
15 Claims. (Cl. 117—4)

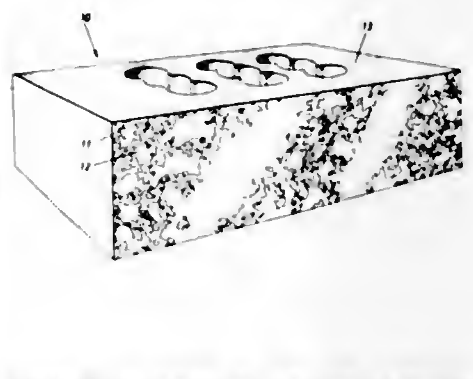


The invention relates to new procedures and facilities for gumming and slitting tubular knitted fabric in a continuous and integrated manner, to form geometrically uniform, open width, knitted fabric.

3,402,060
DECORATIVE BRICKS, TILES OR THE LIKE AND METHODS OF MANUFACTURING THE SAME

Edvins Groskaufmanis, Toronto, Ontario, Canada, assignor to United Ceramics Limited, Toronto, Ontario, Canada
Filed Apr. 12, 1965, Ser. No. 447,492
Claims priority, application Canada, Apr. 15, 1964, 900,394
20 Claims. (Cl. 117—45)

A tile, brick or like decorative building element comprises a ceramic base member which is fired, clay-containing, and moisture and gas-permeable. The base member has two coatings the first of which is a fired, clay and flux-containing, moisture and gas-permeable ceramic material which is bonded to at least one face of the base member. The second coating is a moisture-impermeable, hard, glass-like material having spaced-apart portions which are raised above the surface of the first coating. The spaces between the spaced-apart portions of the second coating at the surface of the first coating and between the surface of the first coating and the face of the base member are occupied by the first coating.



3,402,061
METHOD FOR IMPROVING ANTI-PILLING CHARACTERISTICS OF SYNTHETIC FIBERS

James M. Faria, Decatur, and James R. Biles, Athens, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Oct. 12, 1964, Ser. No. 403,358
15 Claims. (Cl. 117—47)

Anti-pilling characteristics of the synthetic fibers are improved by immersing the fibers in an aqueous bath of a metal salt of a strong acid, adding a strong base to the aqueous solution, dispersing a latex throughout the aqueous solution, and polymerizing the latex on the fibers by allowing the disperson to dry thereon.

3,402,062
CURL-RESISTANT COMPOSITE PACKAGING SHEET

Joseph C. Mohan, Fredericksburg, Va., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Oct. 8, 1963, Ser. No. 314,604
7 Claims. (Cl. 117—68)

1. A composite sheet comprising a base sheet of a nonfibrous, hydrophilic cellulosic material, a resinous moistureproof coating on only one side of said base sheet, and a layer consisting of a C_{12}–C_{18} saturated, straight chain, aliphatic alcohol uniformly covering the other side of said base sheet in an amount sufficient to inhibit the curl tendency characteristics of the sheet.

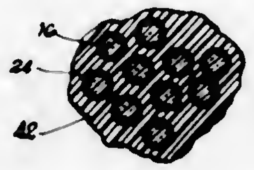
3,402,063
CURL-RESISTANT MOISTUREPROOF REGENERATED CELLULOSE FILM

Joseph C. Mohan, Fredericksburg, Va., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Oct. 8, 1963, Ser. No. 314,627
7 Claims. (Cl. 117—68)

1. A composite sheet comprising a base sheet of a non-fibrous, hydrophilic cellulosic material, a resinous moistureproof coating on only one side of said base sheet, and a layer consisting of a hydrophobic, oleaginous hydrocarbon liquid uniformly covering the other side of said base sheet in an amount sufficient to inhibit the curl tendency characteristics of the sheet.

3,402,064
GLASS FIBER REINFORCED ELASTOMERS AND COMPOSITION FOR SIZING AND IMPREGNATING SUCH GLASS FIBER SYSTEMS

Alfred Marzocchi, Cumberland, R.I., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Sept. 21, 1964, Ser. No. 397,956
12 Claims. (Cl. 117—72)



Glass fibers in bundle form in which the glass fibers in the bundle are coated or in which the bundle of glass fibers is impregnated with a composition the solids of which consist essentially of a solubilized neoprene rubber, powdered magnesium oxide, powdered zinc oxide and carbon black present in the ratio of 2–10 parts by weight zinc oxide, 2–10 parts by weight magnesium oxide and 5–30 parts by weight of carbon black per 100 parts by weight of neoprene and which, when used as a size, the composition contains an anchoring agent in the form of an organo silicon compound or Werner complex compound in which the organic group attached to the silicon atom of the organo silicon compound and the carboxylato group of the Werner complex compound contains either an amino group or an epoxy group and it relates also to compositions of the type described for sizing and impregnating such glass fiber systems.

3,402,065
PHENYLOXYALKANOL COATING OF PARTICLE

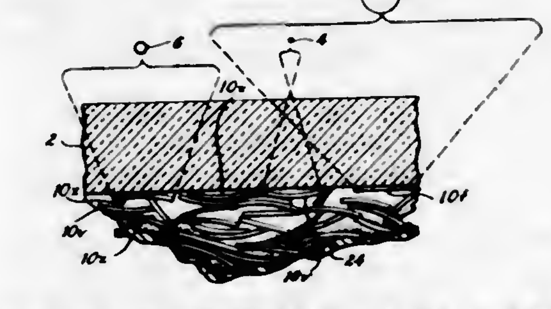
Louis McDonald, Inyokern, and Norman A. MacLeod, Altadena, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Jan. 23, 1950, Ser. No. 140,148
12 Claims. (Cl. 117—100)

1. A method of coating comminuted materials with a surface protective agent which comprises contacting a finely ground solid material with an aryloxy alkanol having a boiling point substantially below the melting point of the comminuted material.

4. A method of coating newly formed pulverized particles of deposition of surface protective agents thereon which comprises contacting a freshly ground solid material with the vapor of any aryloxyalkanol having a molecular weight of at least 124 and not in excess of 400.

3,402,066
METHODS OF MAKING DECORATIVE ARTICLES

William E. Caffray, 1015 River St., Haverhill, Mass. 01831
Filed June 30, 1965, Ser. No. 468,400
3 Claims. (Cl. 117—104)



A method of making decorative articles of semitransparent material containing small reflective plates of uniform dimensions and of substantial curvatures admixed with hardenable clear vehicle sprayed upon a transparent support having a smooth light conducting front surface toward which the article is viewed, the admixed plates and vehicle being projected at the rear of the support with sufficient force to flatten out certain plates against the rear surface of the support, the remaining plates retaining their unflattened condition with convex and concave curvatures facing the front to accentuate depth effects by varying intensities of reflected light rays.

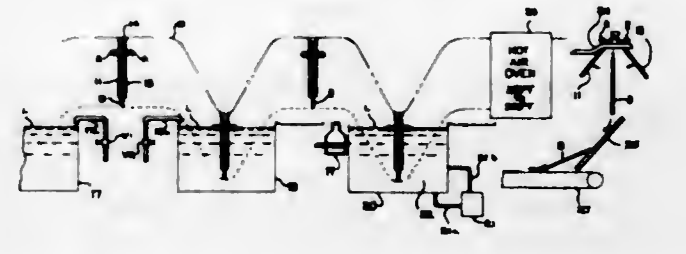
3,402,067
METHOD FOR DEPOSITING ALUMINUM FILM

Robert C. Langley, Millington, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
No Drawing. Filed Sept. 24, 1965, Ser. No. 490,115
3 Claims. (Cl. 117—119)

1. A process for the deposition of aluminum on a surface which comprises coating the surface in a nonprotective atmosphere with a solution of a stabilized hydrocarbon aluminum compound prepared by reacting a hydrocarbon aluminum compound having at least one carbon to aluminum bond with an electron donor compound selected from the group consisting of amines, mercaptans, thioethers, organic sulfides and olefins, and treating the coated surface in an inert atmosphere at an elevated temperature to decompose the stabilized hydrocarbon aluminum compound and to deposit an aluminum film on said surface.

3,402,068
METHOD OF IMPROVING WET STRENGTH PROPERTIES OF PAPERBOARD

Colbert W. Wilkins, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Nov. 12, 1964, Ser. No. 410,508
8 Claims. (Cl. 117—119.8)



A method of imparting to corrugated board combined properties of resistance to moisture and inherent strength when wet by the steps of applying to the corrugated board a relatively fluid liquid which includes a partially polymerized resinous substance capable of further polymerization to the thermoset state, immediately immersing the impregnated board into a molten bath of a wax which simultaneously effects further polymerization of the resinous substance and, at the same time, becomes attached to the board surface and thereafter converting the wax-bearing impregnated board to a non-tacky state.

3,402,069
SILICON-CONTAINING POLYMERS

Ernest Bryson McCall, Llangollen, Brian Beard Millward, Wrexham, and Alan Jeffrey Neale, Llangollen, Wales, assignors to Monsanto Chemicals Limited, London, England, a British company
No Drawing. Filed June 1, 1965, Ser. No. 460,466
Claims priority, application Great Britain, June 2, 1964, 22,744/64
20 Claims. (Cl. 117—126)

Silicon-containing aromatic polymers are produced by the thermal condensation of silicon-containing aromatic compounds with polyfunctional aromatic sulfonyl halides, with the elimination of sulfur dioxide and hydrogen halide. The polymers can be reinforced with fibrous material to give articles of high mechanical strength capable of service for prolonged periods at high temperatures.

3,402,070
BINDER-LUBRICANT FOR FIBER BATTS

George L. Brodmann, Arden, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 417,273, Dec. 10, 1964. This application Jan. 11, 1966, Ser. No. 519,994
7 Claims. (Cl. 117—138.8)

A synthetic fiber batt for cushioning and insulating articles is rendered refluffable by treating the batt with from 0.8% to about 5% of a binder lubricant comprising a cross-linked mixture of methylpolysiloxane and an acrylic resin. The weight ratio of polysiloxane to resin can vary from 2:1 to 1:3.

3,402,071
PROCESS TO RENDER LEATHERS AND FURS WATER-RESISTANT

Rudi Heyden and Jürgen Plapper, Dusseldorf, Germany, assignors to Bohme Chemie Gesellschaft mit beschränkter Haftung, Dusseldorf-Benrath, Germany, a corporation of Germany
No Drawing. Filed July 2, 1964, Ser. No. 380,030
Claims priority, application Germany, Aug. 8, 1963, B 73,039
4 Claims. (Cl. 117—141)

Novel process and composition for rendering furs and leather water-resistant by treating them in organic solvents with the aid of solutions of addition products of 1 to 4 mols of ethyleneoxide per 1 mol of an organic compound, which contains at least one unsaturated lipophilic radical and one exchangeable hydrogen atom bonded to oxygen, nitrogen or sulfur.

3,402,072
PREPARATION OF TIN OXIDE RESISTANCES

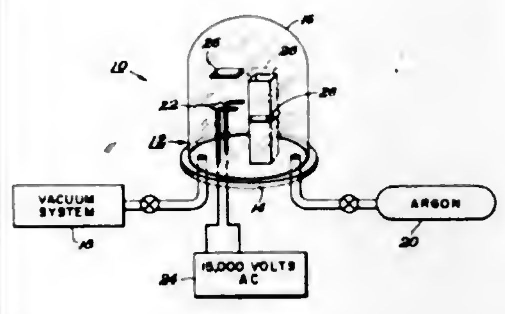
Bertrand Alain Dreyfus, Sevres, France, assignor to Societe d'Electronique et d'Automatisme, Courbevoie, Hauts-de-Seine, France
Filed May 26, 1965, Ser. No. 459,036
Claims priority, application France, June 2, 1964, 976,773
5 Claims. (Cl. 117—201)

Preparation of electrical resistances comprising films of tin oxide formed by pyrolysis of tin salt compositions, which otherwise exhibit great dependency of the resistance per square upon manipulative conditions during preparation and unreliability of resistance, can be prepared with high degree of reproducibility of resistance and without extreme controls on production conditions by including in the tin salt mixture which is pyrolyzed to form the tin oxide film a small amount of doping agent which forms an oxide of P-type conductivity.

3,402,073
PROCESS FOR MAKING THIN FILM CIRCUIT DEVICES

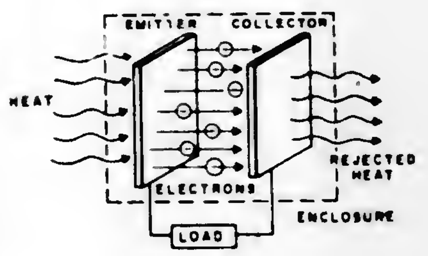
Joe T. Pierce and John P. Pritchard, Jr., Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation-in-part of application Ser. No. 387,299, Aug. 4, 1964. This application Nov. 16, 1964, Ser. No. 415,845
11 Claims. (Cl. 117—212)

Disclosed is a method for simultaneously cleaning the surface of a metal exposed through windows in a layer of photoresist material and polymerizing the photoresist material to produce a very stable insulating film by the bombardment of both the surface of the metal and the material with ionized particles in a glow discharge. Also disclosed are a method of fabricating parallel plate capacitors using photoresist material irradiated in a glow discharge as the dielectric, and a method of forming insulating films by doping the photoresist material with additional material having desired properties and then irradiating the photoresist material in a glow discharge.



3,402,074
ENERGY CONVERTER

Richard A. Chapman, Richardson, Tex., and John J. Connelly, Jr., Chevy Chase, Md., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Original application Mar. 22, 1963, Ser. No. 267,179. Divided and this application Mar. 23, 1964, Ser. No. 353,887
3 Claims. (Cl. 117—224)



1. A collector for a thermionic converter of the type having an emitter and a collector with cesium vapor disposed in the closed space between the emitter and the collector, said collector consisting essentially of an electrically conductive substrate chemically stable at high temperatures coated with a composition of cesium and an element selected from the group consisting of silicon and germanium and containing a donor impurity from Group I–A of the Periodic Table of Elements in an amount sufficient to lower the thermionic work function of said composition.

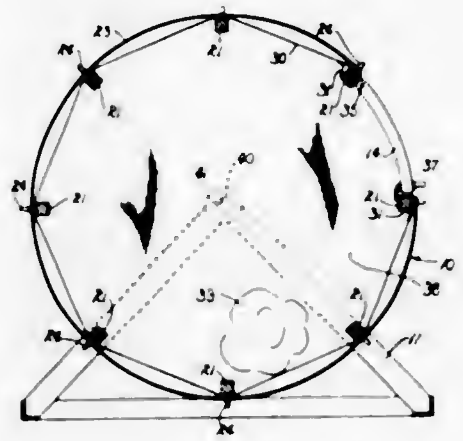
3,402,075
ULTRASONIC WASHING

Seymore Goldwasser, Teaneck, Carl W. Haefele, Jr., Montvale, and Carl Padden, Bloomfield, N.J., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Apr. 8, 1963, Ser. No. 271,470
5 Claims. (Cl. 134—1)

1. A method of cleaning soiled household dishes comprising preparing a solution consisting essentially of water and a cleaning agent effective at a water temperature of 100° F. to 125° F. and in the presence of dissolved air in said water, said agent being selected from the group consisting of alkali metal and ammonium straight chain alkane sulfonates, alkali metal, ammonium and alkaline earth metal alkylaryl sulfonates having from 1 to 3 alkyl groups, said alkyl groups together containing from 1 to 3 carbon atoms, and ethylene oxide acid condensates containing 8 to 20 moles of ethylene oxide per mole of acid, said acid being selected from the group consisting of fatty acids and rosin acids, immersing said soiled article in said solution while it is at a temperature of not more than about 125° F., and energizing said solution with ultrasonic energy.

3,402,076
GARMENT DE-LINTING METHOD

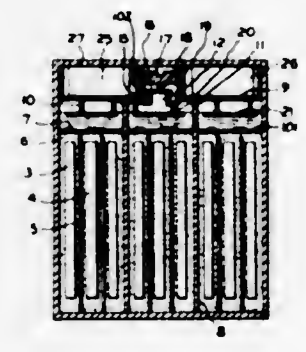
Theodore P. Johnson, Visalia, Calif., assignor of fifty percent to E. C. Presthus, Tulare, Calif.
Filed Sept. 18, 1964, Ser. No. 397,557
3 Claims. (Cl. 134—25)



1. The method of de-linting a cloth garment having an exterior surface comprising the steps of providing a container affording an internal chamber and a tacky adherent inner surface, placing a garment within said chamber, and tumbling said garment to effect contacting of substantially all of the exterior surface thereof with said adherent inner surface of said container.

3,402,077
STORAGE BATTERIES AND METHOD OF MANUFACTURING THE SAME

Katuhiko Kida, Oji, Kusatu, and Kunio Yonezu, Kyoto, Japan, assignors to Japan Storage Battery Company, Ltd., Kyoto, Japan, a corporation of Japan
Filed Oct. 4, 1965, Ser. No. 492,506
Claims priority, application Japan, Dec. 19, 1964, 39/71,847
3 Claims. (Cl. 136—6)



1. A portable lead acid storage battery comprising
a container for holding a plurality of cells,
a plurality of negative and positive electrodes comprising lead alloyed with less than 0.5 percent of a metal selected from the group consisting of calcium, barium, strontium and tin,
a plurality of separators positioned between said positive and negative electrodes, said plurality of separators comprising porous rubber or plastic material,
a gel-type electrolyte comprising sulphuric acid and silicon dioxide of an amount ranging from 3 to 10 percent of the total electrolyte and of a size less than 1 micron diameter, disposed in each cell in contact with said positive and negative electrodes,
a supply of water,
a liquid chamber means for holding said water, comprising a sponge-like acid-proof material disposed above said electrolyte,
means for covering said liquid chamber means,
electrical means for commonly interconnecting the respective positive electrodes,
electrical means for commonly interconnecting the respective negative electrodes,
means commonly interconnecting said plurality of cells for providing interchange of moisture therebetween and for providing a common outlet for excess gas,
valve means operable at a preselected pressure for releasing excess gas from said plurality of cells, said valve means being disposed above said means for covering said liquid chamber and accessible by each of said plurality of cells through the means commonly interconnecting said plurality of cells,
said valve comprising a valve seat,
a valve cover, and
a valve presser which regulates the position of said valve cover with respect to said valve seat,
said valve seat and said valve cover being of a resilient plastic material,
an exhaust compartment located above said means for covering and interconnected to said valve means,
said exhaust compartment having a filter for removing acid foam from said gas before release from said battery container, and
means for sealing said container, said last mentioned means having an escape hatch for said gas and providing an outlet for the interconnected negative and positive electrodes.

3,402,078
SOLID STABILIZED ZIRCONIA OR THORIA HAVING A LAYER OF TANTALUM PENTOXIDE AND TITANIUM OXIDE THEREON

Henry S. Spacil, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 29, 1964, Ser. No. 363,548
2 Claims. (Cl. 136—86)

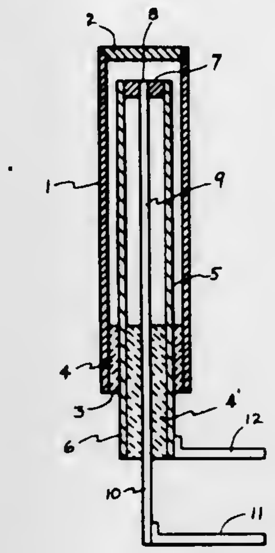
An integrated body is prepared by applying an adherent porous layer of doped tantalum pentoxide over a major surface of a substrate of solid oxygen-ion material. Preparation of the doped tantalum pentoxide and application thereof to the substrate is described. The principal application for such a body is in high temperature fuel cell construction and a fuel cell structure employing stabilized zirconia as the substrate electrolyte is described.

3,402,079
HIGH TEMPERATURE THERMOCOUPLE

Raymond L. Farrow, Westboro, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed July 21, 1965, Ser. No. 473,876
2 Claims. (Cl. 136—228)

1. A high temperature thermocouple to measure temperatures above 5000° F. comprising a cylindrical tantalum housing open at the bottom, an open ended tube of tungsten and 26% rhenium within the housing, a junction block closing said tube at the top and having an interior recess in the center, a tungsten wire positioned centrally with respect to said tube and fitted into said recess of the junction block, granular refractory material sealing the

bottom of the housing and tube and maintaining the housing, tube and wire in spaced relationship and copper



leads connected on the outside to said wire and to said tube for measuring the potential by any suitable means.

3,402,080
HIGH TENSILE STRENGTH STEEL ALLOYS

Hiroyuki Kubota and Junichi Tanaka, Kawasaki-shi, Japan, assignors to Nippon Kokan Kabushiki Kaisha, Tokyo, Japan

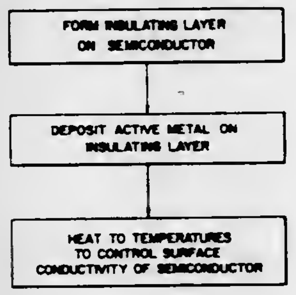
No Drawing. Filed Mar. 24, 1966, Ser. No. 536,983
Claims priority, application Japan, Apr. 13, 1965, 40/21,392
2 Claims. (Cl. 148—36)

The present invention relates to hardened and tempered steel alloys which contain relatively small amounts of vanadium and niobium and/or titanium. These steel alloys have high tensile strength and can be produced relatively cheaply and have a simpler composition than prior known high tensile strength steel alloys.

3,402,081
METHOD FOR CONTROLLING THE ELECTRICAL CHARACTERISTICS OF A SEMICONDUCTOR SURFACE AND PRODUCT PRODUCED THEREBY

Herbert S. Lehman, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 30, 1965, Ser. No. 468,225
12 Claims. (Cl. 148—188)

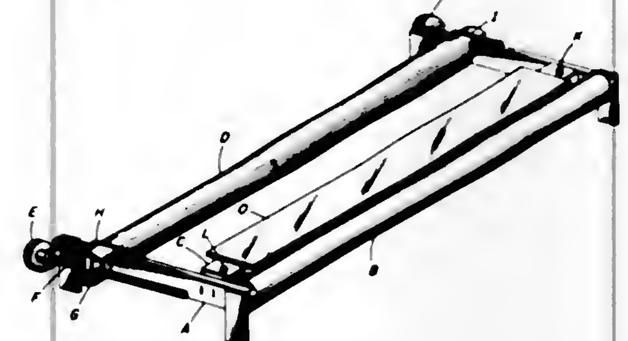

FORM INSULATING LAYER ON SEMICONDUCTOR
DEPOSIT ACTIVE METAL ON INSULATING LAYER
HEAT TO TEMPERATURES TO CONTROL SURFACE CONDUCTIVITY OF SEMICONDUCTOR

A method for controlling the conductivity of a semiconductor surface in contact with an insulating layer that involves the application of an active metal layer to the surface of the insulating layer and followed by a heating procedure. The active metal is selected from the group consisting of aluminum, magnesium, titanium, chromium and silicon. Heat treatment is carried on for a period of time and at a temperature sufficient to vary the conductivity of the semiconductor surface region substantially directly under the active metal layer. It is possible to convert in a controllable fashion the surface of the semiconductor body to a desired conductivity depending on the heat treatment temperature and time.

3,402,082
METHOD AND APPARATUS FOR PATTERN REGISTRATION

Burch Fenner Seaman, Springfield, and Fred Allen Yoder, Middletown, Ohio, assignors to Formica Corporation, Cincinnati, Ohio, a corporation of Ohio

Filed Jan. 22, 1965, Ser. No. 427,219
2 Claims. (Cl. 156—10)



Method and apparatus are disclosed for cutting ano making a continuous pattern upon a gravure cylinder. A photoresist emulsion printed carbon tissue is placed around a pair of spaced parallel rollers with the emulsion side in contact with the rollers wherein the ends of said tissue are brought into overlapping contact with proper registration over an anvil plate including a scratch resistant cutting surface. A clamp bar with a cutting slot is positioned over the overlapping contact and the tissue is properly cut through said slot to form the desired pattern. The tissue is removed from said plate and positioned upon a gravure cylinder with its emulsion surface in contact therewith wherein the cylinder is flooded with a liquid while squeegeeing the tissue thereon. Subsequently, the tissue is soaked and removed from the cylinder leaving the emulsion thereon where said emulsion is dryed and the cylinder is masked and etched.

3,402,083
POWDERLESS ETCHING METHOD FOR ETCHING RELIEF IMAGES IN ALUMINUM

Robert J. Patsko, Merion Station, and William C. Guenst, Jr., Fort Washington, Pa., assignors to Master Etching Machine Company, Ambler, Pa., a corporation of Pennsylvania

No Drawing. Filed June 16, 1965, Ser. No. 464,571
8 Claims. (Cl. 156—14)

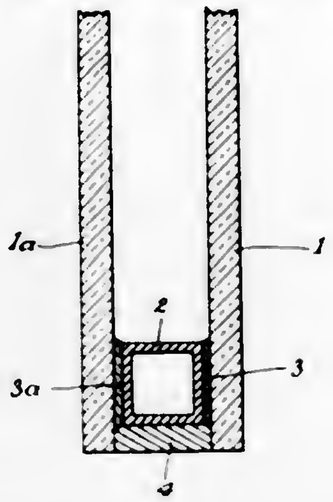
The invention relates to the powderless etching of relief images in aluminum by a bath comprising an aqueous solution of a ferric halide such as ferric chloride, a sulfated or sulfonated castor oil, and a water-immiscible organic solvent substantially unreactive with the ferric halide.

3,402,084
METHOD FOR SEALING SPACING MEMBERS IN A DOUBLE OR MULTIPLE GLASS PANE ASSEMBLY TO THE MARGINS OF THE GLASS PANES

Richard Jacobi, Wernberg-Unterkoblitz, and Richard Stahl, Rudolf Quenett, Josef Achhammer, and Ernst Merkel, Unterkoblitz, Germany, assignors to Deutsche Fafelglas Aktiengesellschaft Detag, a corporation of Germany

Filed Mar. 24, 1966, Ser. No. 537,079
Claims priority, application Germany, Dec. 28, 1965, D 49,034
11 Claims. (Cl. 156—109)

1. A method for sealing the spacing member in a multiple glass pane structure to the margins of the glass pane by means of an adhesive substance comprising an elastic cement having a synthetic rubber base plastified with about 70% of a water-repellent solvent, comprising the steps of firstly applying a layer of said adhesive substance on a strip-like foil of synthetic material, drying said layer of adhesive substance so that said solvent content is reduced to an amount of 3 to 10%, then pressing

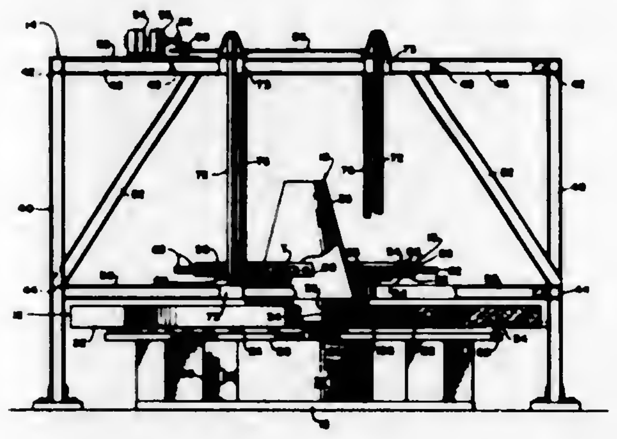


the layer of adhesive substance dried in the mentioned manner while still on said carrier foil against one of the surfaces of the multiple glass pane structure, removing said foil from said layer of adhesive substance on said surface, and bringing said layer of adhesive substance into contact with one of the surfaces of said spacing member.

3,402,085
METHOD OF MAKING HOLLOW ARTICLES OF HELICALLY WOUND FIBROUS TAPE IMPREGNATED WITH RESIN

David C. Trimble, Yorklyn, Del., assignor, by meme assignments, to Haveg Industries, Inc., a wholly owned subsidiary of Hercules Incorporated, New Castle, Del., a corporation of Delaware

Continuation-in-part of application Ser. No. 860,898, Dec. 21, 1959. This application Feb. 9, 1961, Ser. No. 88,052
13 Claims. (Cl. 156—189)



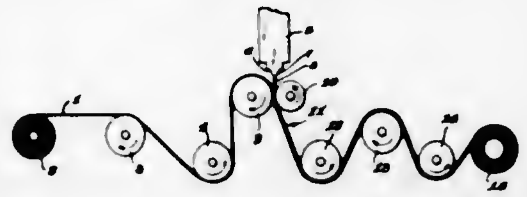
5. A process comprising winding about a mandrel in continuous helical layer formation an elongated tape of fibrous material impregnated with a polymer, said tape having a plurality of parallel rows of spaced aligned slits formed therein, as the sole slits therein, each row of slits extending in a direction transverse to the longitudinal extent of said tape, the slits of each row overlapping the spaces between the slits of adjacent rows, at least some of said slits extending inwardly from one longitudinal edge of said tape, the opposite longitudinal marginal edge of said tape being free of said slits and resistant to longitudinal stretch, the tape except for said resistant edge being expansible in response to longitudinal stretch, and stretching said tape while forming said helical layers to produce a hollow body.

9. A process according to claim 5 wherein said mandrel is frusto-conical and comprising maintaining tension during the step of helically winding said tape and uniting and curing the polymer to a solid mass subsequent to the helical winding step.

3,402,086
HOT-MELT EXTRUSION COATING PROCESS

William F. Smith, Lake Jackson, and Donald J. Endsley, Clute, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed June 5, 1964, Ser. No. 372,971
12 Claims. (Cl. 156—244)

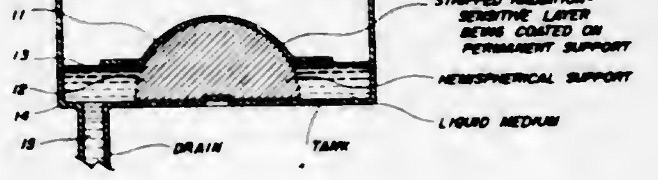


A substrate is provided with an adherent coating of a random copolymer of ethylene and an α,β-ethylenically unsaturated monocarboxylic acid by extruding the copolymer into the form of a film which is deposited on the substrate. The copolymer is extruded at a temperature of between about 105° and about 250° C. to prevent any appreciable degradation of the copolymer. The substrate is heated to a temperature of between about 80° and about 250° C. before, after, or both before and after the deposition of the copolymer film.

3,402,087
COATING NON-PLANAR SURFACES

Edward C. Yackel and Donald P. Foster, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Dec. 23, 1964, Ser. No. 420,634
10 Claims. (Cl. 156—246)


11
13
12
14
15
STRIPPED RADIATION-SENSITIVE LAYER BEING COATED ON PERMANENT SUPPORT
HEMISPHERICAL SUPPORT
LIQUID MEDIUM
DRAIN
TANK

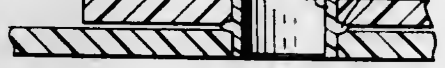
This invention is primarily concerned with the application of uniform photosensitive coatings to non-planar surfaces wherein the coating is preformed on a planar support, stripped from the support, floated on a liquid medium capable of swelling the coating, and finally contacted with the non-planar surface.

3,402,088
METHOD FOR BONDING PLASTIC

William E. Young, 52 Sea Beach Drive, Stamford, Conn. 06902; Robert O. Wolfelsperger, 23 Glenroy Road, Fairfield, N.J. 07006; and Patrick J. Pinto, 73 Ozone Ave., Cedar Grove, N.J. 07009

Filed Sept. 23, 1965, Ser. No. 489,574
4 Claims. (Cl. 156—268)

A method for joining at least two plies of thermoplastic material to one another at portions other than their edges. The method includes arranging and holding a plurality of thermoplastic sheets on a cooled support platen which is maintained at a temperature less than the melting point of the thermoplastic sheets being joined. A heated plunger having a flat tip end is advanced at a predetermined rate into the thermoplastic material, the heated tip melting the plastic and as the tip advance comingles the melted plastic. The advance of the heated plunger is stopped when the tip has entered at least part way into the bottommost layer of material. The heated tip is then withdrawn and the melted portion of plastic is cooled to provide a tubular weld.



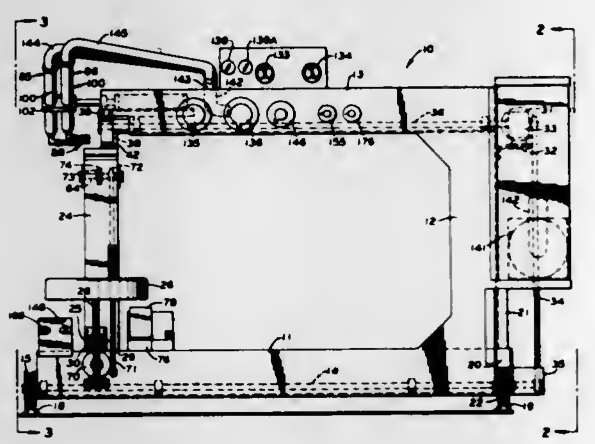
3,402,089

METHOD AND APPARATUS FOR WELDING FABRIC WITH A THERMOPLASTIC SEAM

Norman R. Seaman, Holmesville, Ohio, assignor to Domestic Film Products Corporation, Millersburg, Ohio, a corporation of Ohio

Filed Aug. 24, 1964, Ser. No. 391,614

12 Claims. (Cl. 156—282)



A machine for welding sheet material consisting of two opposed gripping surfaces carried on a movable frame, each gripping surface being driven at selectively independent speeds and the frame being movable at a speed coordinating with one of the gripping surfaces. The gripping surfaces can be moved toward and away from each other to form a controlled nip with a bight at at least one end thereof. At least one heat gun is selectively directed to emit hot air into the bight. To weld fabric on this machine one positions the fabric in overlapped relation within the nip and directs a hot air blast toward the bight formed between the two layers of sheet material as they enter the nip. The hot air forms a puddle of thermoplastic material and the operator causes the frame to move with respect to the sheet material such that the layers are forced into contact throughout the nip. The puddled material falls below the fluxing temperature within the nip and thereby welds the sheet material together. Registry of the sheets is asssured by the selective speed control of the gripping surfaces forming the nip.

3,402,090

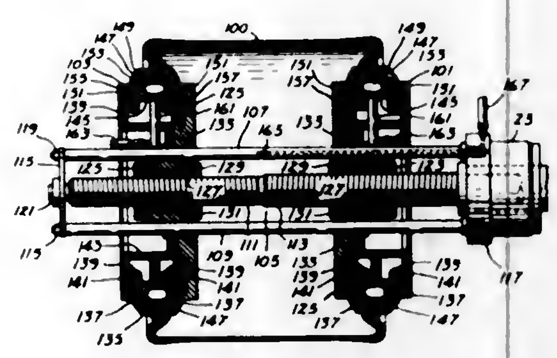
TIRE SHAPING APPARATUS

Virgil E. Henley, Akron, Ohio, assignor to The General Tire & Rubber Company, a corporation of Ohio

Filed May 14, 1965, Ser. No. 455,856

5 Claims. (Cl. 156—398)

A tire carcass shaping apparatus is composed of a pair of circular bead grippers mounted on a screw shaft for movement alternately toward and away from one another. Bladders underlying the bead grippers are inflated to urge said grippers radially outwardly into air-tight engagement with the respective tire beads. Air under pressure is applied directly to the underside of the carcass with concomitant movement of the beads toward one another to transform the carcass from the flat band to toroidal shape. The shaper is preferably used with a tread and breaker drum and a transfer ring for the construction of radial ply tires.



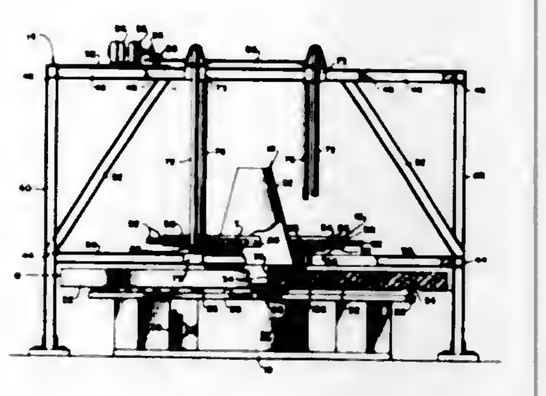
3,402,091

METHOD AND APPARATUS FOR FORMING HOLLOW STRUCTURES BY HELICALLY WINDING STRIPS ON EDGE UNDER PRESSURE

David C. Trimble, Wilmington, Del., assignor, by mesne assignments, to Haveg Industries, Inc., a wholly-owned subsidiary of Hercules Incorporated, New Castle, Del., a corporation of Delaware

Filed Dec. 21, 1959, Ser. No. 860,898

12 Claims. (Cl. 156—425)



1. Apparatus for forming a hollow article from a tape of fibrous material impregnated with resin having a substantially non-expandable longitudinal marginal edge portion and a remaining portion expansible longitudinally comprising a mandrel, a frame having a plurality of elongated members mounted thereon in circumferentially spaced relation about said mandrel for substantially radial movement toward and away from said mandrel, spring means resiliently urging said members radially inwardly toward the exterior surface of said mandrel, means carried by said frame for feeding said tape from a roll between an adjacent pair of said members onto said mandrel with the non-expansible edge portion thereof adjacent the exterior surface of said mandrel and the remaining portion extending transversely outwardly therefrom, means for effecting a relative rotational movement between said frame and said mandrel about the axis of the latter and means for effecting a relative axial movement between said mandrel and said members in timed relation to said relative rotational movement.

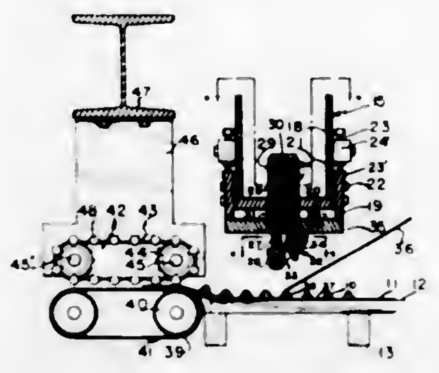
3,402,092

APPARATUS FOR ADHESIVELY SECURING FLEXIBLE COVERING MATERIAL TO A BACKING SHEET

Frank Wiesinger, Winnipeg, Manitoba, Canada, assignor to Lymba Products Limited, Winnipeg, Manitoba, Canada

Filed Nov. 13, 1964, Ser. No. 411,046

8 Claims. (Cl. 156—468)



A device for securing an adhesively coated, flexible panel covering to a backing sheet having spaced and parallel dowels thereon including means to feed the panel covering progressively onto the backing sheet and dowels and having a reciprocating head pressing the flexible material around each dowel and at the same time holding the flexible material in position around the dowel immediately prior to the dowel being worked upon to prevent separation of the flexible material from said immediately prior dowel.

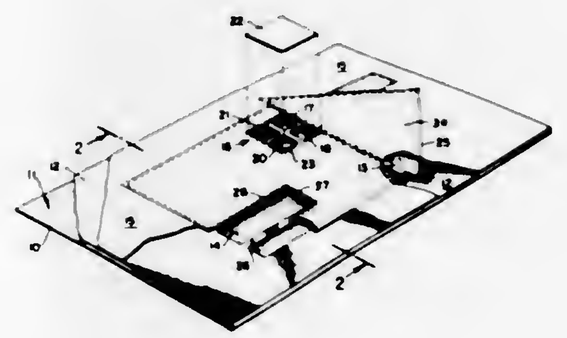
3,402,093

PICTURE ADAPTED FOR COATING WITH POWDERED MATERIAL

William Riva, London, England, assignor to Flock Art Inc., New York, N.Y., a corporation of New York

Filed Feb. 18, 1965, Ser. No. 433,557

7 Claims. (Cl. 161—37)



1. In a structure adapted to be colored by application of finely divided coloring material thereto to form a picture, in combination, a base sheet, a coating of pressure sensitive adhesive on the upper surface of said base sheet, a patterned sheet of relatively thick material adhered to said base sheet by said adhesive, said patterned sheet comprising boundary bands forming a picture and defining areas to be colored, and a cover sheet overlying said patterned sheet and adhered thereto by a coating of pressure sensitive adhesive on the under surface of said cover sheet, said cover sheet being cut along the boundary bands whereby portions of said cover sheet can be removed in sequence to expose the adhesive of said base sheet in discrete areas to be colored by sprinkling finely divided coloring material thereon.

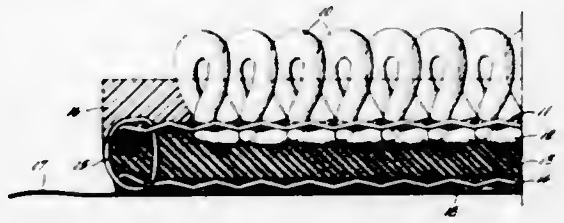
3,402,094

CARPET TILE

Robert G. Levitch, Lexington, Va., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware

Continuation-in-part of application Ser. No. 211,035, July 19, 1962, now Patent No. 3,166,455, dated Jan. 19. 1965. This application Mar. 20, 1964, Ser. No. 353,548

8 Claims. (Cl. 161—44)



1. A carpet tile section comprising a resilient backing member, a pile fabric member adhesively secured to said backing member, said backing member having a larger area than said fabric member forming a substantially uniform marginal edge on said backing member and extending completely around the pile fabric member, and a sealing compound adhering to the top surface of the marginal edge and to the pile of the pile fabric section forming the perimetral edge thereof above the top surface of said marginal edge.

3,402,095

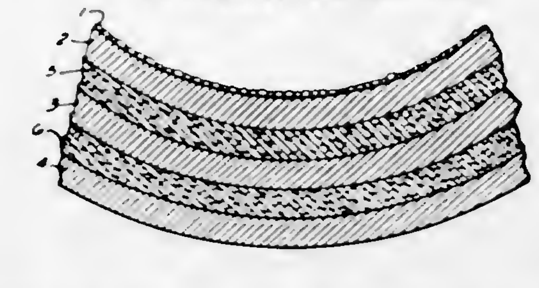
ROLLABLE MULTI-PLY ROOFING MATERIAL

Knud Alfred Varfeldt, Aakarp, and Karl Erik Pontus Thelander, Malmo, Sweden, assignors to Aktiebolaget Svenska Icopalfabriken, Malmo, Sweden

Filed Aug. 10, 1964, Ser. No. 388,498

Claims priority, application Sweden, Aug. 12, 1963, 8,795/63

11 Claims. (Cl. 161—72)



A rollable multi-ply roofing material, which comprises a first flexible outer layer of nonfluid bituminous composition with first reinforcing means, preferably consisting of a layer of glass fiber material, embedded in and extending in longitudinal direction of the first layer for limiting the flexibility of the latter to a predetermined degree of flexibility; a second flexible outer layer of nonfluid bituminous composition with second reinforcing means, preferably consisting of a layer of glass fiber material, embedded in and extending in longitudinal direction of the second layer for limiting the flexibility of the second layer to at most one half of the flexibility of the first layer; and a layer of substantially reinforcement-free nonfluid flexible bituminous material interposed between and integral with the first and second layer.

3,402,096

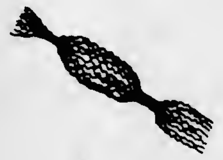
VARIABLE BULK CONTINUOUS FILAMENT YARN

Howard M. Blanchette, Pensacola, Fla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Continuation-in-part of applications Ser. No. 281,396, Ser. No. 281,397, and Ser. No. 281,398, May 20, 1963. This application Apr. 13, 1967, Ser. No. 630,732

3 Claims. (Cl. 161—173)

An intermittently textured multi-continuous filament yarn made of a synthetic thermoplastic polymer is provided. The yarn is characterized by having a plurality of intermittently spaced regions wherein the filaments are



fused together to form a compact threadline. The yarn exhibits a bulky character in the regions between the fused regions.

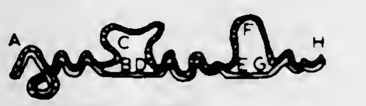
3,402,097

BI-COMPONENT NON-ELASTIC FILAMENT CAPABLE OF PARTIAL SEPARATION

John P. Knudsen and Arthur W. Lockwood, Jr., Raleigh, and Robert P. Teulings, Chapel Hill, N.C., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed May 21, 1964, Ser. No. 369,259

8 Claims. (Cl. 161—177)



DEVELOPED FIBER

A composite filamentary structure of side-by-side components of hard inelastic polymeric material and an elastomer is able to retain from about 25 to 75 percent of the side-by-side structure upon subsequent treatment. Yarns and fabrics are made from the composite structure.

3,402,098

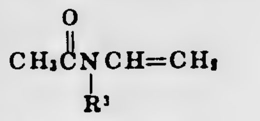
ADHERENDS BONDED TOGETHER BY AN INTERPOLYMER OF ETHYLENE AND A VINYL AMIDE

Bernard O. Baum, Plainfield, Richard K. Walton, North Plainfield, and Royal E. Reynolds, Somerset, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 129,562, Aug. 7, 1961. This application June 19, 1962, Ser. No. 203,478

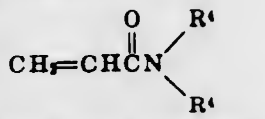
19 Claims. (Cl. 161—190)

13. A glass laminate consisting of a layer of glass and directly bonded thereto, a layer comprising a blend of an organic polyisocyanate and a copolymer of ethylene and a vinyl amide selected from the group consisting of an N-substituted-N-vinyl acetamide of the formula:



$$CH_3C(=O)N(R^3)CH=CH_2$$

and an acrylamide of the formula:



$$CH_2=CHC(=O)N(R^4)_2$$

wherein R^3 is member selected from the group consisting of alkyl of from 1 to 6 carbon atoms and phenyl; and each R^4, when taken individually, is a member selected from the group consisting of a hydrogen atom, alkyl of from 1 to 6 carbon atoms, and phenyl, said copolymer containing from 10 to 50 weight percent polymerized vinyl amide, said blend containing from 0.5 to 10 weight percent of said polyisocyanate.

3,402,099

LAMINATED SAFETY GLASS

Donald I. Christensen, East Longmeadow, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 3, 1965, Ser. No. 476,993

16 Claims. (Cl. 161—199)

9. An improved laminated safety-glass comprising two layers of glass bonded to a plasticized polyvinyl acetal interlayer; said interlayer having a moisture content of 0.1 to 0.8% and containing from 0.01 to 3.0 parts by weight per hundred parts by weight resin, of at least one organic acid which is selected from the group consisting of monocarboxylic acids of from 7 to 22 carbons, dicarboxylic acids of from 4–12 carbons, aliphatic monoamino monocarboxylic acids of from 2 to 6 carbon atoms, aliphatic monoamino dicarboxylic acids of from 4 to 5 carbon atoms, citric acid and mixtures threof.

3,402,100

EMULSIONS OF FATTY ACIDS AND ACROLEIN POLYMERS AND SIZING PAPER THEREWITH

Sherwin P. Malchick, Park Forest, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Aug. 24, 1965, Ser. No. 482,236

5 Claims. (Cl. 162—164)

Stable aqueous emulsions of liquid fatty acids and water-soluble acrolein polymers are shown to be effective sizing agents for paper.

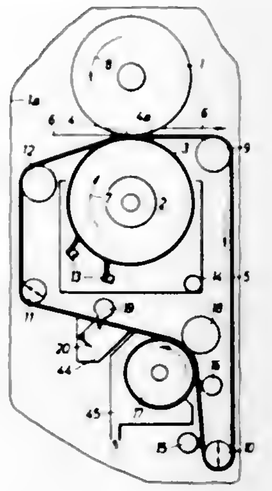
3,402,101

ROLLER PRESS FOR PAPER MACHINES

Christian Schiel, Heidenheim (Brenz), Germany, assignor to J. M. Voith G.m.b.H., Heidenheim (Brenz), Germany

Filed Dec. 22, 1964, Ser. No. 420,318

5 Claims. (Cl. 162—358)



Roller press in which a pervious conveyor belt conveys a wet web through the press nip and in which the roller which engages the side of the belt opposite the web is provided with a substantially incompressible open mesh textile-like close fitting cover or mantle.

3,402,102

NUCLEAR REACTOR PLANT

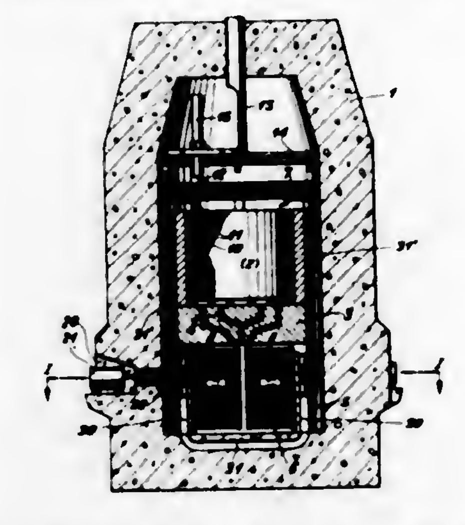
Jakob Kägi, Wiesendangen, Switzerland, assignor to Sulzer Brothers, Limited, Winterthur, Switzerland, a Swiss corporation

Filed May 31, 1966, Ser. No. 554,079

Claims priority, application Switzerland, June 25, 1965, 8,945/65

13 Claims. (Cl. 176—59)

The steam generators are positioned below the shield block and are spaced about a central chamber which receives heated coolant gas from the nuclear reactor and distributes the heated gas transversely through the steam generators. The generators have pipes disposed horizontally to form heat exchanger surfaces with the heated coolant gas.



3,402,103

FERMENTATION OF CARBOHYDRATE-CONTAINING MATERIALS

Herman R. Amberg, Thomas R. Aspitarte, and James F. Cormack, Camas, and Jarrell B. Mugg, Vancouver, Wash., assignors to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada

Filed Jan. 27, 1965, Ser. No. 428,326

6 Claims. (Cl. 195—32)

Spaced packing surfaces are disposed vertically in a tower, and fermenting organisms are grown on the packing surfaces. Thin films of carbohydrate-containing liquor are flowed substantially vertically downwardly without substantial change of direction over the organism surface so that the residence time of the feed liquor in the tower is less than 30 minutes. Substantial conversion of carbohydrate to fermentation product is achieved in one pass without recycling the liquor.

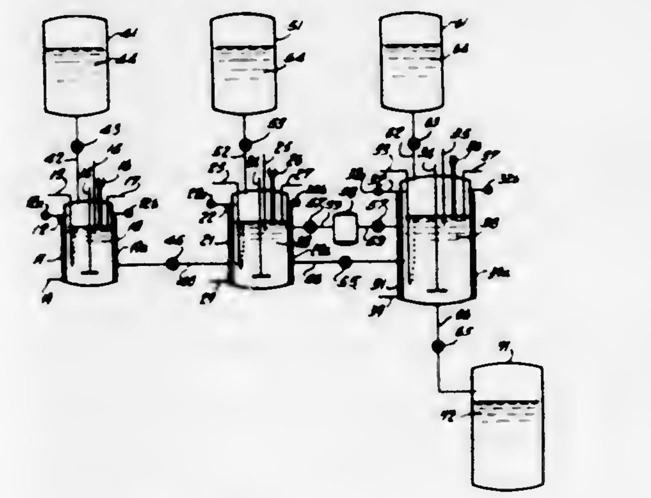
3,402,104

CONTINUOUS FERMENTATION OF GLUTAMIC ACID

James H. Gore, Riverside, and Harold B. Reisman, Danville, Pa., and Charles H. Gardner, Palos Verdes Peninsula, Calif., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

Continuation-in-part of application Ser. No. 423,503, Jan. 5, 1965. This application Nov. 29, 1965, Ser. No. 514,758

10 Claims. (Cl. 195—47)



L-glutamic acid is produced in a continuous fermentation process with biotin-requiring microorganisms by growing the microorganisms in a nutrient growth medium under steady-state conditions in which growth culture medium is constantly transferred to another vessel which contains a growth-limiting factor (penicillin, etc.) and nutrient being added in amounts to create an equilibrium state wherein L-glutamic acid is produced in high yields at a constant rate. Overall fermentation time is reduced by using one or more additional vessels (stages). Microbial growth is developed in the first vessel, very little growth and substantial glutamic acid production occurs in the second (transition) vessel containing the inhibitor. If a third or subsequent vessels are employed glutamic acid is produced with substantially no cell multiplication.

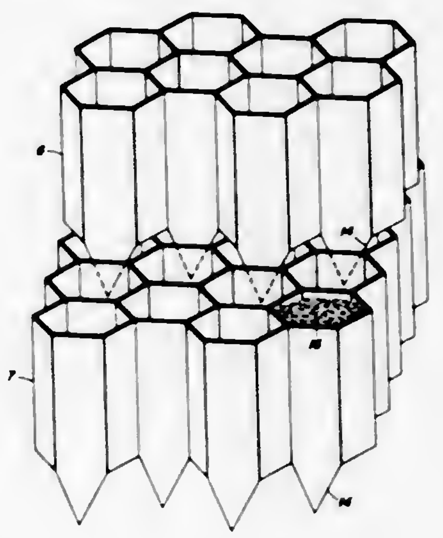
3,402,105

PACKED FRACTIONATING TOWER

Morgan C. Sze, Newark, N.J., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware

Filed Apr. 2, 1965, Ser. No. 445,118

4 Claims. (Cl. 202—158)



A fractionation tower wherein the tower is divided into a plurality of parallel towers by providing a plurality of stacked trays having a plurality of packed vertical passages therein and arranging the trays so that the passages of adjacent trays are in a staggered relationship. The tower is particularly suited for separating close-boiling components.

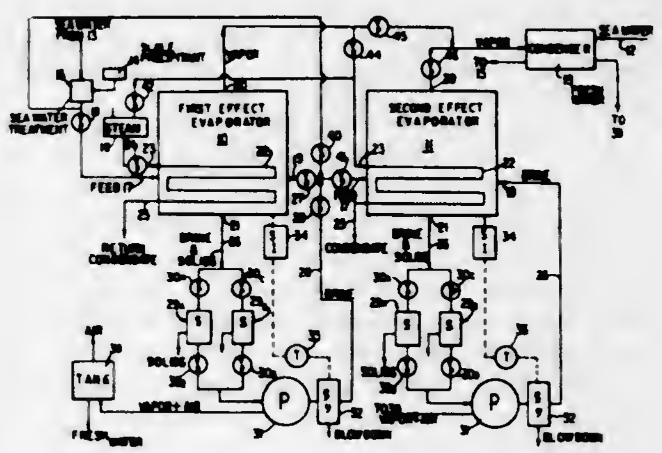
3,402,106

PRODUCTION OF FRESH WATER FROM SALT WATER

Claude L. Spray, 40—40 203rd St., Bayside, N.Y. 11361

Filed Mar. 31, 1966, Ser. No. 545,191

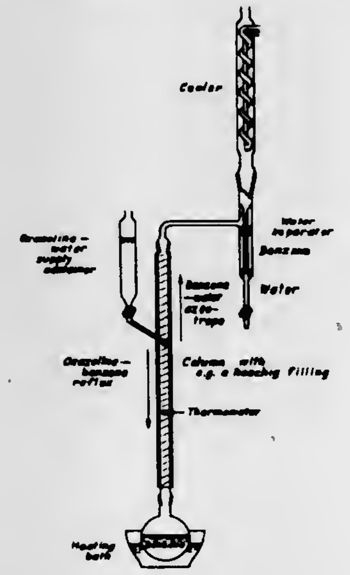
9 Claims. (Cl. 202—174)



Heat exchange apparatus for evaporating and concentrating saline water to produce water insoluble salts in the form of scale particles which are removed by straining. The salinity of the concentrate is sensed and the concentrate is blown down when its salinity exceeds a predetermined value. A timer limits blowdown to periodic intervals.

3,402,107
SEPARATING Δ²-OXAZOLINES FROM WATER BY AZEOTROPIC DISTILLATION WITH A WATER ENTRAINER

Wolfgang Seeliger, Marl, and Maria Lutke-Daldrup, Hiddingsel uber Duimen, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany
Filed May 10, 1965, Ser. No. 455,049
Claims priority, application Germany, May 22, 1964, C 32,950
8 Claims. (Cl. 203—14)



An improvement in the method of separating Δ²-oxazolines from mixtures of Δ²-oxazolines and water comprising:

(a) Delivering in dropwise form the mixture of Δ²-oxazolines and water into the side of a fractionating column containing the vapor of the solvent inert to Δ²-oxazolines wherein the vapor forms an azeotropic mixture with water having a boiling point below the boiling point of both the solvent and the Δ²-oxazolines;

(b) Collecting a mixture of Δ²-oxazolines and solvent in the sump of the fractionating column;

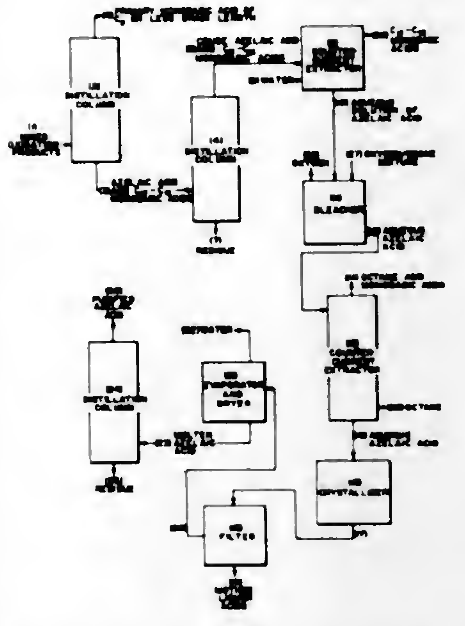
(c) Removing at least a portion of the mixture of Δ²-oxazolines and solvent from the sump; and

(d) Separating the Δ²-oxazolines from the solvent.

3,402,108
PROCESS FOR THE PRODUCTION OF A PURIFIED GRADE OF AZELAIC ACID BY TREATMENT WITH OZONE DURING PURIFICATION

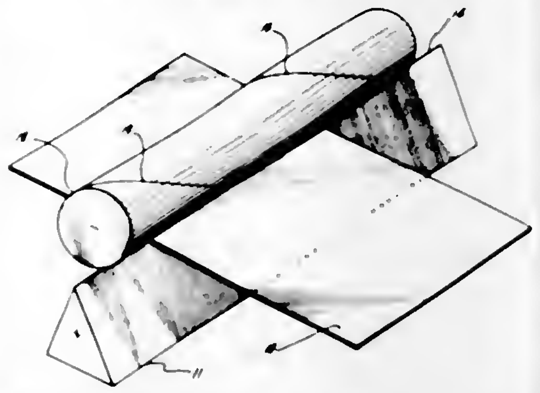
Herman F. Oehlschlaeger and Herbert G. Rodenberg, Cincinnati, Ohio, assignors to Emery Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed July 7, 1966, Ser. No. 563,363
3 Claims. (Cl. 203—31)

A process for purifying azelaic acid from a mixture of oxidation products formed by the oxidation of unsaturated acids such as oleic acid which comprises distilling the mixed oxidation products resulting from the oxidation of unsaturated acids to remove monobasic acids having 9 or less carbon atoms, distilling from the residue azelaic acid, other dibasic acids, and remaining monobasic acids having more than 9 carbon atoms, principally C_{14} to C_{18} acids, dissolving the resulting distillate in hot water to form an aqueous solution of dibasic acids contaminated with some residual quantities of monobasic acids having more than 9 carbon atoms, passing ozone-containing oxygen through the aqueous solution, extracting the aqueous solution with a non-polar hydrocarbon solvent to remove the remaining monobasic acids, and recovering azelaic acid from the raffinate by crystallization.



3,402,109
ELECTROLYTIC RECORDING MEDIUM

Jay R. Berman, Rockville, Md., and Irving Lieblich, Elmhurst, N.Y., assignors to Hogan Faximile Corporation, Los Angeles, Calif., a corporation of New York
Filed Dec. 12, 1966, Ser. No. 600,893
10 Claims. (Cl. 204—2)



1. An electrolytic recording medium comprising a sheet impregnated with an electrolytically-conducting solution containing a compound selected from the group consisting of ascorbic acid and erythorbic acid, the impregnated sheet including between about 25% and about 50% of moisture by weight of the sheet and a sealed container disposed around the sheet to maintain the moisture content between about 25% and about 50% by weight.

3,402,110
MASK ELECTROFORMING PROCESS

Raymond E. Scherrer, Des Plaines, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 17, 1966, Ser. No. 521,188
4 Claims. (Cl. 204—11)

1. The method of making a mask for use in fabricating thin-film microcircuitry which comprises the following steps:

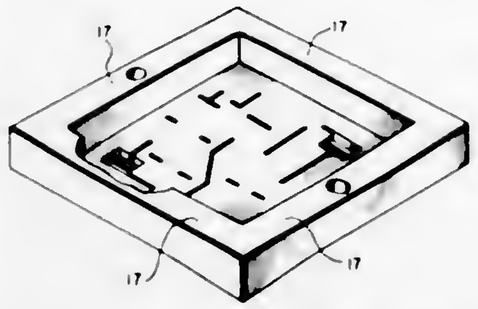
applying over selected areas of a substrate a first coating to define a negative of a circuit pattern and to shield said coated areas against metallic electrodeposition;

electrodepositing over the uncoated surface of said substrate a metallic film of a predetermined thickness which is continuous over said substrate except for the coated areas thereof;

applying over said metallic film, except for the marginal portions thereof, a second coating to shield against further metallic electrodeposition;

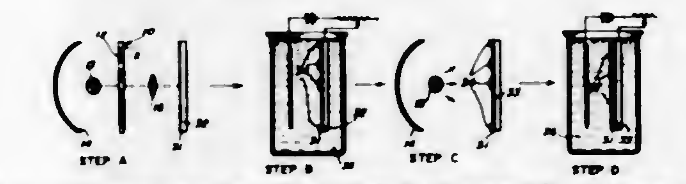
continuing the metallic electrodeposition on said marginal portions of said film to develop a frame enclosing said circuit pattern and of sufficient thickness to be self supporting;

and separating said film with its frame from said substrate.



3,402,111
EMULSION DEVELOPERS FOR PHOTOCONDUCTOGRAPHY

Ivan B. Ville, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 22, 1965, Ser. No. 427,289
8 Claims. (Cl. 204—18)



An electrophoretic photoconductographic process in which an emulsion comprising an oily discontinuous phase and an aqueous continuous phase is used for developing an image exposed on a photoconductive surface. The oil phase is used as a carrier for a suitable dye or pigment, as a leach for removing color already present in the photoconductive material or as a carrier for a leaching agent. The image can be made to appear in any desired color and with the use of suitable pigments, the image densities can be higher than those obtained with the use of conventional silver salt developers.

3,402,112
PROCESS FOR REDUCING ANODE CORROSION IN AN ACRYLONITRILE HYDRODIMERIZATION CELL

David W. Brubaker, Pensacola, Donald E. Danly, Cantonment, and Jim N. Maloney, Jr., Pensacola, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed July 26, 1965, Ser. No. 474,934
6 Claims. (Cl. 204—74)

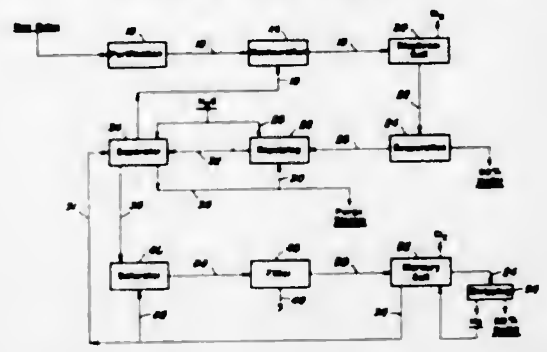
1. In a process for electrohydrodimerizing acrylonitrile to adiponitrile in an electrolytic cell having an anode equipped chamber through which an anolyte of aqueous sulfuric acid solution is continuously circulated and a cathode equipped chamber through which a catholyte including an aqueous quaternary ammonium salt solution, acrylonitrile, and reaction products is continuously circulated while an electrical potential is established between said anode and cathode sufficient to produce unidirectional current flow, a method for reducing corrosion of said anode by removing deleterious acids from said anolyte comprising, in combination, the steps of:

(a) intimately contacting said anolyte with a water insoluble organic solution of a high molecular weight amine; and

(b) separating said organic solution of high molecular weight amine from said anolyte.

3,402,113
PROCESS FOR THE ELECTROLYSIS OF ALKALI METAL HALIDE BRINES

Utah Tsao, Jersey City, N.J., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware
Filed Apr. 27, 1965, Ser. No. 451,263
4 Claims. (Cl. 204—98)



1. In a process for the coordinated operation of diaphragm and mercury cells for the electrolysis of alkali metal halide brines, wherein salt and impurity sulfate recovered from the evaporation of the diaphragm cell catholyte is used to supply said mercury cell, the improvements comprising:

repulping said salt with purge brine, whereby a portion of the sulfate contained in said salt is taken into solution;

washing said repulped salt with depleted brine from said mercury cell, whereby sulfate content of said salt is further reduced, chlorate in said depleted brine remaining in solution;

separating said salt-depleted brine mixture into a purge brine fraction and first and second salt fractions, said brine fraction being relatively concentrated in sulfate and chlorate and said salt fractions being relatively depleted in said sulfate and chlorate;

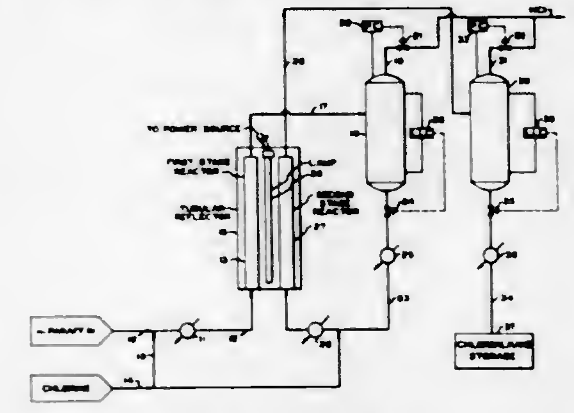
purging said brine fraction from the system, except as required for use in said repulping;

dissolving said second salt fraction in fresh brine for electrolysis within said diaphragm cell, and

dissolving said first salt fraction in depleted brine from said mercury cell for electrolysis within said mercury cell.

3,402,114
PHOTOCHEMICAL HALOGENATION OF HYDROCARBONS

Thomas Hutson, Jr., and Allan D. Holiday, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Feb. 19, 1965, Ser. No. 433,907
3 Claims. (Cl. 204—163)



In a staged photohalogenation process wherein hydrocarbon saturated with a halogen is halogenated in at least two stages, the halogen-containing hydrocarbon is subjected to ultraviolet light from a light source positioned at the longitudinal axis of a cylindrical reflecting surface wherein transparent reaction zones for the stages are positioned between the light source and the reflecting surface.

3,402,115
PREPARATION OF QUATERNARY AMMONIUM HYDROXIDES BY ELECTRODIALYSIS

Charles R. Campbell and Roland R. Spiegelhalter, Pensacola, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Mar. 12, 1965, Ser. No. 439,432
8 Claims. (Cl. 204—180)

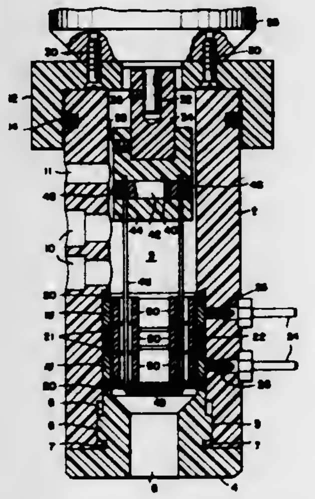
1. An electrolytic process for producing a quaternary ammonium hydroxide from a bis-quaternary ammonium sulfate salt in an electrolytic cell containing three chambers wherein said chambers include an anolyte chamber containing an anode, a catholyte chamber containing a cathode, and a chamber containing bis-quaternary ammonium sulfate salt positioned between said anolyte and catholyte chambers, said salt chamber being separated from said anolyte chamber by a strongly basic anion exchange resin membrane and being separated from said catholyte chamber by a strongly acidic cation exchange resin membrane, said process comprising, in combination:

(a) continuously circulating an aqueous solution of said bis-quaternary ammonium sulfate salt through said salt chamber, an aqueous sulfuric acid solution through said anolyte chamber, and an aqueous quaternary ammonium hydroxide solution through said catholyte chamber;
(b) establishing an electrical potential between said anode and cathode sufficient to produce a flow across said cell of unidirectional electrical current having a density from 0.05 to 1.00 ampere per square centimeter of effective cathode area thereby causing sulfate ions to migrate through said strongly basic anion exchange resin membrane into said anolyte chamber and causing quaternary ammonium ions to migrate through said strongly acidic cation exchange resin membrane into said catholyte chamber;
(c) maintaining the sulfuric acid concentration in said aqueous sulfuric acid solution between 0.05 and 3.0 N;
(d) maintaining the quaternary ammonium hydroxide concentration in said aqueous quaternary ammonium hydroxide solution between 0.1 and 1.0 N; and
(e) withdrawing as process product a portion of said aqueous quaternary ammonium hydroxide solution.

3,402,116
APPARATUS FOR THE MEASUREMENT OF RESIDUAL CHLORINE OR THE LIKE

Gerhart O. Kaltenhauser, Geismar, and Hermann Schweinsberg, Gottingen, Germany, assignors to Fischer & Porter Company, Warminster, Pa., a corporation of Pennsylvania

Filed Oct. 2, 1964, Ser. No. 400,977
Claims priority, application Germany, Oct. 12, 1963,
F 40,974
1 Claim. (Cl. 204—195)

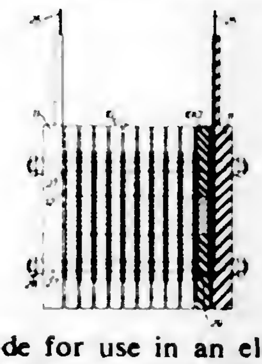


A chlorine measuring cell having coaxial cylindrical electrodes is provided with electrode cleaning rings, driven by a motor, and supported by a U-shaped fork.

3,402,117
ELECTRODES AND ELECTRODE STACKS FOR ELECTROLYTIC CELLS

David Johnson Evans, Town Mills, Cannon Lane, Tonbridge, Kent, England

Filed Oct. 25, 1965, Ser. No. 505,186
Claims priority, application Great Britain, Nov. 5, 1964,
45,088/64
18 Claims. (Cl. 204—268)

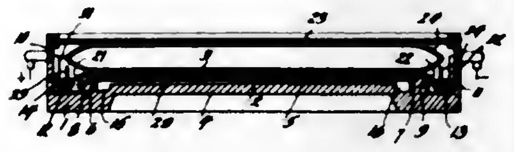


A bipolar electrode for use in an electrolytic cell and comprising at least two substantially identical metal sheets separated by a plate of electrically insulating material to form a stack. The insulating plate has recesses on either side thereof to receive the sheets therein as well as to substantially enclose the peripheries thereof. At least one metal connection passes through the insulation plate at a point spaced from the edges of the stack to interconnect the metal sheets.

3,402,118
APPARATUS FOR ELECTROPHORETIC SEPARATION

Karl J. Mutter, Birsfelden, Basel-Land, Switzerland, assignor to Camag, Chemie-Erzeugnisse und Adsorptionstechnik AG, Muttenz, Switzerland, a corporation of Switzerland

Filed Dec. 9, 1964, Ser. No. 417,050
7 Claims. (Cl. 204—299)



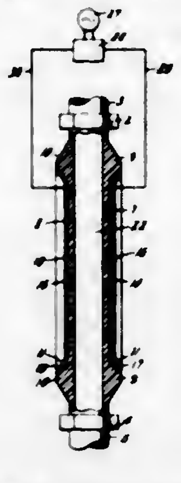
Improvements are provided in apparatus for electrophoretic separation, particularly under high voltage. A system is employed preferably with the use of controlled, uniform pressure, providing optimum heat transfer, and prevention of losses by evaporation of conductive fluid from an electrophoretic medium. Separation of low molecular weight substances is made possible by use of the higher voltages.

3,402,119
UNITARY CORONA REACTOR INCLUDING OPPOSED PLANAR NON-VITRIC DIELECTRIC WALLS

William R. Browne, Scotia, and John E. McNamara, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed May 10, 1965, Ser. No. 454,627
3 Claims. (Cl. 204—312)

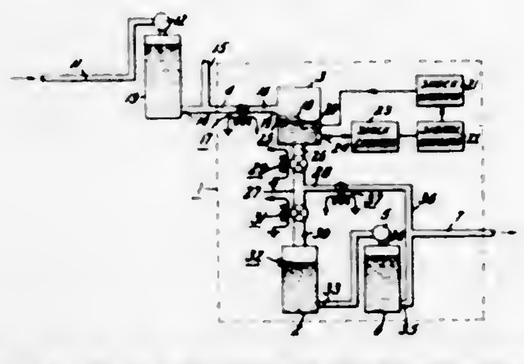
A cororna reactor is disclosed which is formed as a single unitary structure by a simple molding operation from a moldable, dielectric material such as a ceramic or synthetic resin which is chemically inert with respect to the reactant to be treated therein. The reaction chamber comprises inlet and outlet means with a reaction zone therebetween, the reaction zone being defined by a pair of parallel, substantially rectangular wall portions having smooth interior face portions spaced a constant distance apart, the spacing dimension being much smaller than any lateral dimension of the rectangular wall portion. The outer surfaces of the rectangular wall portions have electrode supporting portions which are substantially parallel to each other and to the corresponding inner surface of the rectangular wall portions.



3,402,120
ELECTROHYDRAULIC PURIFICATION APPARATUS

Merton Allen and Edward C. Schrom, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed June 1, 1964, Ser. No. 371,639
4 Claims. (Cl. 204—323)

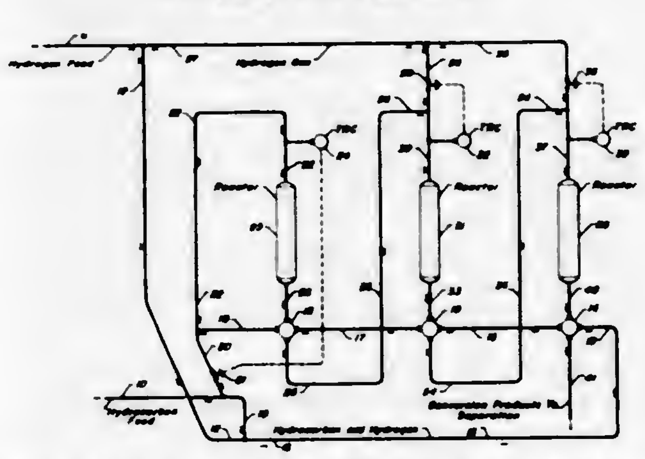


Apparatus is disclosed utilizing electrohydraulic shocks for the purification of contaminated water and other substantially non-compressible liquids and for the sterilization of objects such as surgical instruments. This is accomplished by the generation of an arc discharge through a portion of the fluid which produces a shock wave and chemically active species which are effective in killing organisms in the fluid.

3,402,121
METHOD FOR CONTROLLING THE CONVERSION OF HYDROCARBONS

Newt M. Hallman, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Oct. 6, 1966, Ser. No. 584,787
4 Claims. (Cl. 208—59)

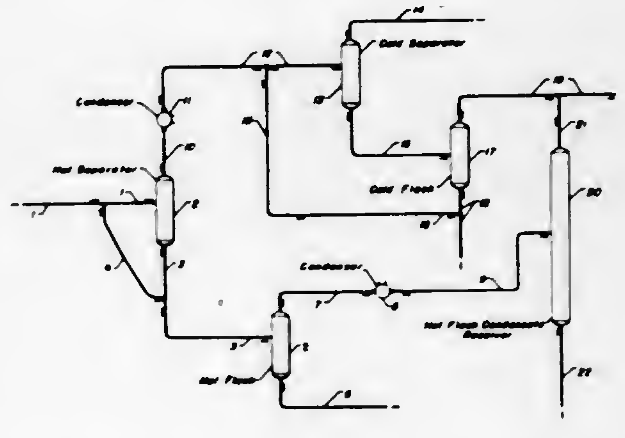


Method for starting-up and controlling a hydrocracking process unit by utilizing the feed mixture and/or hydrogen gas for temperature control of each reaction chamber in a serially connected plural stage conversion zone.

3,402,122
PREPARATION OF AN ABSORPTION MEDIUM FOR HYDROCARBON RECOVERY

Bennett L. Atwater, Elk Grove Township, and J. Robert Penisten, Palatine, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Dec. 5, 1966, Ser. No. 599,160
5 Claims. (Cl. 208—101)

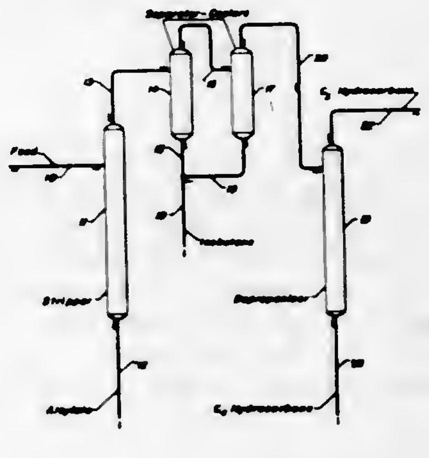


Multiple stage separation of mixed phase hydrocarbonaceous effluent from a hydrocracking and/or hydrorefining reaction zone. The reactor effluent is initially separated in a high temperature, high pressure separator to provide a first vapor phase and a first liquid phase. The first vapor phase is cooled and separated in a high pressure "cold" separator to provide a gaseous hydrogen-rich faction suitable for recycle to the reaction zone. The "cold" separator liquid bottoms is flashed to provide a C_1–C_6+ vapor fraction (I) and a C_4+ liquid fraction. The first liquid phase is subjected to a hot flash to provide a hot flash vapor fraction and a 400°–650° F.-plus liquid hydrocarbon bottoms fraction. The hot flash vapors are cooled and separated to provide a predominantly C_2-minus vapor fraction (II) and a C_6+ liquid fraction suitable for use as an absorption medium. Such absorption medium may be employed to recover C_3–C_6+ material from vapor fractions (I) and (II).

3,402,123
METHOD FOR SEPARATING LIGHT HYDROCARBON COMPONENTS

Angelo C. Coste, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Sept. 15, 1966, Ser. No. 579,614
1 Claim. (Cl. 208—105)



Method for separating the effluent from a C_4 alkylation reaction zone into selected fractions including motor fuel components and light hydrocarbons using fractionation means and a partial condensation technique.

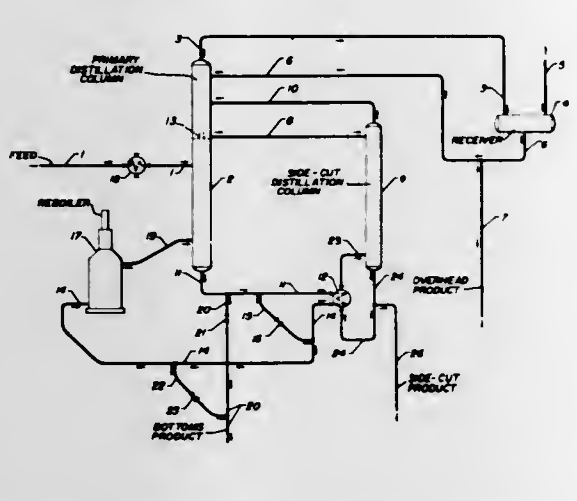
3,402,124

PLURAL STAGE DISTILLATION WITH BOTTOMS STREAM AND SIDE STREAM COLUMN HEAT EXCHANGE

Walter T. Jones, Des Plaines, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Mar. 16, 1966, Ser. No. 534,725

10 Claims. (Cl. 208—353)



Process for reboiling the side-cut stripping column on a main fractionator whereby the hot oil from the bottom of the main fractionator is circulated through the reboiler of the side-cut stripper to provide the heat required therein, then passed through the main fractionator reboiler means for reheating and finally returned to the bottom of the main fractionator.

3,402,125

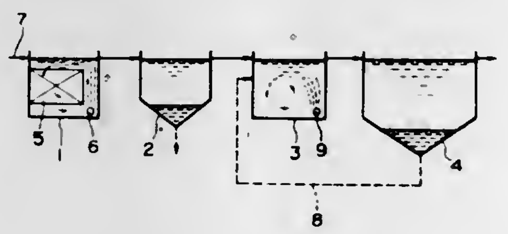
METHOD FOR TREATING ORGANIC WASTE WATER WITH ACTIVATED SLUDGE

Ikuo Tanaka, Kanagawa-ken, Japan, assignor to Kurita Industrial Co., Ltd., Tokohama-shi, Kanagawa-ken, Japan, a corporation of Japan

Filed Apr. 26, 1967, Ser. No. 633,786

Claims priority, application Japan, Apr. 30, 1966, 41/27,465

3 Claims. (Cl. 210—7)



In treating organic waste water with activated sludge, bulking of said sludge due to the nature of the waste water to be treated can be controlled by the employment of the novel two-stage treatment comprising treating the waste water first by the "fixed activated sludge process" using a contact aeration tank which contains a multitude of net layers therein and then treating the resulting waste water by the "usual activated sludge process" which is to perform aeration of this latter waste water with some of the activated sludge recycled from the final settling tank while preventing recycling of any of the activated sludge to the contact aeration tank.

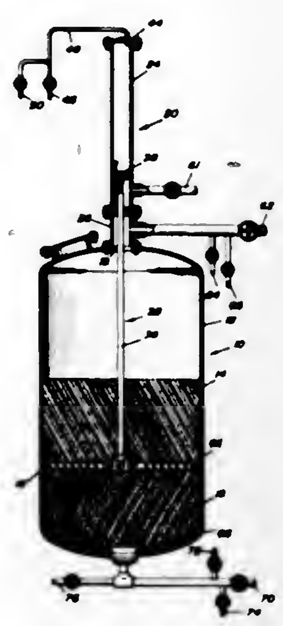
3,402,126

MULTILAYER ION EXCHANGE RESIN SEPARATOR WITH REGENERATING MEANS

Vincent R. Cioffi, Clinton, N.J., assignor to Enpro Incorporated, a corporation of New Jersey

Filed Oct. 23, 1965, Ser. No. 503,068

6 Claims. (Cl. 210—35)



1. In combination with a mixed resin bed deionizer apparatus of the type adapted to utilize a monobed comprised of anion and cation exchange resins, a resin bed regenerating means, said regenerating means comprising a selectively positionable combined regenerant solution distributor and collector means mounted for movement within said tank and an operating means operatively connected to said combined regenerant solution distributor and collector means, said operating means being constructed and arranged to selectively move said combined regenerant solution distributor and collector means to a point within the resin bed coinciding with an interface between the anion and cation resins contained within said deionizer apparatus so as to improve and facilitate the independent regeneration of the resins.

3,402,127

SYNTHETIC THERMOPLASTIC YARN FINISH

Wayne T. Mowe, Pensacola, Fla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,320

3 Claims. (Cl. 252—8.75)

A synthetic thermoplastic yarn finish having excellent antistatic properties, lubricity and stability in aqueous emulsion is provided by a mixture of an imidazolinium alkylsulfate, an alkyl ester of a fatty acid, and a water-oil emulsifier for the alkyl ester.

3,402,128

NOVEL COMPOSITION AND METHOD (LIQUID CONCENTRATES CONTAINING ACTIVE OXYGEN AND HAVING SURFACE-ACTIVE PROPERTIES)

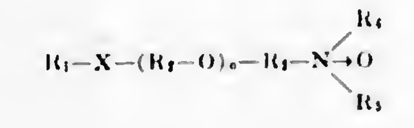
Rolf Puchta, Hilden, Rhineland, and Walter Fries, Erkrath-Unterbach, Germany, assignors to Henkel & Cie, G.m.b.H., Dusseldorf, Germany, a corporation of Germany

No Drawing. Filed Dec. 21, 1964, Ser. No. 420,180

Claims priority, application Germany, May 30, 1964, H 52,856

14 Claims. (Cl. 252—99)

Liquid storage-stable, active-oxygen containing concentrates are disclosed which are composed of water, hydrogen peroxide (free or bound) and a surface active aminoxide of the formula:



$$R_1-X-(R_2-O)_n-R_3-\overset{R_4}{\underset{R_5}{N}}\rightarrow O$$

wherein R_1 is alkyl having 6 to 20 carbon atoms, X is oxygen, sulfur, selenium or telurium, R_2 is ethylene, propylene or oxypropylene, *n* is a whole number from 0 to 18, R_3 is alkyl or alkylol, each having up to 4 carbon atoms and R_4 and R_5 are each alkyl or alkylol each having up to 5 carbon atoms, as stabilizer for the hydrogen peroxide.

The aminoxide is present in the amounts of from 2 to 40% by weight of the total composition and with reference to the hydrogen peroxide (concentrate contains hydrogen peroxide in an amount of from 3 to 90 wt.-percent) in an amount of from 10 to 200% by weight.

3,402,129

SOLID ADDITION COMPOUNDS FOR PRODUCING SMOKE AND PROCESS FOR FORMING SAID COMPOUNDS

Alfred F. Tatyrek, Maplewood, N.J., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed June 3, 1966, Ser. No. 555,932

7 Claims. (Cl. 252—305)

Processes for converting smoke-producing liquids such as titanium tetrachloride or vanadium oxytrichloride into solids by causing about 35 to 65 volume percent of the liquid smoke-producing compound to react with about 65 to 35 volume percent of fuming sulfuric acid having a concentration of about 40 to 80 percent, the reaction being brought about by stirring the chloride with the acid for a few seconds.

3,402,130

ALKYLATION CATALYST-INORGANIC OXIDE OF SULFUR CHEMICALLY COMBINED WITH A PHOSPHORIC ACID ON A SUPPORT

William G. Nixon, Clearwater, Fla., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Original application Jan. 24, 1964, Ser. No. 339,895, now Patent No. 3,293,315, Divided and this application Nov. 30, 1966, Ser. No. 597,881

8 Claims. (Cl. 252—437)

An alkylation catalyst consisting essentially of refractory inorganic oxide, such as alumina or silica, 8–50% by weight of a phosphoric acid, and an inorganic oxide of sulfur chemically combined with the phosphoric acid.

3,402,131

THERMISTOR COMPOSITION CONTAINING VANADIUM DIOXIDE

Hisao Futaki, Kazuo Kobayashi, Minoru Aoki, Takeshi Shimoda, Eizaburo Yamada, and Koziro Narita, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed July 27, 1965, Ser. No. 475,129

Claims priority, application Japan, July 28, 1964, 39/42,462

51 Claims. (Cl. 252—512)

A resistor consisting principally of vanadium dioxide (VO_2) crystals whose resistance value changes abruptly at 65–70° C., wherein a material such as Ge, Fe, Co, Ni, Mn, Ti, Nb, W, Mo, Ta or Cr is present in a state of a solid solution. The VO_2 crystals are enclosed in a sintered oxide member, and electrodes are fitted thereon.

3,402,132

POLYURETHANE COMPOSITIONS FROM HYDROXY COMPOUNDS PRODUCED BY REACTION OF ALKYLENE OXIDES WITH CERTAIN PHOSPHORUS-CONTAINING ACIDS

Paul E. Pelletier, Elmwood Park, and Floy Pelletier, Lockport, Ill., assignors, by mesne assignments, to Wyandotte Chemicals Corporation, a corporation of Michigan

No Drawing. Filed Aug. 28, 1959, Ser. No. 836,580

6 Claims. (Cl. 260—2.5)

1. A fire-retardant polyurethane resin comprising the reaction product of an organic polyisocyanate and an at least substantially neutral hydroxy reaction product of an oxide selected from the group consisting of ethylene oxide, propylene oxide, butylene oxide and styrene oxide with a phosphorus acid selected from the group consisting of phosphorus acids which correspond to a mixture of from 75–90% by weight of phosphorus pentoxide with from 10–25% by weight of water and partial esters of said acids having a residue after esterification of at least one OH group per phosphorus atom, said hydroxy reaction product containing at least one reacted epoxy group per hydroxyl equivalent of said acid.

3,402,133

FOAM PLASTICS AND PROCESS FOR MAKING THEM

Alfred Kühlkamp, Hofheim, Taunus, and Rudolf Nowack, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankufurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 11, 1965, Ser. No. 454,981

Claims priority, application Germany, May 26, 1964, F 42,989

17 Claims. (Cl. 260—2.5)

There is disclosed herein a porous foamed plastic composition, and a method for making such a composition, which comprises the reaction product formed at about room temperature without the addition of heat from approximately equivalent amounts of (1) a short-chain reactive polymer having a molecular weight of about 2000 and having an acidic hydrogen atom on a carbon atom immediately adjacent a carboxyl group or a nitrilo group, (2) a carbamate reaction product of carbon dioxide and a primary or a secondary polyamine, and (3) an aldehyde.

3,402,134

TRI AND TETRA MERCAPTO COMPOUNDS AS CROSS-LINK CONTROL AGENTS FOR POLYSULFIDE ELASTOMERS

Morris B. Berenbaum, Levittown, and Julian R. Panek, Newtown, Pa., and Louis Citarel, Trenton, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Apr. 27, 1964, Ser. No. 362,934

13 Claims. (Cl. 260—18)

Organic compounds having a plurality of mercaptan groups are used as crosslink control agents in curable compositions based on mercaptan terminated polysulfide polymers.

3,402,135

URETHANE CRUDE PROCESSING AID

Joseph L. Schwartz, Philadelphia, and Harold L. Elkin, Levittown, Pa., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 589,164, Oct. 24, 1966, which is a continuation of application Ser. No. 187,956, Apr. 24, 1962. This application May 12, 1967, Ser. No. 638,157

11 Claims. (Cl. 260—22)

Tough urethane crude rubbers are rendered millable by the use therein of fatty acids.

3,402,136
INTRODUCTION OF POLAR GROUPS INTO UNSATURATED POLYMERS OF DIENES

Taketami Sakuragi, Tokyo, Osao Baba, Yokohama, and Shinichi Akiyama, Tokyo, Japan, assignors to The Japanese Geon Company, Ltd., Chiyoda-ku, Tokyo, Japan, a corporation of Japan
No Drawing. Filed June 21, 1965, Ser. No. 465,779
Claims priority, application Japan, July 1, 1964, 39/36,957; Nov. 16, 1964, 39/64,337
14 Claims. (Cl. 260—23.7)

A method of modifying an unsaturated high molecular weight diene-containing substance and the products produced thereby wherein such process comprises reacting such high molecular weight substance with (1) a carboxylic acid, an alcohol, a phenol or a mixture thereof, and (2) an alkyl hypohalite, in a solvent which is inert in the reaction system. The products are valuable as industrial materials or intermediates.

3,402,137
METHOD OF PREPARING AQUEOUS POLYMER SOLUTIONS

Paul W. Fischer, Whittier, and Julius P. Gallus, Anaheim, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Feb. 1, 1966, Ser. No. 523,929
22 Claims. (Cl. 260—29.6)

An acrylamide polymer composition having improved water dispersibility and a method of improving the dispersibility of water-soluble polymers in aqueous liquids by admixing with the particulated solid polymer a solid, water-soluble dispersant.

3,402,138
STOPPING AGENTS FOR EMULSION POLYMERIZATION PROCESSES COMPRISING N,N'-DIALKYL-N,N'-METHYLENEBISHYDROXYLAMINES

Harry Elmer Albert and Paul Gordon Haines, Lafayette Hill, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Mar. 2, 1966, Ser. No. 531,023
10 Claims. (Cl. 260—29.7)

The use of an N,N'-dialkyl-N,N'-methylenebishydroxylamine for short-stopping polymerization processes employing ethylenically unsaturated monomers and deals particularly with these polymerization processes for making synthetic rubber latices.

3,402,139
POLYVINYL ACETALS PLASTICIZED WITH MIXTURES OF AN EPOXY ESTER, A NON-POLYMERIC ESTER AND A SATURATED POLYESTER

George E. Mont, Springfield, and Joseph G. Martins, Ludlow, Mass., assignors, by mesne assignments, to Monsanto Company, a corporation of Delaware
No Drawing. Filed Apr. 21, 1965, Ser. No. 449,890
9 Claims. (Cl. 260—30.4)

Disclosed herein are plasticized polyvinyl acetal resins and glass laminates prepared therefrom which laminates exhibit improved impact strength. The plasticizers are a synergistic mixture of (1) a non-polymeric ester; (2) a liquid saturated polyester and (3) an ester which contains at least one epoxy group per molecule.

3,402,140
ETHYLENE-PROPYLENE RUBBER COMPOUNDING

Frederic W. Bickel, Burbank, and Thomas B. Squire and Gerald H. Peterson, Santa Monica, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
No Drawing. Filed Dec. 28, 1964, Ser. No. 421,662
17 Claims. (Cl. 260—38)

An ethylene-propylene copolymer or terpolymer rubber, containing a tackifier composed of a polypropylene, preferably amorphous polypropylene, and one or more resins, including phenolic resins, coumarone-indene resins, terpene resins, butadiene-styrene resins, polybutadiene resins, and hydrocarbon resins, said tackifier substantially improving the tackiness of the uncured rubber and the adherence of layers of such rubber to each other, and designed particularly for fabrication of a tire formed of layers of ethylene-propylene rubber.

3,402,141
PRODUCTION OF LINEAR POLYESTERS PIGMENTED WITH TITANIUM DIOXIDE

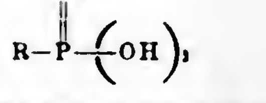
Hans Georg Matthies, Ludwigshafen (Rhine), Paul T. Maahs, Bad Durkheim-Seebach, and Fritz Wenger and Friedrich Lieseberg, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Continuation-in-part of application Ser. No. 318,785, Oct. 25, 1963. This application July 17, 1967, Ser. No. 653,607
Claims priority, application Germany, Nov. 3, 1962, B 69,477
5 Claims. (Cl. 260—40)

Production of linear polyesters pigmented with titanium dioxide by transesterification of alkyl esters of dibasic acids with glycols in the presence of titanium dioxide suspensions and polycondensation of the glycol esters, alumina sols, silicic acid sols or polyphosphate sols being used as suspension stabilizers.

3,402,142
VINYL AROMATIC POLYMERS STABILIZED BY PHOSPHORUS COMPOUNDS

Archie E. Follett, Cary, N.C., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed July 23, 1964, Ser. No. 384,801
5 Claims. (Cl. 260—45.75)

1. A composition of matter which comprises a crystalline polymer selected from the group consisting of a homopolymer of a vinyl aromatic hydrocarbon monomer and copolymers of said vinyl aromatic hydrocarbon monomer with at least one other vinyl aromatic monomer and a stabilizing quantity of a compound selected from the group consisting of metal salts of compounds having the general formula



$$R-\overset{(O)_n}{\overset{\|}{P}}-(OH)_2$$

wherein R is a radical selected from the group consisting of alkyl and monocyclic aromatic radicals and *n* is a member selected from the group consisting of 0 and 1, said metal being selected from the group consisting of an alkali metal, an alkaline earth metal, lead, zinc and manganese.

3,402,143
METHOD FOR DECOLORIZATION AND CAPPING POLYPHENYLENE ETHERS

Allan S. Hay, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Oct. 5, 1967, Ser. No. 672,956
6 Claims. (Cl. 260—47)

Alkali metal adducts of diaryl ketones are reacted with polyphenylene ethers. This reaction does not introduce alkali metal atoms on to the carbon atoms of the phenylene ether repeating units, but does form alkali metal compounds with the hydroxyl groups, chromophores or chromophore-engendering groups present in the polymer molecule as well as alkali metal compounds with any chromophores or chromophore-engendering compounds sorbed on or incorporated in the polymer. Subsequent reaction with esterifying or etherifying agents converts the chromophores and chromophore-engendering materials to thermally stable colorless derivatives and the hydroxyl group to either esters or ethers which are thermally stable. This reaction is therefore extremely useful for simultaneously decolorizing and end-capping polyphenylene ethers to produce polyphenylene ethers having improved color and thermal stability.

3,402,144
ALKALI METAL-CONTAINING POLYPHENYLENE ETHERS

Allan S. Hay, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Oct. 5, 1967, Ser. No. 673,021
9 Claims. (Cl. 260—47)

Polyphenylene ethers are metalated with alkali metal alkyls or aryls to give activated alkali metal-containing polymers. These metalated polymers readily react with chemical reagents to produce modified polymers and also react with anionically polymerizable monomers to produce graft copolymers. Surfaces of fabricated articles, e.g., films, fibers, molded objects, etc., may be modified by this reaction to increase dyeability, wetability, insolubility or other surface properties of the object.

3,402,145
THERMALLY STABLE PHENOLIC COMPOSITION WITH INORGANIC PHOSPHORUS-NITROGEN MODIFICATIONS

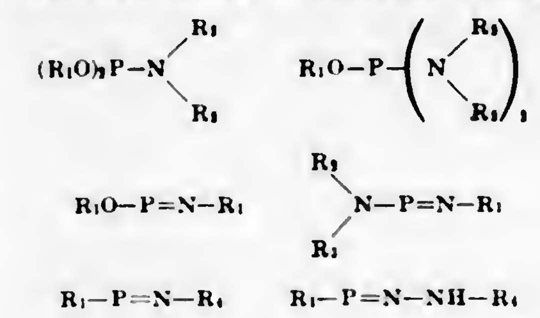
Minert E. Hull III, Kenmore, and Donald W. Hoch, Buffalo, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Nov. 19, 1962, Ser. No. 238,731
4 Claims. (Cl. 260—54)

1. A copolymer comprising (A) phenol and (B) a cyclic phosphonitrilic hydroxylated aromatic composition which are (C) linked together by methylene and alkyl substituted methylene radicals, said cyclic phosphonitrilic hydroxylated aromatic composition being the condensation product of a cyclic phosphonitrilic halide of the formula $(PNZ_2)_n$, wherein Z is selected from the group consisting of chlorine and bromine, and *n* is from 3 to 4, with a compound selected from the group consisting of hydroquinone, resorcinol, pyrocatechol and mixtures thereof and being condensed so as to contain from 1 to 10 repeating cyclic phosphonitrilic nuclei.

3,402,146
PRODUCTION OF HIGH MOLECULAR POLYOXYMETHYLENES USING A TRIVALENT PHOSPHORUS CATALYST

Hermann Richtzenhain and Wilhelm Vogt, Cologne-Sulz, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Bezirk Cologne, Germany, a corporation of Germany
No Drawing. Filed May 10, 1962, Ser. No. 193,880
Claims priority, application Germany, May 12, 1961, D 36,067
22 Claims. (Cl. 260—67)

1. Process for the production of high molecular weight polyoxymethylenes consisting of polymerizing substantially anhydrous monomer formaldehyde in the presence of a member selected from a group of trivalent phosphorus compounds having the following formula:



$$(R_1O)_2P-N\begin{matrix}R_2\\R_3\end{matrix} \qquad R_1O-P\left(N\begin{matrix}R_2\\R_3\end{matrix}\right)_2$$

$$R_1O-P=N-R_1 \qquad \begin{matrix}R_2\\R_3\end{matrix}N-P=N-R_1$$

$$R_1-P=N-R_4 \qquad R_1-P=N-NH-R_4$$

wherein R_1 represents a member selected from the group consisting of aliphatic, cycloaliphatic, and aromatic hydrocarbon radicals having up to 9 carbon atoms, R_2 and R_3 are each members selected from the group consisting of hydrogen, aliphatic, cycloaliphatic, and aromatic hydrocarbon radicals having up to 9 carbon atoms wherein R_2 and R_3 can be joined together with a nitrogen atom to which they are attached to form a cyclic ring selected from the group consisting of piperidine and tetrahydroquinoline rings and R_4 represents a member selected from the group consisting of aliphatic, cycloaliphatic, and aromatic hydrocarbon radicals having up to 9 carbon atoms as polymerization catalyst, and recovering the high molecular polyoxymethylenes produced.

3,402,147
PROCESS FOR PREPARING POLYESTER RESINS FROM A TELOMER

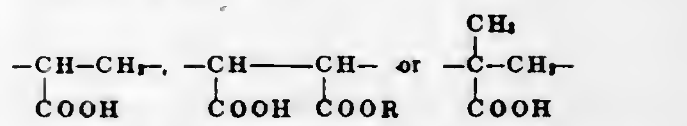
Werner Starck, Hofheim, Taunus, Jakob Winter, Kelkheim, Helmut Rinno, Lorsbach, Taunus, and Wilhelm Lampe, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany
No Drawing. Filed Jan. 21, 1964, Ser. No. 339,084
Claims priority, application Germany, Jan. 22, 1963, F 38,818
13 Claims. (Cl. 260—75)

1. A process for the production of polyester resins which comprises the step of reacting, at a temperature within the range of 100° C. to 190° C. until an acid number of 40 to 140 is reached.

(A) at least one member selected from the group consisting of alcohols containing from 1 to 3 hydroxyl groups, with up to 20% of the hydroxyl groups present in the starting substances originating from alcohols having 1 and 3 to 4 hydroxyl groups,

(B) a member selected from the group consisting of telomers having a molecular weight of 400 to 2,000 and containing 3 to 12 carboxyl groups, telomers having a molecular weight of 400 to 2,000 and containing carboxylic anhydride groups in an amount corresponding to 3 to 12 carboxyl groups, said telomers being defined as

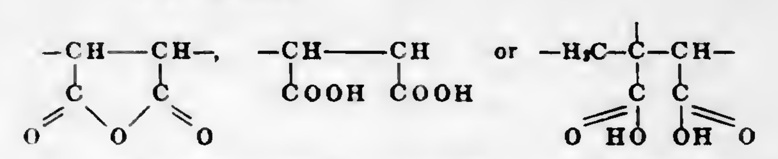
(a) a telomer consisting of 3 to 12 structural units of a formula



$$-\underset{COOH}{CH}-CH_2-,\ -\underset{COOH}{CH}-\underset{COOR}{CH}-\ \text{or}\ -\overset{CH_3}{\underset{COOH}{C}}-CH_2-$$

wherein R is derived from an alcohol of 1 to 6 carbon atoms or ethylene glycol monoalkyl ethers having a total of 3 to 6 atoms, and wherein the terminal groups of the telomer are derived of an alkyl benzene telogen, said alkyl benzene being substituted with 1 to 3 alkyl groups having 2 or 3 carbon atoms;

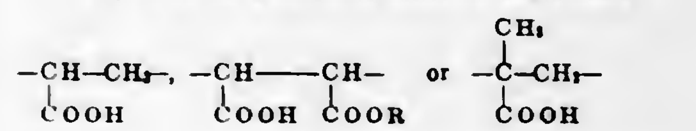
(b) a telomer consisting of 2 to 6 structural units of a formula



and wherein the terminal groups of the telomer are derived of an alkyl benzene telogen defined in (a);

(c) a telomer consisting of

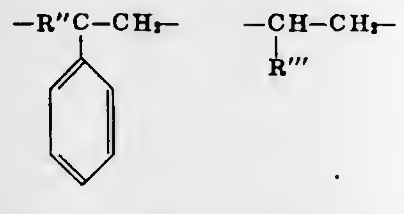
(1) 3 to 12 structural units of a formula



$$-\underset{COOH}{CH}-CH_2-,\ -\underset{COOH}{CH}-\underset{COOR}{CH}-\ \text{or}\ -\overset{CH_3}{\underset{COOH}{C}}-CH_2-$$

and

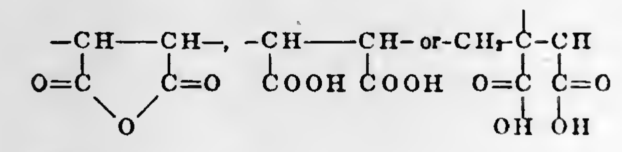
(2) structural units of a formula



wherein R″ is H or —CH_3 and wherein R‴ is H or an alkyl radical of 1 to 6 carbon atoms, and wherein the terminal groups of the telomer are derived of an alkyl benzene telogen defined in (a);

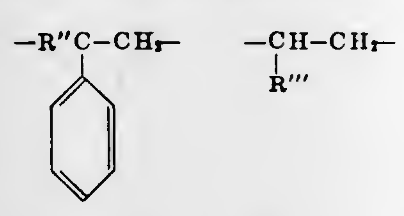
(d) a telomer consisting of

(1) 2 to 6 structural units of a formula



and

(2) structural units of a formula



wherein R″ is H or —CH_3 and wherein R‴ is H or an alkyl radical of 1 to 6 carbon atoms, and wherein the terminal groups of the telomer are derived of an alkyl benzene telogen defined in (a), and mixture of said telomers;

(C) at least one member selected from the group consisting of carboxylic acids containing 1 to 4 carboxyl groups and anhydrides of dicarboxylic acids, with up to 20% of the carboxyl groups present in the starting substances originating from carboxylic acids having 1 and 3 to 4 carboxyl groups,

the total mixture having the ratio of carboxyl groups to hydroxyl groups within the range of 1:1 to 1:1.5, with 20 to 85% of the carboxyl groups present in the starting substances being contained in the telomers and of the remaining carboxyl groups at least 15% being contained in the dicarboxylic acids or anhydrides thereof said polyester resin being characterized as being capable of dissolving in water when neutralized with ammonia or an amine.

3,402,148

EASILY PROCESSABLE, BLOOM-RESISTANT, URETHANE GUMS AND VULCANIZATES

Burton J. Sutker, Union, and Melvin A. Schulman, Somerset, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed July 6, 1964, Ser. No. 380,643

3 Claims. (Cl. 260—75)

Polyurethane gums may be prepared by reacting together (1) a polyether or polyester, (2) a monohydric fatty alcohol, (3) glycerol alpha-allyl ether or the monoallyl ether of trimethylolpropane, and (4) an organic polyisocyanate. These polyurethane gums may be vulcanized in the presence of a curing agent at high temperatures. The gums are easily processable and are substantially "bloom-resistant." The gums are clear and show improved freedom from occluded gas.

3,402,149

PROCESS FOR PREPARING POLYUREA-POLYURETHANE MOLDING POWDERS

Fred L. Walters, Levittown, Pa., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Dec. 4, 1964, Ser. No. 416,156

3 Claims. (Cl. 260—75)

An aqueous emulsion polymerization procedure is provided for the preparation of polyurea-polyurethane molding powders. The powders themselves are novel compositions of matter.

3,402,150

NON-CRYSTALLIZABLE COPOLYCARBONATE/URETHANE RESINS PREPARED FROM 2,2,4,4-TETRAALKYL-1,3-CYCLOBUTANEDIOL AND A PIPERAZINE

John J. Gardikes, Somerville, and Markus Matzner, Highland Park, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 10, 1965, Ser. No. 513,086

12 Claims. (Cl. 260—77.5)

Novel non-crystallizable copolycarbonate/urethane resins prepared from 2,2,4,4-tetraalkyl-1,3-cyclobutanediol and a piperazine. The resins have reduced viscosity of at least 0.4 and contain the cyclobutandiol polycarbonate in the form of a recurring block polycarbonate structure.

3,402,151

STORABLE ONE-PART POLYSULFIDE COMPOSITION CONTAINING ZEOLITIC MOLECULAR SIEVES

Edward F. Kutch, Trenton, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed June 1, 1966, Ser. No. 554,344

8 Claims. (Cl. 260—77.5)

A stable, curable liquid polythiopolymercaptan polymer containing zeolitic molecular sieves.

3,402,152

PROCESS FOR PREPARING A POLYAMIDE

Edmond P. Brignac, Pensacola, and Robert T. Wright, Pensacola Beach, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Continuation-in-part of application Ser. No. 367,749, May 15, 1964. This application May 31, 1967, Ser. No. 642,584

8 Claims. (Cl. 260—78)

This invention relates to the preparation of a polyamide from an aqueous solution of polyamide-forming reactants by a process which includes returning reactant vaporized during the polymreization reaction to the aqueous process feed.

3,402,153

POLYMERISATION PRODUCTS FROM MONOMERIC ESTERS OF α,β-UNSATURATED CARBOXYLIC ACIDS CONTAINING A CYCLOALIPHATIC RING IN THE ALCOHOL RESIDUE AND METHOD FOR THEIR PREPARATION

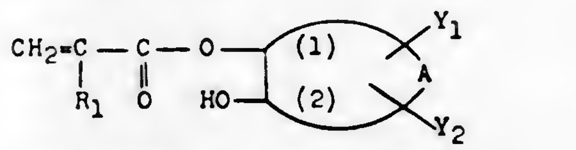
Horst Jaeger, Bettingen, Rosemarie Toepfl, Basel, and Arthur Maeder, Therwil, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Nov. 30, 1964, Ser. No. 415,222

Claims priority, application Switzerland, Dec. 2, 1963, 14,695/63

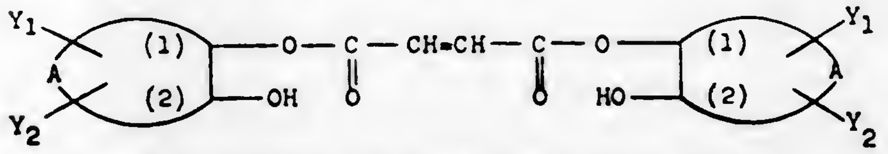
5 Claims. (Cl. 260—78.5)

1. New addition reaction homo-high polymers from monomeric esters of α,β-unsaturated carboxylic acids containing a cycloaliphatic ring in the alcohol residue, which esters are selected from the group consisting of compounds of the formula



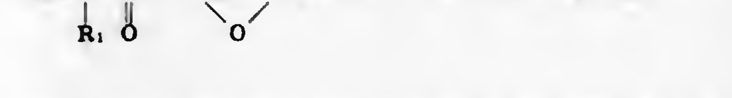
(Ia)

and compounds of the formula



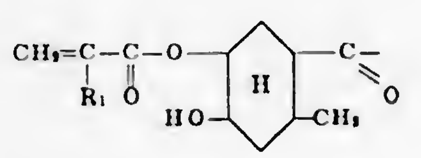
(Ib)

wherein R_1 is a member selected from the group consisting of a hydrogen atom and methyl group, A, together with the mono-substituted carbon atoms numbered (1) and (2) forms a member selected from the group consisting of a cyclopentane ring, a cyclohexane ring, an endomethylenecyclohexane ring, and a tetrahydrodicyclopentyldiene ring system, the endocyclic carbon atoms numbered (1) and (2) being vicinal, and wherein the residue Y_1 is a member selected from the group consisting of (a) a hydroxyl group (b) a group of formula —CH_2O—Z wherein Z is a member selected from the group consisting of hydrogen,

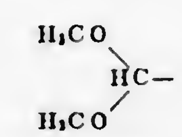


$CH_2{=}\underset{R_1}{C}{-}\underset{O}{\overset{}{C}}{-}$, $\underset{O}{CH_2{-}CH}{-}CH_2{-}$, $H{-}({-}OCH_2CH_2)_x{-}$

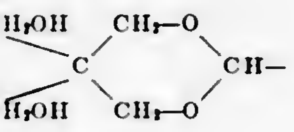
wherein X is a whole number from 1 to 100, and a radical of the formula



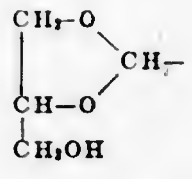
(c)



(d)

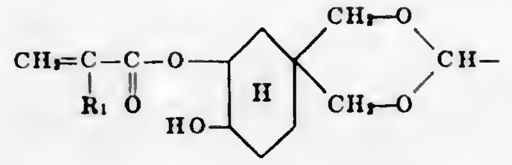


(e)

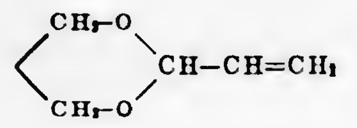


and

(f)



Y_2 is a member selected from the group consisting of a hydrogen atom, a methyl group and a group of the formula —CH_2O—Z, wherein Z has the same significance as above and Y_1 and Y_2 when attached to the same carbon atom may form together a radical of the formula



3,402,154

PRODUCTION OF HIGH MOLECULAR WEIGHT POLYMERS OF VICINAL EPISULFIDES

Roy Larsen, Lambertville, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Sept. 2, 1965, Ser. No. 484,749

16 Claims. (Cl. 260—79)

The poly(vicinal episulfides) formed by polymerizing reaction monomer systems containing a major amount of vicinal episulfides in the presence of an episulfide polymerization catalyst which had been compacted until its bulk density was not less than 300 grams per liter are normally solid, granular, high molecular weight polymers having bulk densities approximately equal to that of the particular compacted episulfide polymerization catalyst from which such polymers were prepared. Moreover, by increasing the bulk density of the compacted episulfide polymerization catalyst over the range from 300 to about 800 grams per liter, it is possible to obtain polymers having approximately the same bulk density as that of the compacted catalyst from which the polymer was prepared, which provides a unique method for controlling the bulk densities of high molecular weight, thermoplastic polymers of vicinal episulfides during the polymerization reaction.

3,402,155

STORABLE, ONE-PART POLYTHIOL COMPOSITIONS WITH AMINE-LOADED MOLECULAR SIEVES

Edward F. Kutch, Trenton, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Aug. 22, 1966, Ser. No. 573,827

13 Claims. (Cl. 260—79)

One-part polymer compositions containing (a) a curable, liquid polythiol polymer, (b) a dormant curing agent, (c) a hygroscopic accelerating agent, and (d) an amine-loaded molecular sieve are characterized by excellent storage stability and undergo relatively fast cures when exposed to moisture or a moisture-laden atmosphere. Upon exposure of these one-part polymer compositions to moisture or a moisture-laden atmosphere, the hygroscopic accelerating agent facilitates the absorption of water by the polymer composition which, in turn, displaces amine from the amine-loaded molecular sieve, thereby accelerating the rate of cure of the polymer composition.

3,402,156

REACTION PRODUCT OF POLYVINYLPHOSPHONIC DICHLORIDE AND GLYCEROL

Hans Bernhard Adolf Kramer, New York, N.Y., and Gunter Messwarb, Kelkheim, Taunus, and Walter Denk, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Original application Oct. 3, 1962, Ser. No. 228,011, now Patent No. 3,350,368, dated Oct. 31, 1967. Divided and this application July 17, 1967, Ser. No. 664,581

Claims priority, application Germany, Sept. 25, 1956, F 21,304; Sept. 26, 1956, F 21,318

1 Claim. (Cl. 260—80)

1. The reaction product of polyvinylphosphonic acid dichloride with glycerol at a temperature between —50° C. and 200° C. with substantially complete replacement of all halide groups.

3,402,157

TERPOLYMERS OF 2,3-DICHLOROBUTADIENE-1,3, α-HALOACRYLONITRILE, AND ETHYLENICALLY UNSATURATED COMPOUNDS

Wendell W. Moyer, Jr., Vienna, W. Va., and Harold W. Reader, Belpre, Ohio, assignors, by mesne assignments, to Lord Corporation, Erie, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 25, 1964, Ser. No. 354,754

11 Claims. (Cl. 260—80.77)

1. A random terpolymer comprising:
from about 5 parts by weight to about 85 parts by weight of 2,3-dichlorobutadiene-1,3,
and
correspondingly from about 10 parts by weight to about 60 parts by weight of a α-haloacrylonitrile,
and
from about 5 parts by weight to about 35 parts by weight of at least one ethylenically unsaturated compound copolymerizable with the dichlorobutadiene and α-haloacrylonitrile, said compound having at least one $CH_2{=}C<$ group therein.

3,402,158

SULFUR- AND PEROXIDE-VULCANIZABLE INTERPOLYMERS OF A LOWER ALKYL ACRYLATE, DICYCLOPENTADIENE, AND A POLYENE CONTAINING FROM 2 TO 4 EXOCYCLIC OLEFINIC BONDS

Anthony F. Santaniello, Trenton, N.J., and Marina N. Gillis, Morrisville, Pa., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Sept. 18, 1963, Ser. No. 309,887

8 Claims. (Cl. 260—80.81)

The interpolymerization of a major amount of a lower alkyl acrylate with minor amounts of dicyclopentadiene and a polyene containing from 2 to 4 exocyclic olefinic bonds per monomer molecule yields a series of sulfur- and peroxide-vulcanizable interpolymers having controllable and relatively high plasticities or viscosities at the high molding temperatures generally useful to cure these interpolymers. Upon vulcanization, these interpolymers are converted to elastomers having excellent physical properties.

3,402,159

PROCESS FOR POLYMERIZING BUTADIENE AND STYRENE TERMINATED IN SHORT BLOCKS OF POLYSTYRENE

Henry L. Hsieh, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 20, 1963, Ser. No. 332,251

1 Claim. (Cl. 260—85.1)

1. A process which comprises: introducing into a polymerization zone 1,3-butadiene and styrene, the quantity of said 1,3-butadiene being at least 60 parts by weight per 100 parts by weight total monomers, said polymerization zone containing tetrahydrofuran, cyclohexane, and n-butyllithium initiator; conducting the polymerization in an inert atmosphere under conditions to give a polymer of substantially the final viscosity desired until substantially complete conversion of the monomers is obtained; thereafter introducing into said polymerization zone a second quantity of styrene in an amount within the range of 0.5 to 4 weight percent based on the weight of the total polymer; and recovering from said polymerization zone a copolymer wherein random copolymer chains are terminated in short blocks of polystyrene.

3,402,160

STYRENE RESINS

Robert A. Hayes, Cuyahoga Falls, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Continuation of application Ser. No. 475,585, July 28, 1965, which is a continuation-in-part of application Ser. No. 120,936, June 30, 1961. This application Feb. 16, 1967, Ser. No. 616,736

2 Claims. (Cl. 260—93.5)

Polystyrene, etc. is produced in filterable form by polymerizing styrene or methylstyrene in a solvent in which the polymer is insoluble, in the presence of a lithium catalyst and a polymeric suspending agent which is soluble in the solvent at the polymerization temperature.

3,402,161

POLYMERIZATION OF OLEFINS UTILIZING 2-NONAGITATED REACTION ZONES

Donald D. Norwood, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 7, 1963, Ser. No. 314,361

2 Claims. (Cl. 260—94.2)

Polymerization process for the formation of diene polymers wherein gel formation is avoided in the reaction system by carrying the process in a nonagitated reactor having a high and low temperature zone therein and wherein the reaction mass is confined by a zone having a temperature differential of at least 40° F.

3,402,162

POLYMERS OF ORGANOLITHIUM-INITIATED CONJUGATED DIENES TREATED WITH VINYL SUBSTITUTED HETEROCYCLIC NITROGEN COMPOUNDS

Charles W. Strobel, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed June 18, 1964, Ser. No. 376,234

9 Claims. (Cl. 260—94.2)

In the process of preparing polymers of conjugated diolefins having low tendency to cold flow with organolithium initiators, the addition of a vinyl substituted heterocyclic nitrogen compound at the completion of polymerization.

3,402,163

PRODUCTION OF MIXTURES OF HIGH MOLECULAR WEIGHT 1,4-HOMO-CIS- AND 1,4-HOMO-TRANS-POLYBUTADIENES

Bernhard Schleimer and Heinrich Weber, Marl, Germany, assignors to Chemische Werke Huls, A.G., Marl, Germany

No Drawing. Filed Apr. 30, 1965, Ser. No. 452,340

Claims priority, application Germany, Apr. 30, 1964, C 32,767

7 Claims. (Cl. 260—94.3)

A method of simultaneously polymerizing a mixture of predominantly homo-cis-polybutadiene, and homo-trans-polybutadiene, by polymerizing butadiene with a

catalyst of: (a) an aluminum alkyl halide; (b) a hydrocarbon-soluble nickel or cobalt compound; (c) a hydrocarbon-soluble vanadium compound; and (d) an azo compound such as azo-benzene, the ratio of the cis-homopolymers to the trans-homoplymers being varied in accordance with the ratio of (b) to (c).

3,402,164

PROCESS FOR POLYMERIZING ISOBUTYLENE AND CATALYST COMPOSITION THEREFOR

Mitsuji Miyoshi, Kawasaki-shi, Seiichi Uemura, Tokyo, Shozo Tsuchiya, Kawasaki-shi, and Osamu Kato, Yokohama-shi, Japan, assignors to Nippon Oil Company, Limited, Tokyo, Japan

No Drawing. Filed Aug. 23, 1965, Ser. No. 481,934
Claims priority, application Japan, Aug. 25, 1964, 39/47,810

10 Claims. (Cl. 260—94.8)

A catalyst for the homopolymerization of isobutylene or for its copolymerization with one or more copolymerizable monomers, the catalyst being a composition comprising boron trifluoride and an alkoxide of a metal selected from the transition metals of Group VIII of the Periodic Table.

3,402,165

METHOD FOR PROCESSING OIL MILL RESIDUES TO RECOVER HIGHLY PURIFIED PROTEIN

Helmut Bock, Krefeld, Germany, assignor to Protein-Compagnie G.m.b.H., Zug, Switzerland, a corporation
Filed May 14, 1962, Ser. No. 194,341

Claims priority, application Germany, May 17, 1961, B 62,505

10 Claims. (Cl. 260—123.5)

1. Process for treating oil seel mill residues to obtain therefrom a protein fraction, a soluble component fraction and a fraction of fiber material which comprises treating an oil seed mill residue with water in a ratio of about 1:1.5 to about 1:20 in a treatment zone maintained as a closed circulatory system and therein treating the oil seed mill residue by the steps of

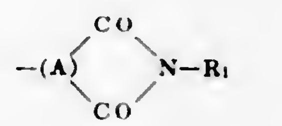
(1) mashing the oil seed mill residue with a solution-suspension derived from subsequent treatment step (6);
(2) breaking down the mash resulting from step (1) by a fiber separation treatment into a fiber material fraction and a protein emulsion fraction at a pH of from 3–7;
(3) separating the resulting protein emulsion fraction from step (2) into a protein concentrate fraction and a first solution containing soluble components;
(4) washing out the resulting protein concentrate fraction from step (3) by passing said protein concentrate in counter-current flow contact with fresh water introduced into said treatment zone at the iso-electric point of the protein whereby there is formed a second solution containing soluble components and a protein fraction;
(5) separating the protein fraction resulting from step (4) at the iso-electric point of the protein and withdrawing the same from the treatment zone;
(6) washing the fiber material fraction obtained in step (2) by passing the same in counter-current flow contact with the second solution containing soluble components resulting from step (4) to thereby produce a solution-suspension and a fiber material fraction;
(7) separating the fiber material fraction resulting from step (6) and withdrawing the same from the treatment zone at a pH of from 3–7; and
(8) re-cycling at least a portion of the solution-suspension from step (6) into said mashing step (1).

3,402,166

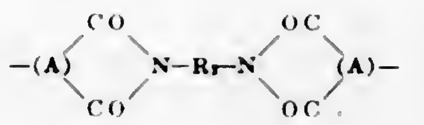
MONOAZO AND DISAZO DYES CONTAINING CYCLIC DICARBOXYLIC ACID IMIDE GROUPS

Leonhard Heckl, Besigheim, Kurt Heinle, Stuttgart, and Egon Liedek, Esslingen, Germany, assignors to Siegle & Co. G.m.b.H., Stuttgart-Feuerbach, Germany
No Drawing. Filed Aug. 31, 1964, Ser. No. 393,355
Claims priority, application Germany, Sept. 3, 1963, S 87,058
8 Claims. (Cl. 260—152)

An azo dye molecule containing at least one group selected from the class consisting of at least one of the radicals of the formula:



and



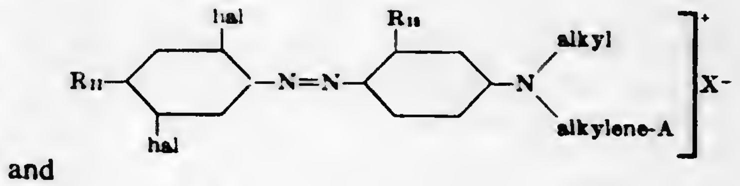
wherein the substitute A is a simple or condensed aromatic or heterocyclic system, wherein R_1 is selected from the group consisting of hydrogen, alkyl, aryl, aralkyl and heterocyclic radicals, or substitution products thereof, and wherein R_2 is a divalent radical derived from a radical selected from the group consisting of alkyl, aryl, aralkyl and heterocyclic radicals. These dyes have improved properties of color fastness, resistance to solvents and to bleeding.

3,402,167

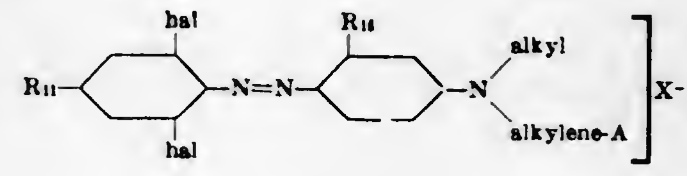
BASIC MONOAZO DYES

Roland Entschel, Basel, Switzerland, assignor to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland
No Drawing. Filed Jan. 18, 1965, Ser. No. 426,353
Claims priority, application Switzerland, Jan. 24, 1964, 836/64; Jan. 30, 1964, 1,067/64; Mar. 25, 1964, 3,839/64
13 Claims. (Cl. 260—154)

Compounds of the formulae



and



wherein

R_{11} is either —CO-alkyl, alkylsulphonyl, monoalkylaminosulphonyl or dialkylaminosulphonyl;
R_{18} is either hydrogen, halogen or alkyl;
hal is a halogen; and
A is a quaternary ammonium group;

are particularly useful for the dyeing, padding or printing of acrylonitrile polymer fibers.

3,402,168

MONOAZO PIGMENTS CONTAINING 2,3-HYDROXYNAPHTHOIC ACID AMIDE

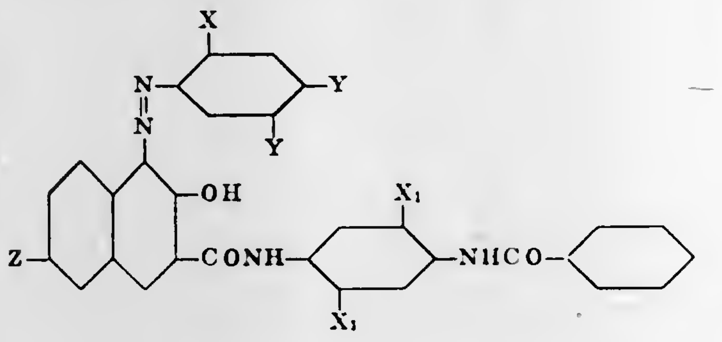
Karl Ronco and Willy Mueller, Riehen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed June 22, 1965, Ser. No. 466,088

Claims priority, application Switzerland, June 26, 1964, 8,415/64

6 Claims. (Cl. 260—204)

Monoazo dyestuff pigments of the formula



in which X is halogen, alkyl, alkoxy or nitro, one Y is halogen, alkyl, alkoxy or nitro and the other Y is hydrogen or alkyl, Z is hydrogen, halogen or alkoxy and the two symbols X_1 are halogen, alkyl or alkoxy, are useful for coloring plastic masses, and lacquers in red shades of excellent fastness to light and migration.

3,402,169

POLYHALOGENOUS POLYHYDROXY ETHERS

Donald R. Jackson, deceased, late of Southgate, Mich., by Ruth H. Jackson, special administratrix, Southgate, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Jan. 2, 1964, Ser. No. 335,432

14 Claims. (Cl. 260—210)

1. A polyhalogenous polyhydroxy ether comprising the product formed by mixing and reacting together at an elevated temperature and in the presence of a catalytic amount of a Lewis acid:

(1) a polyhydric alcohol initiating compound having a maximum of 8 hydroxy groups,

(2) a halogenated propylene oxide having an alkyl group attached to a carbon atom of the oxirane ring, said alkyl group having a maximum of 2 carbon atoms and containing at least 2 chloride atoms bonded to the same terminal carbon atom, (1) and (2) being in a molar ratio of about 1:1 to about 1:24,

said ether being charactized by the presence of pendant alkyl groups having a maximum of two carbon atoms, and having at least two halogen atoms bonded to the same terminal carbon atom.

6. A polyhydroxy ether as defined in claim 1 of alphamethylglucoside and 1,1,1-trichloro-2,3-epoxyproprane, wherein said alpha-methylglucoside and 1,1,1-trichloro-2,3-epoxypropane are in a molar ratio of about 1:1 to about 1:16.

3,402,170

PROCESS FOR PREPARING STARCH-BASED POLYHYDROXYPOLYOXYALKYLENE ETHERS

Stephen Fuzesi, Hamden, and Leonard J. Klahs, Cheshire, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Mar. 26, 1965, Ser. No. 443,098

17 Claims. (Cl. 260—233.3)

A process for increasing the proportion of starch-based material in starch-based polyhydroxy-polyoxyalkylene ethers by reacting starch with a polyhydric alcohol and an alkylene oxide in the presence of an acid catalyst, the proportion of alcohol to starch being at least 0.5 mole of alcohol per glucose unit weight of starch, then oxyalkylating the resulting mixture, followed by adding additional starch, catalyst and alkylene oxide to increase the total proportion of starch to a molar ratio of glucose unit weight of starch to alcohol of at least 2:1. The resulting polyethers have a higher functionality than starch-based polyethers prepared by previously known techniques, they contain a substantially higher proportion of cyclic structure in the polyether backbone due to the higher proportion of starch-based material, and the resulting polyurethane foams have properties equal to or better than polyurethane foams prepared from previously known starch-based polyethers.

3,402,171

PROCESS FOR PREPARING 5-ARYL-3H-1,4-BENZODIAZEPIN-2(1H)-ONES

Earl Reeder, Nutley, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of applications Ser. No. 858,564 and Ser. No. 858,597, Dec. 10, 1959, now Patent No. 3,051,701, dated Aug. 28, 1962, and Ser. No. 75,690, Dec. 14, 1960. Division of applications Ser. No. 149,527, Nov. 2, 1961, now Patent No. 3,136,815, dated June 9, 1964; Ser. No. 154,921 and Ser. No. 154,926, Nov. 20, 1961, now Patent No. 3,270,053, dated Aug. 30, 1966; and Ser. No. 154,927, Nov. 20, 1961, now Patent No. 3,239,564, dated Mar. 8, 1966. This application Nov. 27, 1963, Ser. No. 326,337

Claims priority, application Switzerland, Dec. 2, 1960, 13,489/60, 13,492/60, 13,494/60

11 Claims. (Cl. 260—239.3)

1. A process for producing 5-phenyl-3H-1,4-benzodiazepin-2(1H)-ones which comprises reacting a 2-(α-halo-lower alkanoyl-amido)-benzophenone with ammonia.

3,402,172

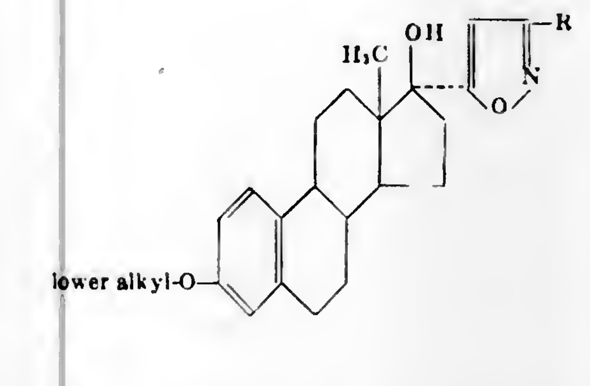
3-LOWER ALKOXY-17α-(3-SUBSTITUTED-5-ISOXAZOLYL) ESTRA-1,3,5(10)-TRIEN-17β-OLS

Townley P. Culbertson, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Jan. 12, 1966, Ser. No. 520,067

8 Claims. (Cl. 260—239.55)

1. A compound of the formula



where R is a member of the class consisting of lower alkyl, phenyl, lower alkoxycarbonyl, and carboxyl.

3,402,173

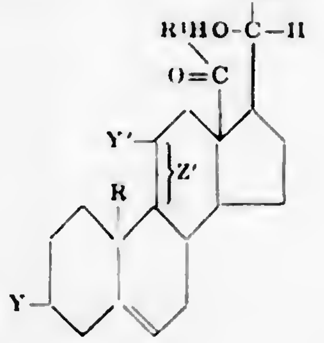
18-LOWER ALKYL PREGNANES AND DERIVATIVES

John A. Edwards, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Continuation-in-part of application Ser. No. 441,297, Mar. 19, 1965. This application Feb. 18, 1966, Ser. No. 528,398

24 Claims. (Cl. 260—239.55)

12. A compound of the formula:



wherein R is selected from the group consisting of hydrogen and methyl, R^1 is a lower alkyl containing from 1 to 3 carbon atoms, Y is selected from the group consisting of beta hydroxyl and cycloethylenedioxy, Y' is selected from the group consisting of hydrogen, alpha hydroxyl, and beta hydroxyl, and Z' is selected from the group consisting of a single bond and a double bond between carbon-9 and carbon-11, provided that Z' is a single bond when Y' is hydroxyl.

3,402,174

AMINOALKYL PYRROL-3-YL KETONES AND 3-HALOALKANOYL PYRROLES

Irwin J. Pachter, Woodbury, N.Y., assignor to Endo Laboratories, Inc., Garden City, N.Y., a corporation of New York

No Drawing. Filed Aug. 27, 1965, Ser. No. 483,336

13 Claims. (Cl. 260—247.5)

Novel aminoalkyl pyrrol-3-yl ketones which are unsubstituted in the 4-position of the pyrrole ring are prepared by reacting the appropriate haloacylhalides with Grignard derivatives of the appropriate pyrroles.

The compounds are useful as tranquilizers, anti-depressants, analgesics and hypotensives.

3,402,175

SALT OF PHENETHYLBARBITURIC ACID

Laszlo Suranyi, Mannheim, Germany, assignor to Knoll A.-G., Ludwigshafen (Rhine), Germany, a corporation of Germany

No Drawing. Original application Apr. 11, 1961, Ser. No. 102,139, now Patent No. 3,210,247, dated Oct. 5, 1965. Divided and this application June 14, 1965, Ser. No. 463,873

1 Claim. (Cl. 260—256.4)

1. The addition compound of 5-ethyl-5-phenylbarbituric acid and 1-cyclohexylisopropyl-2-methylamine.

3,402,176

O-PYRAZOLO-(1,5-a)-PYRIMIDYL PHOSPHORUS-CONTAINING ESTERS

Hans-Gerd Schicke, Wuppertal-Elberfeld, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Dec. 20, 1965, Ser. No. 515,181

Claims priority, application Germany, Dec. 24, 1964, F 44,813

10 Claims. (Cl. 260—256.4)

O-pyrazolo-(1,5-a)-pyrimidyl-phosphorus acid esters which possess biocidal, especially pesticidal, properties and which may be produced by conventional methods.

3,402,177

SUBSTITUTED 1-CYANO-2,3-PHTHALOYL-7,8-BENZOPYRROCOLINES

Lester Weinberger, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

No Drawing. Filed Apr. 2, 1965, Ser. No. 445,235

3 Claims. (Cl. 260—287)

A group of substituted 1-cyano-2,3-phthaloyl-7,8-benzopyrrocolines are disclosed as novel yellow pigments. In addition, methods of preparing these pigments and of using them as colorants for various materials are disclosed.

3,402,178

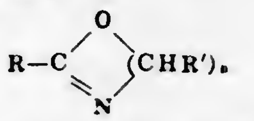
PROCESS FOR THE PREPARATION OF HETEROCYCLIC IMINOETHERS

Alan J. Levy and Morton H. Litt, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 17, 1966, Ser. No. 595,040

6 Claims. (Cl. 260—307)

1. A process for the preparation of heterocyclic iminoethers having the formula



wherein R represents a radical selected from the group comprising hydrogen, aliphatic and aromatic hydrocarbons which may contain inert substituents, R' at each occurrence is a member independently selected from the group consisting of hydrogen and lower alkyl radicals, and *n* is an integer from 2 to 3, which comprises reacting an aminoalkanol of the formula $NH_2(CHR')_nOH$, wherein R' and *n* have the meanings given above, with an organic trihalide of the formula $R—CX_3$, wherein R has the meaning given above, and X is chlorine or bromine, in solution at a temperature from about 80° C. to about 150° C. in the presence of an inorganic base.

2. A process according to claim 1 wherein the aminoalkanol is ethanol amine.

3,402,179

PHTHALIMIDOMETHYL ALKYNYL ETHERS

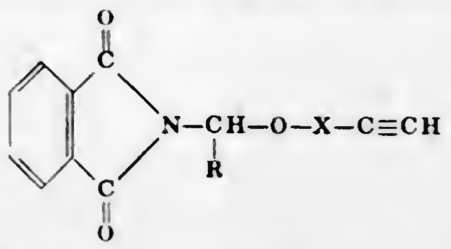
Keimei Fujimoto, Minoo-shi, Yositosi Okuno, Nishinomiya-shi, Kenzo Ueda, Toyanaka-shi, Sadao Horie, Suita-shi, Toshio Mizutani, Ikeda-shi, and Katsuji Nodera, Minoo-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Jan. 21, 1966, Ser. No. 522,049

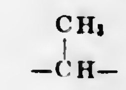
Claims priority, application Japan, Jan. 25, 1965, 40/3,958; Apr. 30, 1965, 40/25,736; June 8, 1965, 40/34,287; Sept. 1, 1965, 40/53,742

6 Claims. (Cl. 260—326)

A phthalimide compound having the formula,



wherein X is $—CH_2—$, $—CH_2CH_2—$ or



$$-\overset{\displaystyle CH_3}{\overset{|}{C}}H-$$

and R is a hydrogen or methyl group. These compounds are useful as synergists for pyrethrin, allethrin, various chrysanthemumic acid ester-type insecticides and carbamate-type insecticides.

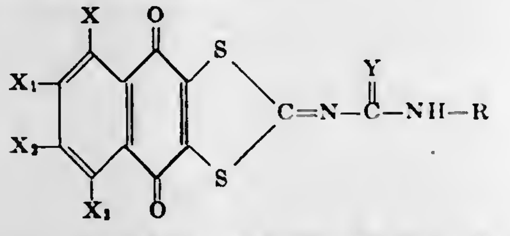
3,402,180
2-IMINONAPHTHO[2,3-d]-1,3-DITHIOLE-4,9-DIONES

William Lindsay Mosby, North Plainfield, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed July 23, 1965, Ser. No. 474,477

3 Claims. (Cl. 260—327)

2-iminonaphtho[2,3-d]-1,3-dithiole-4,9-dione compounds of the formula:



wherein X, X_1, X_2 and X_3 are hydrogen, halogen or lower alkyl; Y is oxygen or sulfur; and R is lower alkyl, phenyl, naphthyl, phenyl-substituted lower alkyl or lower alkyl substituted phenyl are prepared by treating a 2-iminonaphthol[2,3-d]-1,3-dithiole-4,9-dione with a substituted isocyanate or isothiocyanate. The compounds are useful as pigments, dyes, and biocides, particularly as herbicides and fungicides.

3,402,181
LOWER ALKYLENE KETALS OF CYCLOPENTANEDIONE

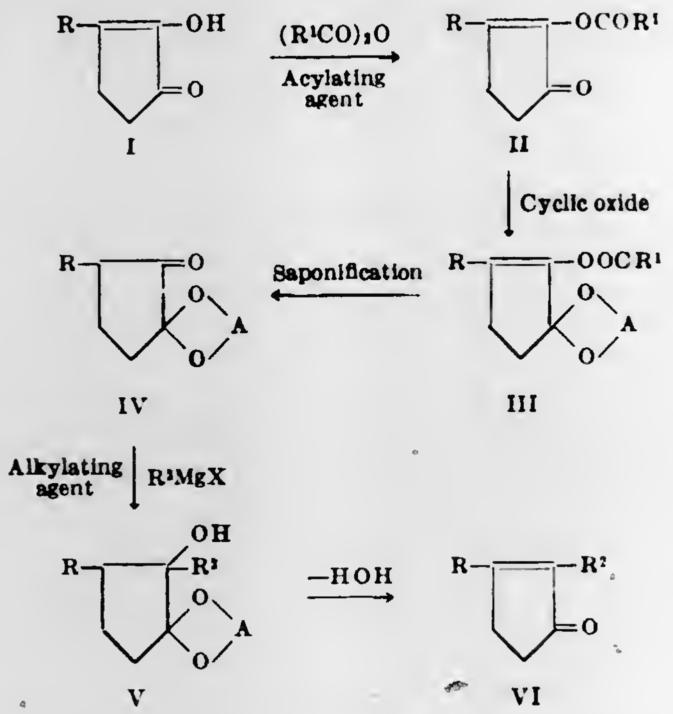
Julius L. E. Erickson, Baton Rouge, and Frank E. Collins, Jr., Jonesville, La., and Robert T. Dahill, Jr., Perth Amboy, N.J., assignors to The Givaudan Corporation, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 31, 1965, Ser. No. 444,448

3 Claims. (Cl. 260—340.7)

A process for preparing 2-cyclopenten-1-ones and novel intermediates is disclosed.

The process is represented as follows:



wherein R=H or alkyl such as methyl, R^1 and R^2 are selected from the group consisting of aryl, alkyl, aralkyl and cycloaliphatic radicals, and A is an alkylene chain having at least two carbon atoms, which may have one or more of the hydrogen atoms substituted e.g. with alkyl radicals, and X is a member selected from the group consisting of chlorine, bromine and iodine. R, R^1, and R^2 may be the same or different. The radicals in R, R^1 and R^2 may be saturated or unsaturated.

The novel intermediates (IV) are useful in perfumery, and as flavors, as well as intermediates for pharmaceuticals.

Several detailed examples are given.

3,402,182
METHOD OF ISOLATING AND REFINING TOCOPHEROL HOMOLOGUES

Shizumasa Kijima, Toyota, Hino-shi, Tokyo, and Tetsuya Nakamura, Kamikizaki, Urawa-shi, Saitama, Japan, assignors to Eisai Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Apr. 28, 1966, Ser. No. 545,830

7 Claims. (Cl. 260—345.6)

A process for separating from one another the individual members of a tocopherol homologue mixture inincluding α-tocopherol, β-tocopherol, γ-tocopherol and δ_5-tocopherol in which the tocopherol homologue mixture is adsorbed on an OH-type basic anion exchange resin. A self-dissociating solvent is then passed through the resin thereby eluting, first, the α-tocopherol and the β-tocopherol or γ-tocopherol. Afterwards, a solution of the self-dissociating solvent and an acid is passed through the resin, thereby eluting the δ-tocopherol.

3,402,183
NEOPENTYL-BIS-ESTER OF 3,4-DIHYDRO-2H-PYRAN CARBOXYLIC ACID

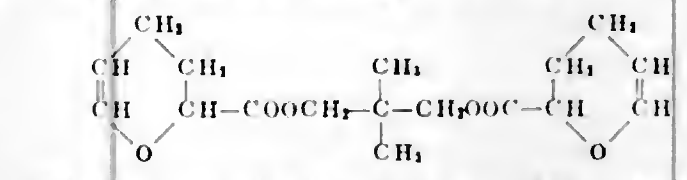
Arthur Ibbotson, Manchester, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed June 28, 1965, Ser. No. 467,696

Claims priority, application Great Britain, July 17, 1964, 29,277/64

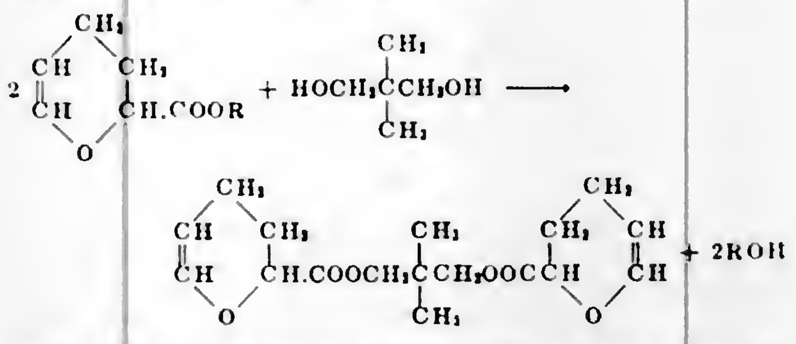
1 Claim. (Cl. 260—345.8)

The neopentyl-bis-ester of 3,4-dihydro-2H-pyran-2-carboxylic acid, said ester having the formula:



The ester may be prepared by any of the normal processes used for the manufacture of esters.

The ester is preferably manufactured by an ester interchange reaction involving the reaction of neopentyl glycol with an ester of 3,4-dihydro-2H-pyran-2-carboxylic acid: the reaction is formulated as follows:



where R is for example a lower alkyl group or the 3,4-dihydro-2H-pyran-2-methyl radical.

When R is the 3,4-dihydro-2H-pyran-2-methyl radical, that is when acrolein tetramer is used as the starting material, the useful 2-hydroxymethyl-3,4-dihydro-2H-pyran is obtained as a by-product (ROH).

The neopentyl bis-ester of 3,4-dihydro-2H-pyran-2-carboxylic acid is useful as a polymer forming intermediate in the manufacture of foamed polymers.

3,402,184
PROCESS OF AROMATIC HYDROCARBON OXIDATION

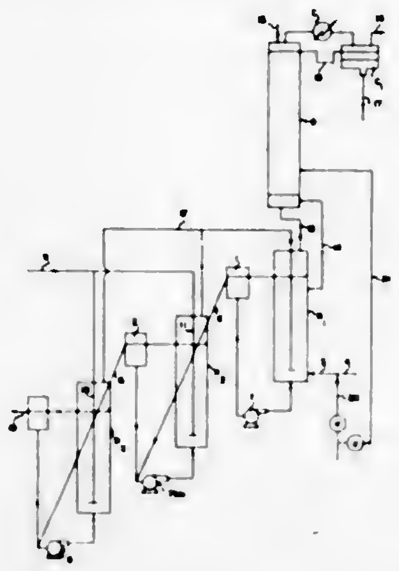
Jean Berthoux and Claude Gerbelot-Barrillon, Lyon, France, assignors to Progil S.A., Paris, France, a corporation of France

Filed Oct. 24, 1965, Ser. No. 504,833

Claims priority, application France, Dec. 14, 1964, 998,922

5 Claims. (Cl. 260—346.4)

A process is described for the continuous liquid phase counter-current oxidation of aromatic hydrocarbons containing oxidizable side chains, especially the oxidizing of xylenes to various phthalic acids and/or anhydrides. The process is carried out in a series of reactors in which the reaction fluids are maintained at approximately constant pressures and without condensation between reactors. Off gases are dehydrated by azeotropic distillation in such a manner that the dehydrating agent is recovered and unreacted aromatics and solvents are recovered in a dehydrated state suitable for recycling into the oxidation process.



3,402,185
1-AMINO-4-METHYLAMINO-2-ANTHRAQUINONECARBOXYLIC ACID CYCLOHEXYL-METHYL (OR ETHYL) -AMINOPROPYLAMIDE

Karl Maier and Julius Eisele, Ludwigshafen (Rhine), and Wilhelm Federkiel, Frankenthal, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed June 2, 1965, Ser. No. 460,860

Claims priority, application Germany, June 18, 1964, B 77,288

3 Claims. (Cl. 260—377)

An anthraquinone carboxamide containing in the carbamoyl group the γ-cyclohexylmethylaminopropyl substituent or the γ-cyclohexylethylaminopropyl substituent. These anthraquinones are useful as dyes for dyeing polyacrylonitrile textile materials.

3,402,186
5β,19-CYCLOANDROSTANES

John S. Tadanier, Chicago, and John Wayne Cole, Deerfield, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Feb. 24, 1964, Ser. No. 347,055

5 Claims. (Cl. 260—397.4)

3,6,17-trisubstituted 5β,19-cycloandrostanes are described which are useful as growth-promoting and growth-regulaing agents with substantially no sex-hormone activities.

3,402,187
PROCESS FOR THE PREPARATION OF NAPHTHOQUINONE BY CATALYTIC GAS-PHASE OXIDATION

Anton Kaiser, Basel, and Willy Regenass, Neuallschwil, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

Filed Feb. 26, 1964, Ser. No. 347,425

Claims priority, application Switzerland, Mar. 7, 1963, 2,882/63

8 Claims. (Cl. 260—396)

A process for manufacturing naphthoquinone is provided in which naphthalene is oxidized by conducting it at a temperature of 300–500° C. together with a gas containing free oxygen over a solid bed catalyst whose active catalyst mass is formed by roasting at 250–600° C., a mixture comprised of vanadium pentoxide or a mixture of vanadium pentoxide with other metal oxides, an alkali metal sulfate and an alkali metal pyrosulfate. The catalyst is further characterized by having an inert support for the active catalyst components and having pores of which up to about 95% have a diameter within the range of 0.2 to 50μ.

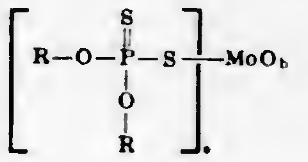
3,402,188
MOLYBDENUM OXIDE PHOSPHORODITHIOATES

Herbert F. Wiese, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed July 30, 1962, Ser. No. 213,115

6 Claims. (Cl. 260—429)

1. A stable, oil-soluble molybdenum salt of a phosphorodithioic acid having the structural formula



wherein R is an organic radical containing from 3 to about 30 carbon atoms and is selected from the group consisting of alkyl, aryl, alkaryl, cycloalkyl and aralkyl radicals, *a* and *b* are each an integer, and $(a+2b)$ is the valence of molybdenum and is from 4 to 8, said phosphorodithioic acid containing at least about 7.6 aliphatic carbon atoms per molecule.

3,402,189
PROCESS FOR PREPARING TRICYCLOHEXYL TIN HYDROXIDE

Joseph G. Natoli, Middlesex, N.J., assignor to M&T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 29, 1966, Ser. No. 538,219

7 Claims. (Cl. 260—429.7)

The novel process of this invention for preparing tricyclohexyltin hydroxide $(C_6H_{11})_3SnOH$ may comprise maintaining a reaction mixture containing cyclohexyl magnesium halide $(C_6H_{11})MgX$ and a tin tetrahalide SnX_4 in molar ratio of 3:1 wherein X is an active halide selected from the group consisting of chloride and bromide; maintaining in said reaction mixture a hydrocarbon solvent and a solvent-diluent compound selected from the group consisting of an aliphatic ether, tetrahydrofuran, tetrahydropyran, 2-methyltetrahydrofuran, 2-ethoxytetrahydropyran, tetrahydrofurfuryl ethyl ether, dihydropyran, and N-methyl-morpholine; maintaining said reaction mixture for time sufficient to form tricyclohexyltin halide $(C_6H_{11})_3SnX$; admixing said reaction mixture and aqueous medium thereby hydrolyzing said reaction mixture; separating from said hydrolyzed reaction mixture an organic layer containing said hydrocarbon solvent, said solvent-diluent. and said tricyclohexyltin halide

$$(C_6H_{11})_3SnX$$

causticizing said organic layer thereby forming organic solution of tricyclohexyltin hydroxide; separating said organic solution; cooling said separated organic solution thereby precipitating substantially pure tricyclohexyltin hydroxide; and recovering said tricyclohexyltin hydroxide.

3,402,190
METHOD FOR MANUFACTURING ALKYL-ALUMINUM COMPOUNDS

Kiyoshi Toyoshima, Hirosuke Ryu, Atsuro Matsui, and Eiichi Ichiki, Niihama-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

Filed June 16, 1964, Ser. No. 375,484

Claims priority, application Japan, June 18, 1963, 38/32,101

5 Claims. (Cl. 260—448)

A method for activating inactive aluminum and inactive aluminum alloys by heating the same with an agent comprising an organooxymetal; preparing alkyl aluminum compounds by reacting said inactive aluminum or aluminum alloy with said organooxymetal and a mixture of alkyl aluminum compound and hydrogen or a mixture of an alkyl aluminum compound, hydrogen and an olefin.

3,402,191
N,N-DISUBSTITUTED AMINOALKYLSILOXANE COPOLYMERS AND AMINE OXIDE, QUATERNARY AMMONIUM SALT, AND COORDINATION COMPOUNDS OF TRANSITION METAL DERIVATIVES THEREOF

Edward L. Morehouse, Snyder, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Aug. 27, 1963, Ser. No. 304,965

13 Claims. (Cl. 260—448.2)

This invention relates to novel tertiary aminoorganosilicon compounds (silanes and siloxanes) which are characterized by the presence of at least one ether linkage in the organo group connecting the tertiary amino group to silicon. This invention further relates to novel derivatives of these amines (i.e., the amine oxide, salt and metal coordination compound derivatives of these amines). The salt derivatives include the reaction products of the amines with alkyl halides, dialkyl sulfates, chloroalkanoic acid esters and carboxylic acids. In the specific case where there are a plurality of ether linkages linking the nitrogen atom to silicon, the amines and their derivatives are a species of siloxaneoxyalkylene block copolymers. The various types of novel compounds claimed are useful as surfactants.

3,402,192
POLYOXYALKYLENE SILOXANE BRANCH COPOLYMERS

Loren A. Haluska, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Continuation-in-part of application Ser. No. 430,205, Feb. 3, 1965. This application July 16, 1965, Ser. No. 472,720

18 Claims. (Cl. 260—448.2)

Polyoxyalkylene siloxane branch copolymers useful in the preparation of polyurethane foams are disclosed. The copolymers of this invention allow greater processing latitude than was possible heretofore. Polyurethane foams prepared with these copolymers do not exhibit the undesirable pneumatic effect.

3,402,193
PREPARATION OF IMIDO ESTER HYDROCHLORIDES

Hugh J. Hagemeyer, Jr., and William J. Gammans, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 16, 1966, Ser. No. 527,736

8 Claims. (Cl. 260—453)

A process for preparing imido ester hydrochlorides comprises passing anhydrous hydrogen chloride into a stirred solution of one molar equivalent of a lower alkanol and not less than 1.25 molar equivalents of a nitrile. The imido ester hydrochlorides are well-known and valuable compounds, for example, as chemical intermediates for other valuable chemical compounds such as amidine hydrochlorides.

3,402,194
PREPARATION OF THIOLESTERS FROM ALIPHATIC ACID ANHYDRIDES AND AROMATIC THIOLS

Alfred A. Schleppnik, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 15, 1965, Ser. No. 472,341

8 Claims. (Cl. 260—455)

A process for the preparation of a thiolester by reacting an aliphatic acid anhydride with an aromatic thiol in the presence of a catalytic amount of a tertiary amine.

3,402,195
RECOVERY OF ALKYL TETRAHALOTEREPHTHALATES FROM XYLENE

Theodore M. Barna, Houston, Tex., assignor to Diamond Shamrock Corporation, a corporation of Delaware

No Drawing. Filed May 18, 1964, Ser. No. 368,411

7 Claims. (Cl. 260—475)

A lower alkyl tetrahaloterephthalate is prepared by esterifying tetrahaloterephthalyl dichloride with a lower alkanol in an alkaline medium, dissolving the crude ester product in xylene, removing lower alkanol and insoluble impurities and finally recovering the purified lower alkyl tetrahaloterephthalate from the xylene solution.

3,402,196
ORGANOPHOSPHORUS COMPOUNDS AND METHODS FOR THE PREPARATION THEREOF

Bobby F. Dannels and Alvin F. Shepard, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 220,901, Aug. 31, 1962. This application Nov. 16, 1967, Ser. No. 683,463

11 Claims. (Cl. 260—502.4)

3,5-di-alkyl (and cycloalkyl)-4-hydroxyphenylphosphonous (and phosphinous) acids are new compounds, useful to stabilize organic materials, such as lubricants, hydrocarbons, fuels, and plastics against oxidation and the effects of light and heat. Methods for manufacture of such compounds by reaction of 2,6-dialkyl (and cyclohexyl) phenols with a phosphorus trihalide in the presence of a tertiary amine and subsequent hydrolysis of the product made are also described.

3,402,197
FLUOROCHLOROALKANE SULFONATES

Henry R. Nychka, Randolph Township, Morris County, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 16, 1964, Ser. No. 411,635

2 Claims. (Cl. 260—513)

Fluorocarbon compounds of the class consisting of the saturated fluorocarbon sulfonic acids having the formula

$$RSO_3H$$

wherein R is an alphahydro perfluorochloroalkyl or perfluorochloroalkyl radical containing an average of 5 to 20 carbon atoms and a ratio of fluorine to chlorine atoms of about 3 to 1, and the corresponding metal and ammonium salts. These compounds have surface active properties rendering them useful as surface tension reducing agents, wetting agents, dispersing agents and emulsifying agents.

3,402,198
2-(PHENOXY), 2-(PHENYLTHIO) AND 2-(ANILINO) SUBSTITUTED 2-ALKYLIDENEACETIC ACID DERIVATIVES

William A. Bolhofer, Frederick, Montgomery County, Pa. 19435

No Drawing. Filed Oct. 20, 1965, Ser. No. 499,009

9 Claims. (Cl. 260—519)

This invention relates to 2-(phenoxy), 2-(phenylthio) and 2-(anilino) substituted 2-alkylideneacetic acids and to the salts, esters and amide derivatives thereof. The products are cholesterol and triglyceride lowering agents which have application in the treatment of atherosclerosis.

The products are obtained by treating a phenol, thiophenol or aniline with an ester of a 2-halo-2-alkylideneacetic acid in the presence of a base followed by the hydrolysis of the resulting ester intermediate thus formed to the desired carboxylic acid.

3,402,199
METHOD FOR PRODUCING THREONINE

Tetsuhiro Kusunose, Nobeoka-shi, and Saburo Senoo and Masashi Nitta, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed July 13, 1964, Ser. No. 382,399

Claims priority, application Japan, July 13, 1963, 38/35,651

3 Claims. (Cl. 260—534)

1. A method for producing threonine comprising reacting acetaldehyde with a suspension of a mixture of glycine and a basic copper salt in an aqueous caustic alkali solution at a temperature up to about 100° C. for about 30 minutes, adding hydrochloric acid to stop the reaction and then removing copper from the resulting reaction product solution, said caustic alkali, acetaldehyde, basic copper salt and glycine being present in a molar ratio of 0.8–1.2:2–3:1–1.5:1.

3,402,200
N-POLYAMINOPOLYALKYLENE-PHENYLENEDIAMINES

Charles M. Hayes, Hoffman Estates, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed May 19, 1966, Ser. No. 551,209

5 Claims. (Cl. 260—570.5)

Reductive alkylation product of a ketone with the reaction product of nitrohalobenzene or haloaniline and an alkylene polyamine. The compounds are useful as stabilizers for hydrocarbon oils, lube oils, plastics and other organic substrates normally subject to oxidative deterioration.

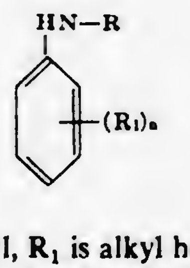
3,402,201
N-CYCLOOCTYL-ALKYL-ANILINES

Louis Schmerling, Riverside, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Mar. 4, 1963, Ser. No. 262,380

7 Claims. (Cl. 260—576)

1. A compound of the formula



wherein R is cyclooctyl, R_1 is alkyl having from 1 to about 6 carbon atoms, and *n* is an integer of 2 or 3.

3,402,202
PROCESS FOR PREPARING 3,3′-DIAMINO-2,2′,4,4′,6,6′-HEXANITROBIPHENYL

Delton William Hein, Darien, Conn., and Stanley Joseph Radkowski, Pulaski, Pa., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 10, 1965, Ser. No. 478,730

6 Claims. (Cl. 260—581)

A chlorinated hydrocarbon such as ethylene dichloride is employed to advantage as a solvent in Ullmann Reactions and particularly in all the steps of the process for making 3,3-diamino-2,2′,4,4′,6,6′-hexanitrobiphenyl comprising (1) nitrating m-bromoanisole to form 3-bromo-2,4,6-trinitroanisole, (2) condensing the latter in the presence of copper powder (Ullmann Reaction) to form 3,3′-dimethoxy - 2,2′,4,4′,6,6′ - hexanitrobiphenyl and (3) aminating the product of (2) with anhydrous ammonia to form the 3,3-diamino-2,2′,4,4′,6,6′-hexanitrobiphenyl.

3,402,203
PROCESS OF PREPARING N,N-DIMETHYLAMINO ALCOHOLS

John B. Tindall, Terre Haute, Ind., assignor to Commercial Solvents Corporation

No Drawing. Filed Nov. 19, 1964, Ser. No. 412,301

17 Claims. (Cl. 260—584)

A process for the preparation of N,N-dimethylamino alcohols by replacing each of the hydrogens on the amino nitrogen on the amino alcohol with a methyl radical by reacting the alcohol with at least three mols of formaldehyde per mol of amine. The process also includes the selective production of N,N-dialkylamino alcohols such as N,N-dimethylamino alcohols and isomers thereof utilizing different aldehydes by controlling the reaction mixture to remove formic acid prior to separation of the methylated amino alcohol or to insure the presence of formic acid.

3,402,204
PROCESS FOR THE PRODUCTION OF DIARYL SULFONES

Charles W. Plummer, Beverly, and Milton R. Radcliffe, Marblehead, Mass., assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

No Drawing. Filed Dec. 2, 1964, Ser. No. 415,456

9 Claims. (Cl. 260—607)

A process of producing diaryl sulfones by reacting an aryl sulfonyl chloride with an aryl compound in nonaqueous liquid medium containing a catalytic amount of zinc chloride.

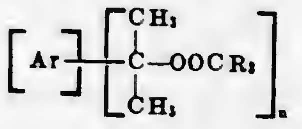
3,402,205
POLYPEROXIDES

George P. Gregory, Green Acres, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Sept. 13, 1961, Ser. No. 137,744

2 Claims. (Cl. 260—610)

1. An organic peroxide of the formula



$$\left[Ar\right]-\left[\begin{array}{c}CH_3\\ |\\ C-OOCR_3\\ |\\ CH_3\end{array}\right]_n$$

where *n* is an integer from 2 to 4, Ar is the diphenyl ether nucleus of a polyvalent aryl group, and $—CR_3$ is t-butyl.

2. m-Bis(α-t-butylperoxyisopropyl)benzene.

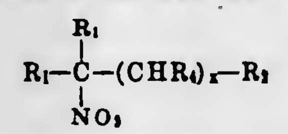
3,402,206
NITROHYDROXYETHERS

John A. Frump, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Continuation-in-part of application Ser. No. 588,749, Oct. 24, 1966. This application Oct. 30, 1967, Ser. No. 679,214

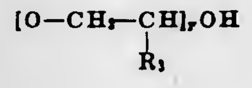
2 Claims. (Cl. 260—615)

Nitrohydroxyethers of the formula



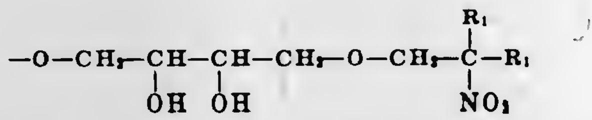
$$R_1-\underset{NO_2}{\overset{R_1}{C}}-(CHR_4)_x-R_2$$

wherein R_4 is a member selected from the group consisting of methyl and hydrogen; wherein R_1 is a member selected from the group consisting of alkyl radicals, for instance, of about 1 to 10 or 20 carbon atoms, including lower alkyl radicals; lower hydroxyalkyl radicals, for instance, of up to 5 carbon atoms; and a radical having the formula $-(CH_2)_x-R_2$; wherein R_2 in the above formula and radical is selected from the group consisting of



$$[O-CH_2-\underset{R_3}{CH}]_yOH$$

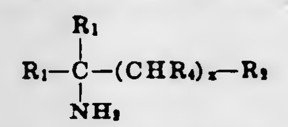
and



$$-O-CH_2-\underset{OH}{CH}-\underset{OH}{CH}-CH_2-O-CH_2-\underset{NO_2}{\overset{R_1}{C}}-R_1$$

wherein R_3 is a member selected from the group consisting of hydrogen, phenyl, nitro-substituted phenyl, halo-substituted phenyl, hydroxyl-substituted alkyl, halo-substituted alkyl, alkene and phenyl-substituted alkyl radicals; *y* is an integer ranging from 1 to 10 or 20 and *x* in the above formula and radical is an integer ranging from about 1 to 20 which are useful in preparing the corresponding amino compounds. Exemplary of such compounds is 2-methyl-2-nitro-6-hydroxy-4-oxa-6-chloromethyl hexane.

Aminohydroxyethers of the formula



$$R_1-\underset{NH_2}{\overset{R_1}{C}}-(CHR_4)_x-R_2$$

wherein R_1, R_2, R_3, R_4, *x* and *y* have the values assigned them above which are useful as corrosion inhibitors, bactericides, pigment wetting and dispersing agents, emulsifiers and intermediates in the preparation of non-ionic surface active agents. Exemplary of such aminohydroxyethers is 2-methyl-6-hydroxy-4-oxa-6-chloromethyl-2-hexylamine.

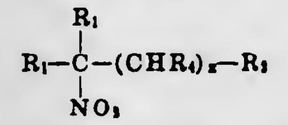
3,402,207
NITROHYDROXYETHERS

John A. Frump, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Continuation-in-part of application Ser. No. 588,756, Oct. 24, 1966. This application Oct. 16, 1967, Ser. No. 675,320

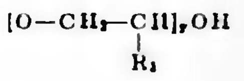
1 Claim. (Cl. 260—615)

Nitrohydroxyethers of the formula



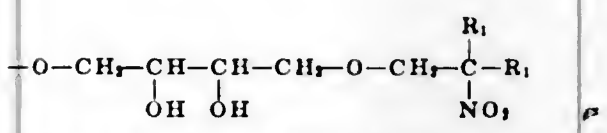
$$R_1-\underset{NO_2}{\overset{R_1}{C}}-(CHR_4)_x-R_2$$

wherein R_4 is a member selected from the group consisting of methyl and hydrogen; wherein R_1 is a member selected from the group consisting of alkyl radicals, for instance, of about 1 to 10 or 20 carbon atoms, including lower alkyl radicals; lower hydroxyalkyl radicals, for instance, of up to 5 carbon atoms; and a radical having the formula $-(CH_2)_x-R_2$; wherein R_2 in the above formula and radical is selected from the group consisting of



$$[O-CH_2-\underset{R_3}{CH}]_yOH$$

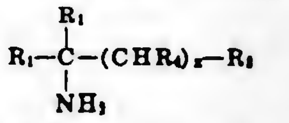
and



$$-O-CH_2-\underset{OH}{CH}-\underset{OH}{CH}-CH_2-O-CH_2-\underset{NO_2}{\overset{R_1}{C}}-R_1$$

wherein R_3 is a member selected from the group consisting of hydrogen, phenyl, nitro-substituted phenyl, halo-substituted phenyl, hydroxyl-substituted alkyl, halo-substituted alkyl, alkene and phenyl-substituted alkyl radicals; *y* is an integer ranging from 1 to 10 or 20 and *x* in the above formula and radical is an integer ranging from about 1 to 20 which are useful in preparing the corresponding amino compounds. Exemplary of such compounds is 2,3-dimethyl-2-nitro-4-oxa-6-hydroxyhexane.

Aminohydroxyethers of the formula



$$R_1-\underset{NH_2}{\overset{R_1}{C}}-(CHR_4)_x-R_2$$

wherein R_1, R_2, R_3, R_4, *x* and *y* have the values assigned them above which are useful as corrosion inhibitors, bactericides, pigment wetting and dispersing agents, emulsifiers and intermediates in the preparation of nonionic surface active agents. Exemplary of such aminohydroxyethers is 2,3-dimethyl-6-hydroxy-4-oxa-2-hexylamine.

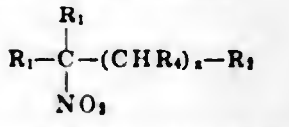
3,402,208
NITROHYDROXYETHERS

John A. Frump, Terre Haute, Ind., assignor to Commercial Solvent Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Continuation-in-part of application Ser. No. 588,718, Oct. 24, 1966. This application Oct. 30, 1967, Ser. No. 679,189

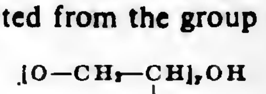
1 Claim. (Cl. 260—615)

Nitrohydroxyethers of the formula



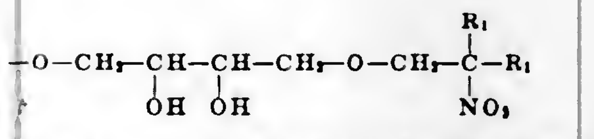
$$R_1-\underset{NO_2}{\overset{R_1}{C}}-(CHR_4)_x-R_2$$

wherein R_4 is a member selected from the group consisting of methyl and hydrogen; wherein R_1 is a member selected from the group consisting of alkyl radicals, for instance, of about 1 to 10 or 20 carbon atoms, including lower alkyl radicals; lower hydroxyalkyl radicals, for instance, of up to 5 carbon atoms; and a radical having the formula $-(CH_2)_x-R_2$; wherein R_2 in the above formula and radical is selected from the group consisting of



$$[O-CH_2-\underset{R_3}{CH}]_yOH$$

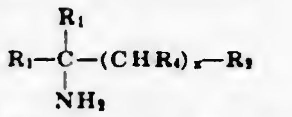
and



$$-O-CH_2-\underset{OH}{CH}-\underset{OH}{CH}-CH_2-O-CH_2-\underset{NO_2}{\overset{R_1}{C}}-R_1$$

wherein R_3 is a member selected from the group consisting of hydrogen, phenyl, nitro-substituted phenyl, halo-substituted phenyl, hydroxyl-substituted alkyl, halo-substituted alkyl, alkene and phenyl-substituted alkyl radicals; *y* is an integer ranging from 1 to 10 or 20 and *x* in the above formula and radical is an integer ranging from about 1 to 20 which are useful in preparing the corresponding amino compounds. Exemplary of such compounds is 2-nitro-2-methyl-4-oxa-6 hydroxy-6-vinyl hexane.

Aminohydroxyethers of the formula



$$R_1-\underset{NH_2}{\overset{R_1}{C}}-(CHR_4)_x-R_2$$

wherein R_1, R_2, R_3, R_4, *x* and *y* have the values assigned them above which are useful as corrosion inhibitors bactericides, pigment wetting and dispersing agents, emulsifiers and intermediates in the preparation of nonionic surface active agents. Exemplary of such aminohydroxyethers is 2 - methyl - 4 - oxa-6-hydroxy-6-vinyl-2-hexylamine.

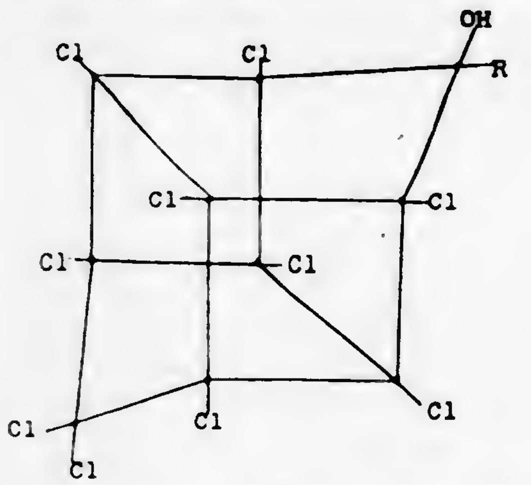
3,402,209
INSECTICIDAL TERTIARY ALCOHOLS

Everett E. Gilbert, Morris Township, Morris County, Pasquale Lombardo, East Hanover Township, Morris County, Edmund J. Rumanowski, Jersey City, and Bernard Sukornick, Elizabeth, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 1, 1965, Ser. No. 436,348

2 Claims. (Cl. 260—617)

1. A tertiary alcohol having a melting point of from about 300° C. and higher and having the formula:



wherein R represents a hydrocarbon radical having up to 18 carbon atoms and united to the alcoholic tertiary carbon atom by an aliphatic carbon atom.

3,402,210
PRODUCTION OF 1-NAPHTHOL

Robert D. Hiser, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Jan. 20, 1964, Ser. No. 338,563

4 Claims. (Cl. 260—621)

1. The method for producing 1-naphthol which comprises heating at 250° C. to 450° C. a mixture of hydrogen gas and 3,4-dihydro-1-(2H)-naphthaleneone in contact with a catalyst composition consisting essentially of a support material, from 0.25 to 5 weight percent platinum metal and from 0.25 to 1.5 weight percent neodymium in the form of an inorganic compound.

3,402,211
PROCESS FOR THE PRODUCTION OF PERCHLORALLENE DIMERS

Günther Maahs, Marl, Germany, assignor to Chemische Werke Huls Aktiengesellschaft, Marl, Germany

No Drawing. Filed Dec. 23, 1963, Ser. No. 332,839

Claims priority, application Germany, Dec. 27, 1962, C 28,773; Feb. 28, 1963, C 29,266

17 Claims. (Cl. 260—648)

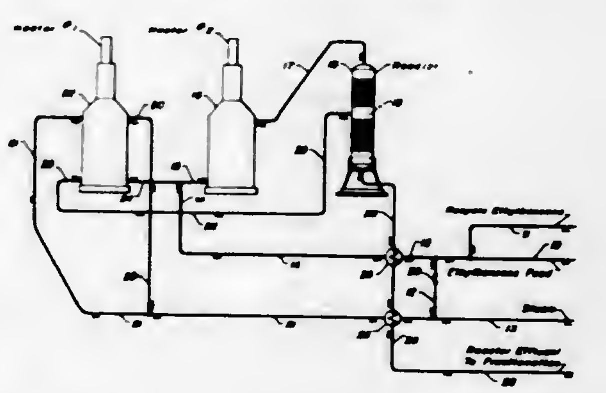
1. In a process for the preparation of dimeric perchlorallene, the step which comprises reacting at 20–150° C.: (1) a member of the group consisting of perchlorocrotonyl chloride and perchlorovinylacetyl chloride with (2) a member of the group consisting of an N,N-di-lower-alkyl amide of a lower carboxylic acid, N,N-ethylphenylacetamide, an unsubstituted amide of lower carboxylic acids, a lower alkyl ketone, an acetic acid ester of a lower alkanol, a lower alkyl aldehyde, furfural, benzaldehyde, tetrahydrofuran, and mixtures thereof, with the provision that, with members which are not amides, the reaction is conducted in the further presence of a member of the group consisting of a tertiary organic nitrogenous base, an alkali metal carbonate, an alkali metal bicarbonate, ammonium carbonate, and ammonium bicarbonate, wherein the tertiary organic nitrogenous base is selected from the group consisting of trimethyl amine, triethyl amine, dimethyl aniline, quinoline, tripropylamine and tributylamine.

3,402,212
DEHYDROGENATION OF ETHYLBENZENE TO STYRENE

James E. Gantt, Elmwood Park, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed July 18, 1966, Ser. No. 565,878

6 Claims. (Cl. 260—669)



1. Method for producing styrene in high concentration via the catalytic dehydrogenation of ethylbenzene in a multi-bed reaction zone which comprises

(a) admixing ethylbenzene with water in an amount equivalent to a first minor portion of hereinafter specified total steam;

(b) heating said admixture to a temperature from 900° F. to 1100° F., but at least 150° F. less than the hereinafter specified reaction zone inlet temperature by indirect heat exchange of the admixture with the reaction zone effluent;

(c) separately heating a second minor portion of said total steam to a temperature from 900° F. to 1100° F., but from 100° to 50° F. less than said reaction zone inlet temperature;

(d) blending said second portion of steam with said heated admixture to form a total feed stream;

(e) heating the feed stream to a temperature from 1100° F. to 1400° F. as the specified reaction zone inlet temperature;

(f) contacting the heated feed stream with dehydrogenation catalyst contained in a first bed of said reaction zone under conditions sufficient to convert at least 30% by weight of the ethylbenzene therein to styrene;

(g) heating at least a third minor portion of said total steam to a temperature from 1200° F. to 1500° F., said temperature being at least 100° F. more than said reaction zone inlet temperature;

(h) admixing said heated third portion of steam with the total effluent from the first catalyst bed to form a second feed mixture in an amount such that the second feed mixture is at a temperature substantially the same as said reaction zone inlet temperature;

(i) contacting the second feed mixture with dehydrogenation catalyst in a second bed of said reaction zone under conditions sufficient to convert at least 15% by weight of the ethylbenzene present therein to styrene;

(j) withdrawing the total reaction zone product stream from the zone into indirect heat exchange with said ethylbenzene admixture as hereinabove specified, said product stream now containing from 2 to 10 pounds of steam per pound of ethylbenzene in said admixture as the total steam specified, but not exceeding 5 pounds of steam per pound of styrene in said product stream; and

(k) recovering styrene in high concentration from the heat exchanged reaction zone product.

3,402,213

ALKYLATION PROCESS

Armand J. De Rosset, Clarendon Hills, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Aug. 30, 1966, Ser. No. 575,946

10 Claims. (Cl. 260—671)

A process for the alkylation of aromatic compounds with olefin-acting compounds using a catalyst comprised of a refractory inorganic oxide chemically combined with a metal subfluoride is disclosed.

3,402,214

PROCESS FOR HYDRODEALKYLATING ALKYL-SUBSTITUTED AROMATIC HYDROCARBONS

Shinobu Masamune, Yasuo Suzuki, Yoshio Okabe, Mitsuo Sagara, and Hiroyuki Sagami, Yokkaichi, Mie, Japan, assignors to Mitsubishi Petrochemical Co., Ltd., Tokyo, Japan

No Drawing. Filed Aug. 28, 1967, Ser. No. 663,518

Claims priority, application Japan, Sept. 8, 1966, 41/58,935

3 Claims. (Cl. 260—672)

Process for the noncatalytic thermal hydrodealkylation of alkyl-substituted aromatic hydrocarbons which comprises preheating hydrocarbon oils containing alkyl-substituted aromatic hydrocarbons or hydrocarbon oils containing alkyl-substituted aromatic hydrocarbons and nonaromatic hydrocarbons together with from 2 to 10 mols of hydrogen per mol of the starting hydrocarbons, and passing the mixture through two or more reaction zones, the first of said reaction zone being a back mixing-type reactor and a second or the subsequent reaction zones being piston flow-type reactors.

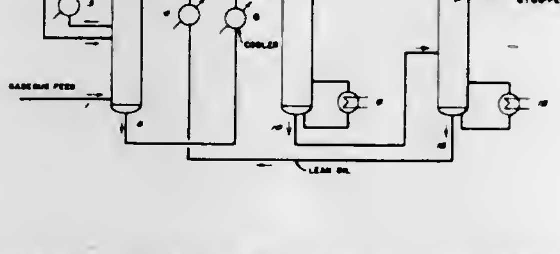
3,402,215

DIOLEFIN PRODUCTION AND PURIFICATION

Rudolph C. Woerner and Lloyd D. Tschopp, Houston, and Lester M. Welch, Seabrook, Tex., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

Filed June 27, 1966, Ser. No. 560,638

6 Claims. (Cl. 260—680)



A process for the purification of unsaturated hydrocarbons, particularly diolefins such as butadiene-1,3 or isoprene from a gaseous mixture containing hydrocarbons including acetylenic hydrocarbons and relatively noncondensable gases including oxygen. Gases to be purified may be obtained by oxidative dehydrogenation. Purification by a particular process including absorbing and stripping.

3,402,216

OLEFIN PRODUCTION

Thomas Hutson, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Continuation-in-part of application Ser. No. 545,092, Apr. 25, 1966. This application Dec. 27, 1966, Ser. No. 605,047

3 Claims. (Cl. 260—683.2)

Saturated alicyclic hydrocarbons are converted to selected olefins with high selectivity by photochlorinating said hydrocarbons, dehydrochlorinating the resultant monochlorinated hydrocarbons to produce monoolefins, recovering the selected monoolefins and recycling the remaining monoolefins to extinction through isomerization to convert the same to the selected monoolefin.

3,402,217

PROCESS FOR PREPARING OLEFIN HYDROCARBONS FOR DETERGENT USE

Robert M. Engelbrecht, St. Louis, George D. Davis, Creve Coeur, James M. Schuck, Webster Groves, Robert G. Schultz, Vinita Park, and Joseph Q. Snyder, St. Charles, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Nov. 20, 1963, Ser. No. 325,156

9 Claims. (Cl. 260—683.15)

1. A process for the preparation of olefin hydrocarbons suitable for the preparation of alkyl aromatic compounds susceptible to biological decomposition which comprises contacting in a first polymerization zone at elevated temperatures of from 60° C. to 350° C. and pressures of approximately atmospheric to 1000 p.s.i.g. normally gaseous mono-olefin hydrocarbons with a catalyst comprised of a crystalline zeolite molecular sieve and a metal from Group VIII of the Periodic Table, said catalyst in an oxidized stage having been subjected to at least one oxidation treatment at elevated temperatures in the presence of an oxygen-containing gas and having present from 0.2 to 15 percent by weight of the Group VIII metal calculated as the oxide of the metal, to form a polymer fraction, separating said polymer fraction to obtain a fraction comprised of relatively linear mono-olefin dimers of the normally gaseous mono-olefin hydrocarbons, said dimers having 4 to 8 carbons atoms, contacting said relatively linear dimer fraction in a second polymerization zone at a temperature of 0 to 250° C. and a pressure of atmospheric to 2500 p.s.i.g., with an activated carbon supported cobalt oxide catalyst having present from about 2 to 50 weight percent of cobalt as an oxide and having been activated in an inert atmosphere at a temperature of 400 to 575° C. to form a second polymer fraction, separating said second polymer fraction to obtain a fraction comprised of relatively linear mono-olefin dimers of olefin hydrocarbons in the feed to the second polymerization zone, said dimers being of 8 to 16 carbon atoms.

3,402,218

BLENDING VISCOUS POLYMER SOLUTIONS BY FORMING EMULSIONS

Howard R. Wilson, Akron, Ohio, assignor to The General Tire & Rubber Company

Filed Apr. 20, 1965, Ser. No. 449,529

2 Claims. (Cl. 260—823)

A process is disclosed of producing a polyether crumb, such as a crumb of a copolymer of propylene oxide and allyl glycidyl ether, from a viscous cement of the polyether and a solvent for the same by thoroughly mixing said cement with water to form a homogeneous aqueous dispersion or emulsion of polyether, solvent and water. The dispersion can be treated subsequently with hot water or steam to remove or vaporize the solvent and provide a mixture of polyether crumb and water from which the crumb can be recovered. By means of the present process batches of different cements, for example, from different solvent polymerization runs, in which the polymers may exhibit different Mooney viscosities can readily be handled and blended in the form of their aqueous dispersions and later converted into a crumb exhibiting a generally uniform viscosity. This process thus eliminates the need for mixing batches of viscous cements requiring large expenditures of time and power as well as the need for mixing dry polymers from separate runs in a Banbury or on a rubber mill.

3,402,219

COATING COMPOSITIONS COMPRISING STYRENE INTERPOLYMER, AMINOPLAST, AND HYDROXY-CONTAINING POLYESTER

Robert W. Hill, Leawood, and Francis R. Galiano, Prairie Village, Kans., assignors to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 9, 1965, Ser. No. 447,082

25 Claims. (Cl. 260—850)

Coatings for thermoplastic polymer articles are obtained by providing a solvent solution of a curable admixture comprised of a hydroxy-containing interpolymer of styrene, curable aminoplast and a hydroxy containing polyester having a hydroxy number of at least 50, typical examples are reaction products of polybasic acids (or the corresponding anhydrides thereof) and dihydric alcohols, such as 2,4,6-trioxo-s-triazine-1,3,5(2H,4H,6H)-trialkanoic acid, and a glycol or trimelletic anhydride and a glycol, and reaction products of a polyhydric alcohol and a dibasic acid, such as trimethylol propane and a dibasic acid or trihydroxy-ethyl-isocyanurate and a dibasic acid. In general, for ease of reaction and faster cures, the hydroxyl groups, of the alcohols, are preferably attached to primary carbons, i.e., so as to form primary alcohols.

3,402,220

HOMOGENEOUS BLEND OF UNCURED BUTYL AND CURED CHLOROBUTYL RUBBERS

Clarence Robert Bierman, Barrington, and Walter Arthur Fourier, Crystal Lake, Ill., assignors to American Can Company, a corporation of New Jersey

No Drawing. Filed Dec. 27, 1965, Ser. No. 516,691

4 Claims. (Cl. 260—888)

An intimate and homogeneous mixture of uncured butyl rubber and cured chlorobutyl rubber useful in caulking and sealing compositions.

3,402,221

POLY(α-OLEFINS) CONTAINING SULFATED OR SULFONATED CONDENSATION POLYMERS

John R. Caldwell, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 29, 1963, Ser. No. 319,699

12 Claims. (Cl. 260—897)

Dyeable polyolefin fiber- and film-forming compositions susceptible of permanent dyeing by basic dyes containing a dye receptor, a polyether condensation polymer containing in its molecule from 0.4 to 6 percent of sulfur in the form of an acidic group selected from the class consisting of sulfonic acid and acid sulfate groups.

3,402,222

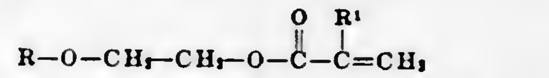
DYEABLE POLYPROPYLENE COMPOSITIONS CONTAINING ALKOXYETHYL ACRYLATE COPOLYMERS

Nathan L. Zutty, Charleston, George M. Bryant, South Charleston, and Andrew T. Walter, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 30, 1963, Ser. No. 319,993

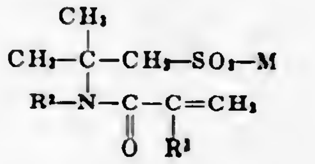
14 Claims. (Cl. 260—897)

1. A dyeable composition comprising a blend of (A) from about 60 percent by weight to about 98 percent by weight of a solid polypropylene, and (B) from about 2 percent by weight to about 40 percent by weight of a copolymer of (1) an alkoxyethyl acrylate represented by the formula

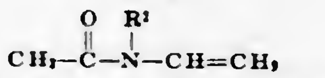


$$R-O-CH_2-CH_2-O-\overset{O}{\overset{\|}{C}}-\overset{R^1}{\overset{|}{C}}=CH_2$$

wherein R is an alkyl radical containing from 1 to 30 carbon atoms and R^1 is a radical selected from the group consisting of hydrogen and methyl, and (2) a compound selected from the group consisting of compounds represented by the formulas



$$\begin{array}{l} \quad\;\; CH_3 \\ \quad\;\;\; | \\ CH_3-C-CH_2-SO_3-M \\ \quad\;\;\; | \\ R^2-N-\underset{\underset{O}{\|}}{C}-\underset{\underset{R^3}{|}}{C}=CH_2 \end{array}$$



$$CH_3-\overset{O}{\overset{\|}{C}}-\overset{R^2}{\overset{|}{N}}-CH=CH_2$$

wherein M is an alkali metal, R^2 is a radical selected from the group consisting of hydrogen and alkyl radicals containing from 1 to 3 carbon atoms, and R^3 is a radical selected from the group consisting of hydrogen and methyl, said copolymer having a polymerized alkoxyethyl acrylate content of from about 50 percent by weight to about 95 percent by weight and from about 5 percent by weight to about 50 percent by weight of the polymerized comonomer.

3,402,223

HIGH MOLECULAR WEIGHT ETHYLENE COPOLYMER AND LOW MOLECULAR WEIGHT ETHYLENE-VINYL ACETATE COPOLYMER BLEND

John Burton Lee Hollingsworth, Bound Brook, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Mar. 23, 1966, Ser. No. 536,631

7 Claims. (Cl. 260—897)

An improvement in both stress crack resistance and low temperature brittleness is obtained when a high melt index ethylene-vinyl acetate copolymer is added to a base resin which is a copolymer of ethylene with a minor amount of ethyl acrylate or vinyl acetate.

3,402,224

DIACID ESTER DIMETHYL THIOETHER DIPHOSPHORUS COMPOUNDS

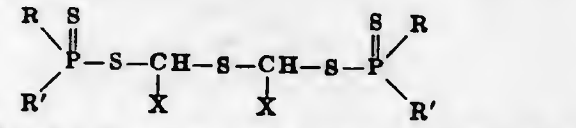
Hans-Gerd Schicke, Wuppertal-Elberfeld, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Mar. 12, 1965, Ser. No. 439,442

Claims priority, application Germany, Mar. 24, 1964, F 42,403

13 Claims. (Cl. 260—929)

Organic phosphorus diacid ester dimethyl thioethers of the formula



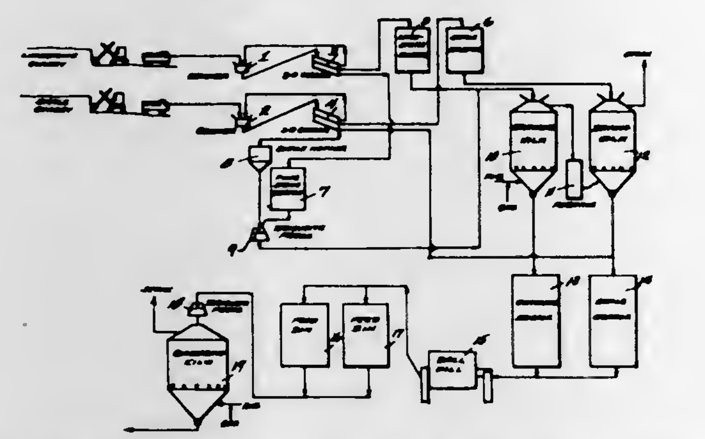
$$\begin{matrix} R \\ R' \end{matrix}\Big\rangle\overset{S}{\overset{\|}{P}}-S-\underset{\underset{X}{|}}{CH}-S-\underset{\underset{X}{|}}{CH}-S-\overset{S}{\overset{\|}{P}}\Big\langle\begin{matrix} R \\ R' \end{matrix}$$

in which R and R′ each respectively is alkyl, alkoxy, alkylamino, dialkylamino or phenyl, and X is lower carbalkoxy, aminocarbonyl, alkylaminocarbonyl, dialkylaminocarbonyl or cyano, which possess pesticidal properties, and which may be produced by conventional methods.

3,402,225
METHOD OF PREPARING VERTICAL SHAFT KILN FEED FOR PRODUCTION OF PORTLAND CEMENT

Russell J. Cameron and John W. Hand, Denver, Colo., and Karl R. Komarek, Chicago, Ill., assignors of one-half each to Komarek-Greaves and Company, Rosemont, Ill., a corporation of Illinois, and Cameron and Jones, Incorporated, Denver, Colo., a corporation of Colorado

Filed Oct. 7, 1966, Ser. No. 585,008
18 Claims. (Cl. 263—53)

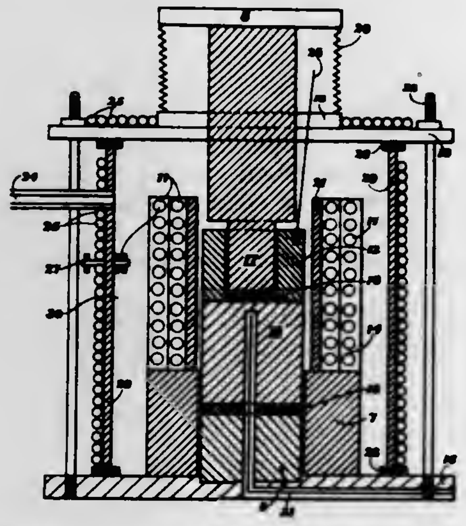


1. A process for the production of portland cement clinker from calcareous compounds, argillaceous compounds, and miscellaneous corrective components in a vertical shaft kiln, comprising decarbonating the calcareous raw materials at a temperature of at least 1400° F., dehydrating the other raw materials at a temperature at least 1000° F., mixing the decarbonated materials and the dehydrated materials together and briquetting the resultant mixture at a briquetting pressure of at least 5000 p.s.i., and clinkering the briquettes at a temperature of at least 2350° F. in a vertical shaft kiln, to thereby produce portland cement clinker.

3,402,226
PROCESS OF HOT PRESSING MAGNESIUM OXIDE INFRARED TRANSMITTING OPTICAL ELEMENTS

Edward Carnall, Jr., and Sherley E. Hatch., Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Original application Oct. 2, 1961, Ser. No. 142,149, now Patent No. 3,236,595, dated Feb. 22, 1966. Divided and this application Sept. 15, 1965, Ser. No. 505,206
6 Claims. (Cl. 264—1)

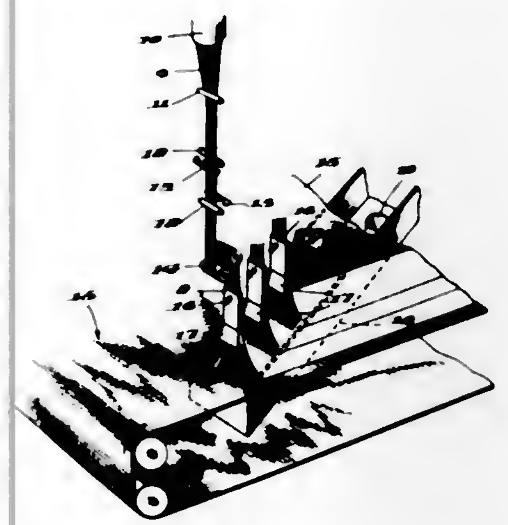


1. The method of forming a homogeneous solid of molded magnesium oxide having a density in the range of from 99% up to and including theoretical density which comprises molding magnesium oxide powder in an inert atmosphere under a pressure within the range of from 40,000 to 65,000 pounds per square inch and at a temperature within the range of 800° C. to 860° C.

3,402,227
PROCESS FOR PREPARATION OF NONWOVEN WEBS

Terence E. C. Knee, Hendersonville, Tenn., assignor to to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Jan. 25, 1965, Ser. No. 427,834
20 Claims. (Cl. 264—24)

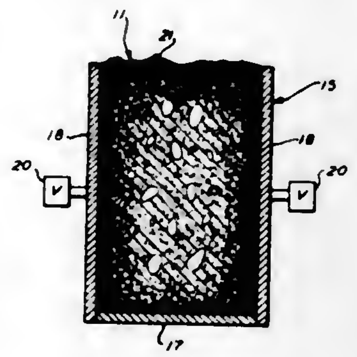


A process for the preparation of nonwoven webs from continuous filaments wherein ribbons of electrostatically charged filaments exiting from stationary jet devices are laid down on a moving receiver with an overlap in the range of from 50–80% for slot jets and 67–80% for round jets between laterally adjacent ribbons. An amount of suction air corresponding to at least five times the total amount of jet air is withdrawn through the receiver.

3,402,228
METHODS FOR PRODUCING MOLDED WALLS AND MOLDED WALLS PRODUCED THEREBY

Robert L. Wood, Sand Harbor Road, Wildwood Shores, and Howard O. Wood, Bishop Rock Road, Wildwood Shores, both of Hopatcong, N.J. 07843

Filed Apr. 14, 1965, Ser. No. 448,089
3 Claims. (Cl. 264—42)

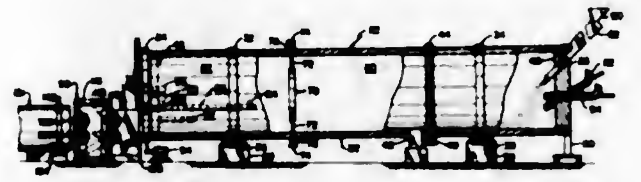


A method for producing a heterogeneous, structural member in which the external surfaces are relatively more dense and free from voids and the internal mass is relatively less dense and charged with voids; the entire mass being a heterogeneous but continuous dispersion of cement, light particulate matter such as cork and asbestos and gas filled voids.

3,402,229
PROCESS FOR MANUFACTURING STRUCTURAL MATERIAL

John Lawson Felder, 207 Luther Drive, San Antonio, Tex. 78212

Filed July 29, 1965, Ser. No. 475,766
9 Claims. (Cl. 264—60)



A method of making ceramic products, such as, aggregate, brick, tile, etc., from siliceous raw materials which method comprises heating the particulate raw material in a rotating kiln until it becomes tacky while tumbling it to form it into a cylindrical mass, coating the cylindrical mass with a particulate refractory material, such as sand, having a liquid fusion temperature above that of the raw material, and heating the coated mass to the liquid fusion temperature of the raw material while rolling it to form a cylindrical product; the coating of refractory material preventing the raw material at its liquid fusion temperature from sticking to the walls of the kiln so that the advantages of firing the raw material in a kiln at its liquid fusion temperature can be obtained, as well as a fired product having a refractory coating thereon.

3,402,230
METHOD OF PRODUCING TUBULAR FUEL CELL STACK

Donald W. White, Jr., Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York

Filed June 21, 1965, Ser. No. 465,624
5 Claims. (Cl. 264—104)

A self-supporting, fuel cell structure of a number of stacked, high-temperature, tubular, fuel cell segments gastightly joined together is made by depositing a first electrode material in separate segments along the length of a substrate and then providing a coating of solid electrolyte on the outer surface of each of the electrode segments so that only one end of each segment is completely covered. Then depositing an outer layer of electrode material in similar segment form on the electrolyte coating so that at one end each top layer segment contacts the exposed end portion of the adjacent first electrode segment.

3,402,231
PROCESS FOR PREPARING SYNTHETIC FIBERS FOR PAPER PRODUCTS

George D. Bynum, Gerd R. Baur, and Byrd T. Thompson, Jr., Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

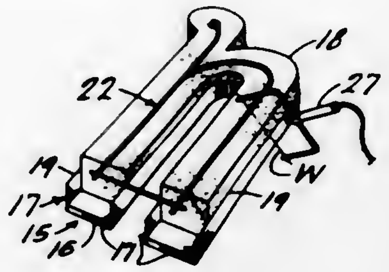
Filed May 21, 1964, Ser. No. 369,225
7 Claims. (Cl. 264—176)

Fibrous filamentary materials are produced from polyacrylonitrile polymers dispersed in water containing sodium carboxymethylcellulose. The dispersion is heated in a pressure vessel to form a viscous polymer melt which is extruded into a restricted area wherein a high velocity stream of steam is directed transverse to the travel of the emerging extrudate imparting a stretch thereto. The filamenary materials are comprised of loosely bonded fibrils which can be separated easily by beating or other abrasive forces.

3,402,232
PREPARATION OF SHAPED OBJECTS OF THERMOPLASTIC MATERIALS

Francis A. De Rusha, Toledo, Ohio, assignor to International Assemblix Corporation, Toledo, Ohio, a corporation of Illinois

Filed Apr. 20, 1966, Ser. No. 543,977
4 Claims. (Cl. 264—129)



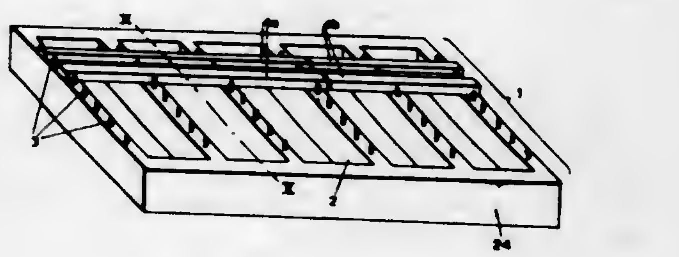
1. A method of fabricating three dimensional shaped objects of thermoplastic material, said objects having predetermined outlines defined by side surfaces normal to planar rear surfaces and each having at least one oblique surface at an acute angle to said side and rear surfaces, comprising the steps of:

(a) shaping a blank conforming to said predetermined outline defined by said normal side surfaces from a piece of said thermoplastic material having parallel and spaced front and rear faces,
(b) placing said blank in a shaped lower jig corresponding to said predetermined outline and having a lower guide member extending contiguously along said side surfaces and lying in a plane parallel to and spaced a predetermined distance from said back surface of said blank,
(c) positioning a shaped upper guide member upon said front face of said blank at a predetermined distance from said side surfaces,
(d) guiding a forming tool along said lower and upper guide members for forming said oblique surface,
(e) and removing material above said oblique surface from the remainder of said blank.

3,402,233
METHODS AND ARRANGEMENTS FOR CUTTING A MASS OF PLASTIC MATERIAL AND BODIES PRODUCED ACCORDING TO SAID METHODS

Berend Vrijma, Vuren aan den Waal, Netherlands, assignor to Fabriek van Bouwmaterialen "Loevestein" N.V., a company of the Netherlands

Filed Jan. 16, 1964, Ser. No. 338,193
Claims priority, application Netherlands, Jan. 16, 1963, 287,814, 287,815
16 Claims. (Cl. 264—157)



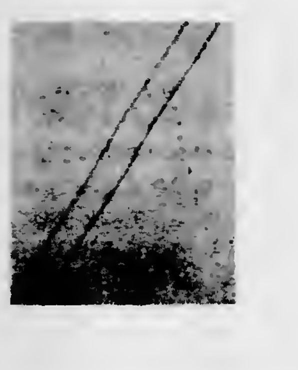
1. In a method of cutting a mass of plastic material such as light weight concrete, the improvement which

comprises, providing a plurality of spaced-apart bars running in the direction of their longitudinal axes, loosely supporting said bars by a plurality of spaced-apart supports arranged transversely to said bars so that said bars lie loosely across said supports, placing said plastic mass to be cut on said bars, providing at least one cutting wire held in tension by upper and lower tightening members, said at least one wire being arranged to pass through a space between a pair of said bars, causing said bars and supported mass on the one hand to move freely relative to said cutting wire on the other hand so that said wire passes longitudinally through said space and cuts through said mass while the mass is continuously maintained in contact along its whole length with said bars during cutting.

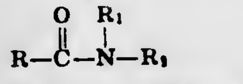
3,402,234
NOVEL COAGULATION PROCESS
Richard D. Borie, Jr., Durham, and Arthur W. Lockwood, Jr., Raleigh, N.C., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed Dec. 22, 1964, Ser. No. 420,455
8 Claims. (Cl. 264—182)

High density acrylic fibers have been formed from polymer solutions of dimethylacetamide, dimethylformamide and dimethylsulfoxide which were spun into coagulants composed of branched chain alkanols having 4 to 5 carbon atoms.

3,402,235
MANUFACTURE OF SHAPED ARTICLES FROM ACRYLONITRILE POLYMERS BY WET SPINNING
William B. Henderson and Gerd R. Baur, Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Apr. 8, 1964, Ser. No. 358,337
12 Claims. (Cl. 264—182)



The wet spinning of acrylonitrile polymer filaments by extruding a solution of polyacrylonitrile into a spin bath which comprises at least 50 percent by weight of an amide or mixtures of amides having the formula

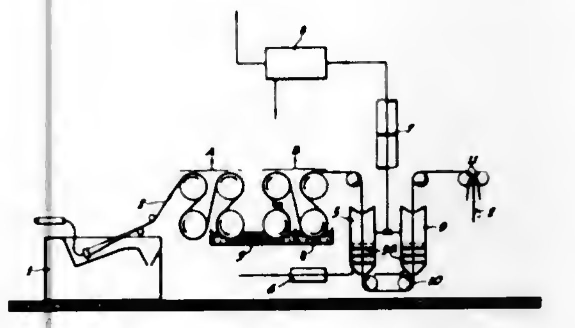


$$R-\overset{\overset{\displaystyle O}{\|}}{C}-\underset{}{\overset{\overset{\displaystyle R_1}{|}}{N}}-R_2$$

wherein R is an aliphatic hydrocarbon radical containing at least 5 carbon atoms and R_1 and R_2 are lower alkyl radicals.

3,402,236
MANUFACTURE AND TREATMENT OF SYNTHETIC FIBRES AND FABRICS CONTAINING THE SAME
Chester Howard Goodwin, Coleraine, County Londonderry, Northern Ireland, assignor to Chemstrand Limited, London, England
Filed Jan. 29, 1964, Ser. No. 340,932
3 Claims. (Cl. 264—210)

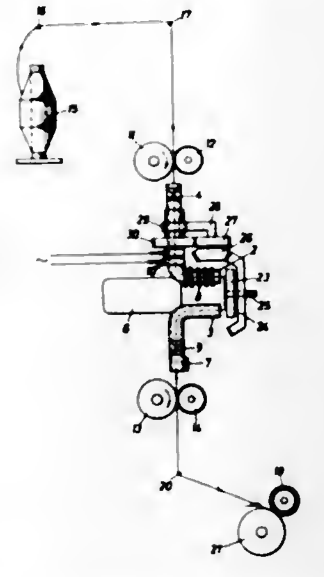
Filaments have been prepared from polymers in solution by wet or dry spinning techniques wherein the partially coagulated filamentary materials are given an orientation stretch in a hot water bath, passed through a finish bath and then continuously dried under tension in a hot fluidized drying zone. From the hot fluidized drying zone the dried filamentary tow is continuously relaxed in a second hot fluidized zone and thereafter passed to a texturizing operation.



3,402,237
CONJUGATED DRYING OIL-ISOBUTYLENE FACTICE POTTING COMPOSITION AND METHOD
Robert D. Holzinger, Homewood, Ill., assignor to The Sherwin-Williams Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Feb. 19, 1963, Ser. No. 259,725
15 Claims. (Cl. 264—272)

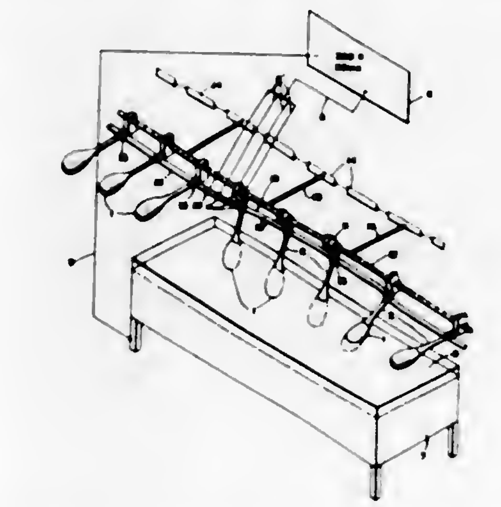
1. The process of in situ production of a non-leaking potting compound in electrical devices containing conductor elements which comprises copolymerizing (a) a drying oil having fatty acid radicals containing a major proportion of conjugated unsaturation with (b) an ethylenically unsaturated isobutylene selected from the group consisting of diisobutylene, triisobutylene, and mixtures thereof, in the presence of (c) a metallic halide addition polymerization catalyst until said drying oil and isobutylenes have copolymerized to form a rubber-like jell about the conductor elements thereof.

3,402,238
METHOD OF CENTRIFUGALLY CRIMPING THERMOPLASTIC TEXTILE FILAMENTS
Frederick Scragg, Mobberley, and Alexander A. Chubb, Macclesfield, England, assignors to Ernest Scragg & Sons Limited
Filed Oct. 7, 1963, Ser. No. 314,351
Claims priority, application Great Britain, Oct. 5, 1962, 37,710/62
11 Claims. (Cl. 264—282)



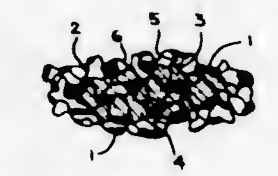
1. A method of processing thermoplastic textile filaments, comprising the steps of heating the filaments, crimping the filaments by urging the heated filaments lengthwise against a surface by revolving a length of the filaments about one end of said length, and cooling the filaments.

3,402,239
PROCESS FOR LATEX DIPPING
Robert D. Brubaker, Cleveland, Ohio, assignor to The Oak Rubber Co., Ravenna, Ohio, a corporation of Ohio
Filed July 24, 1963, Ser. No. 297,295
12 Claims. (Cl. 264—297)



This invention comprises an improved method for producing dipped latex products by applying an electrical charge on a form which is periodically dipped into and withdrawn from a natural rubber or synthetic rubber latex, the presence of the electrical charge on the form at the instant of contact of the form with the latex prevening the formation of blisters in the resultant product. The voltage of the applied electrical charge is in the range of 5–1000 volts, preferably 100–400 volts, and for reasons of safety, the amperage is desirably kept very low, for example in the neighborhood of 50 milliamps per form.

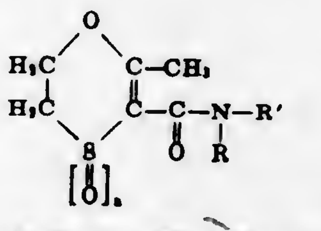
3,402,240
MEDICINAL TABLET AND PROCESS OF MAKING SAME
Russell A. Cain, Hohokus, and Nicholas J. Federici, Paterson, N.J., assignors to Chas. Pfizer & Co., Inc., a corporation of Delaware
Filed June 25, 1957, Ser. No. 667,908
4 Claims. (Cl. 424—22)



1. A medicinal tablet for oral administration comprising a continuum of a non-toxic matrix in skeleton form, said matrix consisting essentially of wax which has a melting point between about 65° and about 90° C. and is insoluble in digestive juice, and said matrix having in the interstices thereof interconnected canals and ducts, the canals and ducts being filled with a drug and leachable filler, the canals and ducts being continuous to the outer surfaces of the tablet so that a portion of said drug and filler extends to and is exposed on an outer surface of said tablet, the matrix resisting disintegration in digestive juices and retaining substantially its original tablet form during the entire leaching out period, said tablet requiring a period of at least about 8 hours for the drug to be substantially completely leached therefrom by the action of said digestive juice.

3,402,241
CONTROL OF PLANT FUNGAL AND BACTERIAL DISEASES WITH 2,3-DIHYDRO-5-CARBOXIMIDO-6-METHYL-1,4-OXATHIIN, MONO- AND DI-OXIDES
Bogislav Von Schmeling, Hamden, New Haven, Conn., and Marshall Kulka, Dalel Singh Thiara, and William A. Harrison, Guelph, Ontario, Canada, assignors to Uniroyal, Inc., a corporation of New Jersey
No Drawing. Filed Nov. 5, 1965, Ser. No. 506,606
10 Claims. (Cl. 424—248)

Control of fungus diseases of plants (e.g., bean rust, post-emergence damping-off, tomato early blight) is effected by application of 2,3 - dihydro - 5 - carboxamido-6-methyl-1,4-oxathiin-4-sulfoxides or -4,4-sulfones of the formula



where R is alkyl, aryl, etc., R′ is hydrogen, alkyl, etc., and *n* is 1 or 2. An example is 2,3-dihydro-5-carboxanilido-6-methyl-1,4-oxathiin-4,4-dioxide.

3,402,242
NON-IRRITANT QUATERNARY AMMONIUM COMPOUND COMPOSITION
David H. E. Laumann, New York, and Alfred F. Lorman, Brooklyn, N.Y., assignors to Parachlor Chemical Corporation, Brooklyn, N.Y., a corporation of New York
No Drawing. Filed July 20, 1964, Ser. No. 383,955
5 Claims. (Cl. 424—148)

4. A method of treating an enclosed space and its contents to kill pathogenic organisms therein which comprises discharging into said enclosed space in nebulized condition a composition consisting of an aqueous solution of a germicidal quaternary ammonium compound which is irritating to nose, throat and eye tissues to which has been added about 1–5% of borax as anti-irritant agent, based on the weight of the solution.

3,402,243
TREATMENT OF LIVING BODIES BY IMMERSION IN SILICONE FLUID
Frank J. Gerow, Houston, Tex., assignor, by mesne assignments, to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
Continuation-in-part of applications, Ser. No. 247,637, Dec. 27, 1962, and Ser. No. 326,518, Nov. 27, 1963. This application July 9, 1965, Ser. No. 473,561
7 Claims. (Cl. 424—184)

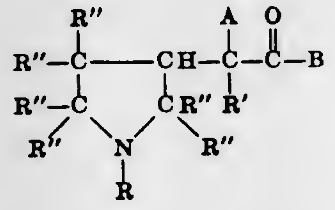
Method of treatment of living bodies including humans, e.g., for burns, by immersion in a bath of liquid silicone. The immersion system includes a tank, pumping means for circulating liquid through the tank producing circulation and turbulence, a filtering device for removing foreign material from the liquid, and a movable supporting device for supporting a patient in the tank.

3,402,244
ANALGESIC AND ANTI-INFLAMMATORY METHODS AND COMPOSITIONS
Carl D. Lunsford, Richmond, Va., assignor to A. H. Robins Company, Incorporated, Richmond, Va., a corporation of Virginia
No Drawing. Original application Dec. 26, 1962, Ser. No. 247,351, now Patent No. 3,247,222, dated Apr. 19, 1966. Divided and this application June 22, 1965, Ser. No. 466,050
22 Claims. (Cl. 424—274)

1. A method of alleviating pain and inflammation in a living animal which comprises administering to said ani-

mal an effective amount of a compound selected from the group consisting of

analgesically active acetamides having the formula:



wherein R is selected from the group consisting of lower-alkyl having up to a maximum of 8 carbon atoms, cycloalkyl having up to a maximum of 9 carbon atoms, and non-toxic monocarbocyclic aralkyl having up to a maximum of 18 carbon atoms,

A is a non-toxic monocarbocyclic aryl having up to a maximum of 15 carbon atoms,

R′ is selected from the group consisting of non-toxic monocarbocyclic aryl having up to a maximum of 15 carbon atoms and non-toxic monocarbocyclic aralkyl having up to a maximum of 18 carbon atoms,

R″ is selected from the group consisting of hydrogen and methyl, a maximum of two R″ being other than hydrogen, and

B is a disubstituted amino radical selected from the group consisting of di-lower-alkyl-amino, di-(hydroxy - lower-alkyl)-amino, lower-alkyl-(hydroxy-lower - alkyl)-amino, basic saturated monocyclic heterocyclic radicals of less than twelve carbon atoms including piperidino, lower-alkyl-piperidino, di - lower-alkyl-piperidino, lower-alkoxy-piperidino, pyrrolidino, lower-alkyl-pyrrolidino, di-lower-alkyl-pyrrolidino, lower-alkoxy-pyrrolidino, morpholino, lower - alkyl-morpholino, lower-alkoxy-morpholino, di-lower-alkyl-morpholino, thiomorpholino, lower-alkyl - thiomorpholino, di-lower-alkyl-thiomorpholino, lower - alkoxy-thiomorpholino, piperazino, lower-alkyl-piperazino, N^4-(lower-alkyl)-C-(lower-alkyl)-piperazino, N-(hydroxy-lower-alkyl)-piperazino, N-(lower-aliphatic acyloxy lower-alkyl)-piperazino, lower - alkoxy-piperazino, N′-lower-alkoxy-lower-alkylpiperazino, and lower-carbalkoxy-piperazino, and

non-toxic pharmacologically acceptable acid-addition salts thereof.

3,402,245

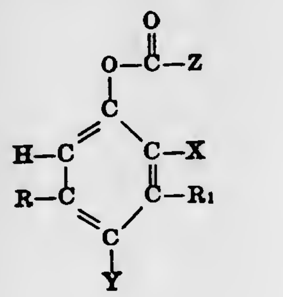
INSECTICIDAL 2-HALO- AND 2,4-DIHALOALKYL-PHENYL CARBAMATE COMPOSITIONS AND METHOD FOR CONTROLLING INSECTS

Alan J. Lemin, Richland Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 129,262, Aug. 4, 1961, which is a division of application Ser. No. 60,679, Oct. 6, 1960, now Patent No. 3,131,215. This application June 12, 1964, Ser. No. 374,839

19 Claims. (Cl. 424—300)

1. Insecticidal composition of matter comprising a dispersible insecticide carrier and as the essential active ingredient a compound represented by the following structural formula:



wherein Z contains a total of not more than 10 carbon atoms and is selected from the group consisting of monoalkylamino, monoalkenylamino, dialkylamino, and dialkenylamino; X is halogen; R is alkyl of from 1 to 4 carbon atoms, inclusive; R_1 is selected from the group consisting of hydrogen and alkyl of from 1 to 4 carbon atoms, inclusive; and Y is selected from the group consisting of halogen and alkyl of from 1 to 4 carbon atoms, inclusive.

3,402,246

m-ALKYLPHENYL N-CHLOROACETYL-N-METHYLCARBAMATES AND THEIR USE AS PESTICIDES

Albert H. Haubein, Newark, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 458,784, May 25, 1965, and Ser. No. 539,734, Apr. 4, 1966. This application Feb. 27, 1967, Ser. No. 618,992

15 Claims. (Cl. 424—300)

The compounds are of the class of substituted-phenyl carbamates, useful as insecticides. A representative compound is m-isopropylphenyl N-chloroacetyl-N-methylcarbamate.

3,402,247

2-CHLORO-5-ISOPROPYLPHENYL N-CHLOROACETYL-N-METHYLCARBAMATES AND THEIR USE AS PESTICIDES

Albert H. Haubein, Newark, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 27, 1967, Ser. No. 619,029

10 Claims. (Cl. 424—300)

The compounds are of the class of substituted-phenyl carbamates, useful as insecticides. A representative compound is 2-chloro-5-isopropylphenyl N-chloroacetyl-N-methylcarbamate.

3,402,248

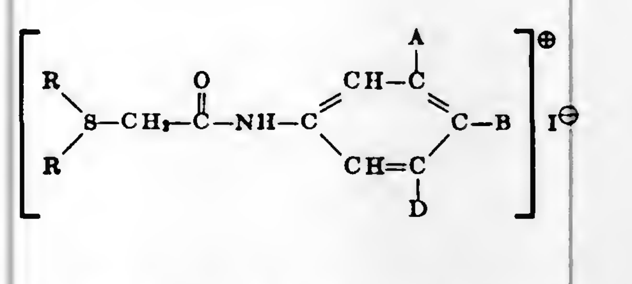
METHOD OF CONTROLLING FUNGI WITH SULFONIUM IODIDES

Kenneth Wayne Ratts, Creve Coeur, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application June 28, 1965, Ser. No 467,675, now Patent No. 3,350,447, dated Oct. 31, 1967. Divided and this application Feb. 23, 1967, Ser. No. 617,828

5 Claims. (Cl. 424—324)

This disclosure relates to the fungicidal usage of sulfonium iodides of the formula



wherein R and R′ are like or unlike lower alkyl (e.g. methyl, ethyl, propyl, butyl, and the various isomeric forms thereof having up to and including four carbon atoms), wherein A and D are hydrogen, methyl, chlorine or bromine, wherein B is hydrogen, methyl, chlorine, bromine or nitro, and wherein at least one of A, B and D is hydrogen.

ELECTRICAL

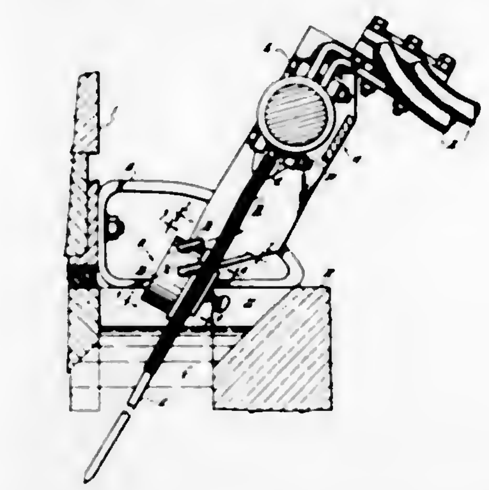
3,402,249

LIQUID COOLING DEVICE FOR GLASS FURNACE ELECTRODE

John F. Blumenfeld, Simsbury, Conn., and John T. Merdian, Pittsburgh, Pa., assignors to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut

Filed Jan. 20, 1967, Ser. No. 610,593

3 Claims. (Cl. 13—6)



A housing defining a chamber for circulating a liquid coolant and which is clamped in engagement with a surface area on a glass electrode.

3,402,250

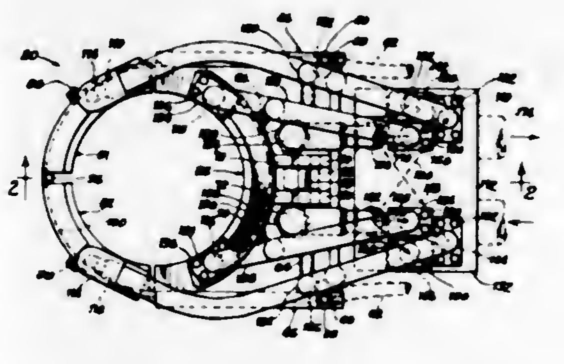
WATER COOLED ELECTRODE HEAD FOR ELECTRIC FURNACE ELECTRODES OR THE LIKE

Alfred H. Turner, Pinson, Ala.

(P.O. Box 1148, Birmingham, Ala.)

Filed Jan. 11, 1967, Ser. No. 608,668

3 Claims. (Cl. 13—16)



An electrode head having three angularly spaced water cooled contact shoes removably mounted on a clamping band and also on a second clamping member; a pair of electrically conductive water tubes connected to each shoe; a distribution header connected to the tubes and having passages therein for conducting the cooling water to and from the tubes.

3,402,251

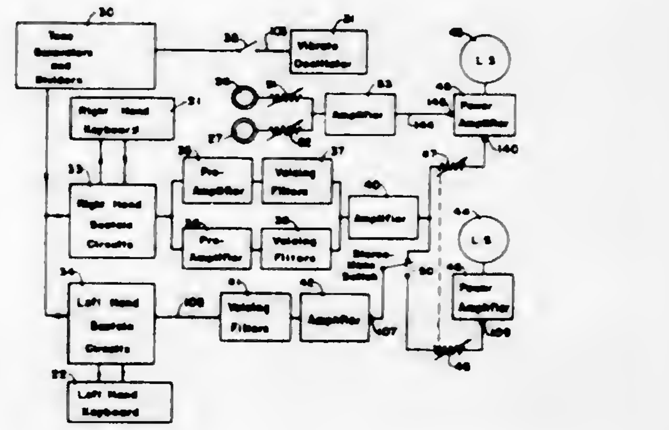
ELECTRICAL ACCORDION-ORGAN

Thomas F. Bright, Bergenfield, N.J., assignor to Bergen Laboratories, Inc., Paterson, N.J., a corporation of New Jersey

Filed June 30, 1965, Ser. No. 468,527

9 Claims. (Cl. 84—1.13)

An accordion-organ combination which can be played as a reed instrument using the bellows, as an electronic organ using electric oscillators, or as a combination of both. The electric circuits include frequency dividers, tonal filters for simulating other instruments, a vibrato



oscillator for producing a low frequency modulation, and a sustain circuit for causing the sound to decay in a natural manner after the key switch has been opened.

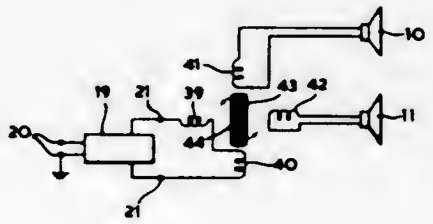
3,402,252

TREMULANT DEVICE FOR ELECTRONIC ORGANS UTILIZING ROTATING-CORE OUTPUT TRANSFORMER

John Szabo, Sheridan Drive, Breslau, Ontario, Canada

Original application Sept. 29, 1964, Ser. No. 400,180. Divided and this application May 17, 1967, Ser. No. 641,107

4 Claims. (Cl. 84—1.25)



A tremulant effect is created by alternately and periodically increasing and decreasing the intensity of the sound reproduced by one loudspeaker, while at the same time alternately and periodically decreasing and increasing the intensity of the sound reproduced by another loudspeaker by supplying the signal to be reproduced to two primary windings of a transformer having a movable core and two secondary windings, the latter each being connected to a different one of the loudspeakers. By movement of the core, the coupling between the two sets of windings increases and decreases and vice versa.

3,402,253

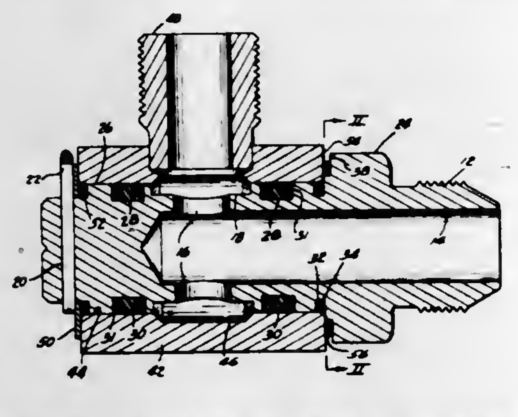
SWIVEL JOINTS

Donald G. McCracken, McHenry, Ill., assignor to Aeroquip Corporation, Jackson, Mich.

Filed Oct. 23, 1965, Ser. No. 504,002

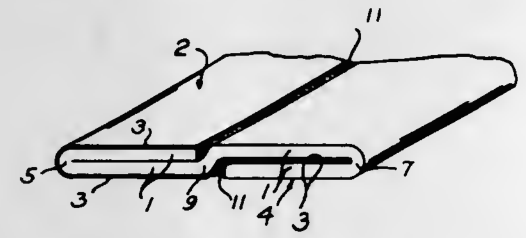
1 Claim. (Cl. 174—86)

A swivel joint for use in a fluid system that requires electrical conductivity between the relatively rotatable parts. An annular wave spring is compressed between two



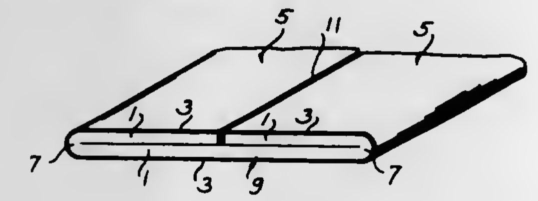
adjacent relatively movable surfaces to provide the conductivity.

3,402,254
COMPOSITE ELECTRICAL BUS BAR
Gregory H. Parker, Winnetka, Ill., and Edwin A. Miller, Attleboro, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 2, 1966, Ser. No. 598,818
4 Claims. (Cl. 174—133)



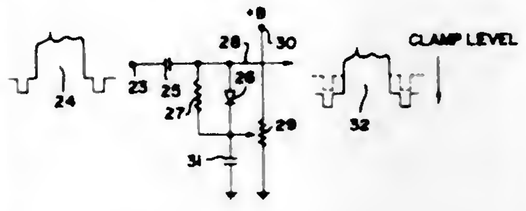
A composite strip of relatively thick aluminum and relatively thin copper metallurgically bonded thereto is longitudinally folded by oppositely bending opposite marginal portions flatwise against intermediate portions so as to place the edges of the strip near one another, with a reverse bend of the intermediate portion formed therebetween. The small spaces between the edges and the reverse bend are infilled with a protective material. The result is a bus bar having rounded longitudinal edges with opposite copper faces along one side and opposite aluminum faces along the other side. In another form one margin only of the composite is marginally bent with its edge substantially spaced from the edge of edge of the unfolded margin. The result is a bus bar having a rounded longitudinal edge along one side which has opposite copper faces and having opposite copper and aluminum faces along the other side.

3,402,255
COMPOSITE ELECTRICAL BUS BAR
Gregory H. Parker, Winnetka, Ill., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 2, 1966, Ser. No. 598,819
7 Claims. (Cl. 174—133)



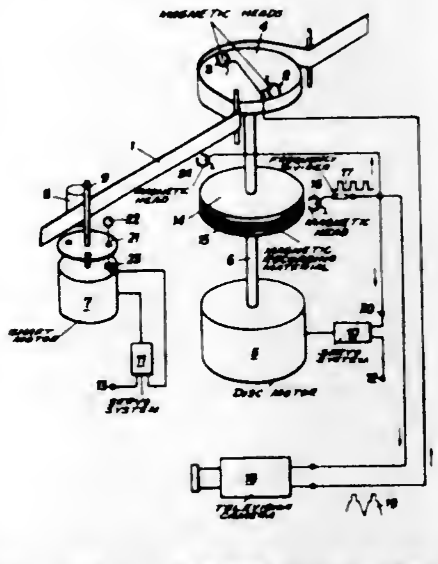
A composite strip of relatively thick aluminum and relatively thin copper metallurgically bonded thereto is marginally folded by bending opposite margins flatwise against one side of the strip so as to place the edges adjacent to one another with the copper outside. The resulting small space between the edges is infilled with a protective material such as solder. The result is a bus bar having an aluminum core faced on both sides and the edges with copper and having rounded longitudinal edges.

3,402,256
FM VIDEO RECORDING WITH WHITE LEVEL CLAMPING
Hisao Kinjo Yokohama, Japan, asssignor to Victor Company of Japan, Limited, Yokohama, Japan, a corporation of Japan
Filed Mar. 31, 1965, Ser. No. 444,227
Claims priority, application Japan, Apr. 1, 1964, 39/18,217
11 Claims. (Cl. 178—6.6)



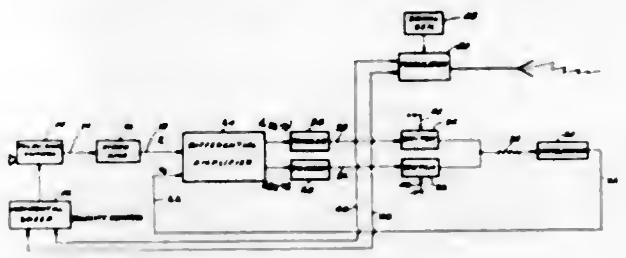
1. In a system for translating a video signal having an amplitude varying between a first limit defined by synchronizing pulses and a second limit corresponding to maximum video information, means responsive to said video signal for producing a frequency modulated carrier signal varying in frequency between two limits respectively corresponding to said first and second amplitude limits, and level fixing means for fixing the level of said video signal during intervals at which said video signal is at said second limit to thereby fix the frequency of said carrier signal at a certain value during said intervals.

3,402,257
MAGNETIC RECORDING OF TELEVISION SIGNALS WITH PRE-RECORDED SYNC SIGNALS
Herman Kasper Adriaan de Lange, Klosterneuburg, Austria, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 18, 1965, Ser. No. 480,684
Claims priority, application Austria, Aug. 19, 1964, A 7,181/64
6 Claims. (Cl. 178—6.6)



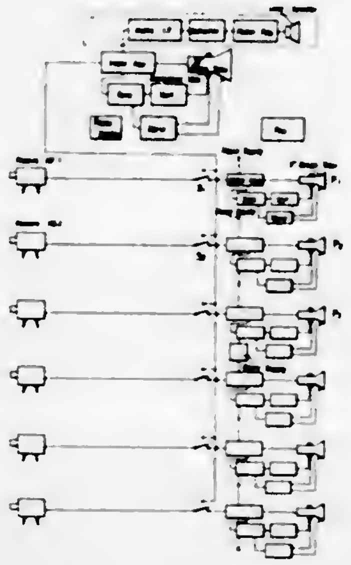
The invention is an apparatus for producing and recording a television image and synchronization signal on magnetic tape. Pre-recorded synchronization pulses are scanned from a magnetizable layer on a rotatable member, and are used through a servo system to regulate the speed of a motor which drives the rotatable memory and the rotation recording heads. The scanned synchronization pulses are simultaneously recorded on the tape and used to synchronize a free-running television camera.

3,402,258
VARIABLE VELOCITY SCANNING FOR TV SYSTEMS
Theodore Lerner, Williamsville, N.Y., assignor to Bell Aerospace Corporation, Wheatfield, N.Y.
Filed Sept. 16, 1965, Ser. No. 487,867
5 Claims. (Cl. 178—6.8)



The camera of a television system is caused to vary the speed of its horizontal sweep in response to the output of a pulse generator. The pulse generator is controlled to have an output whenever the video output of the camera differs by more than a predetermined amount from the output of a variable reference voltage generator which is also controlled by the pulse generator to vary the output of the reference voltage generator toward the video output.

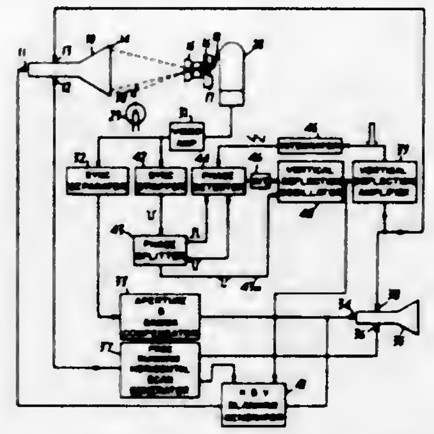
3,402,259
TELEVISION MONITORING SYSTEM
Yoshiharu Takahashi, 180 Tairamachi, Meguro-ku, Tokyo, Japan
Filed Oct. 6, 1964, Ser. No. 401,932
Claims priority, application Japan, Sept. 15, 1964, 39/52,759
5 Claims. (Cl. 178—7.1)



A television monitoring system is disclosed as including a multi-channel master receiver including a relatively large screen or picture tube, and a plurality of single-channel slave receivers each including a relatively small picture tube or screen, the slave receivers and the master receiver being grouped for ready visual observation, by being included in a common console. The master receiver is arranged to transduce both the video and the audio portion of a signal, whereas each slave receiver is preferably designed to transduce only the video portion of a signal.

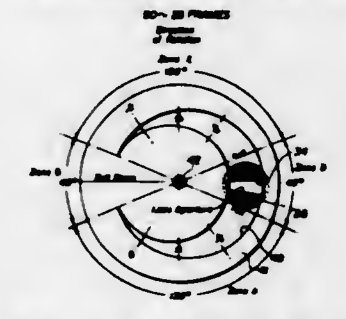
Each slave receiver is connected, through a normally closed switch, to a respective source of television signals, such as an antenna or a television camera. Selector means are provided in association with the master receiver and selectively operable to operate a selected switch means to disconnect the associated television signal source from the associated slave receiver and connect the selected signal source to the master receiver. Respective metering means may be associated with each slave receiver.

3,402,260
TELEVISION FILM SCANNING SYNCHRONIZING SYSTEM
Peter C. Goldmark, Abraham A. Goldberg, and Saul M. Decker, Stamford, Conn., assignors to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Dec. 21, 1964, Ser. No. 419,763
7 Claims. (Cl. 178—7.2)



A system for synchronizing the scanning of a film strip containing synchronizing indicia to maintain in synchronization the film scanner, the film and a kinescope for reproducing the information recorded on the film, in which the scanner scans the film with a raster scan and a light source directs a beam in the path of the synchronizing indicia, both the raster and the light beam being directed to the photosensitive means through a common lens. The vertical deflection signals for the kinescope and the scanner are derived from a vertical deflection oscillator whose frequency is variable in accordance with a control signal. Synchronizing signals corresponding to movement of the synchronizing indicia through the path of the light beam are separated from the video signal and directed to a phase splitter producing synchronizing signals of opposite polarity. Those synchronizing signals are compared in a phase detector with a sawtooth wave derived from the vertical deflection circuit to develop the control signal, which is delayed, or integrated, prior to application to the vertical deflection oscillator.

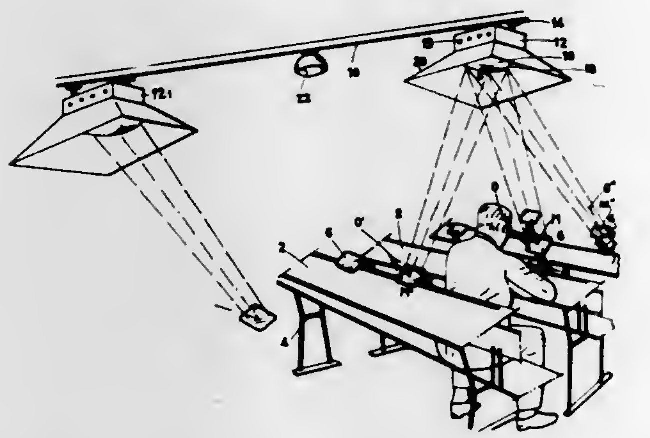
3,402,261
VIDEO RECORDING WITH LAP-DISSOLVE FILMING OF INTERLACED TELEVISION FIELDS
William A. Palmer, Menlo Park, Calif., assignor to W. A. Palmer Films, Inc., San Francisco, Calif., a corporation of California
Filed Dec. 11, 1964, Ser. No. 417,549
12 Claims. (Cl. 178—7.4)



Video recording camera having an in-front-of-the-lens shutter with at least one crescent-shaped opening to provide a lap-dissolve of an interlaced video image extending over a substantial angle.

3,402,262
MULTIPLE VIEWING SYSTEM FOR EDUCATIONAL TELEVISION AND THE LIKE

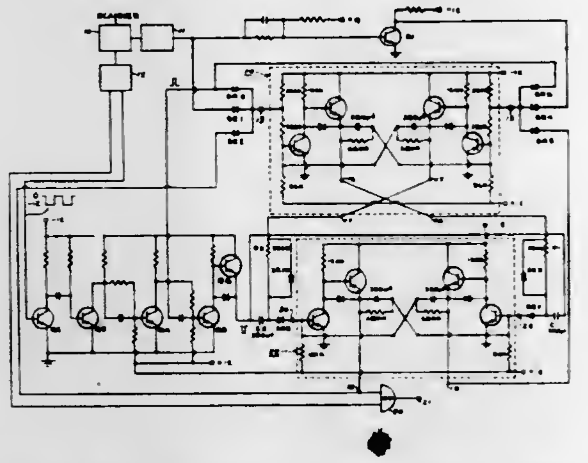
Mario M. Sollima, Colombes, Hauts-de-Seine, France, assignor to Compagnie Francaise Thomson-Houston, Paris, France, a corporation of France
Filed Feb. 19, 1965, Ser. No. 433,999
Claims priority, application France, Feb. 21, 1964, 964,693
13 Claims. (Cl. 178—7.85)



A television receiver (**12**, FIGS. 1, 2) or a motion picture projector (**20'**, FIG. 4) is positioned overhead with its screen (**18**) or (or lens) directed vertically downward and surrounded by a light-shield (**20**). A plurality of mirrors (**6**) are, each, mounted in front of seated viewers and adjustable to reflect the vertical picture beam from the TV screen, or projector, into each individual viewer's eyes. (See FIG. 2.)

3,402,263
FACSIMILE DECISION CIRCUIT

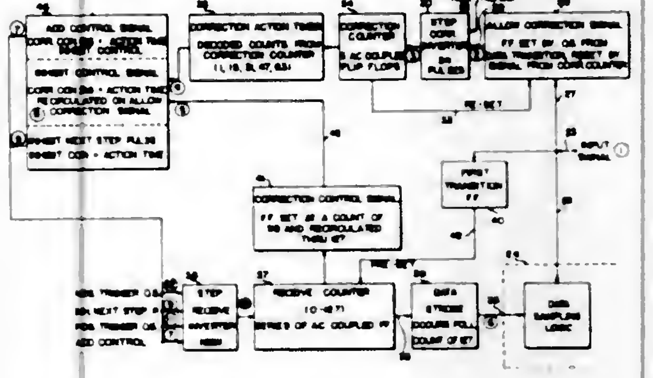
Stephen E. Townsend, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 2, 1964, Ser. No. 415,318
4 Claims. (Cl. 178—69.5)



A circuit for converting a video signal with random transitions, i.e., changes from black to white and vice-versa, into a signal in which transitions are synchronized to a clock signal. Circuitry is utilized to decide what binary state should be assigned to each bit of the clocked signal on the basis of the random transition video signal which can often be expected to be in both states sometime during a clock period. Bistable circuitry performs the rule that if the facsimile signal was transmitted as black during the previous clock interval, the next interval will be transmitted as white if the input video siganl is white at any time during this interval, and vice-versa.

3,402,264
DIGITAL SYNCHRONIZER

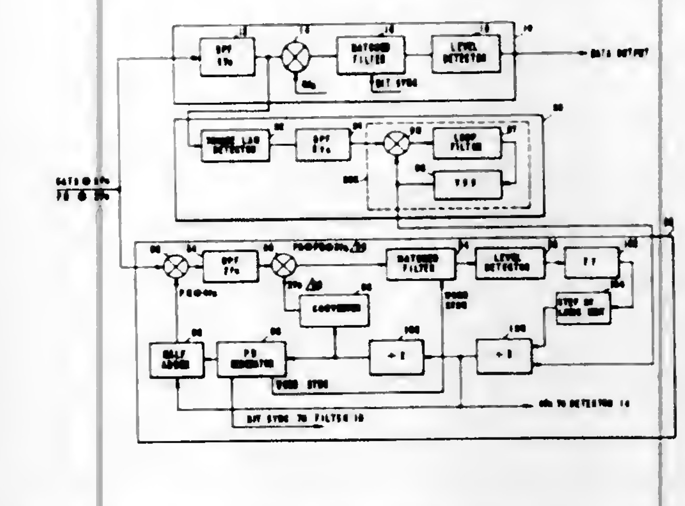
David T. Ellis, Holliston, and William G. Daly, Lexington, Mass., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed May 22, 1964, Ser. No. 369,540
9 Claims. (Cl. 178—69.5)



A data strobe pulse generator generates strobe pulses spaced by the binary data bit interval by counting a predetermined number of high frequency pulses corresponding to the binary bit interval. A set of possible pulse correction times is generated which occupies a first portion of the binary bit interval after each data transition. The predetermined number count is used to produce an asymmetrical control wave which separates the possible pulse correction times into two equal parts, plus or minus one pulse, when the data strobe is located in the middle of the data bit interval. By using the correction control signal to add counts corresponding to the possible pulse correction times during the first part of the correction control signal and subtracting counts during the later part, a correction in the data strobe pulse position corresponding to the net count correction is made and the magnitude of the correction is proportional to the time error of the data strobe relative to the center of the data bit interval.

3,402,265
PSEUDONOISE (PN) SYNCHRONIZATION OF DATA SYSTEM WITH DERIVATION OF CLOCK FREQUENCY FROM RECEIVED SIGNAL FOR CLOCKING RECEIVER PN GENERATOR

Lucien A. Couvillon, Jr., Los Angeles, Calif., assignor to California Institute Research Foundation, Pasadena, Calif., a corporation of California
Filed July 12, 1965, Ser. No. 471,154
17 Claims. (Cl. 178—69.5)



1. In a digital data communication system a detection stage for receiving a first clock signal modulated by binary data and a second clock signal modulated by a first cyclic code from a first cyclic code generator to detect said binary data comprising:

clock signal reconstructing means responsive to said modulated first clock signal for providing a third unmodulated clock signal which is related to said first and second clock signals;

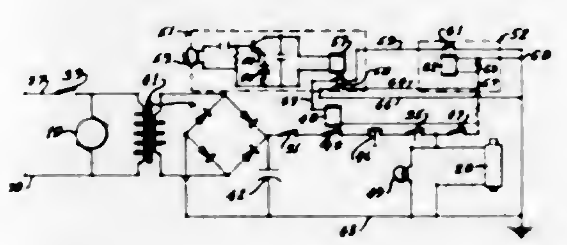
a second cyclic code generator;

first means responsive to said third unmodulated clock signal for causing the second cyclic code generator to provide a second cyclic code; and

second means responsive to said first means and said second cyclic code for synchronizing said first and second cyclic codes by autocorrelating said second clock signal modulated by said first cyclic code.

3,402,266
PROCESS AND APPARATUS FOR CUEING ORATORS

Martin P. Winther, 422 Lake Shore Drive, Clermont, Fla. 32711
Filed Apr. 29, 1965, Ser. No. 451,872
4 Claims. (Cl. 179—100.1)



Process and apparatus for cueing speakers through the use of an audible signal delivered to the speaker, the speaker having previously transcribed the speech to be given by dictating groups of words or phrases each followed by silent portion on the recording, which silent portion is about 1.2 to 1.5 times longer than the playback time for the words immediately preceding each silent portion. The apparatus includes means for producing such recordings to be used in cueing speakers and which embodies a timer for energizing and deenergizing the signal means, telling the speaker when to speak and when to be silent, and for how long, respectively.

3,402,267
AUTOMATIC WINDUP FIXTURE FOR TELEPHONE DIAL

Glenn E. Clarridge, Santa Cruz, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 1, 1965, Ser. No. 510,795
6 Claims. (Cl. 179—175.2)

1. An automatic windup fixture for a telephone dial having electrical terminals on one side and a finger wheel on the other, comprising

a holder for releasably supporting the dial in a test position,

a plurality of terminal members engageable with the electrical terminals, respectively, of the dial when the dial is in the test position,

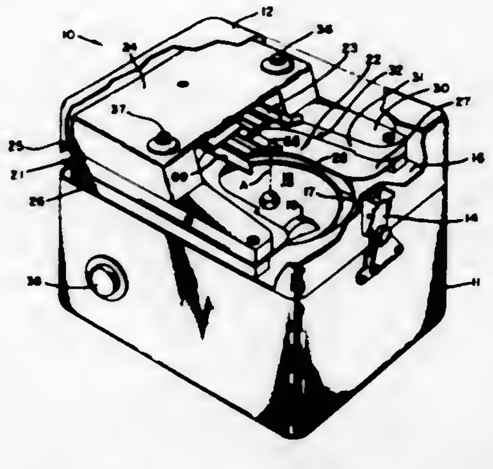
a dial wheel spin mechanism adjacent to said holder comprising

a crank supported for rotation about an axis and having an arm movable between an operative position and an inoperative position,

a motor operatively connected to said crank for rotating same about said axis,

means for initiating energization of said motor,

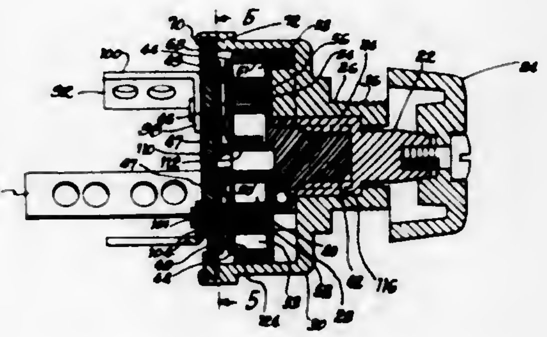
a motor control switch responsive to angular displacement of said crank about said axis to limit energization of the motor to one revolution of said crank about said axis, and



means for actuating movement of said crank between the operative and inoperative positions at predetermined angular displacements thereof about said axis whereby to wind and release the wheel of the dial when in the test position.

3,402,268
ELECTRICAL SWITCH WITH ROTOR BEARING FORMED INTEGRALLY FROM CONTACT PLATE

William N. Schink, Crystal Lake, Ill., assignor to Indak Manufacturing Corp., Northbrook, Ill., a corporation of Illinois
Original application July 2, 1964, Ser. No. 379,894, now Patent No. 3,329,790, dated July 4, 1967. Divided and this application Feb. 9, 1967, Ser. No. 614,998
4 Claims. (Cl. 200—11)

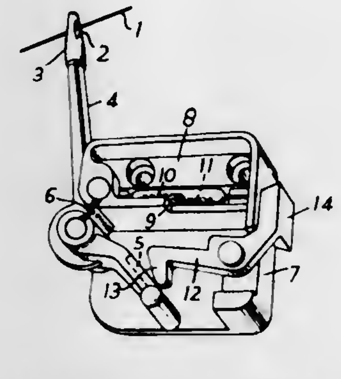


The rotor of an electrical switch is supported at one end by a bearing comprising a tubular eyelet-shaped projection formed integrally with a fixed contact plate. A plurality of contact plates are mounted on an insulating board formed with a plurality of semi-perforated segments projecting forwardly between the plates, to locate the plates, and to provide for smooth movement of the contactor between the contact plates.

3,402,269
APPARATUS FOR THE DETECTION OF BROKEN YARN AND THE LIKE ON TEXTILE MACHINES

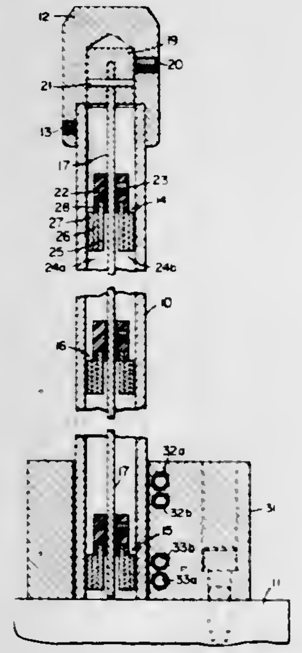
John Edward Reginald Gregory, Wimborne, Dorset, England, assignor to Flight Refuelling Limited, Wimborne, Dorset, England
Filed May 2, 1966, Ser. No. 546,765
Claims priority, application Great Britain, Oct. 6, 1965, 42,443/65; Feb. 25, 1966, 8,480/66
5 Claims. (Cl. 200—61.13)

An apparatus for detecting breaks in continuous textile material including an arm movably suspended from a flexible membrane. The textile material passes through an eyelet in one end of the arm biasing it to a first position. When the material breaks, the arm swings on the membrane to a second position wherein a magnet mounted on the arm effects activation of switch contacts, the operation of which will cause an appropriate alarm.



3,402,270
ELECTRICAL POSITIONING APPARATUS

Francis M. Lathrop II, Houston, Tex., assignor, by mesne assignments, to M.J. Valve Company, Houston, Tex., a corporation of Delaware
Continuation-in-part of application Ser. No. 483,132, Aug. 27, 1965. This application July 11, 1966, Ser. No. 564,150
4 Claims. (Cl. 200—82)

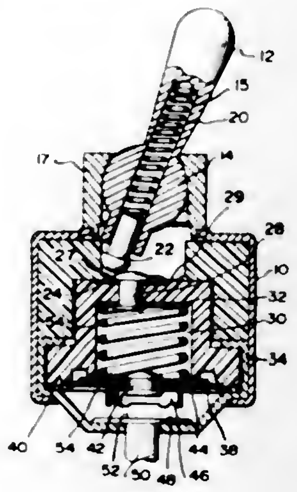


Apparatus responsive to the positioning of a member (e.g., the gate of a valve) being operated by a hydraulic cylinder-piston assembly. A tube of non-magnetic material is attached to the piston. A magnetic device is located within the tube and forms a magnetic field polarized transversely of the axis of the tube. An electric switch of the magnetic reed type is mounted exterior of the tube and is operated by the magnetic flux field.

3,402,271
COMBINATION TOGGLE AND PRESSURE SWITCH

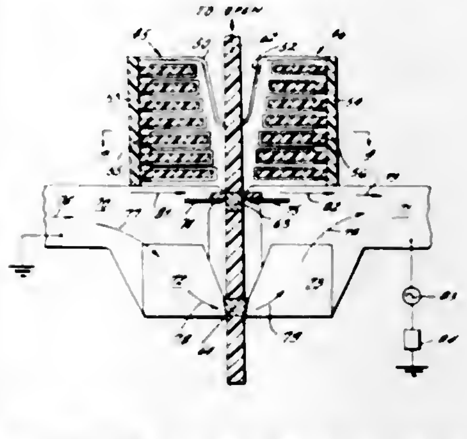
John E. Maas, Valparaiso, Ind., assignor to McGill Manufacturing Company, Inc., Valparaiso, Ind., a corporation of Indiana
Filed Sept. 28, 1966, Ser. No. 582,576
5 Claims. (Cl. 200—83)

1. A combination toggle and pressure switch including in combination, a switch casing, a first conducting member supported by said casing, actuating means for the toggle switch mounted within said casing and being movable to first and second positions, said actuating means being electrically coupled to said first conducting member in said first position, a common terminal extending into and being supported within said casing, means for electrically coupling said common terminal to said actuating means with said actuating means in said first position to complete the connection between said terminal and said first conducting member, a housing for the pressure switch being supported within said switch casing and having a chamber therein open at one end, a diaphragm, means for securing said diaphragm across the open end of said chamber, means for applying a pressure to said diaphragm, contact means supported by and movable with said diaphragm, a second conducting member supported by said switch casing, means for electrically coupling said terminal to said contact means, spring means within said housing chamber, said spring means acting to bias said diaphragm and contact means to a first position with the pressure on said diaphragm being less than said spring pressure, said contact means being moved to a second position with the pressure being greater than said spring pressure, said contact means being coupled to said second conducting member in one of said first and second positions of said contact means.



3,402,272
DUAL PATH CURRENT LIMITING CIRCUIT BREAKER

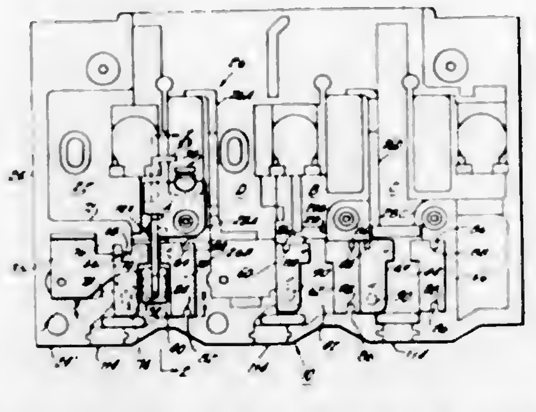
Otto Jensen, Malvern, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 22, 1965, Ser. No. 474,006
4 Claims. (Cl. 200—144)



A current limiting circuit breaker having a bridging main contact and a bridging arc contact carried in a movable insulation barrier. The main contact is disposed below the plane of main current flow, while the arcing contact is parallel to the plane of main current flow so high rate-of-rise-of-current tends to flow through the arcing contacts during fault conditions due to the inductance in the main contact path. A pair of arcing chambers are disposed on either side of the baffle and contain plates which have iron conductors connected in series by arcs extending between the plates in order to increase the resistance of the arc current path under interrupting conditions and to limit the current being interrupted.

3,402,273
ARC CHAMBER FOR CIRCUIT BREAKERS

Russell S. Davis, Detroit, Mich., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 1, 1965, Ser. No. 510,842
9 Claims. (Cl. 200—144)



1. In a circuit breaker having a base, a stationary contact mounted on said base, a movable contact movable in a predetermined plane of motion in and out of engagement with said stationary contact to interrupt the flow of current. therethrough and a cover removably secured to said base, the improvement comprising an arc chamber closely surrounding said stationary and movable contacts, said arc chamber including:

a pair of insulating members each provided with a groove which cooperates with an integral rib on said base to removably align said members on said base on opposite sides of said contacts, each of said insulating members having interior surfaces extending parallel to the plane motion of said movable contact, said interior surfaces being spaced from one another by a distance which is just slightly larger than the width of said movable contact;

a first insulating sheet disposed between said insulating members and said base, said first insulating sheet having an aperture through which a movable-contact-engaging portion of said stationary contact may pass into said arc chamber; said first insulating sheet being securely held in place by said insulating members when said cover is placed on said base; and

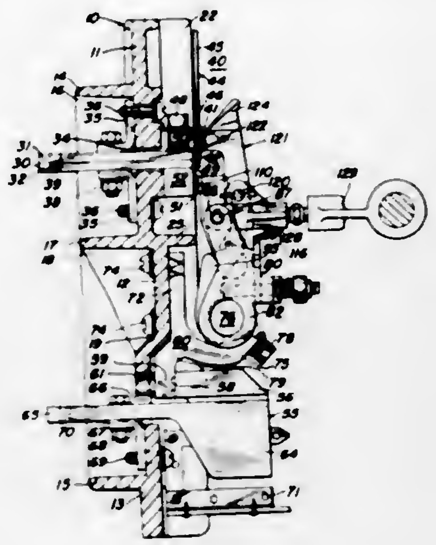
a second insulating sheet secured to said movable contact and movable therewith, said second insulating sheet having an aperture through which a stationary-contact-engaging portion of said movable contact may pass into said arc chamber;

said interior surface of said insulating members and said first and second insulating sheets cooperating to define a small arc chamber which closely surrounds said stationary and movable contacts to aid arc extinguishment when said stationary-contact-engaging portion of said movable contact is disengaged from said movable-contact-engaging portion of said stationary contact.

3,402,274
CONTACT STRUCTURE FOR A POWER CIRCUIT BREAKER

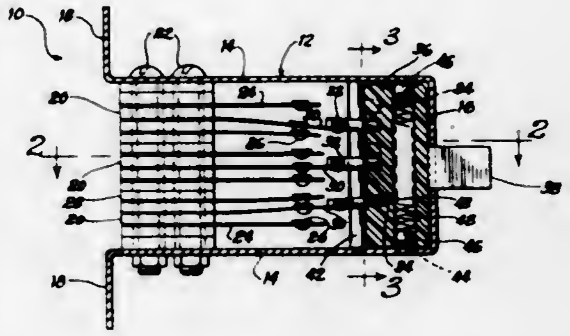
Fred Bould, Pittsburgh, Pa., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Oct. 1, 1965, Ser. No. 491,949
7 Claims. (Cl. 200—146)

1. A contact structure for a low-voltage power circuit breaker, said contact structure comprising a stationary arcing contact, a stationary main contact means, a main shaft, a frame pivoted on said shaft and carrying a main contact pivot pin, a plurality of main contact arms pivoted on said main contact pivot pin in axially spaced relation therealong, an operating member pivoted on said main contact pivot pin and carrying an arcing contact pivot pin, a movable arcing contact arm pivoted on said arcing contact pivot pin, a plurality of contact pressure fingers pivoted on said main shaft in axially spaced relation therealong, a plurality of springs operatively interposed between said fingers and said frame and biasing said fingers with respect to said frame, said arcing contact arm having a depending portion engaging at least one of said fingers, said main contact arms having depending portions engaging others of said fingers, respectively, said springs urging said fingers about said main shaft in one direction thereby to urge said contact arms in the opposite direction about their associated pivot pins, and said operating member being movable to rotate said frame about said main shaft thereby to move said main contact arms into engagement with said stationary main contact means and said arcing contact arm into engagement with said stationary arcing contact, said engagement of said contact arms urging said depending portions against their associated fingers thereby to further compress said springs.



3,402,275
CAM ACTUATED MULTIPLE SWITCH

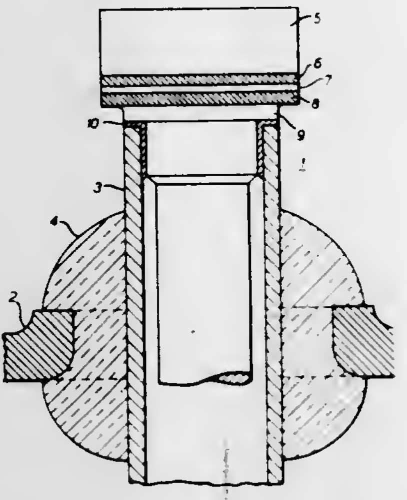
Matthew C. Podgorski, Wood Dale, and Guy M. Farrell, Elmhurst, Ill., assignors to F & F Enterprises, Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 31, 1966, Ser. No. 590,644
14 Claims. (Cl. 200—153)



A switch construction including a plurality of contact elements forming separate switches. Cam followers are associated with individual switch actuating means, and cam means defining cam tracks are engaged by the cam followers whereby relative movement of the cam means and cam followers will result in opening and closing of separate switches. The cam tracks are irregular and differ from each other whereby a plurality of different combinations of switch conditions can be achieved depending upon the position of the cam means relative to the cam followers.

3,402,276
HERMETICALLY SEALED SWITCHES

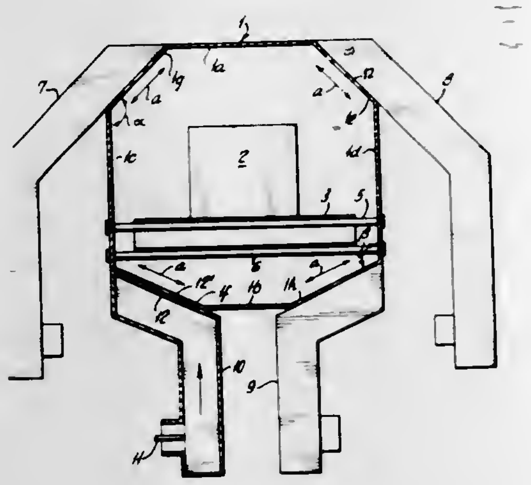
William Joseph Scott, Rugby, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed June 15, 1967, Ser. No. 646,294
2 Claims. (Cl. 200—166)



Contact structures for use in switching devices of the kind having at least one pair of co-acting contacts in an hermetically sealed envelope comprise a contact head or tip of one metal mounted on one end of a shank of a different metal with a thin plate of a third metal interposed between the head or tip and the shank to serve as a barrier to inhibit alloying between the two metals of which the head or tip and the shank are constituted.

3,402,277
MICROWAVE TREATING DEVICE

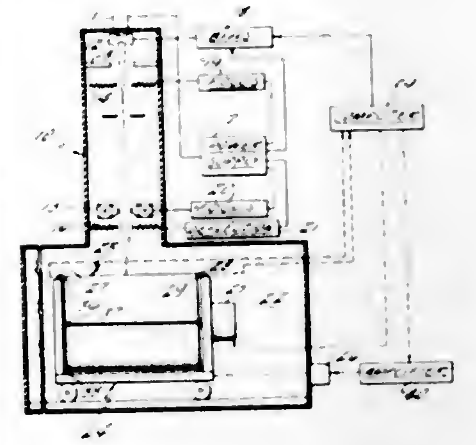
Paul Curt Müller, Wettingen, Switzerland, assignor to Patelhold Patentverwertungs- & Elektro-Holding A.G., Glarus, Switzerland
Filed Oct. 6, 1966, Ser. No. 584,913
Claims priority, application Switzerland, Oct. 25, 1965, 14,697/65
6 Claims. (Cl. 219—10.55)



1. Microwave treatment tunnel with an endless conveyor belt which is guided through an electrically conductive tunnel member having two horizontal and two vertical inner bounding planes, characterized in that these bounding planes are arranged in pairs at a distance from one another of at least double the length of the microwaves in free space, in that the tunnel member (1) comprises four further oblique internal bounding planes which are not parallel to one another, each linking one horizontal and one vertical bounding plane and being at an included angle of 20–70° to the vertical, and in that the microwave feed takes place across a plurality of cross-sections of the tunnel member, in such a way that the mean direction of the density of energy flow fed in is different at least for neighbouring feed cross-sections.

3,402,278
ELECTRON BEAM CUTTING OF PRINTING PLATES

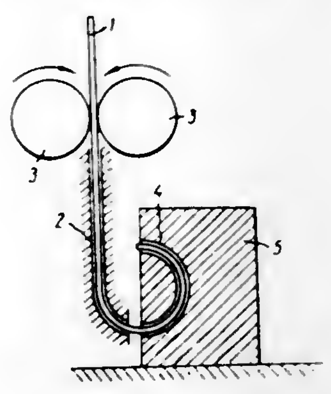
Anthony F. Dernbach, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed June 14, 1965, Ser. No. 463,481
1 Claim. (Cl. 219—69)



This invention relates to a device for producing printing plates by means of a beam of charged particles such as an electron beam. The invention employs a drum on which a plurality of printing plates are mounted for rotation and translation under the beam of charged particles so that the beam scans the printing surface of the plates. A computer is tied into the beam generator and controls the removal of material from the plates by the beam to form printing characters on the plates in response to several detectors sensing the motion of the plates under the scanning beam.

3,402,279
METHOD OF ELECTROEROSION MACHINING OF HOLES WITH A CURVILINEAR AXIS

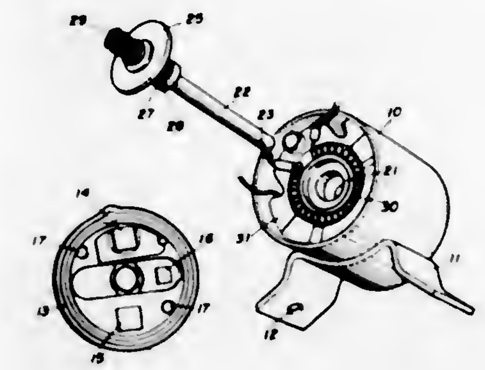
Ivan Ivanovich Sazhin, Fryazino, ul. Tsentralnaya 30, kv. 2, Oblast Schelkovsky Raion, Moscow, U.S.S.R.
Filed Aug. 17, 1965, Ser. No. 480,292
1 Claim. (Cl. 219—69)



The electroerosion machining of holes having a curvilinear axis by an electrode tool whose cross section and curvilinearity correspond to the cross section and curvilinearity of the hole to be machined. The required curvilinearity is imparted to the tool directly during the machining by passing the tool through a corresponding bending and guiding unit or jig.

3,402,280
STARTER SOLENOID WITH ELECTRICAL HEATING MEANS

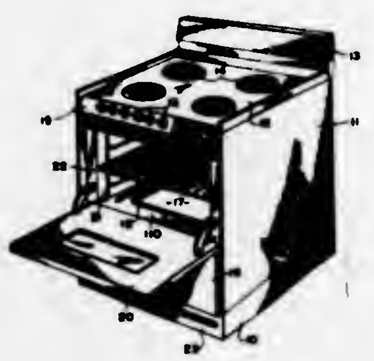
Thomas Howard Grigg, 39 Elizabeth St. S., Brampton, Ontario, Canada
Filed May 7, 1965, Ser. No. 453,981
5 Claims. (Cl. 219—209)



A solenoid switch for an automobile starter motor is connected in a control circuit. The solenoid switch comprises a housing, a core, two coils (pull-in and hold-in) and fixed and movable contacts. The switch further includes an electric resistance heater located in immediate heat exchange relation with the contacts. A ceramic plate disposed in the housing separates the heater from the coils. The heater is connected in the control circuit and is energized simultaneously with the operation of the solenoid to prevent ice accumulation on the contacts.

3,402,281
RANGE CONSTRUCTION

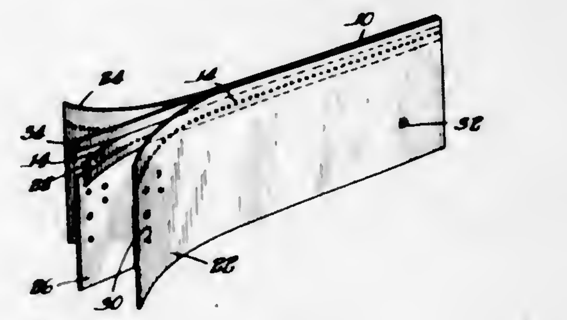
Arthur W. Vonderhaar, Mansfield, Ohio, assignor to The Tappan Company, Mansfield, Ohio, a corporation of Ohio
Filed Oct. 8, 1965, Ser. No. 494,037
12 Claims. (Cl. 219—408)



A free-standing range having a platform base supporting an oven liner and outwardly spaced exterior panels, and a cook top which interconnects the back exterior panel and the top front of the liner. Insulation is wrapped about the liner and compressed against the same by wire netting to leave air circulating passages at the sides having bottom inlets and outlets to the interior of the cook top. Controls are at the front of the top and cooled by ducting including a flue at the back of the oven and a conduit extending to the controls, with wiring for the latter enclosed by the ducting.

3,402,282
INFORMATION STORAGE CARD

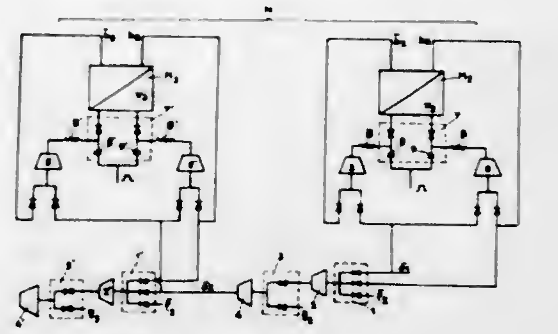
Ernest A. Dahl, Jr., 729 Greenwood Ave., Wilmette, Ill. 60091
Filed June 14, 1963, Ser. No. 288,048
11 Claims. (Cl. 235—61.12)



1. An information storage card comprising: a first outer layer of paper material having a substantially constant thickness; a second outer layer of paper material having a substantially constant thickness, said first and second outer layers extending in a substantially parallel spaced apart relationship to define opposite sides of the information storage card; a center layer positioned intermediate said first and second outer layers and connected to said first and second outer layers, said center layer including a relatively large filler section formed of a paper material and an elongated reinforcing section formed of a material which is relatively tough compared to said first and second outer layers and said filler section, said filler section and said reinforcing section having substantially the same thickness to form a center layer of substantially uniform thickness; and a line of aperture means extending through said first and second outer layers and said reinforcing section for cooperation with sprocket drive means for moving the information storage card, said reinforcing section precluding elongation of said aperture means due to repetitive engagement with the sprocket drive means.

3,402,283
CONDITIONAL JUMP SEQUENCING ARRANGEMENT FOR A COUNTER REGISTER OF A COMPUTER

Philippe Sabut d'Izarn, Paris, France, assignor to Societe de Constructions Electromecaniques Jeumont-Schneider, Paris, France, a company of France
Filed Jan. 19, 1966, Ser. No. 521,598
Claims priority, application France, Jan. 21, 1965, 2,787
1 Claim. (Cl. 235—92)



1. A conditional jump sequencing arrangement for a transistorised counter register for a computer having *n* stages each comprising a trigger controlled by a circuit having two inputs, when the said inputs are in different logical conditions, the two inputs being constituted, one

by an AND circuit securing the content of the trigger under consideration and the carry from the preceding stage, the other by an AND circuit receiving the complement of the trigger in question and the carry from the preceding stage, the arrangement being characterised by the fact that it comprises for a given stage, a first AND circuit two inputs of which receive, one the carry from the preceding stage, the other the content of the trigger in question and a third input which is constituted by a command not to block the carry signals, the first AND circuit being connected through a first NOT circuit to a second AND circuit with a command not to pass the carry signals, the output of this second AND circuit being connected to a second NOT circuit; the output of which constitutes the carry signal of the stage in question.

3,402,284

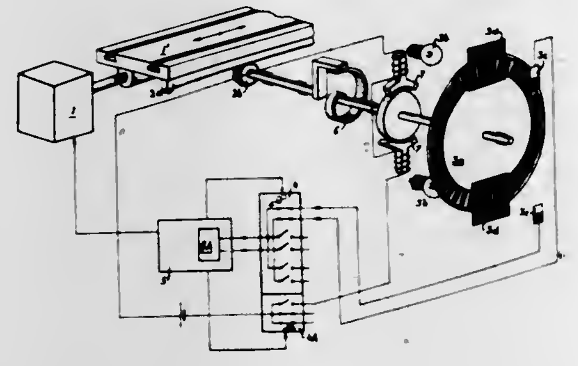
DEVICE FOR CONTINUOUS DIGITAL INCREMENTAL CONTROL OF THE RELATIVE POSITION OF MOVING PARTS

Bohuslav Loun, Miloslav Martínek, Josef Šob, and Ivan Zelinka, Prague, Czechoslovakia, assignors to Výzkumný ústav matematických strojů, Prague, Czechoslovakia

Filed June 30, 1964, Ser. No. 379,315

Claims priority, application Czechoslovakia, July 26, 1963, 4,303/63

8 Claims. (Cl. 235—151.11)



An energy storage device is coupled to and responsive to a moving machine part. A brake is coupled between the storage device and the input of the signal transmitter of a control system. The brake includes a brake control connected to and controlled by the control of the control system for selectively energizing the brake to block the transfer of energy from the energy storage device to the signal transmitter so that movement of the machine part causes a corresponding accumulation of energy in the energy storage device and deenergizing the brake to permit the transfer of energy from the energy storage device to the signal transmitter so that movement of the machine part causes a corresponding movement of the signal transmitter and the transfer to the signal transmitter of energy accumulated in the energy storage device.

3,402,285

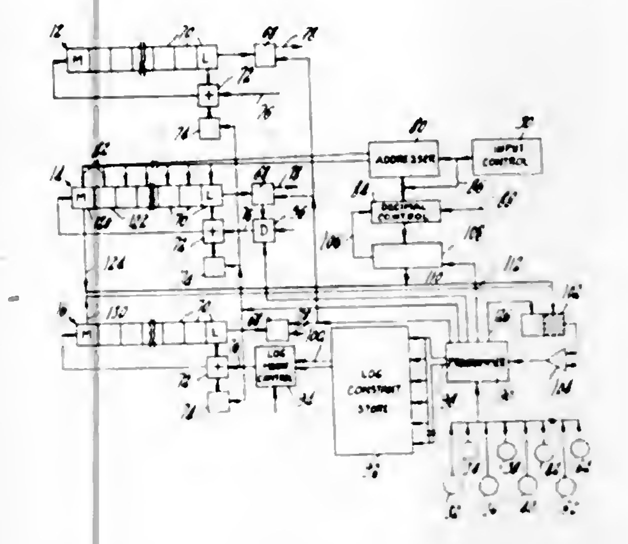
CALCULATING APPARATUS

An Wang, Lincoln, Mass., assignor to Wang Laboratories, Tewksbury, Mass., a corporation of Massachusetts

Filed Sept. 22, 1964, Ser. No. 398,254

24 Claims. (Cl. 235—160)

A calculator includes an input register and a log register, each having adder circuitry coupled to it. Ten manual control buttons are provided for entering numerical values 0 through 9 into the input register. The calculator also includes a store of logarithmic values of the following constants: 10, 2, 0.9, 1.01, 0.999 and 1.0001 and a sequencer. Operation of the sequencer is initiated by a single manual log control button. The sequencer then automatically controls, in a series of steps, the selection of constants and the operation of the input register and log register adders to generate in the log register a logarithmic value of the quantity stored in the input register.



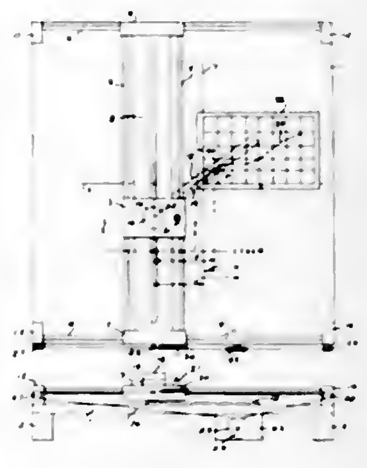
3,402,286

APPARATUS FOR PLOTTING THE DERIVATIVE OF A FUNCTION AS A FUNCTION OF THE INDEPENDENT VARIABLE

Robert A. Mather, 37 Dawn Drive, Rome, N.Y. 13440

Filed Sept. 9, 1965, Ser. No. 486,246

3 Claims. (Cl. 235—183)



1. Apparatus for plotting the derivative of a function $y=f(x)$ as a function of the independent variable x, said apparatus comprising: means providing a flat surface having rectangular X and Y directions delineated thereon, upon which surface may be placed a graphical representation of the function $y=f(x)$ plotted in an x–y rectangular coordinate system with the x and y axes parallel to said X and Y directions; a cursor slidable over said surface and having an index point located on a straight index line; support means attached to said surface and to said cursor so as to provide a pivotal axis for said cursor normal to said surface, movable over said surface and intersecting said index line at a point removed from said index point; means fixed relative to said surface and actuated by said support means for producing a direct voltage x' proportional to and of the same sign as the displacement measured in said X direction of said pivotal axis from an adjustable X direction zero position; tangent and cosine function generators coupled to said cursor and actuated by its rotation about said pivotal axis to produce direct voltages proportional to and of the same sign as the tangent and the cosine of the angle between said index line and said X direction; a rectangular coordinate plotter having y and x inputs; means for applying said tangent voltage to the y input of said plotter; and means for algebraically adding said cosine voltage and said x' voltage and for applying the sum to the x input of said plotter.

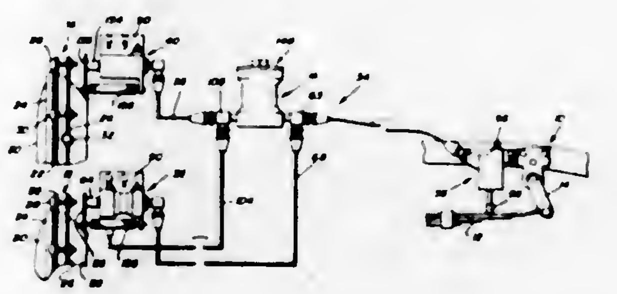
3,402,287

LOAD COMPENSATING HEADLIGHT ADJUSTING MECHANISM

Earl L. Hindman, Phoenix, Ariz., assignor of twenty-five percent to Roy E. McAfee, Mesa, Ariz.

Filed Nov. 5, 1965, Ser. No. 506,561

6 Claims. (Cl. 240—7.1)



A pair of first and second adjusting fluid actuators operatively connected between corresponding first and second oscillatable headlight assemblies of a vehicle and including variable volume chambers communicated by a contained column of fluid. One of the fluid actuators includes a second chamber inversely variable in volume relative to the first chamber thereof and a controlling fluid motor communicated with the inversely variable volume chamber by a contained column of fluid.

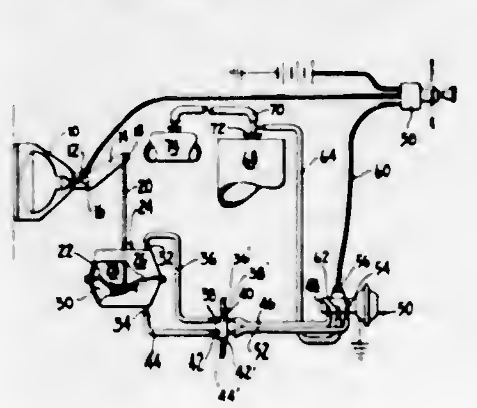
3,402,288

RETRACTABLE HEADLAMP SYSTEM UTILIZING AN ELECTRO-PNEUMATIC PILOT VALVE

Raymond A. Deibel, Cheektowaga, and William C. Riester, Williamsville, N.Y., assignors to Trico Products Corporation, Buffalo, N.Y.

Filed July 20, 1966, Ser. No. 566,521

3 Claims. (Cl. 240—61.1)



A retractable headlamp system for motor vehicles utilizing an electro-pneumatic pilot valve for controlling a servo-valve. The servo-valve in turn controls application of vacuum from a source including the engine intake manifold and a vacuum storage tank to differential pressure actuated power units. Through a linkage system the power unit moves the headlamp assembly from operative to retracted position and vice versa. Venting occurs through the pilot valve. A manual switch simultaneously energizes the headlight circuit and the solenoid of the pilot valve. A manual mechanical actuator is provided to operate the servo-valve in case of electrical failure.

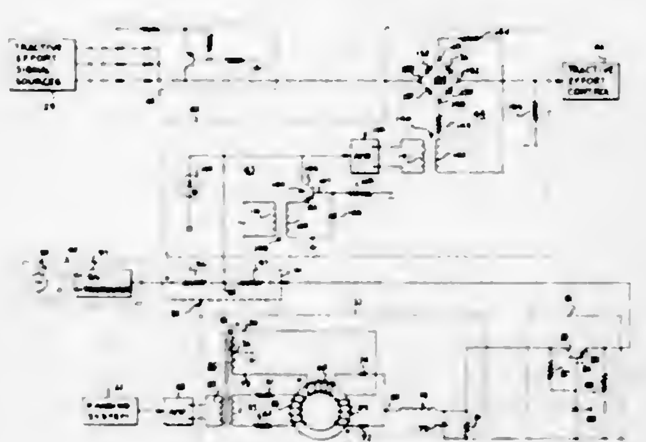
3,402,289

AUTOMATIC CONTROL SYSTEM FOR VEHICLES INCORPORATING A RANGING SYSTEM FOR VEHICLE TRAFFIC SAFETY CONTROL

Hubert K. Burke, Schenectady, and Gerald J. Michon, Waterford, N.Y., assignors to General Electric Company, a corporation of New York

Filed Dec. 29, 1966, Ser. No. 605,913

8 Claims. (Cl. 246—167)



1. In a system for automatically controlling the operation of a vehicle in accordance with a tractive effort control signal representing the most restrictive mode of operation called for by (1) a number of first electrical signals derived from wayside electrical command signals representing operating data such as permissible maximum local route speed limits or distance to a required stopping point and (2) a second electrical signal representing the range from said vehicle to an obstruction in advance thereof, the combination comprising:

(a) function generator means responsive to said second electrical signal for producing a first velocity signal whose value is proportional to a preselected maximum vehicle velocity for the range;

(b) velocity sensing means for producing a second velocity signal whose value is proportional to the actual velocity of the vehicle;

(c) comparison circuit means responsive to said first and second velocity signals operative to produce a velocity-error signal whose value varies as a function of the difference in value between said first and second velocity signals, said velocity-error signal having a first portion representing an actual vehicle speed greater than the preselected maximum permissible velocity for the range and a second portion representing an actual vehicle velocity less than the preselected maximum permissible velocity for the range;

(d) circuit means operative to convert only the first portion of said velocity-error signal to an alternating current signal having an amplitude determined by the amplitude of said first portion;

(e) minimum quantity selector means having input means and output means and being operative to produce a unidirectional voltage output signal representing the smallest of the electrical quantities applied to the input means therof;

(f) means for applying all of said first electrical signals to the input means of said minimum quantity selector means;

(g) gate circuit means having first and second input means and an output means and being operative to produce from a unidirectional voltage signal and an alternating current signal applied respectively to the first and second input means thereof an alternating current output signal whose amplitude is determined by the input signal having the smallest value;

(h) means applying the unidirectional output signal from said minimum quantity selector means to the first input means of said gate circuit means;

(i) means applying the alternating current signal obtained from the first portion of said velocity error signal to the second input means of said gate circuit means; and

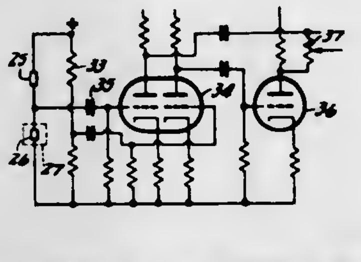
(j) means for extracting at the output means of said gate circuit means an alternating current control signal whose amplitude is determined by the lesser amplitude of the electrical signals applied at the first and second input means thereof.

3,402,290
HOT-BOX DETECTOR

Henry Blackstone, Syosset, William Derganc, Centerport, and Sabert N. Howell, Huntington, N.Y., and Frank G. Willey, Saratoga, Calif., assignors to Servo Corporation of America, New Hyde Park, N.Y., a corporation of New York

Continuation of application Ser. No. 438,822, Feb. 24, 1965, now abandoned, which is a continuation of application Ser. No. 675,948, Aug. 2, 1957, which in turn is a continuation-in-part of abandoned application Ser. No. 349,826, Apr. 20, 1953. This application Oct. 7, 1966, Ser. No. 585,209

3 Claims. (Cl. 246—169)



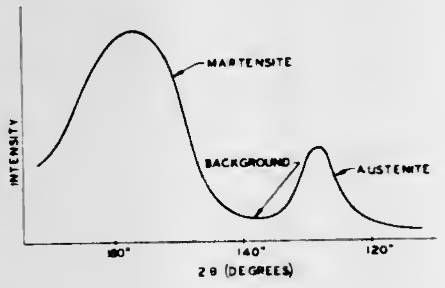
This invention relates to an infrared hot-box detector to determine temperatures above a predetermined value. A detector is imaged continuously upon a portion of a moving journal box. Two heat-sensitive detectors are arranged in a bridge circuit, one of which is imaged in the journal box and the other of which provides a compensating effect. These elements are D.C. biased and are capacitance coupled to an amplifier.

3,402,291
METHOD AND APPARATUS OF MEASURING RESIDUAL STRESS IN METALS AND THE AMOUNT OF A KNOWN CONSTITUENT

Eric W. Weinman, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Apr. 6, 1966, Ser. No. 540,543

18 Claims. (Cl. 250—51.5)



17. X-ray diffraction apparatus for determining percent retained austenite in a specimen containing martensite and austenite crystalline structure comprising X-ray radiating means,

means supporting said specimen and said X-ray radiating means,

first, second and third goniometers rotatably mounted about a common axis,

first, second and third detector means mounted on said first, second and third goniometers respectively at predetermined angular orientations relative to the surface of said specimen,

said first and third detector means including first, second and third detector tubes,

said first and second detector tubes responsive to X-ray intensity at separate diffraction angles,

said second detector means including a single detector tube,

said third detector tubes being responsive to X-ray intensity at a diffraction angle midway between said separate diffraction angles,

first and second control means responsive to the outputs of said first and second tubes of said first and third detector means respectively,

said control means including motor means for driving said first and third goniometers to positions where equal corrected intensities are detected by said first and second tubes respectively,

and means responsive to the intensities detected by said third tubes and said single tube for indicating percent retained austenite.

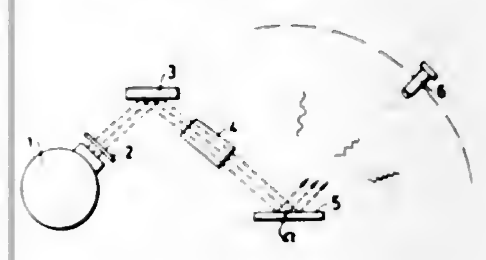
3,402,292
APPARATUS FOR X-RAY ANALYSIS OF A MATERIAL HAVING A SPECIFIC FILTER IN THE PRIMARY X-RAY BEAM PATH

Johannes Baecklund, Bro, Sweden

Filed June 2, 1964, Ser. No. 372,049

Claims priority, application Sweden, June 7, 1963, 6,339/63

2 Claims. (Cl. 250—51.5)



1. An apparatus for carrying out X-ray analysis of a material for the purpose of determining the presence and concentration of at least one element which comprises:

(a) an X-ray tube for irradiating said material with primary X-rays;

(b) means for the spectral division of the secondary X-radiation emitted by said material;

(c) a radiation sensor for measuring the band of wavelengths of secondary X-radiation including the wavelengths emitted by said element and divided from said secondary X-radiation emitted by said material by said means for spectral division; and

(d) at least one filter interposed in the path of said primary X-rays between said X-ray tube and said material having a high absorptivity for said band of wavelengths of secondary X-radiation including the wavelengths emitted by said element and low absorptivity for wavelengths of said primary X-rays which induce said secondary X-radiation emitted by said element.

3,402,293
COMPRESSED LITHIUM FLUORIDE DOSIMETER PELLET

Arthur Shambon, Great Neck, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Nov. 15, 1966, Ser. No. 594,632

4 Claims. (Cl. 250—71)

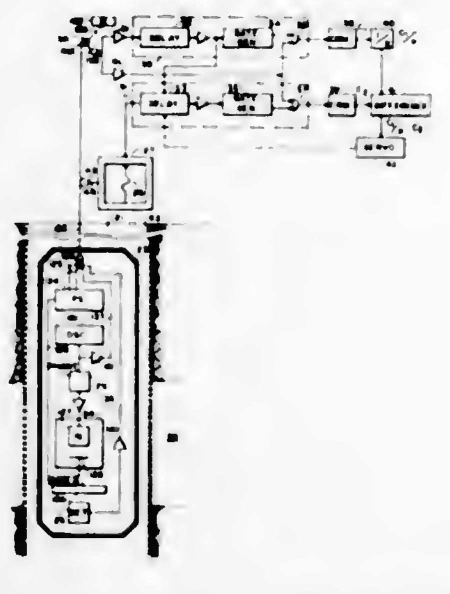
A dosimeter consisting of a pellet of LiF compressed in a binder of sodium silicate, and the method of preparing such pellet including compressing the mixture to above 18,000 p.s.i.

3,402,294
RADIATION MEASURING SYSTEM AND METHOD

James D. Bargainer, Jr., Austin, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed Feb. 7, 1964, Ser. No. 343,315

8 Claims. (Cl. 250—71.5)



1. A radioactive well logging system for logging the formations traversed by a borehole comprising:

a borehole unit including a neutron source for irradiating the formations with pulses of neutrons spaced in time for the production of secondary radiation,

a detector for detecting secondary radiation passing from the formations into the borehole and for producing first functions representative of the secondary radiation detected,

means for continuously moving said unit including said source and detector along the borehole,

a selection circuit including:

first and second discriminating means, a time-to-pulse height converter, the output of said detector being applied to said time-to-pulse height converter, said time-to-pulse height converter producing an output of pulses having heights proportional to the time that secondary radiation is detected, the output of said time-to-pulse height converter being applied to said discriminating means, said discriminating means being selectively responsive to predetermined magnitudes of said pulses for producing at the output thereof second and third functions representative of radiation detected within first and second time periods following each pulse of primary radiation,

means responsive to said second and third functions for producing first and second signals representative of the intensity of secondary radiation detected within said first and second time periods,

means for modifying one of said first and second signals by a factor equal to a ratio desired to be maintained between said first and second signals,

means for comparing the modified signal and the other of said first and second signals,

means responsive to the output of said comparing means for varying the response of said selection circuit for maintaining constant the ratio desired between said first and second signals, and

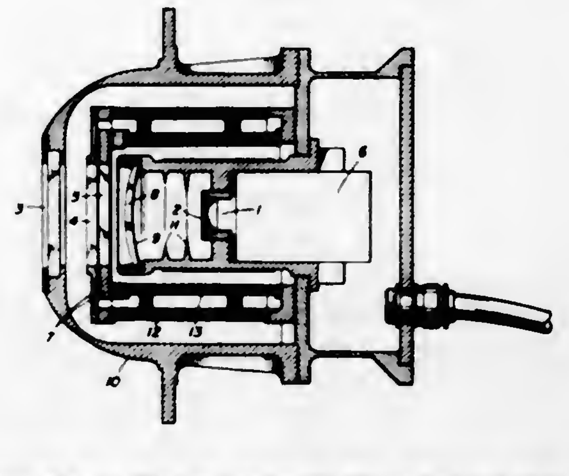
a recorder responsive to the output of said comparing means for producing a log continuously and in correlation with depth of said borehole unit in said borehole and related to the decay of secondary radiation detected.

3,402,295
PROCESS FOR MEASURING THE DISTANCE FROM THERMAL DISCONTINUITIES IN THE ATMOSPHERE

Robert W. Astheimer, Westport, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware

Continuation-in-part of applications Ser. No. 364,151, May 1, 1964, Ser. No. 411,934, Nov. 17, 1964, and Ser. No. 440,352, Mar. 4, 1965. This application Apr. 16, 1965, Ser. No. 448,694

2 Claims. (Cl. 250—83.3)



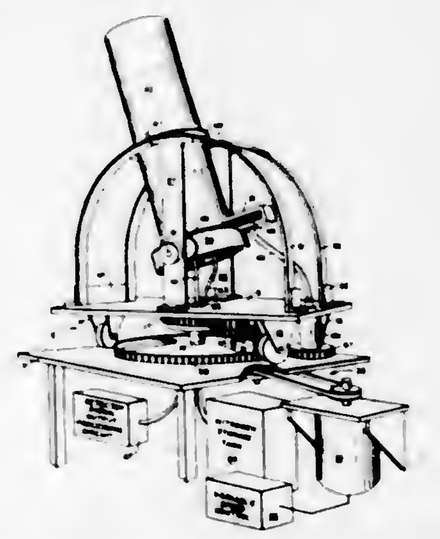
A temperature discontinuity in the atmosphere such as one resulting in so-called "clear air turbulence" is measured by aiming an infrared radiometer horizontally, scanning spectrally, and comparing the wavelength of peak radiation with a tangible relationship, such as a graph, of distance versus peak wavelength of radiation, the radiation being from a carbon dioxide emission band.

3,402,296
ATMOSPHERIC INFRARED RADIATION SCANNER

Robert A. Benedict, Ridgefield, Conn., Henry F. Cooper, Jr., Albuquerque, N. Mex., and George E. Fink, Chula Vista, Calif., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Jan. 13, 1967, Ser. No. 609,727

7 Claims. (Cl. 250—83.3)

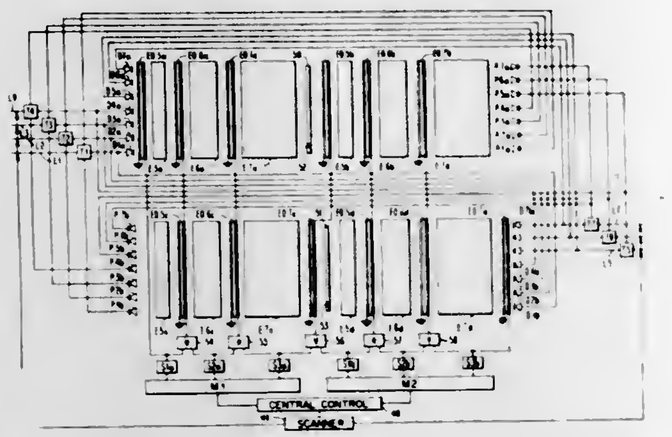


A device for systematic scanning of the atmospheric background hemisphere with an infrared detector system. A scanner tube is mounted on a rotatable table so that as the table rotates, the scanner tube rotates about its longitudinal axis at the same speed as the table, but in the opposite direction. There is no relative motion between the scanner tube and the structure which supports the rotatable table. Since there is no relative motion, it is possible to have direct electrical connections between the support structure and the scanner tube.

3,402,297

OPTICAL DISTRIBUTION NETWORK

Thomas J. Harris, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 10, 1965, Ser. No. 454,369
13 Claims. (Cl. 250—199)

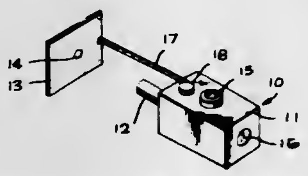


Apparatus is provided for accomplishing the selective transferral of information between any two of a plurality of transmission lines. Parallel optical links, each containing light deflecting apparatus are operative in response to indications from a seeking line and a sought line to effect bidirectional connection between the lines for information transfer. Line scanners also respond to the indications from the seeking and sought lines to act through control and switching circuitry to activate the deflecting apparatus.

3,402,298

OPTICAL-ELECTRONIC DISPLACEMENT TRANSDUCER

William F. Janeway, 2945 Glen Albin, Santa Barbara, Calif. 93105
Filed Oct. 6, 1964, Ser. No. 401,818
22 Claims. (Cl. 250—203)



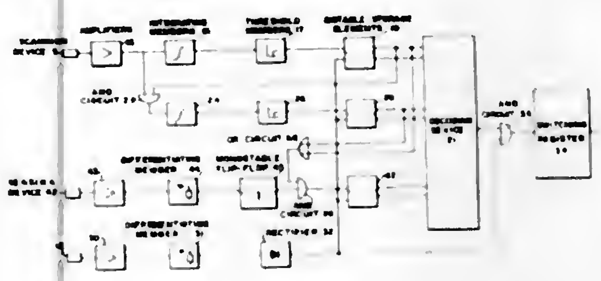
An optical-electronic displacement transducer, for viewing an object optically, and then producing an electrical signal varying in accordance with movement of the object. The transducer includes a tube on which an optical image of the target area is produced, and which acts to produce a corresponding electron image, in conjunction with means responsive to the electron image to produce two electrical signals varying in accordance with changes in illumination of two different portions of the input face of the tube. These two signals are combined to produce a signal varying in accordance with the difference between them, and the combined signal is then utilized to deflect the electron image in a manner compensating for the movement of an object in the target area.

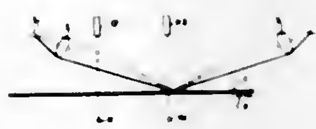
3,402,299

METHOD AND APPARATUS FOR SCANNING

Hans-Joachim Held, Litzelstetten, near Constance, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed June 18, 1965, Ser. No. 465,068
Claims priority, application Germany, June 18, 1964, T 26,396
20 Claims. (Cl. 250—219)

11. A device for recognizing, in accordance with markers thereon, the position of flat articles being conveyed, comprising, in combination:
(a) means defining a conveying path;
(b) irradiating means on one side of said path for irradiating articles moving along said path;
(c) scanning means on one side of said path and sensitive to the spectral region of the irradiating means for being activated when radiation is prevented from arriving at the scanning means due to markers on such articles;
(d) light barrier means for monitoring the passage of an article along said path;



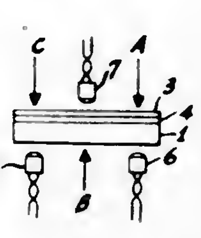


(e) circuit means connected to said scanning means and said light barrier means and including
(1) two storage element means connected with each other for said scanning element means for providing a signal from one of the element means if only one marker is scanned, and for providing a signal at the other if two markers are scanned, said storage element means being connected to be reset by said light barrier means,
(2) a register for evaluating position criteria, and
(3) a register AND-circuit connected to be opened by said light barrier means for transmitting signals at the outputs of the storage element means to said register.

3,402,300

RADIATION SENSITIVE OPTICAL LOGIC ELEMENT USING PHOTOCHROMIC LAYERS

Judea Pearl, Kendall Park, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 28, 1966, Ser. No. 530,290
5 Claims. (Cl. 250—220)



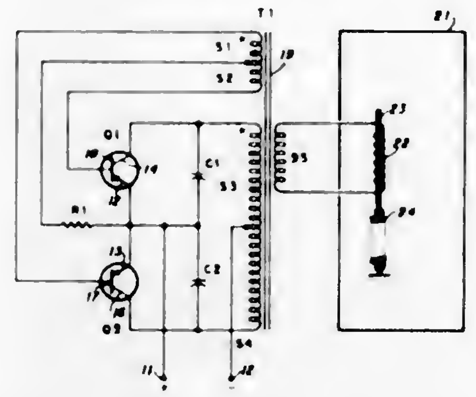
An optical logic system for data handling using photochromic layers exhibiting a plurality of stable absorption spectra selected by an input radiation wavelength. The photochromic layers are sequentially deposited on transparent substrates which can be arranged in series in an optical path to provide sequential logic operations.

3,402,301

LOAD RESPONSIVE INVERTER

Robert F. Gibb, 545 N. Granados, Solano Beach, Calif. 92075
Filed Nov. 4, 1964, Ser. No. 408,917
2 Claims. (Cl. 307—104)

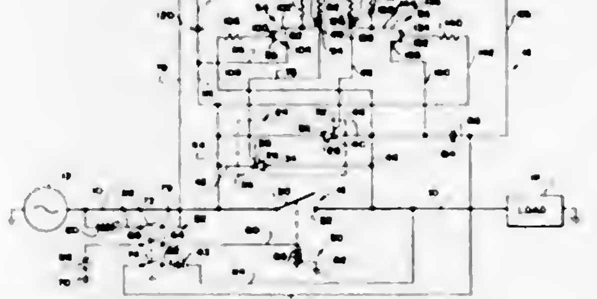
A load responsive inverter includes an output transformer coupled for driving a mechanical resonant load. The transformer includes a pair of feedback windings connected to the bases of two transistors which are driven into saturation and cutoff alternately as determined by the reflected impedance from the mechanical resonant load.



3,402,302

RADIO NOISE-FREE SWITCH

Richard J. Coburn, West Hartford, Conn., assignor to Dynamic Controls Corporation, South Windsor, Conn., a corporation of Connecticut
Original application Sept. 28, 1962, Ser. No. 226,825, now Patent No. 3,237,030, dated Feb. 22, 1966. Divided and this application Feb. 1, 1966, Ser. No. 524,349
1 Claim. (Cl. 307—133)



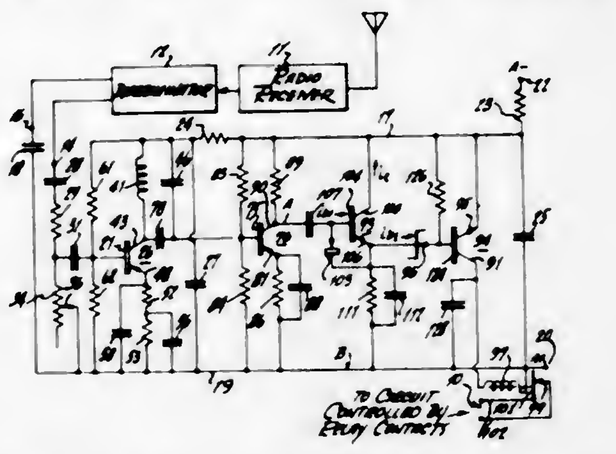
A switch comprising first and second oppositely oriented controlled rectifiers in a power line each with a control circuit comprising a controlled rectifier and a transistor adapted to cause the power line rectifiers to conduct initially at substantially zero potential, and an arming switch.

3,402,303

LEVEL SENSITIVE SWITCHING CIRCUIT UTILIZING A ZENER DIODE FOR DETERMINING SWITCHING POINTS AND SWITCHING SENSITIVITY

Walter C. Painter, Bethel Park, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 17, 1964, Ser. No. 389,921
2 Claims. (Cl. 307—235)

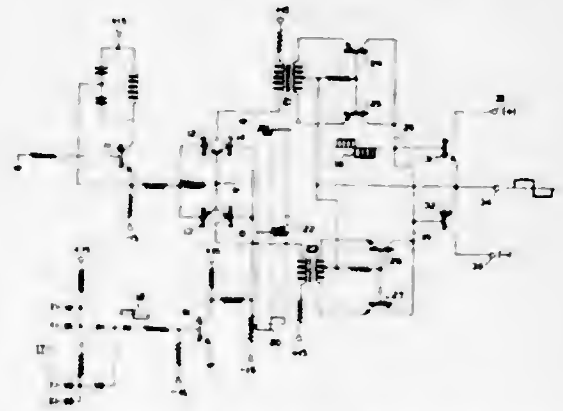
An improved level sensitive switching circuit is provided wherein the anode of a Zener diode is coupled to a load amplifier. The cathode of the Zener diode is coupled to the emitter of a normally cutoff input transistor amplifier. The load amplifier is in saturation when the Zener diode voltage input level causes Zener conduction and when the Zener diode input voltage drops below the Zener breakdown voltage, the load amplifier is cut off. An output load resistor for the normally cutoff input transistor amplifier is connected to the emitter of the input transistor amplifier to provide a more negative voltage output when the transistor conducts. When the input signal to the input transistor amplifier exceeds a given level, the input amplifier load current through the load resistor increases the voltage drop across the resistor and reduces the bias of the Zener diode below the breakdown voltage resulting in cutoff of the load amplifier.



3,402,304

ELECTRICAL DATA PROCESSING APPARATUS

Nelson W. Burke, Stoneham, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed Apr. 23, 1965, Ser. No. 450,388
5 Claims. (Cl. 307—268)



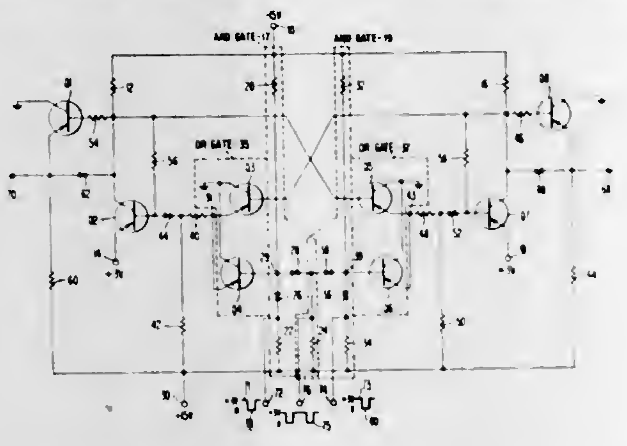
1. A communication line solid state relay for switching a communication line in response to mark and space signals comprising:
(a) a continuously running oscillator,
(b) a pair of transformers,
(c) an output circuit including transistor switch means for switching said communication line,
(d) opposite polarity full wave rectifier circuits respectively connected to the secondary windings of said transformers, the unfiltered outputs of said rectifier circuits being connected to a common control point for switching said transistor switch means in accordance with the polarity of said control point,
(e) two state switching means connected to couple the oscillations of said oscillator exclusively to one or the other of the primaries of said transformers in accordance with a control signal, and
(f) means for generating a binary control signal for said two state switching means in accordance with said mark and space signals.

3,402,305

CROSS-COUPLED FLIP-FLOP EMPLOYING SERIES INPUT DIODE CONNECTED TO OUTPUT OF OR GATE FORMING PART OF CROSS-COUPLES

Thomas E. Gilligan, Havertown, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Sept. 23, 1964, Ser. No. 398,558
8 Claims. (Cl. 307—292)

Buffering circuits receive signals from input gates for switching the flip-flop inverting stage electronic control devices from one state to the other without significantly loading down the signal source. Buffering circuits are also provided at the outputs of the inverting stage electronic control devices so that the flip-flop is prevented from being loaded down significantly by its loads. The inverting stage electronic control devices are provided with feedback impedance circuits which serve to keep them out of saturation to obtain high speed operation. Asymmetrical current conducting networks afford transient overdrive of the inverting stage electronic control devices to obtain high speed cut off. Impedance devices are also provided for suppressing oscillations in output terminals of the fiip-flop.

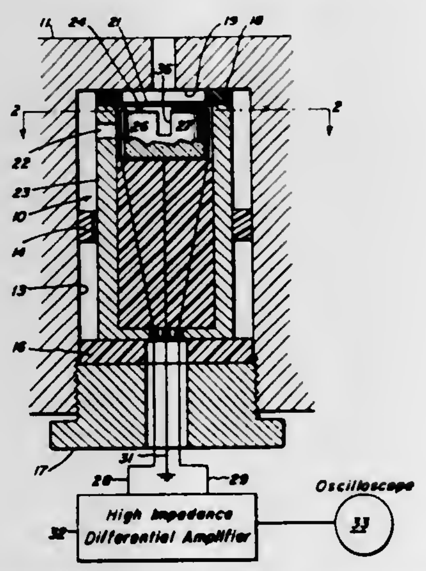


3,402,306
COMPENSATING MEANS FOR A PIEZOELECTRIC SENSING ELEMENT

Kenneth H. Cary, Gansevoort, and Henry T. Nagamatsu and Russell E. Sheer, Jr., Schenectady, N.Y., and Bruce C. Graber, Norristown, Pa., assignors to General Electric Company, a corporation of New York

Filed June 28, 1966, Ser. No. 561,254

7 Claims. (Cl. 310—8.7)



1. An improved device for the generation of small voltages in response to the application of forces to a sensing element comprising in combination:

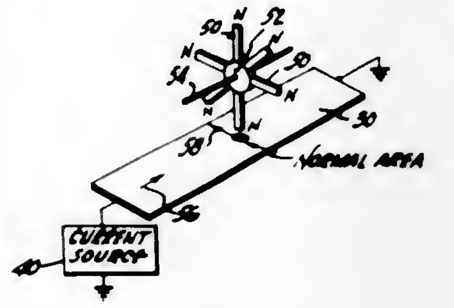
(a) a housing,
  (1) a portion of the wall area of said housing being thin and flexible,
(b) a piezoelectric crystal mounted in said housing,
  (1) said crystal having opposite first and second flat faces, the surface of each face being electrically conducting,
  (2) said crystal having a slot extending into the body thereof through said first flat face such that first and second crystal portions are formed having first and second conducting segments of said first flat face, respectively, which crystal portions remain connected by a common region of the orginal crystalline material,
  (3) said first crystal portion being rigidly connected to said flexible portion of wall area over said first segment and being electrically insulated from said flexible portion of wall area,
  (4) said second crystal portion being free of direct connection to said flexible portion of wall area,
  (5) said crystal being retained in position in said housing by a rigid connection between said housing and said second flat face and being electrically insulated from said housing,
(c) first electrically conducting means connected to said first segment for carrying voltage therefrom,
(d) second electrically conducting means connected to said second segment for carrying voltage therefrom, and
(e) third electrically conducting means connected to said second flat face for grounding thereof,
  (1) each of said first, second and third electrically conducting means being electrically insulated from the wall of said housing and extending therethrough.

3,402,307
MOTORS AND GENERATORS EMPLOYING SUPERCONDUCTORS

Judea Pearl, Kendall Park, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Mar. 23, 1965, Ser. No. 442,031

31 Claims. (Cl. 310—10)



Motors and generators which depend for their operation on the movement of nonsuperconducting areas through a superconductor material. In the operation as a motor, a current applied to a superconductor containing such an area causes movement of this area at an angle to the direction of current flow, and a rotor magnetically coupled to the area moves along with it. The magnetic coupling may be achieved by magnets which are fixed to the rotor or by external magnetic field producing means. In the latter cases, the rotor is made of a magnetic field shield means but is formed with magnetic field permeable regions. In the operation of the invention as a generator, the rotor is mechanically driven and the nonsuperconducting areas magnetically coupled to the rotor move through the superconductor following the movement of the rotor. A current is thereby generated which flows through the superconductor at an angle to the direction of movement of the nonsuperconducting areas.

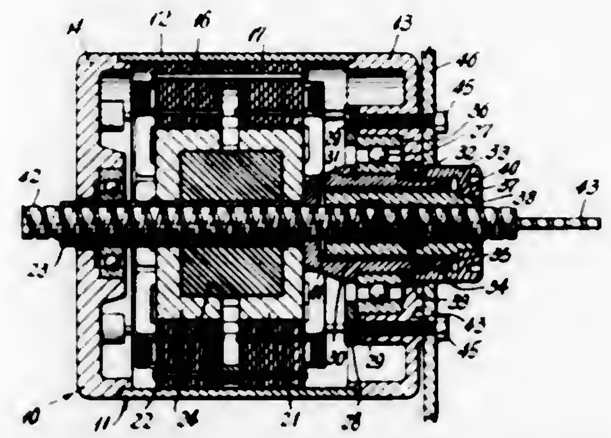
3,402,308
ROTARY ACTUATED LINEAR MOTOR

William O. Henschke, Avon, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut

Filed Jan. 19, 1965, Ser. No. 426,635

5 Claims. (Cl. 310—80)

1. A rotary actuated linear motor comprising a frame including a pair of spaced apart end plates, stator means carried by the frame between the end plates and including a plurality of circularly disposed poles with winding means for the poles to effect magnetization thereof, a shaft mounted for rotation by the end plates by at least one ball bearing having an inner race and an outer race, means clamping the outer race to one of said end plates, a rotor means carried by the shaft for cooperation with the stator means to effect rotation of the rotor means and shaft upon energization of the winding means, a single ball nut carried by the shaft for rotation therewith, means clamping the inner race to the shaft and ball nut, a threaded rod extending through at least said ball nut for threading cooperation therewith to translate rotation of the ball nut into linear movement of the rod and in which the means clamping the inner race to the shaft and ball nut includes a member engaging the inner race and operatively connected to the shaft and ball nut and constituting the sole connection between said shaft and nut.

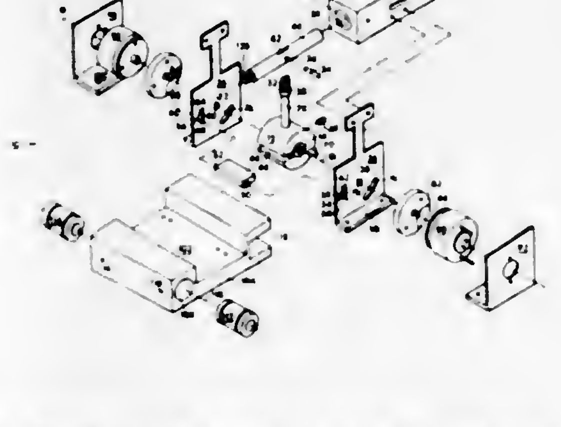


3,402,309
BIDIRECTIONAL LIMITED MOTION MECHANISM

Malvin Greenberg, Commack, N.Y., assignor to General Electronic Laboratories, Inc., Boston, Mass., a corporation of Delaware

Filed June 20, 1966, Ser. No. 558,975

7 Claims. (Cl. 310—80)



1. In a bidirectional limited motion producing mechanism, the combination of a spindle having a longitudinal axis, a lever projecting from said spindle substantially perpendicular to said axis and having an end adapter for imparting motion to a use device, means for rotating said spindle about said axis in one direction, means for rotating said spindle about said axis in the opposite direction, a spring pressed plunger extending from said spindle, and a triangular-shaped formation having two sides extending from a vertex and engaging said spring pressed plunger in manner for said plunger to ride said sides and come to rest in said vertex.

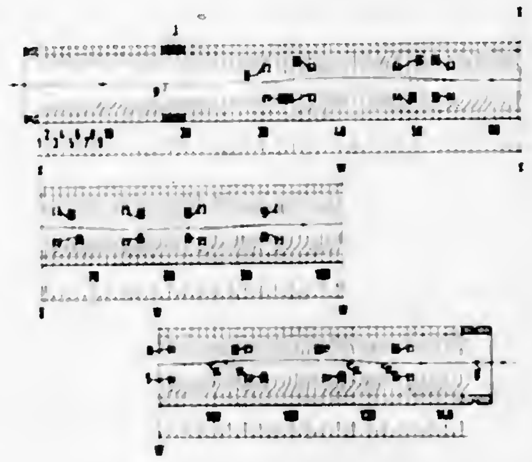
3,402,310
PARTICLE ACCELERATING TUBE HAVING AXIALLY LOCALISED TRANSVERSE MAGNETIC FIELDS AND FIELD-FREE REGIONS

Frederick Albert Howe, Newbury, and Ronald Inch Bell, Basingstoke, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Nov. 17, 1965, Ser. No. 508,242

Claims priority, application Great Britain, Nov. 19, 1964, 47,250/64

7 Claims. (Cl. 313—63)



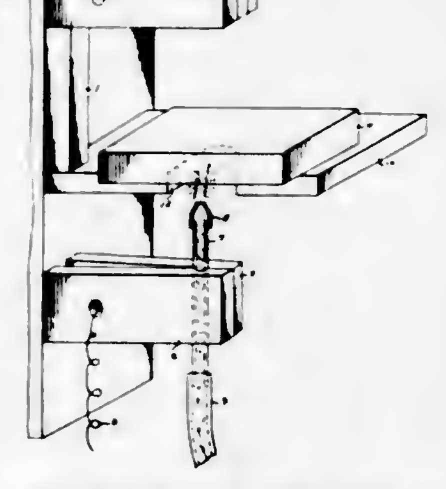
A linear particle accelerating tube including an arrangement for deflecting electrons to minimize the phenomenon known as "electron loading." The arrangement includes a plurality of spaced apertured electrodes and at least two pairs of devices for producing axially localized transverse magnetic fields separated from one another by substantially field-free regions, each successive pair of localized fields being oriented to deflect the accelerated particle beam from one selected path substantially parallel to the tube axis to another selected path substantially parallel to the tube axis. The paths are selected to minimize the net displacement from the tube axis of the beam emerging from the tube while deflecting the unwanted electrons into the electrodes.

3,402,311
GAS ATMOSPHERE COUNTER ELECTRODE

John J. Fitzgerald, Chelmsford, Mass., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Feb. 1, 1966, Ser. No. 524,355

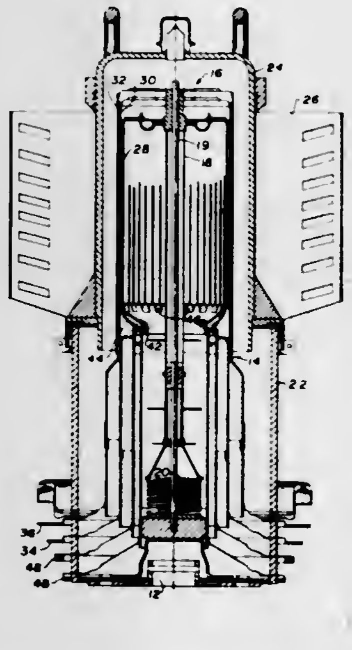
4 Claims. (Cl. 313—231)

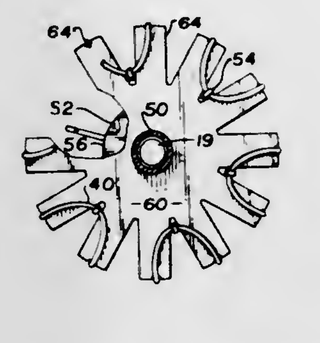


In an A.C. spark excitation system used for the spectral analysis of samples of unknowns, the counter electrode has a hollow support rod and a hollow disposable tip electrode. An inert gas such as argon may therefore be supplied to the spark gap between the counter electrode and the sample through the hollow support rod and tip electrode.

3,402,312
STRUCTURE FOR INDEPENDENTLY SUPPORTING EACH STRAND OF A MEDIALLY-LOOPED FILAMENT IN A VACUUM TUBE

Jackson W. Kendall, Jr., Salt Lake City, Utah, and John D. MacGowan, Los Altos, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Mar. 10, 1966, Ser. No. 533,176
6 Claims. (Cl. 313—278)



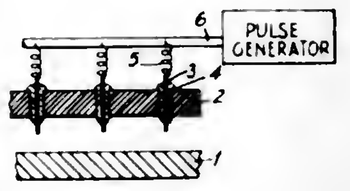


Structure in a vacuum tube for independently supporting each strand of one or more medially-looped filaments under tension in order to keep the strands straight during thermal cycling. The support structure comprises two resilient members each of which support one strand. The medial loop of the filament bridges the two resilient members in an untensioned condition thereby permitting each member to support one strand independently.

3,402,313
THERMIONIC GENERATOR HAVING AUXILIARY ANODES IN THE MAIN DISCHARGE SPACE

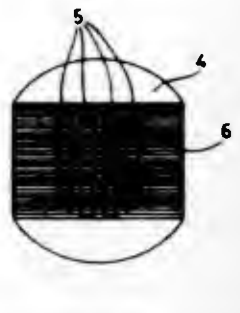
Dennis Gabor, London, England, and John Anthony Nilson, Montreal, Quebec, Canada, assignors to National Research Development Corporation, London, England, a British corporation
Filed May 10, 1965, Ser. No. 454,319
Claims priority, application Great Britain, May 12, 1964, 19,806/64
4 Claims. (Cl. 313—306)

A thermionic generator having, in addition to a heated emitter and a collector, a plurality of auxiliary anodes in the emitter-collector space. The auxiliary anodes, which are carried by and insulated from the collector, provide a discharge to break down the electron space charge in the main discharge. Several methods of making combined collector and auxiliary anode structures are described. The auxiliary anodes are of very small area, and may terminate in sharp points. The discharge space may contain inert gases. The auxiliary anodes are preferably excited by pulses whose duration is considerably longer than the intervals between the pulses. The main discharge current can be controlled by varying the auxiliary anode current.



3,402,314
GRIDDED ELECTRON TUBE WITH DISPENSER CATHODE HAVING COATED SURFACE PORTIONS

Marinus Teunis Vlaardingerbroek, Emmasingel, Eindhoven, Netherlands, and Eduard Gerhardus Dorgelo, Huntington, N.Y., assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 15, 1966, Ser. No. 534,489
Claims priority, application Netherlands, Apr. 7, 1965, 6504397
6 Claims. (Cl. 313—348)

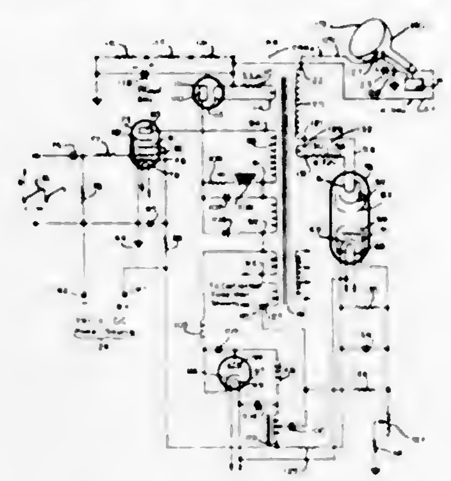


An electron tube having a grid with plural apertures opposite a dispenser cathode. The cathode surface portions only opposite the grid apertures being coated with Rh, Ir, Ru, or Os to increase their emission relative to the uncoated portions, causing the electrons to be emitted as beams aligned with the grid apertures. This reduces heating of the grid as well as offering other improvements.

3,402,315
CIRCUIT FOR REGULATING THE POTENTIAL BETWEEN THE CATHODE AND THE HIGH VOLTAGE ANODE OF A CATHODE RAY TUBE USING A TUBE HAVING TWO GROUPS OF ELECTRODES

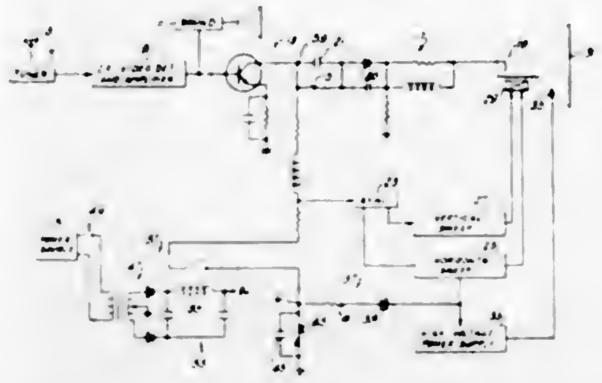
Albert W. Friend, 5903 City Line Ave., Philadelphia, Pa. 19131
Original application July 15, 1963, Ser. No. 294,927. Divided and this application Dec. 9, 1966, Ser. No. 610,706
3 Claims. (Cl. 315—1)

1. A cathode ray tube circuit comprising a cathode ray tube having a cathode and an anode with electrostatic capacity between the anode and the ground which is connected via video and bias networks to the cathode, a circuit including said anode and said cathode, a source of alternating potential in series with said circuit, a tube with two groups of electrodes with each group having at least an anode and a cathode, the cathode of the first of said groups and the anode of the second of said groups being in series with said circuit, and means including the cathode of the second group and the anode of the first group for regulating the potential between the cathode and anode of the cathode ray tube.



3,402,316
FLUX SWITCH PROTECTIVE SYSTEM FOR ELECTRICAL APPARATUS

Thomas E. Gausman and Thomas Lester Taylor, Batavia, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Sept. 29, 1966, Ser. No. 582,804
5 Claims. (Cl. 315—20)

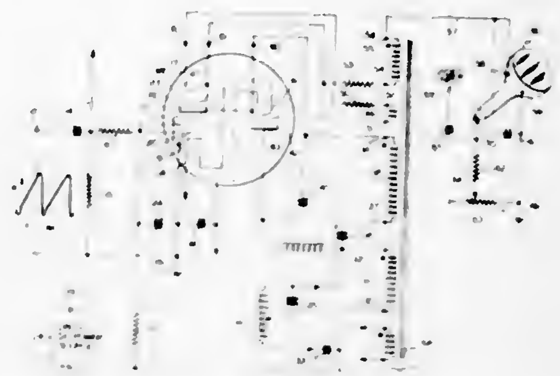


In a television receiver an electrical apparatus protective system includes a television signal source having a video output stage D.C. coupled via a D.C. restoration stage to a display device and a first power supply means including an inductive filter means coupled to the signal source a video power supply means is responsive to the first power supply means and a magnetic flux responsive switching means electrically couples the video power supply means to the junction of the video output stage and D.C. restoration stage and a magnetic flux responsive relationship to the inductive filter means.

3,402,317
TELEVISION HORIZONTAL DEFLECTION AND HIGH VOLTAGE SYSTEM

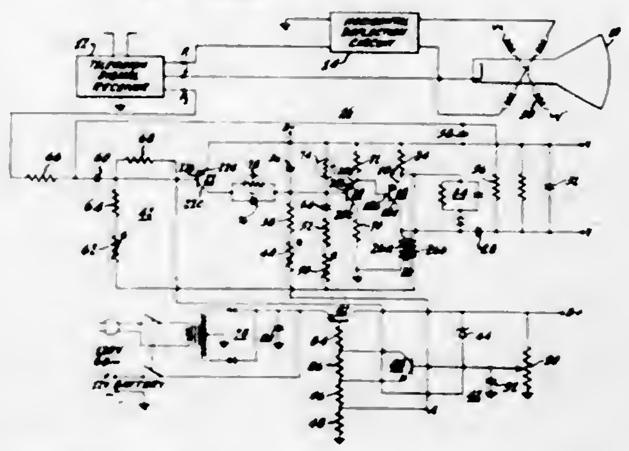
Albert W. Friend, 5903 City Line Ave., Philadelphia, Pa. 19131
Filed Aug. 9, 1963, Ser. No. 301,119
13 Claims. (Cl. 315—22)

1. An energizing system for a cathode ray tube having an anode and a cathode comprising a transformer having at least two windings, a tube having a first cathode, a control grid, a first anode and a second cathode, both said cathodes feeding electrons to said anode and said control grid comprising means controlling the flow of electrons from the first cathode to said first anode, means applying a varying deflection potential to said control grid, a first circuit including the first cathode and first anode and including means for applying the deflection potential in amplified form to said transformer, a second circuit and including means for applying potential to the anode of the cathode ray tube extending from the cathode of the cathode ray tube through one of said windings to said first anode of said tube thence to the second cathode of said tube thence through another of said windings, and thence to the anode of the catohde ray tube, and horizontal deflection means for said cathode ray tube, and means to energize the horizontal deflection means from said transformer.



3,402,318
TELEVISION DEFLECTION CIRCUIT WITH COMPENSATION FOR VOLTAGE SUPPLY VARIATIONS

James A. McDonald and Luke Gene Smithwick, Indianapolis, Ind., assignors to Radio Corporation of America, a corporation of Delaware
Filed Mar. 28, 1966, Ser. No. 538,075
8 Claims. (Cl. 315—27)

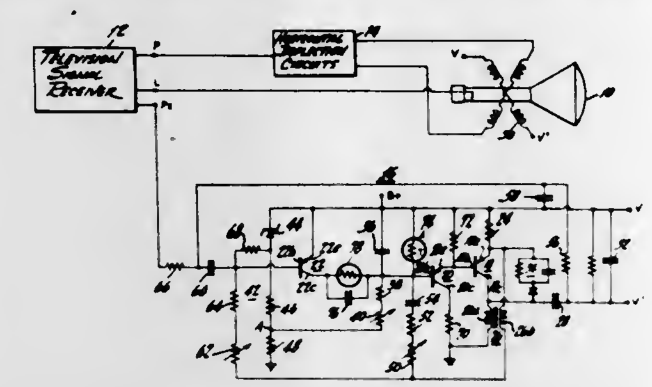


A television deflection circuit comprising a sawtooth waveform generating capacitor coupled to an output amplifier and a compensated voltage supply coupled to the capacitor to maintain image size constant despite supply voltage changes. A retrace switching device coupled across the capacitor is provided with bias voltage derived from the compensated supply to maintain operating frequency constant despite supply voltage changes. Low frequency oscillations in the scanning waveform are precluded by means of a feedback network coupled to the output amplifier.

3,402,319
TELEVISION DEFLECTION CIRCUIT WITH TEMPERATURE COMPENSATION

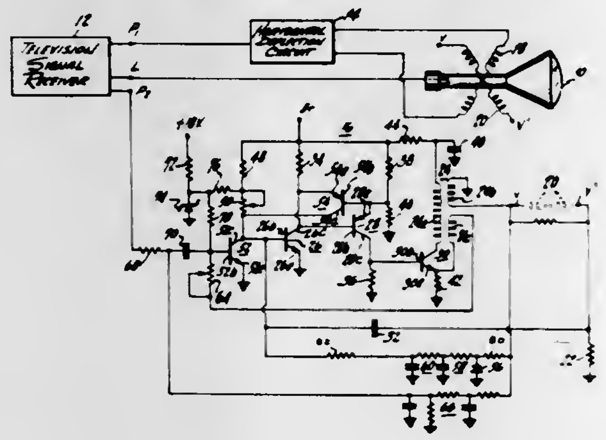
James A. McDonald and Earl K. Retherford, Indianapolis, Ind., assignors to Radio Corporation of America, a corporation of Delaware
Filed Mar. 28, 1966, Ser. No. 538,076
6 Claims. (Cl. 315—27)

A transistorized multivibrator type vertical deflection circuit is provided with a compensating impedance in the series discharge path of the sawtooth capacitor so as to retain sufficient charge on the capacitor at the end of retrace to provide the finite turn-on voltage required for the output amplifier substantially immediately at the beginning of trace. The illustrated compensating impedance comprises the parallel combination of a thermistor and a capacitor arranged to compensate for variations in the required turn-on voltage with respect to temperature. Top cramping of the scanning raster in the vertical direction is precluded.



3,402,320
TELEVISION DEFLECTION CIRCUIT

Todd J. Christopher, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 5, 1966, Ser. No. 599,083
16 Claims. (Cl. 315—27)

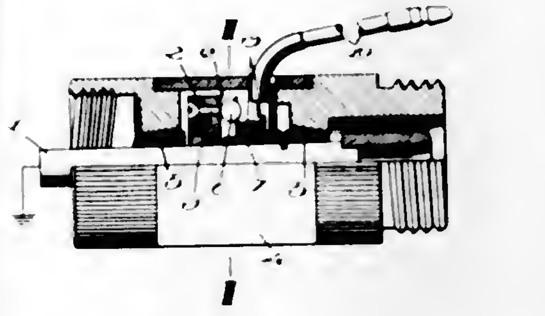


1. In a television receiver, a vertical deflection circuit comprising
  amplifying means having an input terminal and an output terminal,
  vertical deflection windings coupled to said output terminal,
  a capacitor coupled to said amplifier input terminal,
  a primary current supply coupled to said capacitor for charging said capacitor during the trace portion of each deflection cycle.
  discharging means coupled to said capacitor for periodically decoupling said current supply from said capacitor and for rapidly discharging said capacitor, and
  auxiliary charging means coupled to said capacitor for periodically recharging said capacitor rapidly to provide sufficient voltage at said input terminal of said amplifying means to initiate conduction in said amplifying means substantially at the commencement of the trace portion of each vertical deflection cycle.

3,402,321
AUTOMATIC CHANGEOVER SWITCHING FROM IDLE POSITION TO RUNNING POSITION

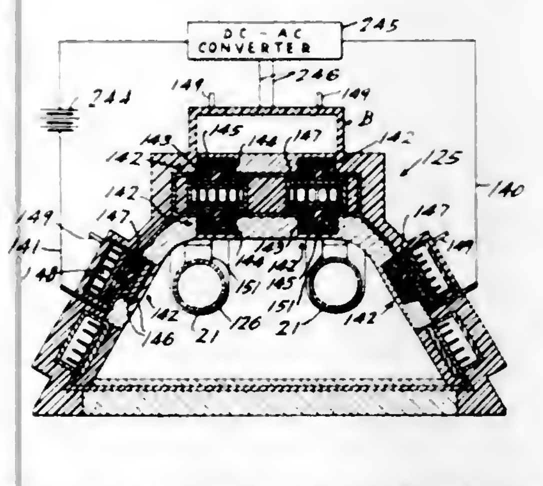
Koji Tagawa, 1892 Kokubu, Ebinamachi, Kozagun, Kanagawa Prefecture, Japan
Filed Sept. 14, 1966, Ser. No. 579,337
10 Claims. (Cl. 315—83)

An arrangement for switching power between the head lamps and the parking lights of a motor vehicle. The parking lights are connected to the battery of the motor vehicle when the latter is stationary or in the idling state in which the gas pedal is released. When the gas pedal is depressed so as to place vehicle into motion, the battery becomes connected to the head lamps and disconnected from the parking lights. The switching between the lamps is performed by a relay which becomes energized when the gas pedal is depressed. A pulse emitter is mechanically coupled to the driving shaft of the vehicle and supplies a train of pulses having a frequency substantially proportional to the speed of the driving shaft. It is the purpose of the pulse emitter to maintain the lights of the head lamps on immediately after the gas pedal has been released and the motor vehicle is in a gliding state. This is accomplished by applying the trains of pulses to the coil of a relay. When the duration between pulses becomes longer due to a slow-down in the motion of the vehicle, the relay coil becomes eventually de-energized and the battery becomes switched to the parking lights. As a result the head lamps are maintained lighted for as long as the driving shaft rotation exceeds a predetermined magnitude. When the speed of rotation of the driving shaft drops below this predetermined level, the head lamps are automatically switched off and the parking lights are turned on.



3,402,322
LIGHTING SYSTEM WITH A POWER FEEDBACK FROM THERMAL JUNCTION ELECTRICAL GENERATORS

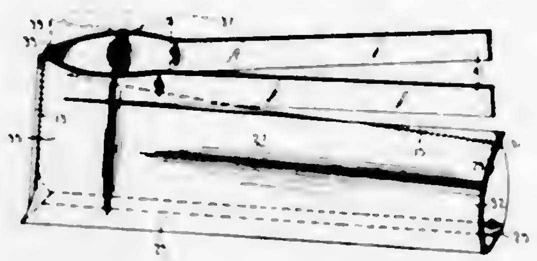
Gershon Meckler, Atlanta, Ga., assignor to Lithonia Lighting, Inc., Conyers, Ga., a corporation of Georgia
Application Aug. 2, 1965, Ser. No. 476,236, now Patent No. 3,268,720, which is a continuation-in-part of application Ser. No. 31,902, May 26, 1960. This application Dec. 22, 1965, Ser. No. 549,071
2 Claims. (Cl. 315—151)



Apparatus for removing heat produced by lighting sources and for increasing the efficiency of a lighting system. A plurality of thermojunctions are located in a lighting fixture adjacent to a light source for converting heat produced by the light source to direct current electrical energy. The direct current energy is converted to alternating current and supplied to the light source to reduce the load on the power supply which operates the light source.

3,402,323
DISPOSABLE OVERSHOES OF FLEXIBLE FILM MATERIAL

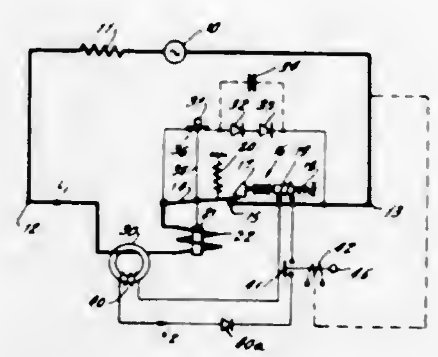
Joseph G. Longstreth, Clayton, Mo.
(2829 S. Brentwood Blvd., St. Louis, Mo. 63144)
Filed Oct. 8, 1965, Ser. No. 494,205
20 Claims. (Cl. 317—2)



Economically disposable overshoes of heat-sealable flexible film material are described which have an integral sole, upper and straps all formed from the same material. The upper has a leg opening at the top adapted to receive the foot and shoe of the wearer and a heel end, a toe end which is closed at the top between the toe and leg opening. A strap portion of the overshoe is provided which may be placed in contact with the skin of the wearer. When formed of electrically conductive material these overshoes are particularly useful as static-eliminating operating room overshoes, the straps being placed in contact with the skin of the wearer to provide a conductive path from wearer to ground. A method of making such overshoes comprises generally slitting lengths of gusseted tubing, and perforating and heat-sealing at successive intervals so as to form lengths of successive pairs of overshoes which may be separated into overshoe lengths or coiled into rolls.

3,402,324
SYNCHRONOUS SWITCHING DEVICE

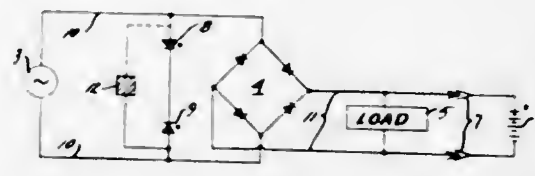
Fritz Kesselring, Kusnacht, Zurich, and Bruno Leisi, Geroldswill, Zurich, Switzerland, assignors to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed June 14, 1966, Ser. No. 557,505
Claims priority, application Germany, June 24, 1965, S 97,839
3 Claims. (Cl. 317—11)



1. An AC circuit interrupter device comprising a movable contact movable into and out of engagement with a cooperating contact; said movable contact and cooperating contact connected in series with AC conductor means connectable to an AC circuit; biasing means connected to said movable contact and biasing said movable contact out of engagement with said cooperating contact; latch means connected to said movable contact and having a latching position and a latch release position; said latch means latching said movable contact engaged against the biasing force of said biasing means when said latch is in its said latching position; an electrically operable latch release means connected to said latch means for moving said latch means to its said latch release position responsive to energization of said latch release means; a winding and a signal generating means connected in series with said movable contact and said AC conductor; a movable body of magnetic material positioned in proximity to said winding to be moved in accordance with the current magnitude through said winding; said signal generating means connected to said electrically operable latch release means; said movable body connected directly to said movable contact and being moved in a direction to hold said movable contact in its said engaged position when the current through said winding exceeds a predetermined value; a lost motion means; a normally closed auxiliary contact and a rectifier; said auxiliary contact and rectifier connected in series with one another and in parallel with said movable contact; said lost motion means connecting said movable body to said auxiliary contact after said movable contact is opened to subsequently move said auxiliary contact to a disengaged position; said signal generating means generating an output signal only when the current through said movable contact begins to rise in a positive direction, thereby to energize said latch release means; said latch release means moving to its said latch release position by the time the current through said winding is sufficiently high to apply a holding force from said movable body to hold said movable contact closed against the force of said biasing means; said movable contact opening when said current through said winding decreases in the later part of said position cycle to below said predetermined current whereby the instantaneous current through said movable contact is shifted to said parallel connected auxiliary contact and rectifier in the forward conduction direction of said rectifier; said auxiliary contact opening prior to the reversal of said current in a negative direction through said lost motion mechanism.

3,402,325
ALTERNATOR HAVING OVERVOLTAGE PROTECTION MEANS CONNECTED TO ESSENTIALLY SHORT CIRCUIT THE ALTERNATOR

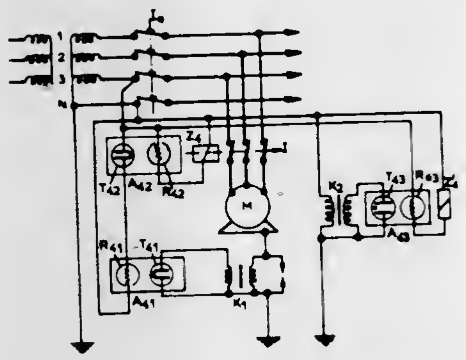
Floyd M. Minks, Campbellsport, Wis., assignor, by mesne assignments, to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 21, 1966, Ser. No. 528,871
12 Claims. (Cl. 317—16)



A Zener diode is connected across an alternator to function as an overvoltage protective device. The alternator is connected to charge a battery. Connected across the Zener diode is a junction which will be fused upon conduction of the Zener diode. The Zener diode is normally non-conducting but upon open circuit conditions will break down and conduct thus fusing the junction connected across the Zener diode. The fusing of the diode junction enables the carrying of the short circuit alternating current.

3,402,326
INSULATION FAULT CONTROL DEVICE WITH LIGHT SENSITIVE ELEMENTS

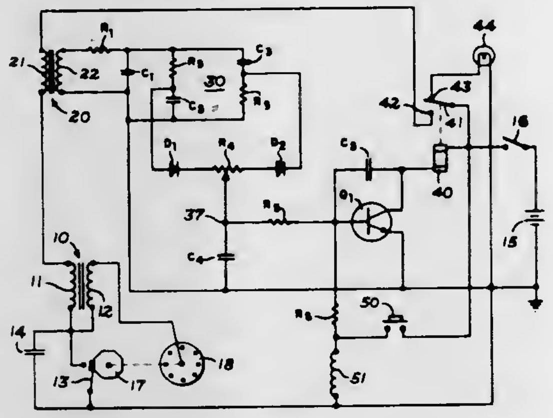
Roger Adrien Guasco, Draveil, and Jérôme Ignacio, Bondy, France; said Ignacio assignor to Ateliers de Constructions de Vaux, Andigny (ACOVA), Paris, France, a French body corporate
Filed May 10, 1966, Ser. No. 548,903
Claims priority, application France, May 10, 1965, 16,468; May 4, 1966, 60,220
8 Claims. (Cl. 317—18)



In an electrical apparatus having an accessible conductive part and a normally insulated electrical circuit fed by a power supply network, a safety device is provided for protection against an insulation fault causing said accessible part to reach a dangerous voltage, said device including an automatic circuit breaker, the operation of which is controlled by a photoelectric circuitry comprising an electroluminescent element to which is applied a voltage deriving from said fault, and a photoconductive element optically coupled to said electroluminescent element and operative when illuminated for opening said circuit breaker.

3,402,327
ENGINE OVERSPEED PROTECTION DEVICE

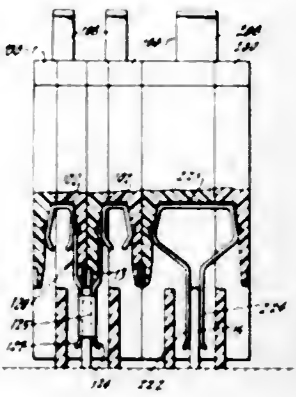
Alan B. Blackburn, Troy, Ohio, assignor to Hobart Brothers Company, Troy, Ohio, a corporation of Ohio
Filed Mar. 25, 1966, Ser. No. 537,503
9 Claims. (Cl. 317—19)



In an engine overspeed detection device for disabling an engine during overspeed conditions, a primary winding of a transformer is placed in series with the ignition circuit and a capacitor is placed across the secondary winding to form a resonant circuit which develops an alternating voltage, the amplitude of which is a function of the engine speed, with the highest voltage output substantially corresponding to the highest allowable engine speed. Frequency sensitive bridge means for developing an output voltage proportional to the difference between the input frequency and the center frequency of the bridge is connected to the output of the resonant circuit with the sensitivity of the bridge means being directly proportional to the voltage applied thereto from the resonant circuit so that the greatest sensitivity to frequency changes is obtained when the engine approaches its maximum allowable speed. Voltage sensitive means are connected to the frequency sensitive bridge means to open the engine ignition circuit when the voltage output of the bridge means reaches a predetermined value indicating the occurrence of an overspeed condition.

3,402,328
SELECTIVE MOUNTING OF DIFFERENT CIRCUIT BREAKER TYPES WITHIN A SINGLE PANELBOARD

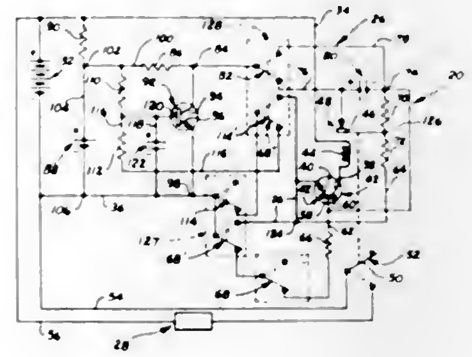
Carl E. Gryctko, Haddon Heights, N.J., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 1, 1967, Ser. No. 635,179
8 Claims. (Cl. 317—119)



A circuit protective arrangement, in which a panelboard for receiving a plurality of different circuit breaker types is predeterminedly adapted in conjunction with the circuit breaker constructions, to estabilsh which of the circuit breaker types may be received at each of the panelboard locations.

3,402,329
MULTIPLE CONDITION SWITCH CONTROLLING APPARATUS

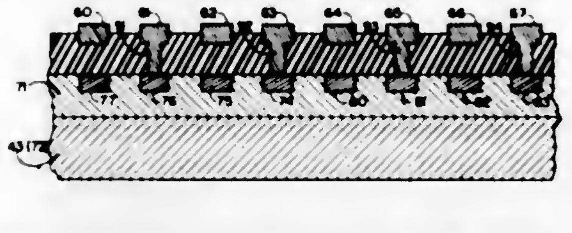
Walter R. Stewart, 8264 E. Beverly Drive, San Gabriel, Calif. 91775
Filed Aug. 6, 1965, Ser. No. 477,901
10 Claims. (Cl. 317—142)



The specification discloses a multiple-condition switch controlling apparatus which, in its broadest form, may be said to comprise cycling means for cycling an auxiliary switch between open and closed positions for various control purposes. One specific form also discloses timing means in association with the cycling means arranged to automatically deenergize or effectively override the cycling means after a preselected period of time and for causing the auxiliary switch to be correspondingly positioned. The timing means may also be separated or independently used. One preferred form of the invention also discloses a selectively activatable overriding means for overriding the cycling means and for maintaining the auxiliary switch in a selected position for a selected period of time determined by the timing means and thereafter becoming operable to effectively inactivate or override the cycling means.

3,402,330
SEMICONDUCTOR INTEGRATED CIRCUIT APPARATUS

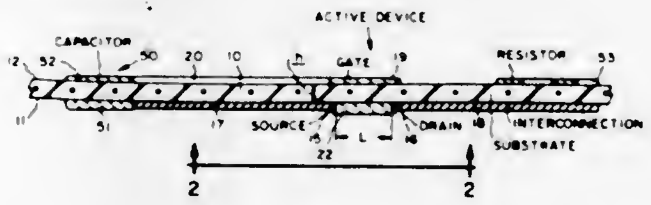
Alva I. Archer, Clearwater, Fla., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed May 16, 1966, Ser. No. 550,224
9 Claims. (Cl. 317—235)



Multi-emitter transistor gating arrays where some of the emitters are used for inputs and at least one emitter is used for an output are shown.

3,402,331
SOLID-STATE ACTIVE ELECTRONIC DEVICE AND MICROCIRCUITS CONTAINING SAME

Edmund S. Rittner, White Plains, N.Y., assignor to North American Philips Co., Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 2, 1966, Ser. No. 569,645
10 Claims. (Cl. 317—235)

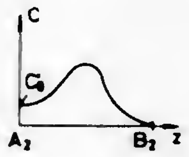


A field-effect type of transistor comprising an insulating substrate whose thickness exceeds 2 microns, a gate electrode on one side of the insulator, a layer of active semiconductive or insulating material on the opposite side of the substrate, and source and drain contacts to the active layer. The ratio of channel length L to insulator thickness *h* is chosen in the range of 1.5–5. Such a device will behave as a dielectric triode exhibiting triode-like electrical characteristics. A microcircuit embodiment of the invention uses a thin resin sheet as the insulator, with the various components printed on opposite sides of the sheet.

3,402,332
METAL-OXIDE-SEMICONDUCTOR CAPACITOR USING GENETIC SEMICONDUCTOR COMPOUND AS DIELECTRIC

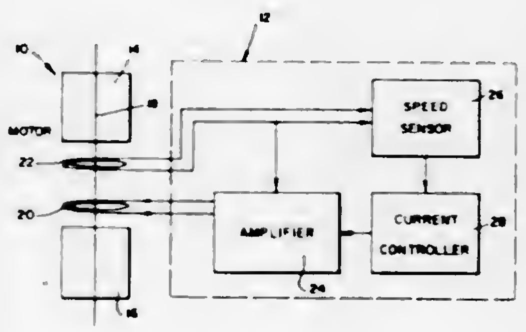
Jacques Thire, Calvados, France, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 5, 1966, Ser. No. 518,928
Claims priority, application France, Jan. 5, 1965, 904
5 Claims. (Cl. 317—240)

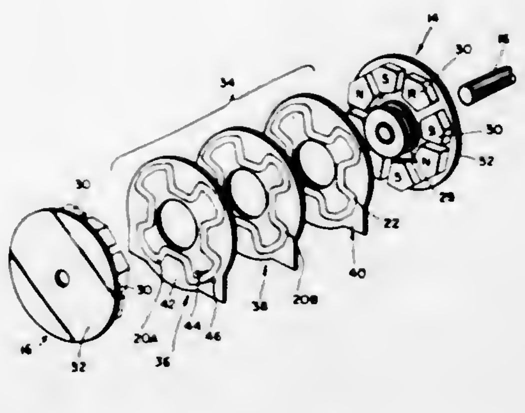
A metal-oxide-semiconductor capacitor in a semi-conductor wafer. A first capacitor electrode is a highly-doped layer in the wafer. The dielectric is a genetic oxide layer formed from a lower-doped layer in the wafer. The second electrode is a vapor-deposited metal on the dielectric. A connection to the first electrode is made through a hole in the dielectric. The highly-doped layer is made by in-diffusion, and the lower-doped layer is made by oxide-gettering. The process is compatible with the planar technology.



3,402,333
ELECTRONICALLY CONTROLLED SYNCHRONOUS MOTOR

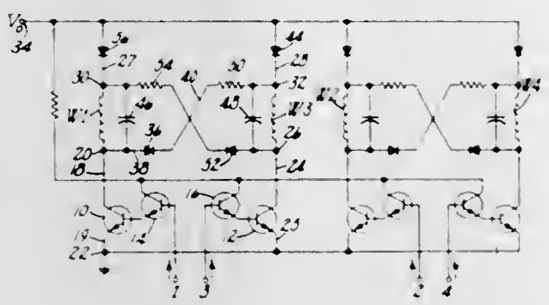
Paul F. Hayner, Lexington, Mass., and John L. Mason, Nashua, N.H., assignors to Sanders Associates Inc., Nashua, N.H., a corporation of Delaware
Continuation of application Ser. No. 450,979, Apr. 26, 1965. This application Sept. 8, 1967, Ser. No. 666,519
13 Claims. (Cl. 318—138)





Apparatus is herein disclosed for a synchronous motor system in which the synchronous motor and its power supply are connected in a feedback loop such that the frequency of the power supply depends upon the motor speed and vice versa. The synchronous motor system includes a generator winding which develops an AC voltage by passing through the motor field during rotation, the induced signal being proportional to motor speed. The signal is amplified and applied to the armature winding of the motor to slightly accelerate the motor. The motor speed continues to accelerate accordingly. The system also includes a speed sensing unit within the power supply to limit armature current and thus maintain the motor at the desired operating speed.

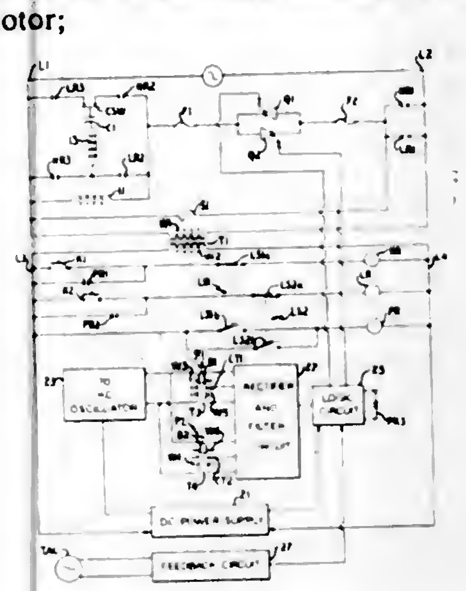
3,402,334
APPARATUS FOR SEQUENTIALLY ENERGIZING WINDINGS
George C. Newton, Jr., Lincoln, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Dec. 8, 1965, Ser. No. 512,299
7 Claims. (Cl. 318—138)



1. A controller for use with electric apparatus having first and second windings for regulating the flow of current from a D.C. source to said windings to provide approximately square wave current pulses sequentially to said first and second windings comprising in combination first and second switching means operable to vary the conductivity of an electric path therethrough, means for connecting said first and second switching means between one side of said first and second windings respectively and one terminal of said D.C. source, means for connecting the other side of the windings to the other terminal of said source, means for controlling the conductivity of said switching means to cause said first switching means to become nonconductive and said second switching means to become conductive and means for transmitting a voltage transient, induced in said first winding upon the cutting off of current flow through said first switching means, to said second winding for increasing the rate of current rise in said second winding comprises a first diode, means for connecting said first diode between said one side of said first winding and said other side of said second winding oriented to permit the passage of current resulting from said transient through said first winding, said second winding, and said second switching means, and a second diode in circuit with the means for connecting said other side of said second winding to the power supply, said second diode being oriented to block the transmission of said voltage transient therethrough to the power supply.

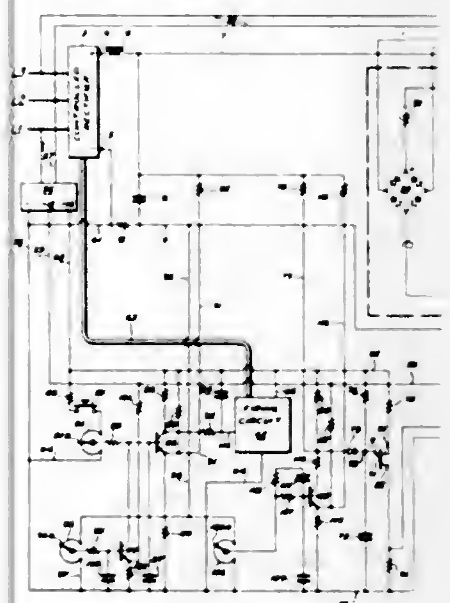
3,402,335
REVERSIBLE INDUCTION MOTOR HOIST CONTROL
Aubrey H. Smith, Kenosha, Wis., and John P. Truemper, West Helena, Ark., assignors to Eaton Yale and Towne, Inc., Cleveland, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 525,236, Feb. 4, 1966. This application June 6, 1966, Ser. No. 555,410
13 Claims. (Cl. 318—202)

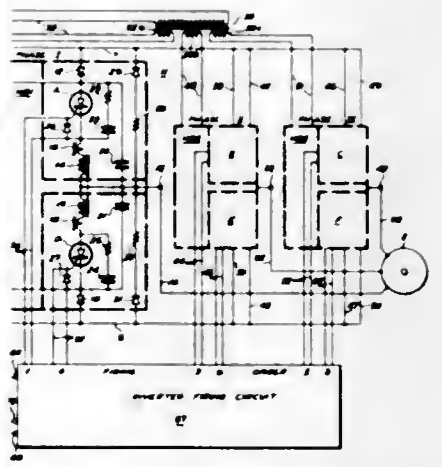
1. A hoist comprising:
means for lifting and lowering a load including a reversible A.C. induction motor;
a circuit for supplying A.C. power to said motor, said circuit including at least one SCR for varying the average A.C. power supplied to said motor in response to variations in the phase of triggering said SCR relative to the supplied A.C. power;
means for selectively reversing said motor;
a manual controller including a pushbutton and means operated by said pushbutton for providing a D.C. reference signal the amplitude of which varies as a function of the travel of said pushbutton and represents a desired speed of said motor;
means for providing a D.C. feedback signal the amplitude of which varies as a function of the speed of said motor;



and means responsive to the relative amplitudes of said reference signal and said feedback signal for varying the phase of triggering of said SCR whereby the power supplied to said motor varies to maintain the actual speed of said motor substantially equal to the desired speed under varying hoist load conditions.

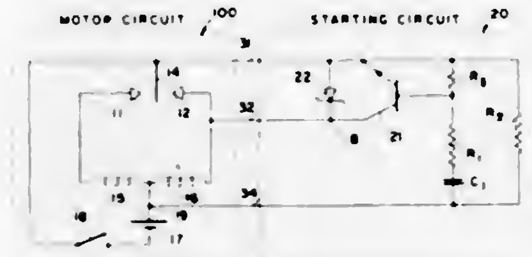
3,402,336
ADJUSTABLE FREQUENCY A.C. MOTOR CONTROL SYSTEM WITH LOW SPEED COMPENSATION
Robert L. Risberg, Milwaukee, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Oct. 13, 1965, Ser. No. 495,594
6 Claims. (Cl. 318—227)





An adjustable frequency alternating current motor control system with means for adjusting the frequency downwardly under conditions of high torque loading and low speed in order to maintain motor field strength and thereby maintain the torque at low speed.

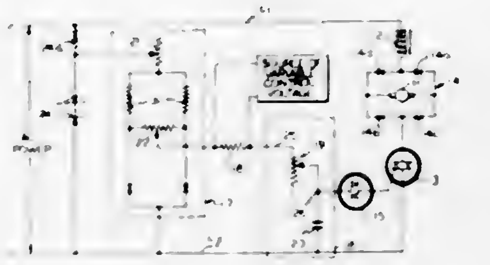
3,402,337
ELECTRICAL MOTOR STARTING ARRANGEMENT
Floyd L. Malmborg, Lincoln Park, and Francis E. Sellinger, Jr., Somerset, N.J., assignors to American District Telegraph Company, Jersey City, N.J., a corporation of New Jersey
Filed June 13, 1966, Ser. No. 557,110
5 Claims. (Cl. 318—254)



1. In an electrical motor characterized by a plurality of field poles, a corresponding plurality of energizable field coils each having one terminal connected electrically to the first terminal of a source of current, a magnetic rotor member mounted on a shaft between said field poles, said shaft bearing an eccentric and adapted to be connected to the second terminal of said source of current, and a plurality of brush members each connected electrically to the other terminal of a corresponding one of said field coils and positioned for electrical contact with said eccentric to effect energization of the corresponding field coil with said eccentric connected to said source of current, a starting circuit which comprises
a switching element provided with a control terminal, an input terminal, and an output terminal,
means responsive to current from said source of current for connecting said control terminal to the first terminal of said source of current for a selected interval of time to energize said switching element for a corresponding interval of time,
means for connecting the other terminal of one of said field coils to the input terminal of said switching element, and
means adapted to connect the output terminal of said switching element to the second terminal of said source of current, so that with the output terminal of said switching element connected to said second terminal of said source of current that one of said field coils connected to the input terminal of said switching element is energized for said selected interval of time after said current source is connected to the output terminal of said switching element.

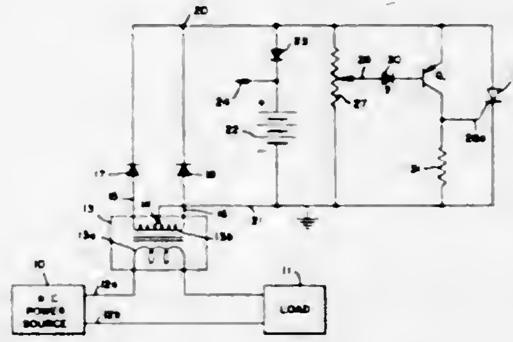
3,402,338
CONTROLLER FOR A DC OR UNIVERSAL MOTOR UTILIZING STATIC SWITCHING ELEMENTS
John C. Thoresen, Warwick, R.I., assignor to The New York Air Brake Company, a corporation of New Jersey
Filed Mar. 3, 1966, Ser. No. 531,502
10 Claims. (Cl. 318—310)

1. A controller for a DC or universal motor including
(a) an AC power source connected with the motor through static, gate-controlled power switching means;
(b) static triggering means for gating said switching means;
(c) a timing circuit for controlling the firing angle of the triggering means;
(d) a generator for supplying to said timing circuit voltage pulses which are in synchronism with the AC power;
(e) means for regulating the magnitude of the voltage pulses supplied to the timing circuit; and



(f) control means for injecting directly into said timing circuit a variable control voltage which is superimposed on said voltage pulses and which causes the timing circuit to change the firing angle of the triggering means in direct proportion to its magnitude.

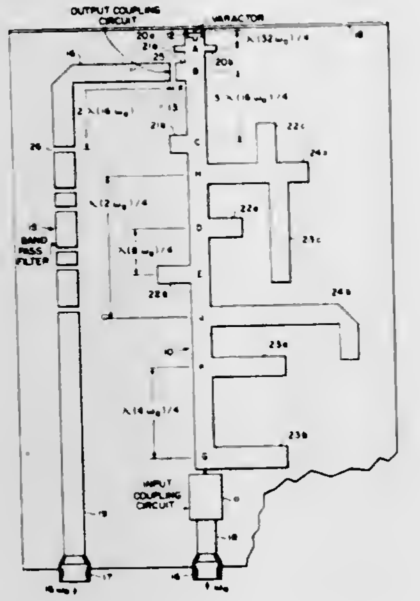
3,402,339
BATTERY CHARGER SYSTEM
Herman Benedict Abrams, 9843 E. Olive St., Temple City, Calif. 91780
Filed Apr. 15, 1966, Ser. No. 542,907
1 Claim. (Cl. 320—40)



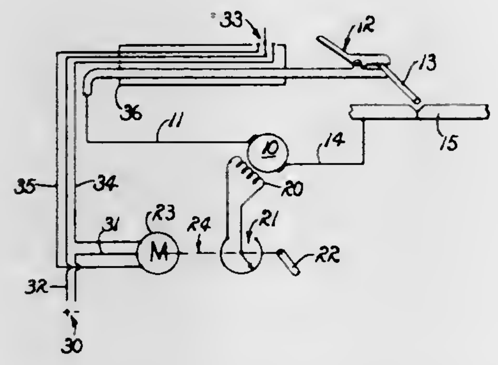
A battery charger system for a highway truck inwhich the primary winding of a current transformer is coupled between an AC power source and a load which may be a refrigeration unit on the truck. The secondary winding of the transformer is coupled to a full-wave rectifier across which is connected the battery to be charged in series with a diode. The diode is so connected to conduct only charging currents. Because of the current transformer the maximum amount of charging current is determined by the load. A potentiometer across the battery and diode senses when the combined battery voltage and voltage drop across the diode during charging reaches a predetermined amount whereupon a breakdown diode on the potentiometer is closed to fire an SCR which shorts the secondary of the current transformer. Thus, during noncharging conditions the current transformer is shorted to prevent buildup of high voltages.

3,402,340
FREQUENCY MULTIPLIER AND A PLURALITY OF TUNING STUBS TO ACHIEVE ISOLATION
Trygve Ringereide, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Sept. 20, 1966, Ser. No. 580,770
6 Claims. (Cl. 321—69)

A microwave frequency multiplier using a varactor diode located at one end of a transmission line and fed from the other end. The multiplier includes a number of idler circuits, each of which has a first tuning stub for series resonating the varactor at one of the idler frequencies and a second tuning stub which reflects parallel resonance at the junction of the said one stub and the transmission line, so as to prevent interaction between a lower frequency idler circuit and the higher frequency ones.



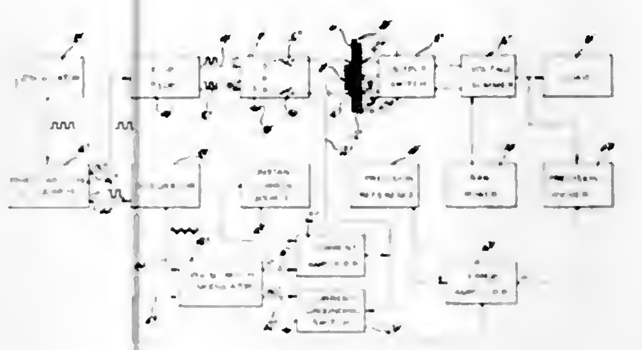
3,402,341
REMOTE CONTROL SYSTEM FOR WELDING GENERATOR
Woodrow W. Cook, Bakersfield, Calif., assignor of one-half to Thelma Nelson, Bakersfield, Calif.
Filed Oct. 24, 1965, Ser. No. 504,535
5 Claims. (Cl. 322—16)



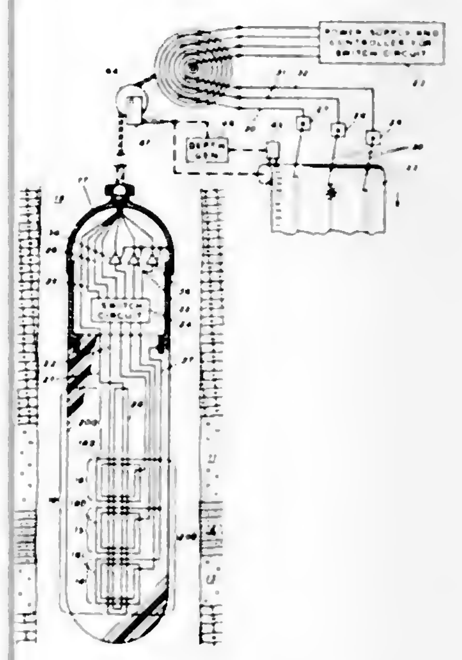
A control system for an electric generator having a load circuit, a field winding and a regulator rheostat, wherein the rheostat is provided with manually adjusted operator means and power driven operator means connected by an impositive drive to permit selective adjustment of the rheostat by either of the operator means.

3,402,342
DC POWER SUPPLY EMPLOYING VARIABLE WIDTH PULSE REGULATION
Ronald M. Wagner, Greendale, Wis., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 16, 1966, Ser. No. 527,911
9 Claims. (Cl. 323—18)

A closed loop regulated DC power supply in which voltage control is accomplished by applying voltage pulses of selected duration to a load. The pulses are generated by means of a transformer having a split primary, the portions of which are placed in separate closed circuits alternately. Current pulses of selected duration are driven through the primary portions in a ratio determined by output voltage comparison to produce a secondary voltage related to the deviation of the raw supply voltage from the desired value. Output circuit means are connected between the secondary winding and a load to add increments of voltage to the raw supply to restore the desired value.

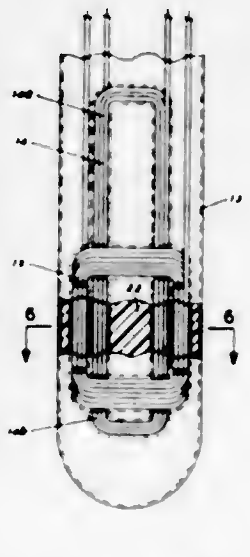


3,402,343
HIGH SPEED, HIGH RESOLUTION, NUCLEAR MAGNETISM WELL LOGGING APPARATUS HAVING A PLURALITY OF RECEIVING COILS AND AN EXTENDED POLARIZING COIL, AND METHOD FOR USING SAME
Robert J. S. Brown, Fullerton, and Bernard W. Gamson, Los Angeles, Calif., assignors, by direct and mesne assignments, to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Continuation-in-part of application Ser. No. 387,569, Aug. 5, 1964. This applicaation Aug. 2, 1965, Ser. No. 476,279
5 Claims. (Cl. 324—.5)



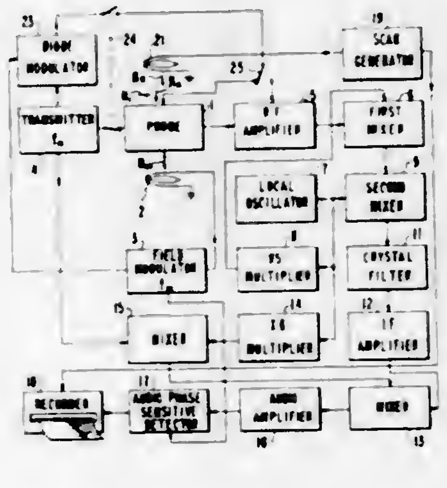
Statistical reliability and vertical resolution of a nuclear magnetism log originating from nuclear magnetism signals from fluids in an earth formation traversed by a well bore and polarized and received by a nuclear magnetism logging system within the sonde, is improved by relating only those precessing atomic nuclei from each depth interval of formation adjacent to each of a plurality of end-to-end arranged receiving coils. The receiving coils are arranged coextensive with the polarizing coil such that the polarizing coil has an effective portion of its windings extending along the well bore substantially further than the plurality of receiving coils, the extension being in the direction of which the sonde travels and being at least equal to the product VT_0 where V is the velocity of the traversing sonde and T_0 is the polarizing time of the protons of the formation being logged.

3,402,344
NUCLEAR MAGNETISM WELL LOGGING METHOD AND APPARATUS
Robert J. S. Brown, Fullerton, and Bernard W. Gamson, Los Angeles, Calif., assignors, by direct and mesne assignments, to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Continuation-in-part of application Ser. No. 387,569, Aug. 5, 1964. This application Aug. 2, 1965, Ser. No. 477,666
8 Claims. (Cl. 324—.5)



1. Apparatus for increasing the speed with which nuclear magnetic signals can be generated and detected in an earth formation penetrated by a well bore and traversed by a logging sonde by aligning protons of said formation in a first direction by means of a polarizing field, interrupting said polarizing field and, as said protons precess about the earth's magnetic field, detecting said relaxing protons comprising
- means for traversing said sonde through said borehole at a velocity (V), said sonde including at least a pair of coils having magnetic axes,
- one of said coils having at least an effective portion of its windings extending along said well bore substantially farther than a second of said coils, said extension along said well bore axis being in the direction in which said sonde is moved during the logging operation and having a magnitude related to the velocity (V) of the sonde and the polarizing time (T_0) of said earth formation,
- a polarizing current source,
- means for connecting at least said one coil to said current source to serve as a polarizing coil of known effective length to provide a magnetic field in said earth formation for a time period at least equal to the polarizing time (T_0) of said formation,
- means for interrupting said polarizing current,
- amplifier means,
- means for connecting said second coil to said amplifier means at least during the interval of time following the interruption of said polarizing current, so that said nuclear magnetic precession signals may be detected by said second coil, said detected signals coming from fluids containing protons precessing about and relaxing towards the earth's magnetic field in portions of said earth formation that have previously been traversed and previously polarized at least in part by the magnetic field generated by polarizing current flowing through said extension of said one coil,
- said pair of coils being connectable in series so that said polarizing current will flow through both of said coils during polarization of the formation and disconnectable following interruptions of said polarizing current so that said second coil is permitted to be singly connectable to said amplifier means.

3,402,345
FIELD MODULATED GYROMAGNETIC RESONANCE SPECTROMETER HAVING AN INTERNAL TEST SIGNAL GENERATOR
Forrest A. Nelson, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Apr. 7, 1966, Ser. No. 541,011
10 Claims. (Cl. 324—.5)

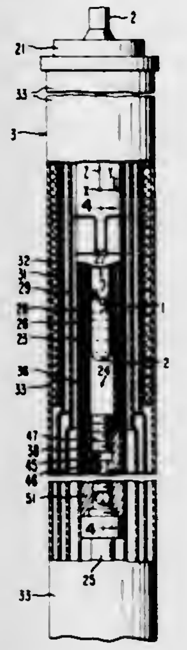


1. A gyromagnetic resonance spectrometer apparatus including, means for immersing a gyromagnetic resonance substance in a D.C. polarizing magnetic field of a given intensity, the substance having a certain gyromagnetic resonance frequency at the given intensity of the D.C. magnetic field, means for modulating the intensity of the D.C. polarizing magnetic field at a certain audio frequency, means for applying an A.C. magnetic field to the substance transverse to the direction of the modulated D.C. polarizing magnetic field, the frequency of the applied A.C. magnetic field being displaced from the certain resonance frequency of the substance by an amount equal to the D.C. magnetic field modulation frequency to produce frequency modulated gyromagnetic resonance of the substance, means for detecting resonance of the gyromagnetic resonance substance and for producing an output resonance signal, means for deriving an audio frequency modulated output of said A.C. magnetic field applying means to produce a simulated resonance signal, and means for applying the simulated resonance signal to said resonance detecting means to give a simulated resonance output, whereby the resonance detecting means may be tested, as desired.

3,402,346
COAXIAL RECEIVER COIL AND CAPACITOR STRUCTURE FOR PROBES OF UHF GYROMAGNETIC SPECTROMETERS
George A. Baker, San Carlos, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Apr. 22, 1966, Ser. No. 544,587
10 Claims. (Cl. 324—.5)

1. Gyromagnetic resonance probe apparatus for use in conjunction with a magnet producing a central region of intense uniform unidirectional magnetic field including, means forming an elongated probe structure for immersing a gyromagnetic resonance sample of matter to be investigated in the hollow interior region of the magnet, said probe means including a plurality of concentrically nested coaxially disposed tubular members, means form-

ing a receiver coil wound to curve with and conform to the surface of one of said nested tubular members for detecting resonance of the sample, means forming a tuning capacitor connected to said receiver coil means for tuning said receiver coil means to an ultrahigh frequency corresponding to the ultrahigh gyromagnetic resonance frequency of the sample in the polarizing magnetic field, said tuning capacitor being contained within said nested tubular members of said probe means and being coaxially disposed of said receiver coil means, whereby said tuning capacitor and said receiver coil means form a compact coaxial structure to minimize stray lead inductance and provide enhanced signal to noise ratio for the detected resonance signal.

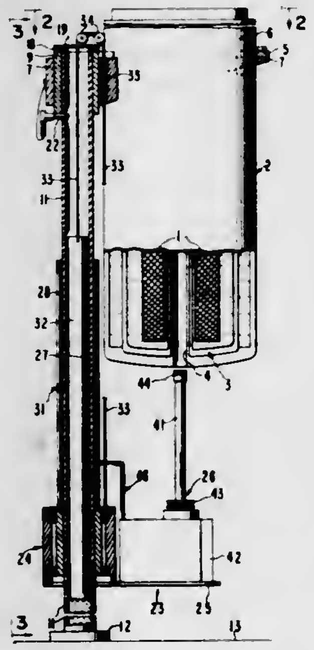


3,402,347
VERTICAL STAND FOR A SUPERCONDUCTIVE MAGNET HAVING A VERTICALLY GUIDED PROBE CARRIAGE

Forrest A. Nelson, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Apr. 25, 1966, Ser. No. 544,775

12 Claims. (Cl. 324—.5)



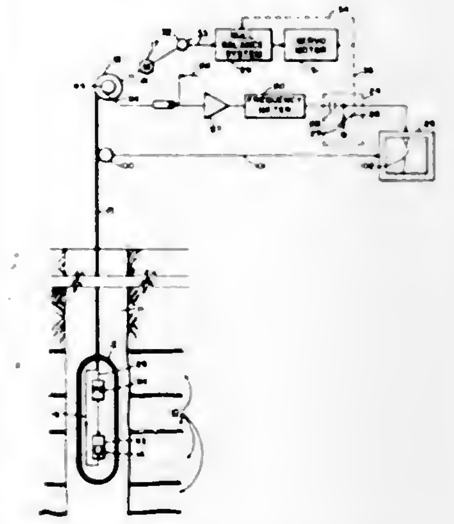
1. A superconductive magnet apparatus including, means forming a superconductive solenoid for producing an intense magnetic field within its interior region, means forming a cryostat enveloping said solenoid for cooling said solenoid to superconductive temperature, said cryostat having a reentrant bore extending coaxially of and into the central region of said solenoid, means forming a stand for supporting said cryostat and solenoid with said bore being vertically directed into said cryostat from the bottom of said cryostat, said stand means including a vertically translatable probe support carriage for vertically inserting and withdrawing a probe within said reentrant bore from below said cryostat, and said stand means further including means for horizontally guiding the vertical movement of said probe carriage to one predetermined vertical path which brings the vertical path of the probe into coaxial registration with the vertical axis of said reentrant bore, whereby vertical insertion of the probe into said bore of said cryostat is facilitated.

3,402,348
REMOVAL OF THE EFFECT OF MICROPULSATION FIELD FROM MAGNETIC WELL LOGS

Gustave L. Hoehn, Jr., and William H. Ruehle, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York

Filed Feb. 15, 1965, Ser. No. 432,578

1 Claim. (Cl. 324—8)



The specification discloses the production of well logs indicative of magnetic fields from the formations wherein there is reduced the effect of significant signal components of the low frequency micropulsation field. The effect of the micropulsation field may be reduced by filtering, either electric or time-domain, or by obtaining an independent measurement of the micropulsation field and subtracting this from the borehole logs obtained. In the embodiments wherein filtering operations are carried out, signal components below a cutoff frequency and within the range from zero to about one cycle per second are filtered from the borehole measurements obtained.

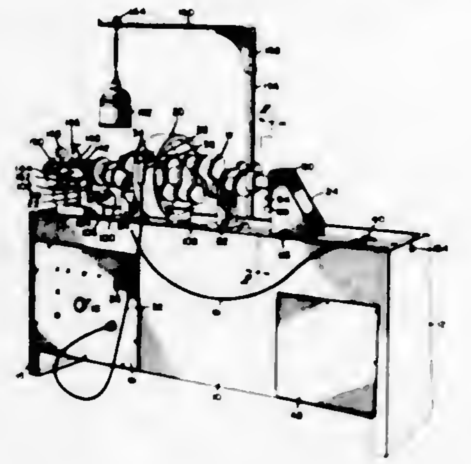
3,402,349
SUPPORT APPARATUS FOR DETECTING FLAWS IN FERROUS OBJECTS BY MAGNETIC PARTICLE INSPECTION

Phillip J. Parker, 1710 Pinehurst Road, Dunedin, Fla. 33528

Filed Apr. 30, 1965, Ser. No. 452,264

9 Claims. (Cl. 324—38)

The apparatus is constructed to facilitate, expedite, and improve the reliability of flaw detection procedure by the wet-method fluorescent magnetic particle inspection method, in the testing of ferrous articles. It features eliminating the need for a light-excluding hood which heretofore interfered with workpiece manipulation, and provides a conveniently portable hand-operated clamping and magnetizing control which minimizes accidental and unsafe operation. The amount of magnetic particle flaw detection solution is minimized to discourage undesirable over-usage of the solution, while at the same time greatly reducing the quantity of magnetic particles to be placed and kept in suspension, thereby to materially reduce start-up time which is further reduced by providing an improved jet-action agitator operative to promptly place the particles in suspension following any shut-down period, without resort to preliminary time-consuming handwork usually required for dislodging magnetic particle settle-out from various structural parts of the apparatus A novel quick-action tailstock lock and actuator automatically limits tailstock movements toward and from the headstock, to preclude accidental dropping of a workpiece onto the machine bed when the workpiece is placed or displaced between workpiece supports carried by the headstock and the tailstock.

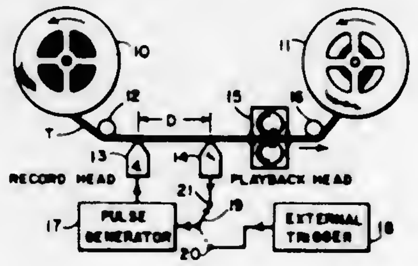


3,402,350
METHOD AND PRODUCT FOR STANDARDIZING TAPE RECORDING AND PLAYBACK SYSTEMS

Richard L. Shellabarger, 1348 Callens Road, Ventura, Calif. 93003

Filed Dec. 6, 1965, Ser. No. 511,606

4 Claims. (Cl. 324—70)



A method of standardizing tape recording and playback systems is provided by recording a series of electrical pulses on a moving tape. The series of pulses are recorded by employing a recording head and a reproduce head in fixed spaced relationship such that a recorded signal from the recording head will be reproduced by the reproduce head at the fixed distance from the recording head which reproduced signal in turn will trigger the recording head to record a second pulse on the tape. The process continues such that there are provided absolutely uniformly spaced pulses on the tape regardless of any flutter or variation in tape speed during the process. This tape with absolutely uniformly spaced pulses thereon can then be used to calibrate and check other tape recording and playback systems to provide an indication as to any deviations from absolute standard tape speeds.

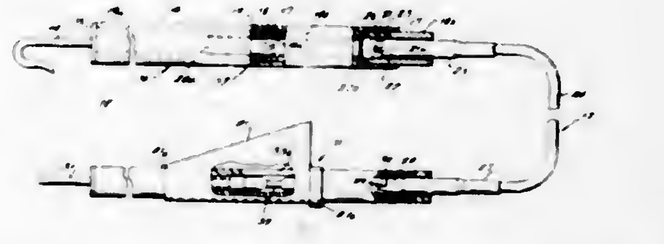
The product of this invention constitutes the tape itself having the absolutely uniformly spaced pulses recorded thereon.

3,402,351
PHASE AND VOLTAGE DETECTOR

Fred L. Kradel, Greensburg, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed May 20, 1965, Ser. No. 457,287

3 Claims. (Cl. 324—87)



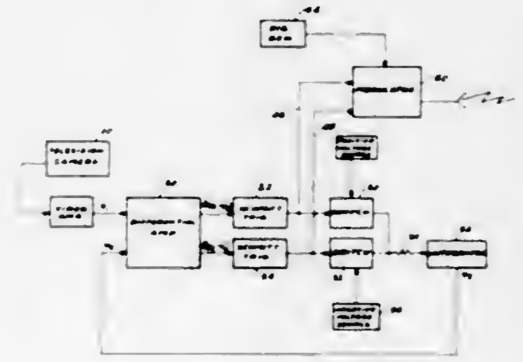
A testing device, for determining the phase relationship of voltages as between two or more circuits and also for determining the presence of a voltage in a circuit, is provided with a voltage detector having a switching means which is automatically operative upon connection of a connecting cable and coupler unit to the voltage detector to convert the testing device from a voltage detector to a phase detector.

3,402,352
SYSTEM FOR TRANSMITTING THE DIFFERENCE BETWEEN AN INFORMATION SIGNAL AND A VARIABLE REFERENCE VOLTAGE

Theodore Lerner, Williamsville, N.Y., assignor to Bell Aerospace Corporation, Wheatfield, N.Y.

Filed Sept. 16, 1965, Ser. No. 487,855

3 Claims. (Cl. 325—38)



A signal V_1 characterized by periods of high information content and periods of low information content is simulated by an integrator having a positive and a negative input and an output V_2. The integrator inputs are controlled by a pair of Schmitt triggers to vary the output V_2 toward the signal V_1 when the difference between V_1 and V_2 exceeds a predetermined value. The outputs of the Schmitt triggers are used to transmit information only concerning the time duration of the periods of varying voltage of the output V_2 thus materially to reduce the duty cycle of the transmitter.

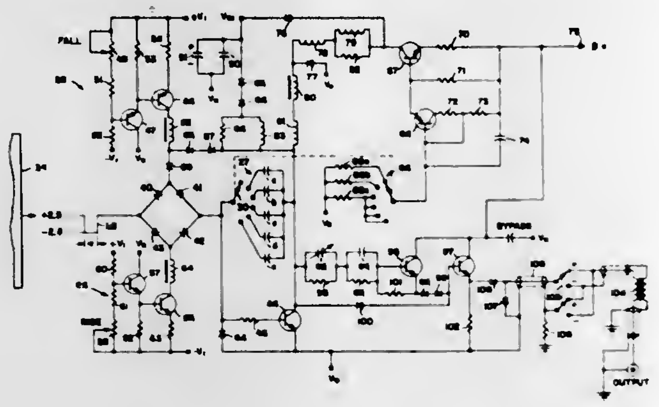
3,402,353
TRAPEZOIDAL PULSE GENERATOR WITH DIODE BRIDGE FOR SWITCHING INDEPENDENT CURRENT SOURCES

John C. Hubbs, Lafayette, Calif., assignor to E-H Research Laboratories, Inc., Oakland, Calif., a corporation of California

Filed July 14, 1965, Ser. No. 471,864

2 Claims. (Cl. 328—59)

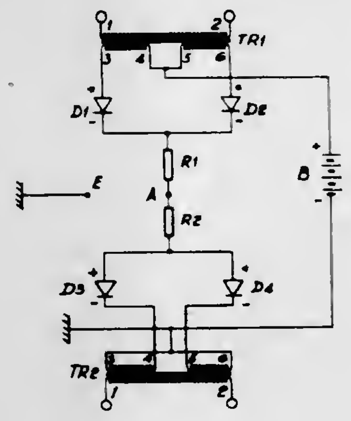
A waveform generator for producing a trapezoidal pulse where the rise and fall ramps are provided by independent current sources which are selectively switched into a Miller integrator by a diode bridge. Additional



diodes are coupled to the Miller integrator to clamp the output pulse at a predetermined amplitude.

3,402,354
DIFFERENTIAL MEASURING RECTIFIER

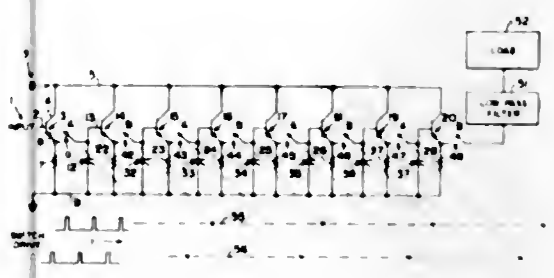
Julio Gonzalez Bernaldo de Quiros, Madrid, Spain, assignor to G.A. Messen-Jaschin, Sarnen, Switzerland, a corporation of Switzerland
Filed July 13, 1965, Ser. No. 471,551
Claims priority, application Switzerland, July 14, 1964, 9,260/64
1 Claim. (Cl. 328—146)



1. A differential measuring rectifier, comprising, in combination, a first rectifier circuit, a second rectifier circuit, a first transformer having primary and secondary windings, a second transformer having primary and secondary windings, the secondary winding of the first transformer being included in the first rectifier circuit and consisting of two equal winding halves wound in the same direction as the primary winding, the first rectifier circuit further including two diodes, the second rectifier circuit including two other diodes, each of said diodes having a positive electrode and a negative electrode, the positive electrodes of the diodes in the first rectifier circuit being connected to the secondary winding of the first transformer, the negative electrodes of the diodes in the first rectifier circuit being interconnected, the secondary winding of the second transformer being included in the second rectifier circuit and consisting of two equal winding halves wound in the opposite direction as the primary winding, the negative electrodes of the diodes in the second rectifier circuit being connected to the secondary winding of the second transformer, the positive electrodes of the diodes in the second rectifier circuit being interconnected, a source of constant D.C. voltage connected to the centers of the secondary windings of the two transformers to provide a D.C. pre-voltage, and two resistances interconnected in series and constituting a voltage divider interconnecting the two rectifier circuits in opposed relationship.

3,402,355
ELECTRONICALLY VARIABLE DELAY LINE

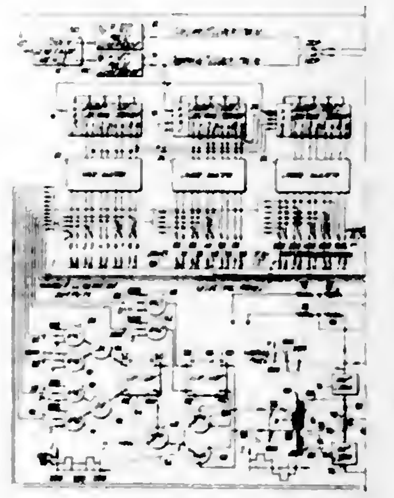
William J. Hannan, Moorestown, N.J., and Joseph F. Schanne, Jr., Philadelphia, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Jan. 5, 1965, Ser. No. 423,615
6 Claims. (Cl. 328—151)



A delay line consisting of a cascade of storage capacitors and switches separated by buffer amplifiers, the switches operate at a data sampling rate and are used to transfer the signal level stored on each capacitor to the adjacent capacitor, and the drive signal to alternate switches are displaced by one-half the sampling period.

3,402,356
POSITION RESPONSIVE SWITCHING SYSTEMS

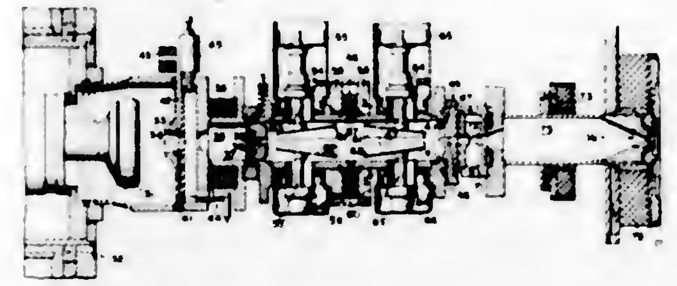
John Harbour, Kilbirnie, Scotland, assignor to Imperial Chemical Industries Limited, London, England
Filed Mar. 16, 1966, Ser. No. 534,902
Claims priority, application Great Britain, Mar. 19, 1965, 11,656/65
28 Claims. (Cl. 328—155)



Switching systems are disclosed giving output signals corresponding to predetermined positions of a movable member along a given path. A number generator provides cyclic successions of signals each corresponding to a particular position of the member. In each number generator cycle a strobe pulse generator associated with the member provides a pulse whose phase relative to the number generator cycle indicates the instantaneous position of the member. Gating means responsive to preselected number generator signals corresponding to predetermined positions of the member pass a strobe pulse to provide an output signal only when the member is at such positions.

3,402,357
HIGH ENERGY CHARGED PARTICLE PULSE LENGTH AND ENERGY CONTROL APPARATUS

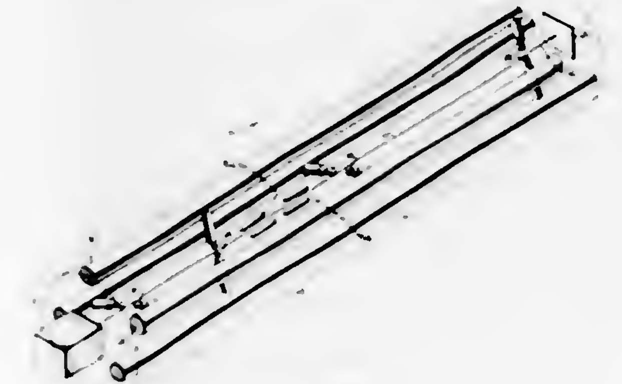
Jacob Haimson, East Palo Alto, and Craig S. Nunan, Los Altos Hills, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Sept. 28, 1964, Ser. No. 399,492
14 Claims. (Cl. 328—229)



Controlled variations in pulse length and pulses of uniformly energetic charged particles are "chopped out" of a cathode pulse in a system utilizing two pair of thyratron controlled deflection plates, a magnetic field orthogonal to the second pair of plates downstream from the first pair and a high energy dissipating V-slotted apertured beam collector. Selected portions of a cathode pulse are "chopped out" by controlled discharge of thyratrons connected to one of each pair of positively charged deflection plates. Discharge of the upstream thyratron permits the beam to pass undeflected through the aperture. Discharge of the downstream thyratron permits the magnetic field to deflect the beam into the high energy dissipating V-slotted beam collector. By such apparatus, uniformly energetic pulses of charged particles of lengths down to a fraction of a nanosecond, e.g., 1/32 nanosecond, have been obtained.

3,402,358
NEUTRAL PARTICLE BEAM ACCELERATOR HAVING TRANSVERSE ELECTRODES AND STEERING MEANS FOR THE PARTICLE BEAM

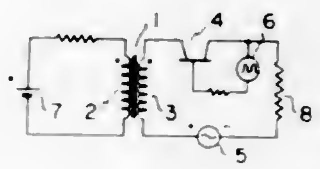
Lennard Wharton, Chicago, Ill., assignor to Research Corporation, New York, N.Y., a non-profit corporation of New York
Filed Nov. 9, 1964, Ser. No. 409,920
14 Claims. (Cl. 328—233)



A neutral particle accelerator is defined by a source of neutral particles and axially spaced electrode pairs whose electric fields polarize neutral particles. Successive electrode pairs are angularly spaced ninety degrees from each other for a beam focusing effect. Dipolar doublets, spaced along the particle beam path, also focus the particle beam. The spaced electrode pairs are operated at the same electrical phase.

3,402,359
MAGNETIC AMPLIFIER FOR LOW-LEVEL INPUT SIGNALS

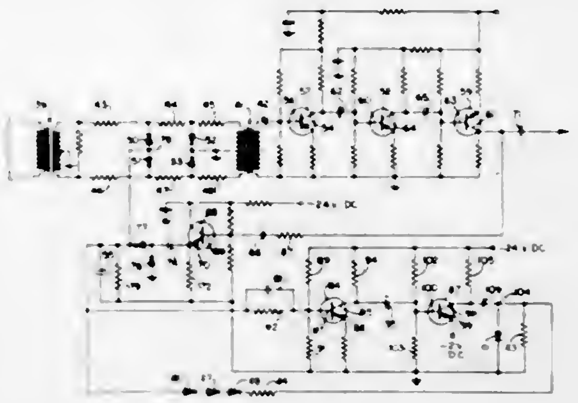
Fumiyuki Inose, Hachioji-shi, Hiroshi Morozumi, Tokyo-to, Kyo Suda, Hachioji-shi, and Toshio Numakura and Ryutaro Mori, Kodaira-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company
Filed July 9, 1964, Ser. No. 381,323
Claims priority, application Japan, July 13, 1963, 38/38,298
1 Claim. (Cl. 330—8)



A magnetic amplifier having a single core and a gating switch connected in the gate winding circuit provides a push-pull characteristics for low-level input signals.

3,402,360
FAST RECOVERY AGC

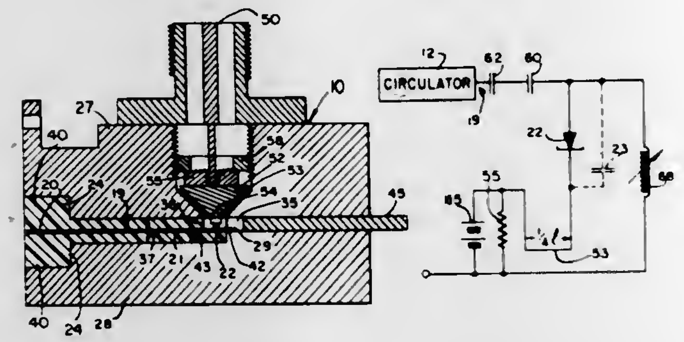
William J. Million, Park Ridge, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Oct. 3, 1966, Ser. No. 583,603
6 Claims. (Cl. 330—29)



1. A fast recovery circuit for an automatic gain control circuit including signal amplitude regulating means adapted to receive input signals and to regulate the amplitude thereof in response to a control signal applied thereto, and rectifier means coupled to the output of the automatic gain control circuit for receiving the amplitude regulated input signals and to develop a control signal having a trailing edge in response thereto, said fast recovery circuit including in combination, filter means coupling the rectifier means to the signal amplitude regulating means for filtering the control signal and applying the same to the signal amplitude regulation means, said filter means being responsive to the control signal to store a potential therein, regenerative circuit means having an input circuit coupled to the filter means for receiving the control signal and an output circuit, circuit means coupling said output circuit of said regenerative circuit means to said input circuit of said regenerative circuit means and said filter means, said regenerative circuit means being responsive to the trailing edge of the control signal to develop a discharge signal at said output circuit of said regenerative circuit means, said filter means being responsive to said discharge signal whereby said stored potential is rapidly reduced.

3,402,361
INTEGRATED MICROWAVE SIGNAL AMPLIFIER CIRCUIT

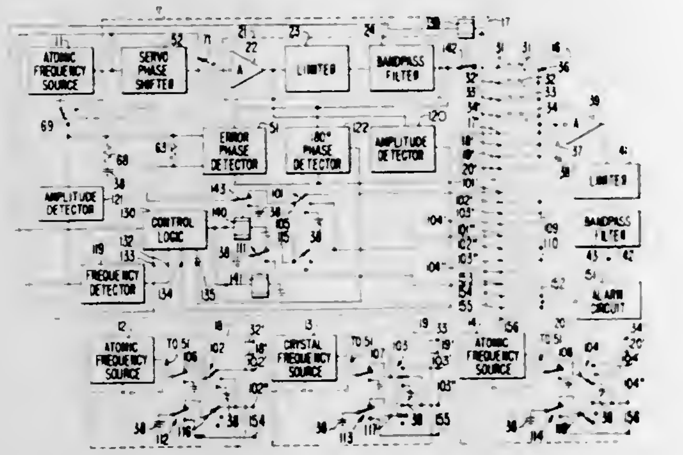
Richard Calvin Havens, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Aug. 10, 1965, Ser. No. 478,656
7 Claims. (Cl. 330—61)



A negative resistive type amplifier utilizing the negative characteristics of a tunnel diode connected in the integrated microwave structure for producing low noise, high gain and a wide band width.

3,402,362
APPARATUS FOR GENERATING A SIGNAL HAVING A FREQUENCY EQUAL TO THE AVERAGE FREQUENCY OF A PLURALITY OF FREQUENCY SOURCES

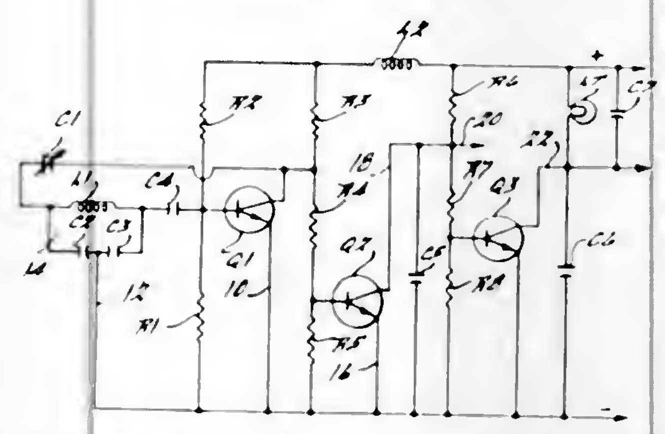
Robert J. Rorden, Los Altos, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Dec. 21, 1966, Ser. No. 603,564
10 Claims. (Cl. 331—2)



The signals generated by a plurality of frequency sources are coupled to a common buss. The instantaneous amplitudes of the signals are summed at the common buss to provide a signal whose phase is the average of the phases of the summed signals. The phase averaged signal is amplified, limited and passed through a bandpass filter to provide a signal whose frequency is the average of those of the frequency sources. The phase averaged signal also is coupled to a phase detector associated with each of the frequency sources. Each phase detector compares the phase of the signal generated by the associated frequency source with the phase averaged signal. The phase detector provides a D.C. error signal of a polarity indicating whether the signal leads or lags the phase averaged signal in phase and of a magnitude proportional to the number of degrees of phase lag or lead. The D.C. error signal is coupled to adjust the frequency of the signal provided by the associated frequency source until the signal agrees with the phase averaged signal in frequency.

3,402,363
MECHANICALLY ACTUATED ELECTRONIC SWITCH

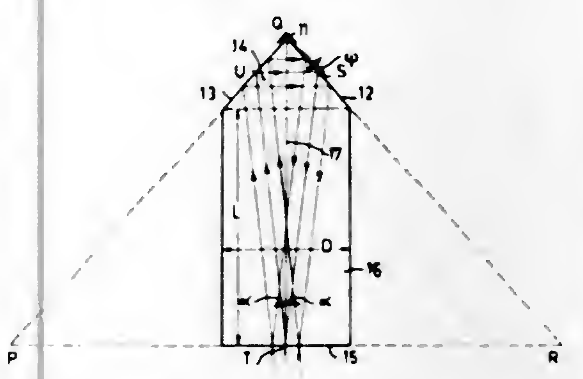
Lee D. Johnson, 1322 N. Adams Road, Rochester, Mich. 48063
Filed July 5, 1966, Ser. No. 562,789
14 Claims. (Cl. 331—75)



An electronic switch utilizing electronic switching elements coupled to the output of an oscillator circuit which contains a mechanically controlled feedback element for selecting an oscillating or non-oscillating condition, whereby the switching elements are placed in conductive or nonconductive states in response to the condition of the oscillator.

3,402,364
OPTICAL MASER WITH ROOF SYSTEM REFLECTOR UNDER 90°

Hendrik De Lang, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 30, 1964, Ser. No. 355,638
Claims priority, application Netherlands, Apr. 22, 1963, 291,813
16 Claims. (Cl. 331—94.5)

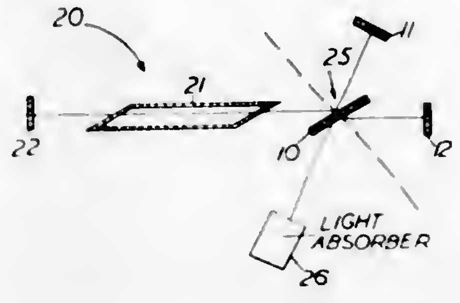


An optical maser comprising a masing medium and reflecting means at opposite ends. In one embodiment, one reflector forms a roof system having a roof angle between 80° and (90°—0°25″) and the other reflector is flat. In another embodiment, both reflectors form roof systems with roof angles between 80° and (90°—0°25″), but the roof lines are perpendicular to one another. Among the advantages is the lack of criticality in making perfect 90° roof prism reflectors.

3,402,365
MONOCHROMATIC OPTICAL MASER

Teiji Uchida, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed July 14, 1964, Ser. No. 382,539
Claims priority, application Japan, July 19, 1963, 38/38,958
5 Claims. (Cl. 331—94.5)

A monochromatic optical maser having a light source for producing a maser light beam within a band of wavelengths has one of its source reflectors, for reciprocating the beam, replaced by an optical system which includes a transmitting-reflecting element angled at the Brewster angle so that the element reflects a first portion of light along a first path and transmits a second portion along a second path. First and second reflectors are positioned in the respective paths to reflect the energy back to the element, the reflectors being spaced in a predetermined distance relationship with respect to the desired wavelength to produce monochromatic light.



3,402,366
BEAM SCANNING IN INJECTION LASERS

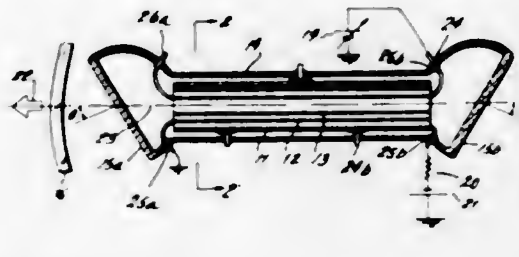
Howard B. Williams and Bankim R. Shah, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 26, 1965, Ser. No. 435,476
9 Claims. (Cl. 331—94.5)

1. A laser comprising:
a device of the type that produces lasing as a function of current applied to the device and the arrangement of reflective surfaces of the device;
said reflecting surfaces being arranged to produce a lasing along any of a plurality of lines; and
two contact means for applying differing current wave forms to said device, said contact means being spaced apart in the direction of lasing whereby the one of said lines where lasing is established is a function of the length of each contact means along said lines and the current applied to each said contact means;
each said contact means being shaped to have a differing length along each said line and the lengths of said two contact means along a common line being related whereby lasing may occur along a selected one of said lines in response to a unique pair of current values applied to said first and second contact means.

3,402,367
THREE-ELECTRODE COLD-CATHODE GAS LASER TUBE

Haruhiro Kobayashi, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Shiba, Minatoku, Tokyo, Japan
Filed June 10, 1965, Ser. No. 462,935
Claims priority, application Japan, June 20, 1964, 39/35,011
13 Claims. (Cl. 331—94.5)

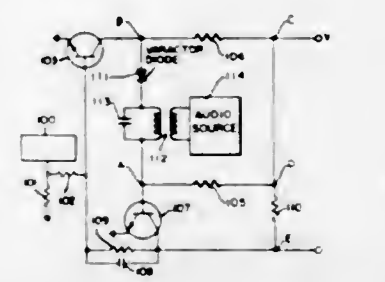
1. A gas laser tube structure for generating a laser output comprising an
elongated evacuated envelope containing a gas mixture suitable for producing a glow discharge;
an elongated hollow first electrode positioned within said envelope; the longitudinal axes of said envelope and said first electrode being substantially in alignment;
a second elongated lattice-type electrode positioned within said first electrode;
bias means coupled between said first and second electrodes for generating a glow discharge therebetween;



a third lattice-type electrode positioned within said second electrode;
second bias means coupled to said third electrode for accelerating electrons diffusing through said second electrode toward said envelope longitudinal axis;
said electrons being diffused through said third electrode to generate a large amount of excited atoms thereby producing powerful laser output.

3,402,368
PULSE DURATION MODULATING ARRANGEMENTS INCLUDING MONOSTABLE MULTIVIBRATOR

Richard J. Belcastro, Chicago, and Max S. Macrander, Wheaton, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Apr. 2, 1965, Ser. No. 445,035
3 Claims. (Cl. 332—9)

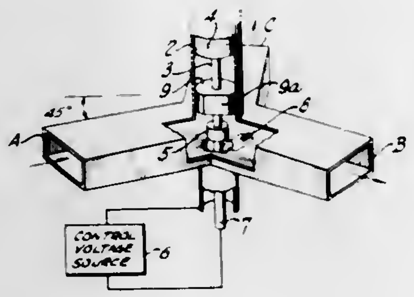


Pulse duration modulator circuits have a basic form of a monostable multivibrator in which the discharge time constant or the initial charging potential for the timing capacitor is varied in response to the amplitude of an audio signal to provide variable time durations of the unstable state of the multivibrator. A varactor diode and nonlinear resistors are individually employed in separate embodiments in which the time constant is varied, and a superposition technique controls the initial charging potential of the timing capacitor in another embodiment.

3,402,369
SINGLE POLE, DOUBLE THROW, CRYSTAL DIODE SWITCH

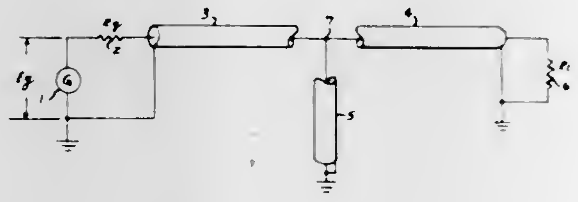
Yutaka Horiguchi and Akio Saeki, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Oct. 17, 1966, Ser. No. 587,128
Claims priority, application Japan, Oct. 19, 1965, 40/64,097, 40/64,098
5 Claims. (Cl. 333—7)

A single pole double throw type microwave switching device having a switching time of less than one nanosecond and including a generally Y-shaped rectangular waveguide having one arm as the input and the other two arms as the output, a coaxial waveguide extending perpendicular to the plane of said rectangular waveguide with its axial conductor passing through said rectangular waveguide generally at the center of the Y, a member of dielectric material having an asymmetrical configuration with respect to the direction of an incoming microwave fed into the input arm, a diode mounted in the central region of said Y-shaped rectangular waveguide and connected to said axial conductor, and said diode receiving a biasing voltage for controlling the microwave output in said output arms.



3,402,370
PULSE GENERATOR

Gerald F. Ross, Lexington, Mass., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Nov. 30, 1965, Ser. No. 510,717
3 Claims. (Cl. 333—20)



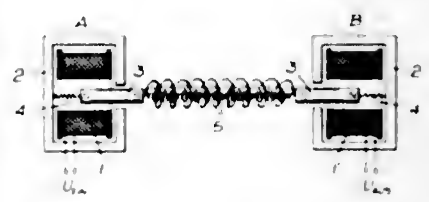
A very narrow pulse generator in which a step waveform is applied from a matched source to a TEM transmission line that has a shorted stub of characteristic impedance one-half that of the line connected intermediate its ends. The pulse produced across a matched load at the output of the line has a duration equal to the round trip delay of the studs.

3,402,371
DELAY DEVICE FOR PRODUCING ARTIFICIAL REVERBERATION

Bernhard Weingartner, Ernst Kovacs, and Otto Marschall, Vienna, Austria, assignor to Akustische u. Kino-Geräte Gesellschaft m.b.H., Vienna, Austria, a firm
Filed Jan. 6, 1964, Ser. No. 335,969
Claims priority, application Austria, Jan. 18, 1963, A 412/63
11 Claims. (Cl. 333—30)

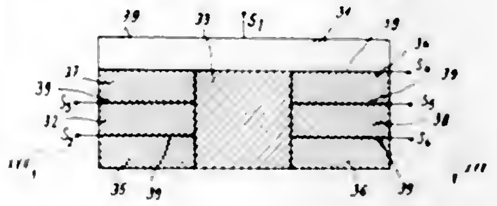
A delay device, for producing artificial reverberations, is disclosed as of the type including a driving magnetic system connected to one end of relatively elongated coil spring means for converting electromagnetic oscillations into mechanical vibrations of the coil spring means, and a driven electromagnetic system connected to the opposite end of the coil spring means for converting vibrations of the coil spring means into electromagnetic oscillations to produce an output voltage.

In accordance with the disclosure, the coil spring means comprises two or more concentric coil springs disposed one within the other. Corresponding ends of all of the springs are connected to each other, and one commn end of all of the springs is connected to the electromagnetic driving system and the other common end of all of the springs is connected to the electromagnetic driven system. The ratio of the respective delay times of the springs is preferably an irrational number, and damping means may be provided for modifying the apparent reverberation time and the frequency response.



3,402,372
PASSIVE ELECTRIC NETWORK

Rostislav Wasyluk, Prague, Czechoslovakia, assignor to Tesla, narodni podnik, Prague, Czechoslovakia
Original application Apr. 11, 1962, Ser. No. 186,737, now Patent No. 3,289,276, dated Dec. 6, 1966. Divided and this application Sept. 8, 1966, Ser. No. 577,947
Claims priority, application Czechoslovakia, Apr. 21, 1961, 2,473/61
3 Claims. (Cl. 333—70)



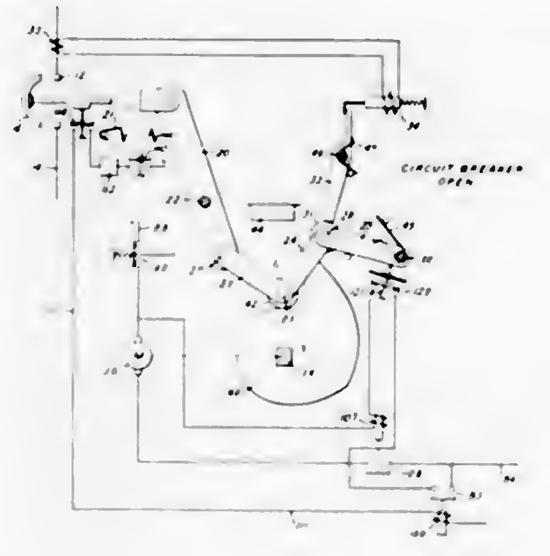
Complex networks of resistors and capacitors are replaced by bodies of dielectric materials having dielectric loss factors greater than 0.1, juxtaposed in layers having flat surfaces and provided with conductive coatings in the flat layer surface for contact with corresponding conductive coatings in another similar layer in which the individual bodies of dielectric material may be differently arranged.

3,402,373
CONTROL MEANS MOMENTARILY OPERATED IN RESPONSE TO CIRCUIT-BREAKER OPENING

Joachim Pieter Werner, Havertown, Pa., assignor to General Electric Company, a corporation of New York
Filed Nov. 18, 1966, Ser. No. 595,422
4 Claims. (Cl. 335—24)

1. An electric circuit breaker comprising:
(a) a first contact,
(b) a second contact movable into and out of engagement with said first contact,
(c) motive means for supplying closing force for driving said second contact into engagement with said first contact,
(d) a mechanically trip-free mechanism through which closing force is transmitted from said motive means to said second contact,
(e) said mechanism comprising a trip-free member which when held in a normal position renders said mechanism capable of transmitting closing force to said second contact but which when released renders said mechanism incapable of transmitting closing force to said second contact, and means for automatically resetting said trip-free member to said normal position after release thereof,

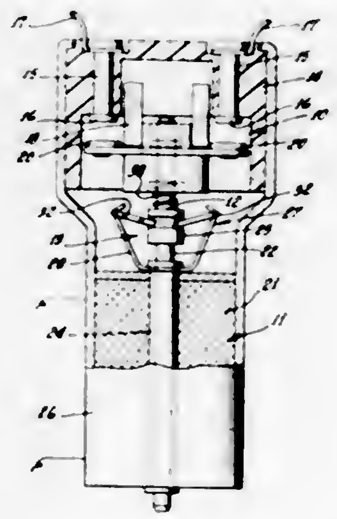
(f) main cut-off means responsive to closing of said circuit breaker for interrupting energization of said motive means when said second contact reaches a substantially fully-closed position,
(g) and auxiliary cut-off means responsive to the position of said trip-free member for preventing continued energization of said motive means while said trip-free member is out of its normal position,



(h) said auxiliary cut-off means comprising a control switch and means for operating said control switch from a non-operated to an operated position when said trip-free member moves out of its normal position and for resetting said control switch to its non-operated position in response to reset of said trip-free member to its normal position.

3,402,374
ELECTRICAL RELAY SWITCH ACTUATOR

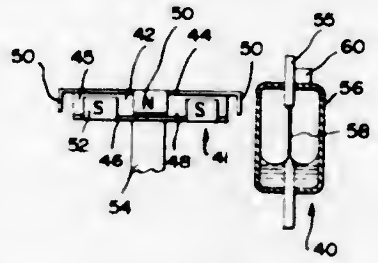
Jack H. Gaines, Seal Beach, and Francis K. Bourhenne, Lawndale, Calif., assignors, by mesne assignments, to Sierra Electric, Inc., Gardena, Calif., a corporation of Wisconsin
Filed July 26, 1966, Ser. No. 567,884
7 Claims. (Cl. 335—68)



A positively acting relay switch device having its actuator interpositioned between a solenoid mo or and the switch, the actuator being characterized as a stationarily positioned assemblage of outer spring arms and spring toggle elements interposed between the arms and a solenoid core stem so that beyond toggle centered condition the spring assembly displaces the stem by snap action to open and close the switch.

3,402,375
PERMANENT MAGNET ACTUATED REED SWITCH HAVING ADJUSTABLE MAGNET POLE PIECES

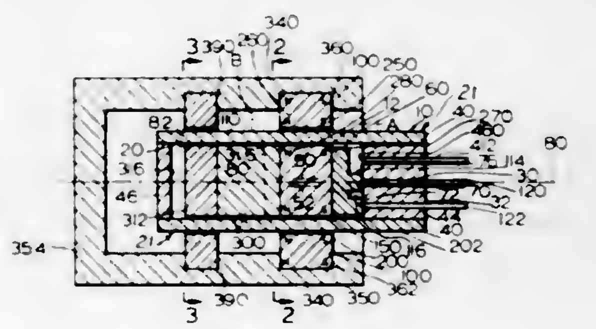
Robert C. McLaughlin, Bloomingdale, and Charles L. Shano, Morton Grove, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Nov. 21, 1966, Ser. No. 595,896
6 Claims. (Cl. 335—205)



4. Magnetic switching apparatus having a reed element operable by changing magnetic fields including in combination, magnetic rotor means having first and second oppositely polarized portions, first and second relatively movable pole pieces mounted to said rotor means and each contacting a respective one of said oppositely polarized portions, a plurality of spaced poles of like polarity integral with each pole piece, said poles alternately passing in close proximity to the reed element and defining a changing magnetic field for operating the same, said first and second pole plates being movable relative to one another to vary the spacing between said poles of opposite polarity thereby varying the frequency of the changing magnetic field to control the operation of the reed element.

3,402,376
SWITCH WITH MAGNETICALLY CONTROLLED INNER ROTATING AND RECIPROCATING ELEMENT

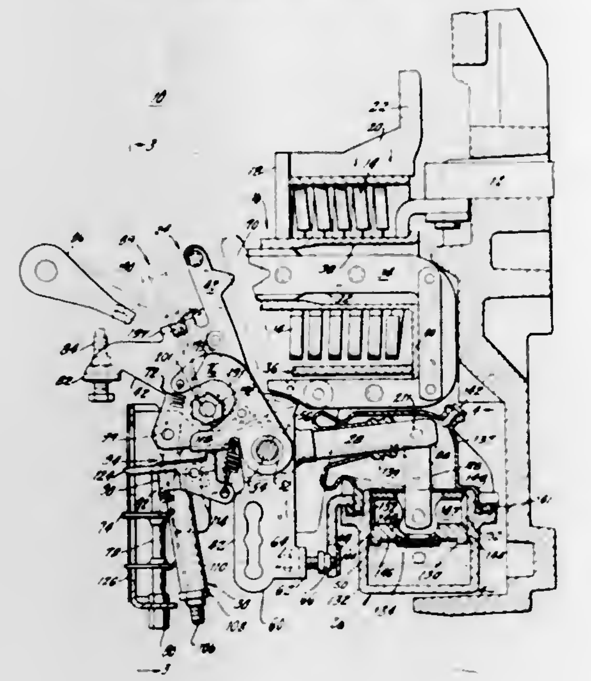
William P. Gardiner, 4822 36th St., Columbus, Nebr. 68601
Filed Nov. 15, 1965, Ser. No. 507,966
2 Claims. (Cl. 335—207)



As thus described it will be seen that movements of the outer element **100** in the directions of the arrows **52** and **50** between alternate positions in which the north pole of the outer element or magnet **100** is slightly to the left or slightly to the right of the north pole of the inner magnet or inner element **12**, and not closer to the inner element south pole than to the inner element north pole, as will cause the inner element **12** to move to the right or left respectively because of a repulsion in which the north and south poles of the outer element repulse the north and south poles of the inner element respectively with greater total force than the total attractive force of the north and south poles of the outer element for the south and north poles of the inner element, the said total attractive force being lesser because of greater distance between the poles which attract each other than there is distance between the poles that repel each other.

3,402,377
ELECTROMAGNETIC OVERCURRENT TRIP DEVICE

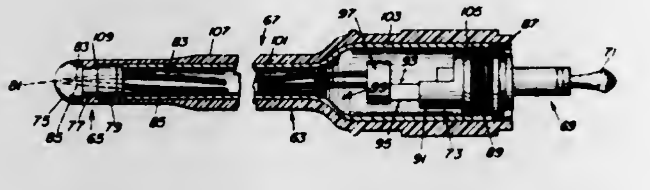
Einar H. Fredrickson, Ambler, and Frank J. Pokorny, Hatboro, Pa., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 30, 1967, Ser. No. 627,095
26 Claims. (Cl. 335—240)



A trip device for a circuit breaker including an electromagnet and an armature which is rotated to trip the circuit breaker in response to predetermined magnitudes of current flowing through the electromagnet. The armature is pivotally rotatable about a bushing upon which bushing also rotates a rocker arm. One end of the rocker arm is linked to a time delay element, while the other end of the rocker is connected to the armature in such a manner as to rigidly connect the two during normal operation while at the same time permit variation in the angular separation therebetween to permit variation of the delay introduced by the time delay element. Additionally, an anti-rattle spring arrangement is provided which also extends the operating life of the device.

3,402,378
ELECTRONIC CLINICAL THERMOMETER AND PROBE THEREFOR

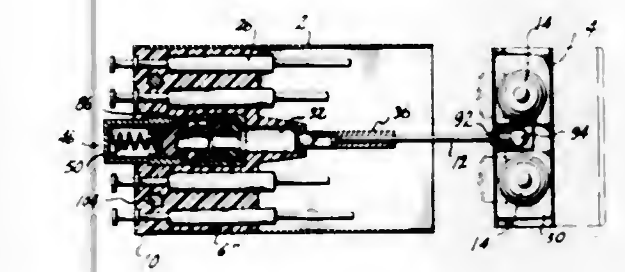
Richard L. Catlin and Russell F. Shew, Silver Spring, Md., assignors to Aero-Med Thermal Instrument Company, Inc., a corporation of the District of Columbia
Filed Sept. 10, 1965, Ser. No. 486,281
2 Claims. (Cl. 338—28)



A probe having a plastic coating and formed with a jack of electrically conductive material projecting from one end, and provided at the other end with a tip formed of plastic material in which is embedded a temperature sensitive resistor. The jack and temperature sensitive resistor being electrically connected together by leads, and the tip having a depression therein into which a part of the plastic coating extends to anchor the two together and the jack being removably attached to the probe, and a method of forming the probe.

3,402,379
ALTERNATE LATCH AND UNLATCH AND EJECT MECHANISM OPERATED BY UNIDIRECTIONAL FORCES

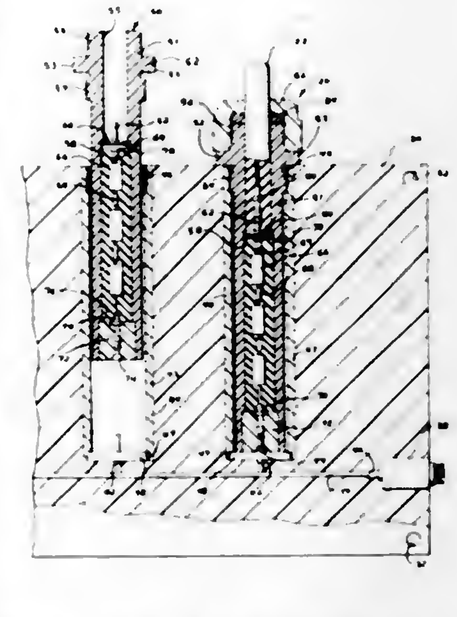
James W. Amis, Jr., Bellevue, and James H. Andersen, Seattle, Wash., assignors to Korry Manufacturing Co., Seattle, Wash., a corporation of Washington
Filed Mar. 14, 1966, Ser. No. 534,208
19 Claims. (Cl. 339—45)



A mechanism is disclosed for alternately latching and unlatching a reciprocable element against reciprocation. The mechanism includes a pair of interlocking axially opposed and relatively axially shiftable members, which in use, are unlocked and relocked at alternate positions spaced along the axis thereof. It also includes means whereby the relatively oscillatory motion of the members between the alternate positions thereof, is used to alternately advance and release detent means into and from engagement with the element. Further features include the fact that the unlock and relock means may be responsive to unidirectional forces successively applied along the axis of the members; and the fact that the mechanism may also displace the reciprocable element in one direction of its reciprocation, each time that the detent means is released from engagement therewith.

3,402,380
HIGH VOLTAGE COMPONENT PACKAGE

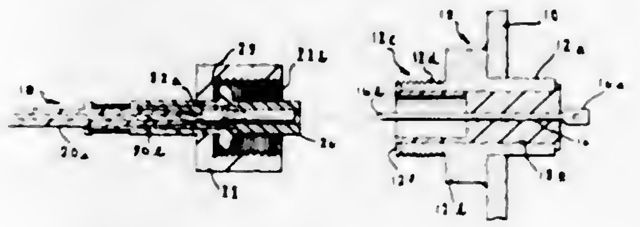
John William Gaw, Elizabethtown, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Mar. 16, 1967, Ser. No. 623,601
9 Claims. (Cl. 339—89)



To provide a quick connect-disconnect and component replacement unit for high voltage circuits, conductive paths are encapsulated within an insulating block having a plurality of deep sockets. Each socket contains a contact member connected to a path as an output from a common input through a further contact member in a block receptacle supplied by a high voltage connector and input lead. Each output includes a removable plug member containing encapsulated surge resistors. The plug members are of a configuration to substantially fill a block socket and each plug member includes a contact mateable with the socket contact member at one end and a socket at the other end adapted to receive a high voltage connector and output lead.

3,402,381
CORONA RESISTANT CONNECTOR ASSEMBLY

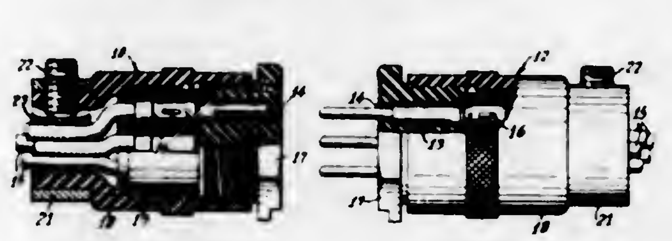
John William Gaw, Elizabethtown, Samuel Cox Stinner, Camp Hill, and William Leander Taylor, Elizabethtown, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed May 6, 1966, Ser. No. 548,162
5 Claims. (Cl. 339—94)



A high voltage, high altitude connector and lead assembly is disclosed which features a receptacle having a contact pin therein to mate with a contact carried by the lead assembly and surrounded by a first sleeve of corona resistant resilient material inserted within the receptable. The lead assembly includes a nut interiorly threaded to mate with threading on the outside of the receptable. The first sleeve is made to extend out along the conductive core of the lead through the nut and is surrounded by a second sleeve made to extend thereover and along the insulating sheath of the lead for a distance sufficient to permit withdrawal of the lead assembly by grasping the second sleeve. The second sleeve is comprised of an insulating material which is substantially stiffer than that of the first sleeve and is resistant to deterioration caused by certain materials found in aircraft fuels such as Coolanol. The first and second sleeves are bonded together and the second sleeve is provided with a plastic ferrule shrunk down at the end thereof driving the material thereof against the sheath of the lead.

3,402,382
MULTICONTACT CONNECTOR WITH REMOVABLE CONTACT MEMBERS

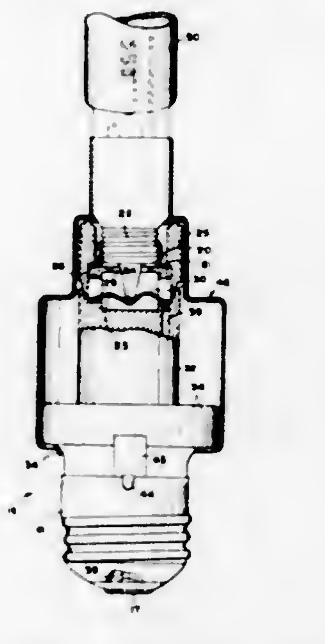
Donald R. De Tar, Stratford, Conn., assignor to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland
Filed Dec. 1, 1966, Ser. No. 598,506
6 Claims. (Cl. 339—103)



An electrical connector comprising an insulating body for supporting the connector contacts, a spacer block provided with radial grooves to position the contacts for convenient assembly of the connector and secure the contacts in the insulating body, and a cap threaded on said insulating body and adapted to lock said spacer block and contacts in assembled relation. The connector may include strain relief means for the conductors which also locks the cap against accidental loosening of the threaded engagement thereof with the insulating body of the connector.

3,402,383
HEAT-DISSIPATING ADAPTORS FOR SINGLE-ENDED HALOGEN QUARTZ LAMPS TO EXISTING ELECTRICAL LIGHTING APPARATUS

Hy Hilzen, 40 Gateway Road, Yonkers, N.Y. 10703
Filed Dec. 7, 1967, Ser. No. 688,762
3 Claims. (Cl. 339—112)



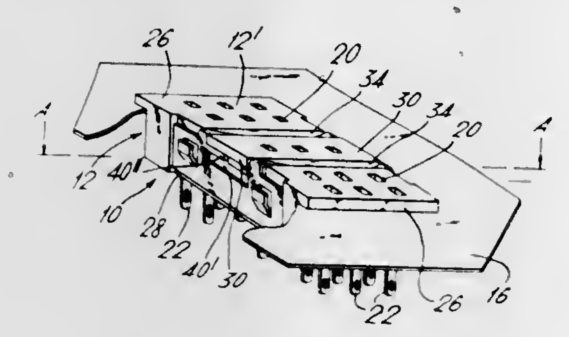
To make an electrical halogen one-ended quartz lamp having a short heat conductive sleeve on its envelope immediately beyond its terminals, suitable for use in existing electrical lighting apparatus and to eliminate damage heretofore incident in its operation, this adaptor consists of a tubular metal casing of appreciable surface area and of material as aluminum to have effective heat-dissipating quality, a socket means at one end of the casing to receive the quartz lamp's base and a base means at the other end of the casing to be received in the socket of the electrical lighting apparatus designed for a lamp of larger base than that of the quartz lamp and whose filament's midpoint is at a predetermined distance from its base, which distance is substantially greater than the corresponding distance in the quartz lamp. The casing is made of such dimensions that the distance between the mid-point of the filament of the quartz lamp it holds, and the base on the casing, is such predetermined distance. One embodiment of the socket means for the quartz lamp, carried in the casing, comprises a group of ceramic and metal pieces, held together in assembly by turning in an end of said casing and by teats in the casing body. Said turned-in casing end serves as a seat for said sleeve on the quartz lamp to impart the heat generated by the operation of the quartz lamp to the casing. The heat dissipating quality of the casing avoids damage generally.

3,402,384
SOCKET UNIT

Yukitugu Murakami, 5–2 4-chome Kusatu, Kusatushi, Shigagen, Japan; Noboru Sano, 15–18 Higashitanakase, Terado, Mukomachi, Otokunigun, Kyoto, Japan; and Eiichi Yamanaka, 671 Wakamiyadori Ichijo Agaru, Shimogyo-ku, Kyoto, Japan
Filed Dec. 27, 1966, Ser. No. 604,907
Claims priority, application Japan, Dec. 29, 1965, 40/108,459
7 Claims. (Cl. 339—128)

1. A socket unit adapted to be mounted onto a supporting structure by inserting said unit into an opening

formed in said structure, comprising a socket body having a plurality of contact members and at least one pair of oppositely projecting flanges adapted to engage the peripheral edges of said opening; and a mounting member consisting of a pair of generally parallel wall elements spaced a predetermined distance apart by a plurality of resilient connecting elements integral with said parallel wall elements, said wall elements being adapted to sandwich the opposite sides of said socket body, and formed with at least one projecting tongue for engaging the edge of said opening of said supporting structure at the surface thereof opposite to that at which said projecting flanges of the socket body engage said supporting member.

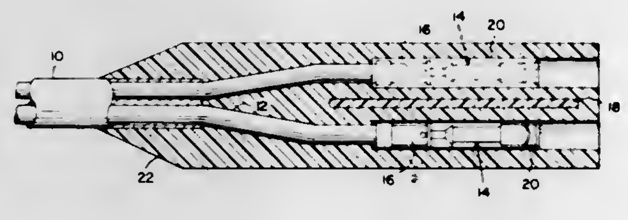


3,402,385
MOLDFORM RECEPTACLE

Richard P. Feinberg, Maitland, Fla., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Aug. 1, 1966, Ser. No. 569,520

1 Claim. (Cl. 339—191)



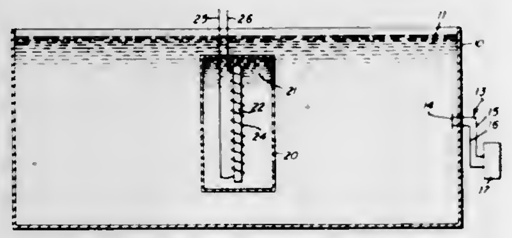
A moldform receptacle wherein the pin inserts are wrapped with Teflon tape, and Mylar strips are inserted between the pin inserts before molding the receptacle.

3,402,386
METHOD AND APPARATUS FOR GENERATING SONIC SIGNALS

Donald S. Rodbell, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 26, 1963, Ser. No. 333,602

4 Claims. (Cl. 340—12)



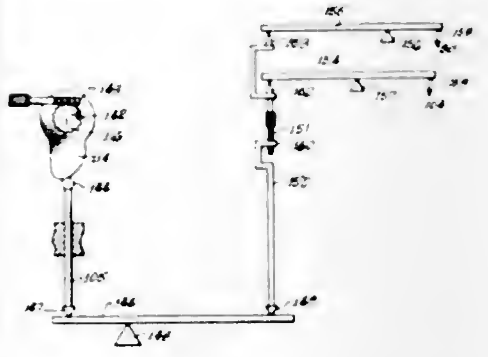
1. Apparatus for continuous cyclic generation of sonic signals comprising a body of material characterized by having a magnetic first-order phase transformation, a closed vessel enclosing the body and providing a space between said body and a wall of the vessel, a sonic shock-transmitting fluid in the vessel filling space between the said body and a wall of the vessel, magnetic field source means operatively associated with the body and the vessel to subject the said body to magnetic field pulses in predetermined sequence and thereby cause abrupt changes in the specific volume of the body of at least 0.01 percent at predetermined intervals, and resetting means in the vessel and spaced from said body for generating sonic shock waves in the sonic shock-transmitting fluid to reset the said body after each actuation of the magnetic field source means.

3,402,387
APPARATUS FOR MOVEOUT RECORDING

Melvin J. Wells, Torrance, Thomas L. Slaven, Los Angeles, and Carl H. Savit, Van Nuys, Calif., assignors to Western Geophysical Company of America, Los Angeles, Calif., a corporation of Delaware

Filed May 27, 1964, Ser. No. 370,633

5 Claims. (Cl. 340—15.5)



The present invention provides an improved multichannel signal reproducing apparatus having functional-generating cam and lever means for altering the time scale of signals reproduced by said apparatus according to a predetermined function of time having the form

$$T_n = t + A_n + B_n[aF(t-t_0) + b]$$

Means are provided, in accordance with the present invention, for adjusting the values of each of the parameters of the function. The present invention includes means to produce a time displacement $(t-t_0)$; means to introduce a proportional factor, *a*, and means to produce a displacement constant, *b*. The apparatus of the present invention thus provides means for adjustment of these parameters and makes possible the use of a single cam defining some function, as for example, F(T), to produce new functions, $G_1(T)$, $G_2(T)$, etc., where

$$G_n(T) = [a_nF(t_n-t_0) + b_n]$$

3,402,388
METHOD AND APPARATUS FOR BOREHOLE LOGGING WITH DUAL DISPLAY OF LOGGING SIGNALS ON RECORD MEDIUM

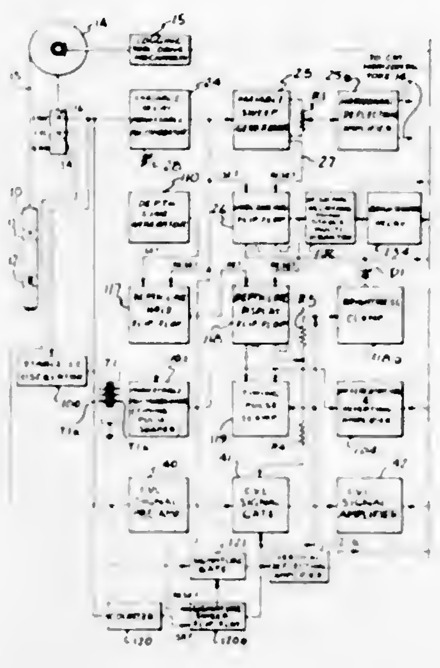
Robert L. Tucker, Tulsa, Okla., assignor to Seismograph Service Corporation, Tulsa, Okla., a corporation of Oklahoma

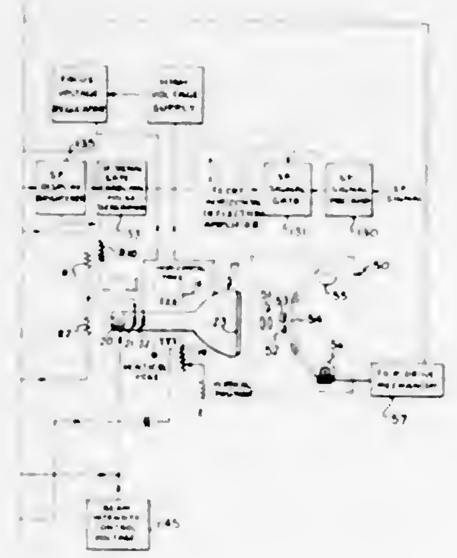
Filed Oct. 21, 1966, Ser. No. 588,557

18 Claims. (Cl. 340—18)

A method and apparatus for producing a borehole log representing seismic waves produced in response to periodic seismic signals transmitted at varying depths within a borehole. Successive traces corresponding to successive seismic signals are produced on a recording medium, extending transversely across the medium as a function of time, in response to electrical output signals corresponding to the seismic waves. The intensity of successive

transverse traces is varied according to variations in the amplitude of the electrical output. The density variations are periodically interpreted at regular longitudinal intervals, and the amplitude of selected transverse traces is varied according to variations in the amplitude of the electrical output during such interpretations. Time marking and depth marking means are included in the logging system. Also, means are provided for logging a D-C electrical logging signal as a trace extending longitudinally along the variable density and variable amplitude traces with the longitudinally extending trace varying transversely according to variations in the amplitude of the electrical logging signals.





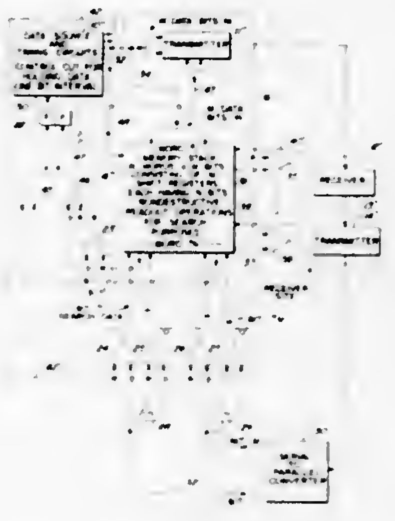
3,402,389
MESSAGE VERIFICATION USING ASSOCIATIVE MEMORY TECHNIQUES

Joseph J. Koontz, Dana Point, Calif., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Jan. 6, 1965, Ser. No. 423,723

12 Claims. (Cl. 340—146.1)

An error detecting means in which words transmitted to a receiver are also transmitted to a storage device comprising a bank of N shift registers, one for each bit of a word. As each word is transmitted it is entered into the shift register, and the words already stored are advanced one stage in the bank of registers. The words received at the receivers are retransmitted back to the transmitter site and compared substantially simultaneously with all of the words stored in the bank of shift register. When coincidence is determined between a retransmitted word and a word stored in the shift registers, the word stored in the shift registers is erased therefrom. If a word advances through all stages of the shift registers, it is assumed an error has occurred and the word is transmitted again.

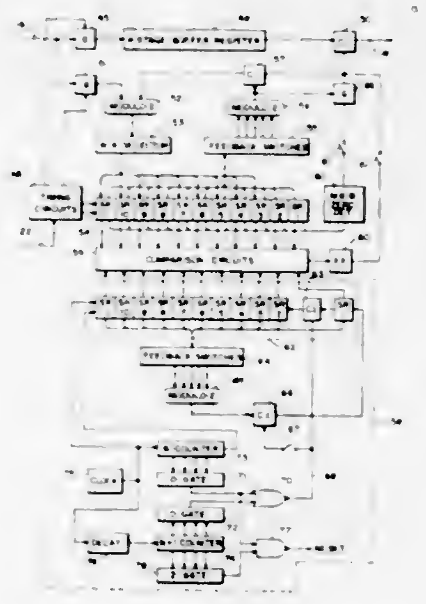


3,402,390
SYSTEM FOR ENCODING AND DECODING INFORMATION WHICH PROVIDES CORRECTION OF RANDOM DOUBLE BIT AND TRIPLE BIT ERRORS

John J. Tsimbidis, Cicero, and Roger F. Salava, Addison, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Mar. 1, 1965, Ser. No. 436,179

15 Claims. (Cl. 340—146.1)

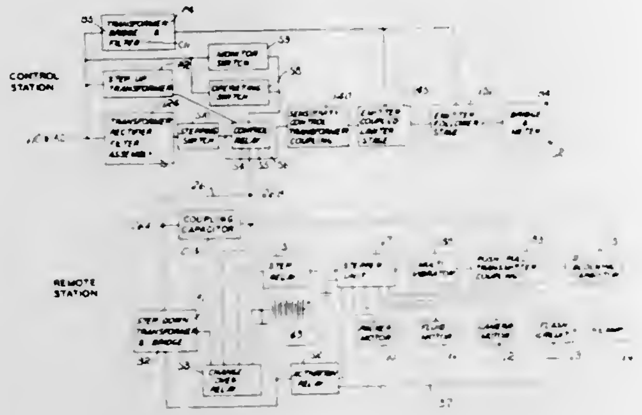


Encoder-decoder equipment responsive to input information to produce an encoded word having *k* information bits and $n-k$ check bits. The decoder has a buffer register and a decode shift register to which received pulse bits are applied, and an error pattern generator for generating single bit, double bit and triple bit error patterns. Signals from the decode register and the error generator are applied to a comparison circuit which controls a conditional inverter for correcting pulses fed out from the buffer register.

3,402,391

CONTINUOUS CONTROL USING ALTERNATING OR DIRECT CURRENT VIA A SINGLE CONDUCTOR OF PLURAL FUNCTIONS AT A REMOTE STATION

Henry Taylor Howard, Menlo Park, and Clarence L. Auernheimer, Fresno, Calif., assignors to A. V. Electronics, Inc., a corporation of California
Filed Apr. 19, 1965, Ser. No. 449,013
12 Claims. (Cl. 340—163)

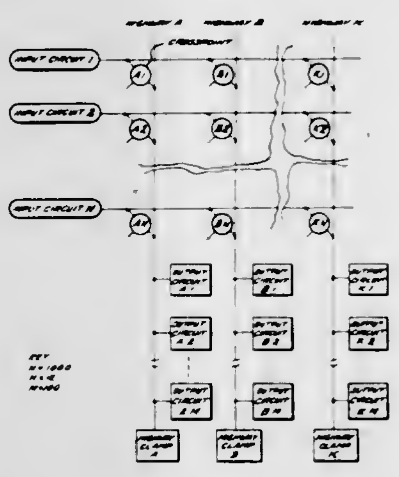


A system for controlling and monitoring the operation of members performing functions in an oil well borehole is disclosed. This system consists essentially of a compact arrangement of the members, a power source, switches, relays and changeover circuitry at the remote station in the borehole. The remote station is connected by a single conductor to a control station which has a source of alternating current and rectifier means, switches and circuitry. The switches are selectively operable for supply of direct or alternating current through the single conductor for selection and operation of a member, respectively. The conductor also serves for return of the function member condition indicating signals to the control station.

3,402,392

TIME DIVISION MULTIPLEX MATRIX DATA TRANSFER SYSTEM HAVING TRANSISTOR CROSS POINTS

Eugene N. Schroeder, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Sept. 24, 1964, Ser. No. 398,811
2 Claims. (Cl. 340—166)

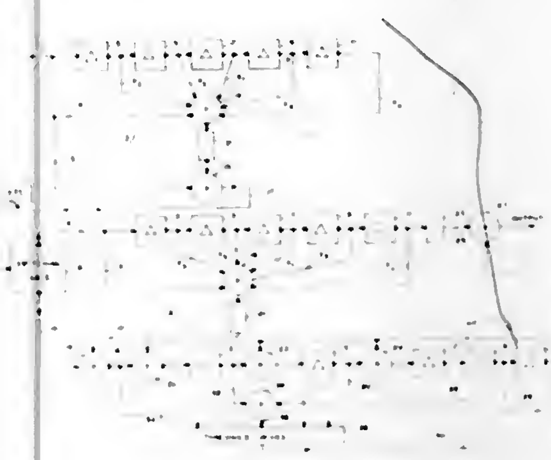


A cross point gate system in which the input signal is applied to a first transistor and the time slot is controlled by a switch transistor connected to the first transistor. A clamp circuit is connected to the switch transistor for periodic discharge of line capacity.

3,402,393

ERROR DETECTION AND CORRECTION IN SIGNAL TRANSMISSION BY USE OF CONVOLUTION CODES

James Lee Massey, South Bend, Ind., assignor to Codex Corporation, Cambridge, Mass., a corporation of Delaware
Continuation-in-part of application Ser. No. 212,312, July 25, 1962. This application Aug. 2, 1963, Ser. No. 299,534
12 Claims. (Cl. 340—172.5)

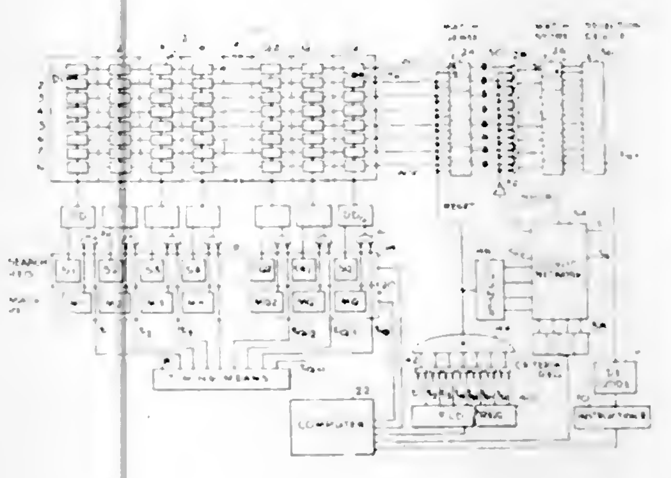


Digital error correcting coding techniques involving the sensing of conditions under which the decoder is operating. In one aspect a monitoring device counts the ones in the decoding decision and in certain parity checks corrected by those decisions. In another aspect the code is supplemented such that one actual decoding error can create a number of apparent errors or ones, which enables early detection of conditions beyond the capability of the decoder. In another aspect fades are detected in combination with a decoding logic capable of acting upon the whole set or any group of nonfaded elements in the decoding set.

3,402,394

CONTENT ADDRESSABLE MEMORY

Ralph J. Koerner, Canoga Park, and Alfred D. Scarbrough, Northridge, Calif., assignors to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Delaware
Filed Aug. 31, 1964, Ser. No. 393,220
14 Claims. (Cl. 340—172.5)

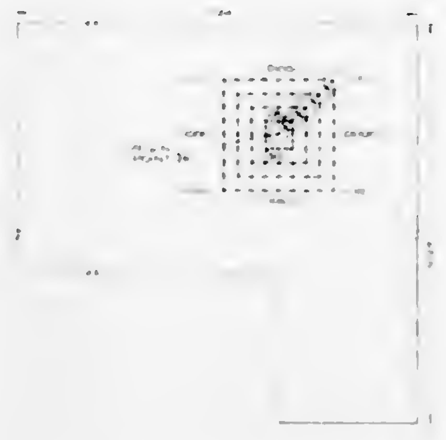


A content addressable memory for simultaneously comparing a search word with a plurality of stored words in accordance with different comparison criteria. The search word digits are compared in sequence, from most to least significant, with the stored word digits with a mismatch signal being generated at each stored word digit mismatching the corresponding search word digit. Different comparison criteria can be defined for different portions of the search word by controlling the coupling of the mismatch signals to a bank of match indicators.

3,402,395

DATA COMPRESSION AND DISPLAY SYSTEM

Glen J. Culler, Santa Barbara, and Roland F. Bryan, Chatsworth, Calif., assignors to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,585
13 Claims. (Cl. 340—172.5)

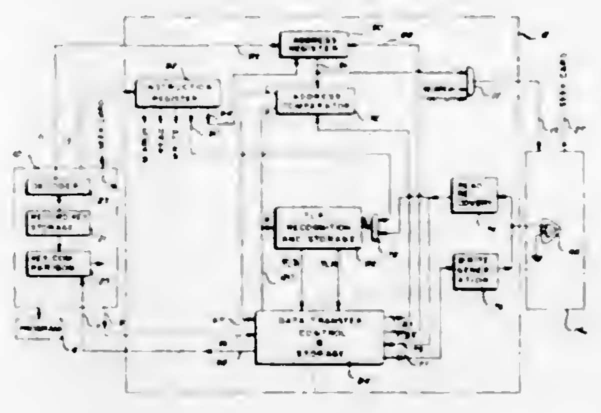


A system including display equipment responsive to digitally represented data for presenting a visual display of such data on a display point matrix such as is provided by a cathode ray tube. The system incorporates means for defining matrix points to be displayed in terms of their orientation with respect to previously displayed points rather than in terms of the point's absolute position in the matrix. That is, each new point to be displayed is defined in terms of its position in a sub-matrix, the position of the sub-matrix in the larger matrix being defined by the absolute position in the matrix of the previously displayed point. By representing data in this fashion, a considerably narrower bandwidth channel can be used for communication between a data source and the display equipment.

3,402,396

DATA PROCESSING APPARATUS

William J. McBride, Wayland, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 2, 1965, Ser. No. 469,269
17 Claims. (Cl. 340—172.5)

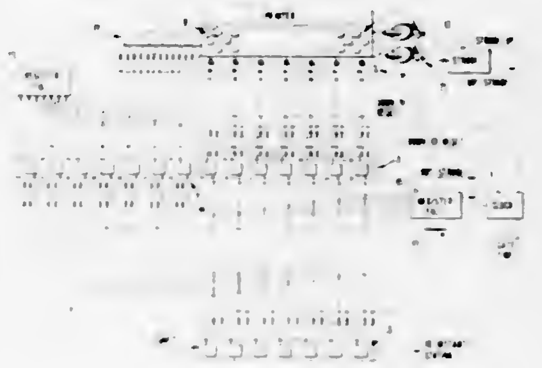


A data processing system comprising apparatus for addressing and reading out records of a first and of a second kind recorded in a plurality of storage tracks. Each of the records includes its own address as well as a data section. The apparatus further comprises an address storage register and a comparator adapted to compare the contents of the address storage register against the address of a record read out. There are further included means responsive to a true address comparison for transferring the data contents of the corresponding record of the first kind to a utilization device, as well as means responsive to a true address comparison for transferring the data contents of the corresponding record of the second kind to the address storage register. This latter action brings about the subsequent addressing and reading out of records at the address specified by the data contents.

3,402,397

COMMUNICATIONS TERMINAL WITH INTERNAL CIRCULATION OF DATA

James F. McDonald, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Nov. 17, 1965, Ser. No. 508,291
2 Claims. (Cl. 340—172.5)

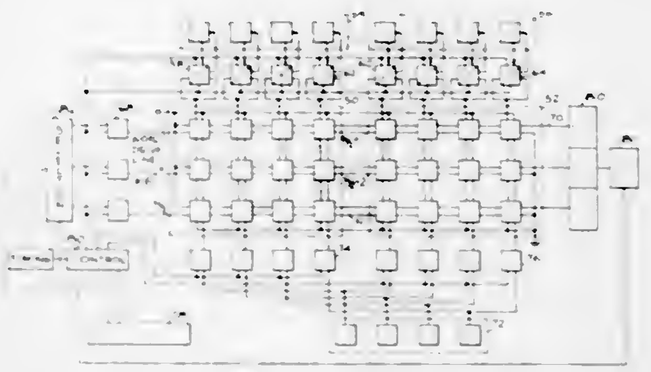


A home loop for maintenance purposes or for type-a-matic operation is provided in a communications terminal. A data path is provided whereby signals generated by the terminal as they are transferred from a first buffer register to a transmitting register can, by the operation of a control, be sent also to a second register and hence to the terminal's recording means such as a printer. The printer then prints the data and regenerates the same signals thus providing a repetitive operation so long as the control is actuated.

3,402,398

PLURAL CONTENT ADDRESSED MEMORIES WITH A COMMON SENSING CIRCUIT

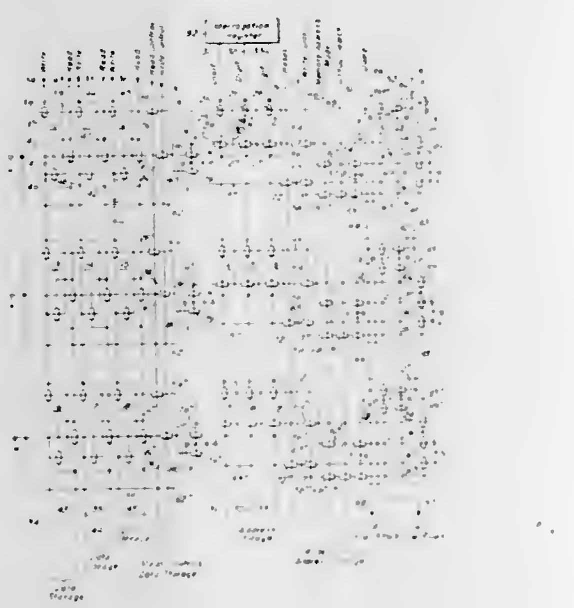
Ralph J. Koerner, Canoga Park, and Alfred D. Scarbrough, Northridge, Calif., assignors to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Delaware
Filed Aug. 31, 1964, Ser. No. 393,219
10 Claims. (Cl. 340—173)



A content addressable memory system utilizing two or more separate memory matrices in order to reduce the amount of selection and sensing equipment required. The memory matrices preferably include an identical number of memory locations. Memory elements of corresponding locations in the matrices are coupled in common to one of a plurality of word sense lines. Each word sense line is connected to one of a plurality of sense stages. Thus, the number of sense stages required is equal to the number of locations in one matrix rather than the total number of locations in the memory.

3,402,399
WORD-ORGANIZED ASSOCIATIVE CRYOTRON MEMORY

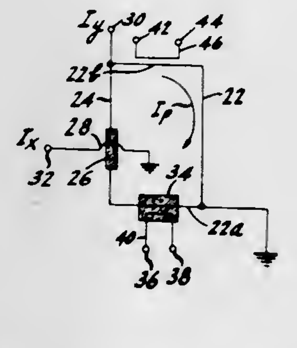
John K. Bragg, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 16, 1964, Ser. No. 418,663
5 Claims. (Cl. 340—173.1)



A memory comprised of first and second word-organized cryotron arrays wherein the second array stores data words which correspond to address words stored in the first array and which are selected by the associative selection of only an address word of the first array. The memory facilitates circumvention of defective cryotrons electronically in either array.

3,402,400
NONDESTRUCTIVE READOUT OF CRYOELECTRIC MEMORIES

Andrew R. Sass, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 22, 1965, Ser. No. 509,054
8 Claims. (Cl. 340—173.1)



A superconducting storage loop which stores persistent current is non-destructively read out by changing the inductance of the loop without affecting the superconducting state of the loop and sensing for the resulting change in persistent current flow through the loop.

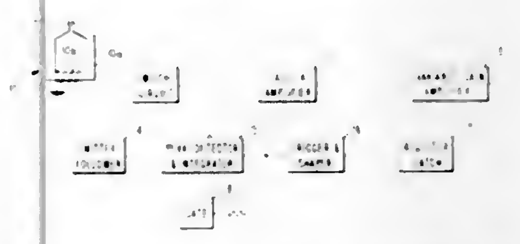
3,402,401
BALANCED MEMORY DRIVE SENSE SYSTEM

William J. Taren, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 13, 1964, Ser. No. 367,119
3 Claims. (Cl. 340—174)

Memory having bit-sense conductors arranged in balanced pairs with a differential sense amplifier such that bit driver voltages appear on both conductors and are cancelled in the differential sense amplifier. Storage elements are formed on two oppositely facing surfaces of conductive substrates. Each conductor of a bit-sense conductor pair is coupled to the storage elements of one substrate surface in a circuit path that includes a first conductor portion positioned along a row of elements, a return path through the conductive substrate, and a second conductor portion positioned along the row of elements.

3,402,402
APPARATUS FOR TRANSLATING MAGNETICALLY RECORDED BINARY DATA

Carter E. Dorrell, Owego, and George J. Laurer, Endwell, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 5, 1964, Ser. No. 344,523
9 Claims. (Cl. 340—174.1)

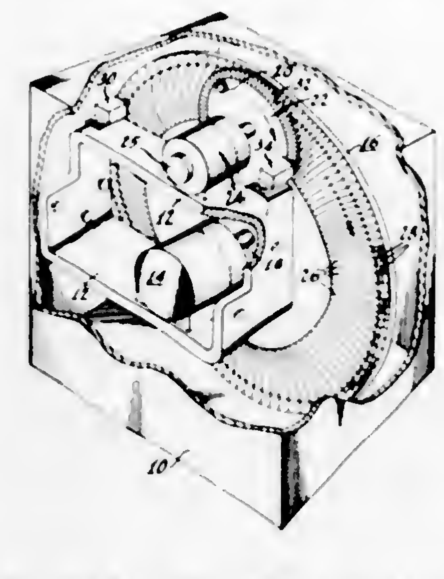


In a "peak detector" type of system for translating magnetically recorded binary data into digital form, a variable gain amplifier is interposed between a first Class A amplifier and the peak detector-integrator. The first amplifier is switched to an optimum one of three available gain levels under control of an automatic retry system. The variable gain amplifier responds to each output data signal from the first amplifier and diodes progressively reduce the amplifier gain as the data signal amplitude increases beyond predetermined levels. Bias means provide a lower threshold level for the variable gain amplifier and also inhibit its operation at heavy saturation levels.

3,402,403
ROTATING HEAD AND DISC MAGNETIC RECORDING SYSTEM

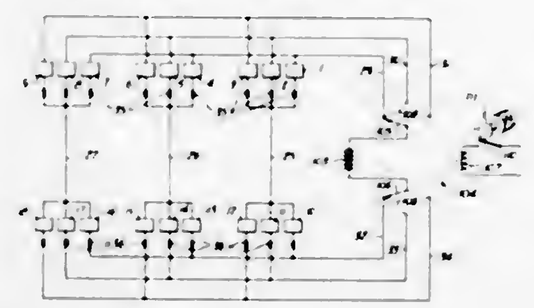
Abraham Lichowsky, Los Angeles, Calif., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 24, 1965, Ser. No. 509,497
19 Claims. (Cl. 340—174.1)

A disc memory in which both the storage disc and head rotate. They rotate in parallel planes and around axes which are offset from one another. The tracks on the storage disc are of curved shape and extend from the outer portion toward the inner region of the storage disc or vice versa. Identification marks may be recorded along the disc circumference to indicate the track positions and identification marks may be recorded along the circumference of a second disc to which the head may be fixed to indicate the head position. A control system may be employed to regulate the speed and phase of one disc relative to the other.



3,402,404
SELECTIVE SIGNAL TRANSMITTING AND INDICATING SYSTEM

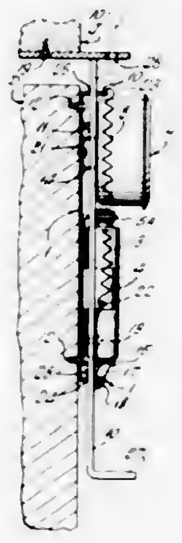
Billy Burley, Dallas, and Charles F. Strawn, Arlington, Tex., assignors to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Dec. 26, 1963, Ser. No. 333,518
23 Claims. (Cl. 340—176)



A plurality of input electrical devices are paired with a plurality of output electrical devices. The paired devices are grouped in threes and in each group the input devices are connected at one end to a common point and the output devices are connected to a common point. Three transmission lines are provided each of which interconnects the common points of one of the groups. Three additional transmission lines interconnect one of each of the input devices of each group to the corresponding output devices of each group. A signal separating means or power device is provided in each of the last-named transmission lines. The separating devices can take the form of a sequentially connected power source or frequency oscillators. Each of the input devices and each of the output devices is connected in series with a diode or corresponding frequency sensitive device, depending upon the power source.

3,402,405
SELF-LOCKING BURGLAR ALARM SYSTEM

Manuel Contreras, 2360 Lafayette St.,
North Bellmore, N.Y. 11710
Filed Jan. 3, 1966, Ser. No. 518,354
3 Claims. (Cl. 340—274)



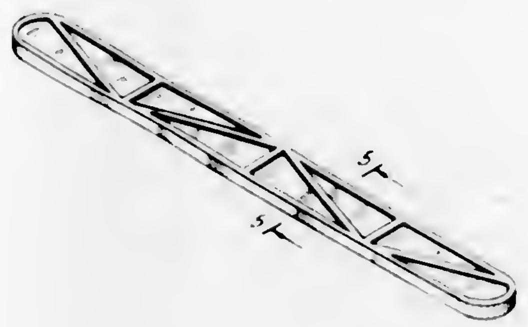
1. In combination with a door, window, or the like, an alarm and locking device comprising, a housing mounted to said door having openings at the upper and lower surfaces thereof, an arm member extending through both of said openings, a mounting plate secured to said arm member, resilient means secured at one end thereof to the upper surface of said housing and at the other end thereof to said mounting plate for biasing said arm in a first position, a locking plate having an aperture therethrough mounted to the jamb of said door disposed above said housing, signal means mounted to said housing, electrical supply means, a first contact connected to said supply means and said signal means, and a second contact biased by said mounting plate out of connection with said first contact, whereby when said door is laterally moved, said arm member comes into registry with said aperture and is urged therethrough into a second position by said resilient means, thereby locking said door and bringing said first and second contacts into electrical connection to energize said signal means.

DESIGNS

SEPTEMBER 17, 1968

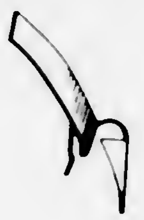
212,205
ICE CREAM STICK

Melvin Feuerstein, Fort Washington, N.Y., assignor to Ranger Plastic Corporation, Bronx, N.Y., a corporation of New York
Filed Sept. 25, 1967, Ser. No. 8,731
Term of patent 14 years
(Cl. D1—99)



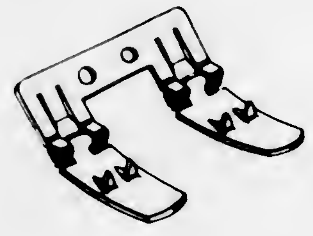
212,206
TIE SUPPORT

Robert B. Rietman, 3434 Manor Hill Drive, Cincinnati, Ohio 45220
Filed May 22, 1967, Ser. No. 7,211
Term of patent 14 years
(Cl. D2—359)



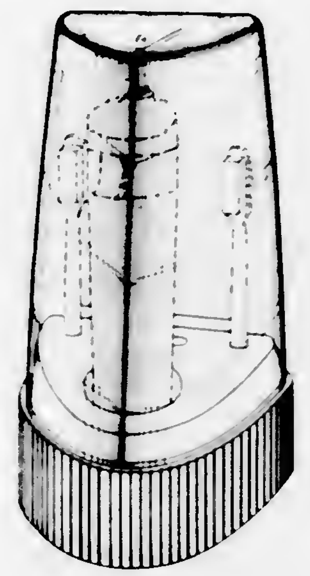
212,207
SPRING CLIP FOR BOOT BUCKLES OR SIMILAR ARTICLES

Domenic A. Zinni, Warwick, R.I., assignor to B. B. Greenberg Co., Cranston, R.I., a corporation of Rhode Island
Filed Nov. 27, 1967, Ser. No. 9,557
Term of patent 14 years
(Cl. D2—422)



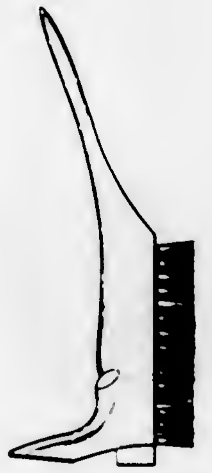
212,208
COMBINED DISPLAY AND CHARGING UNIT FOR A BATTERY OPERATED TOOTHBRUSH

Meyric K. Rogers, La Grange Park, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 20, 1967, Ser. No. 5,509
Term of patent 14 years
(Cl. D4—16)



212,209
COMBINED BRUSH AND SHOE HORN

Eric Seger, London, England, assignor to Frederick Wich and Company Limited, London, England, a British company
Filed Sept. 5, 1967, Ser. No. 8,502
Term of patent 7 years
Claims priority, application Great Britain Mar. 17, 1967
(Cl. D4—17)



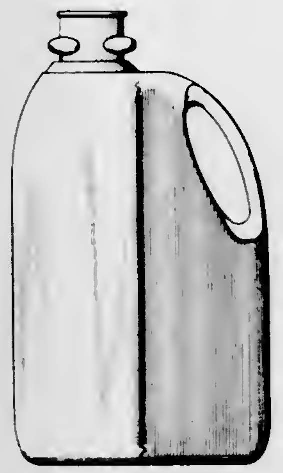
212,210
JUG

Victor F. Anderson, Wenonah, N.J., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Sept. 21, 1967, Ser. No. 8,701

Term of patent 3½ years

(Cl. D9—40)



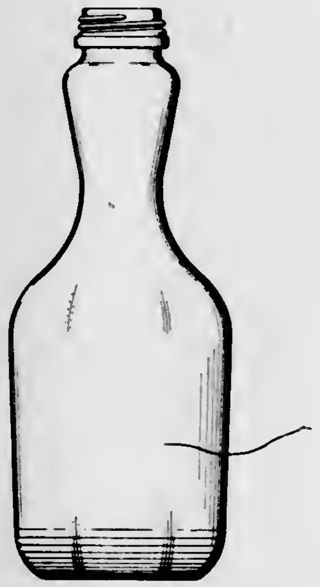
212,211
BOTTLE

Saul Bass, Los Angeles, Calif., assignor to Hunt-Wesson Foods, Inc., Fullerton, Calif., a corporation of Delaware

Filed Oct. 2, 1967, Ser. No. 8,803

Term of patent 14 years

(Cl. D9—160)



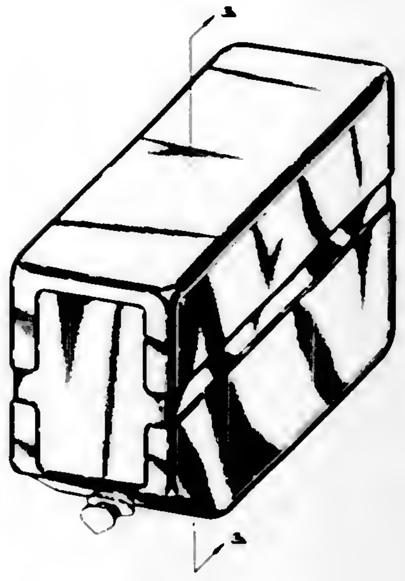
212,212
DISPENSING CONTAINER FOR MILK OR THE LIKE

David D. Tompkins, Worthington, Ohio, assignor to The Corrugated Container Company, Columbus, Ohio, a corporation of Ohio

Continuation-in-part of design application Ser. No. 5,791, Feb. 13, 1967. This application May 22, 1967, Ser. No. 7,220

Term of patent 14 years

(Cl. D9—175)



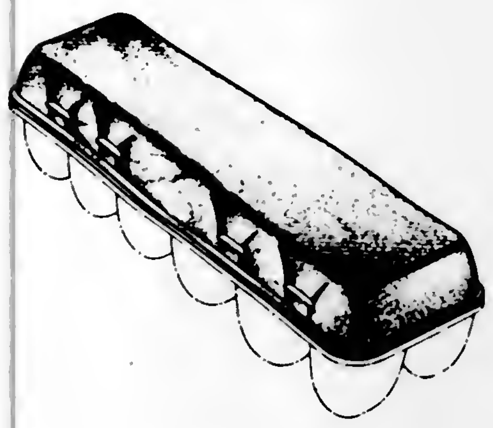
212,213
EGG CARTON

David Donaldson, Wilmington, Del., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware

Filed Dec. 11, 1967, Ser. No. 9,722

Term of patent 14 years

(Cl. D9—190)



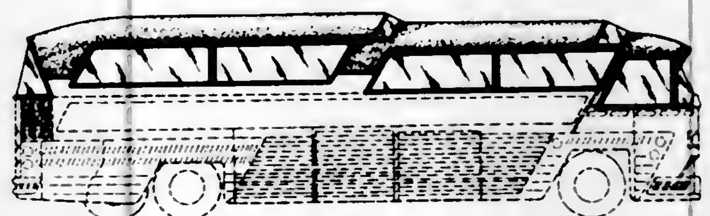
212,214
MOTOR COACH

Harry Zoltok, Winnipeg, Manitoba, Canada, assignor to Motor Coach Industries Limited, Winnipeg, Manitoba, Canada

Filed June 19, 1967, Ser. No. 7,514

Term of patent 14 years

(Cl. D14—3)



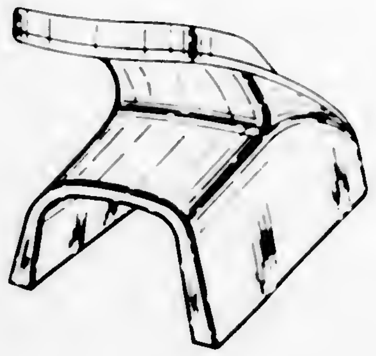
212,215
MOTOR VEHICLE PASSENGER RESTRAINT DEVICE

Harold G. Brilmyer, Grosse Pointe, and Samuel A. Heap, Taylor Township, Wayne County, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Nov. 20, 1967, Ser. No. 9,460

Term of patent 14 years

(Cl. D14—6)



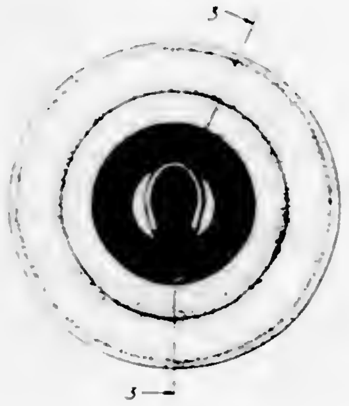
212,216
WHEEL COVER

Chester B. Bostick, R.F.D. 1, Allentown, Pa. 18102 and Larry B. Bostick, R.F.D. 1, Schnecksville, Pa. 18078

Filed Aug. 22, 1966, Ser. No. 3,555

Term of patent 14 years

(Cl. D14—30)



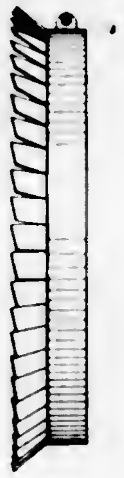
212,217
BRAKEDRUM COOLING DEVICE OR THE LIKE

Elvon C. John, 451 W. Dulles Road,
Des Plaines, Ill. 60016

Filed Dec. 6, 1967, Ser. No. 9,672

Term of patent 14 years

(Cl. D14—30)



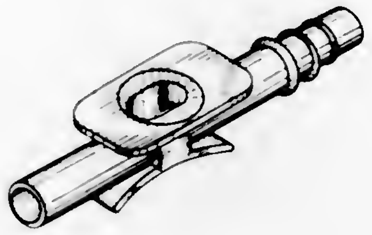
212,218
VENTED SUCTION CATHETER CONNECTOR

William J. Norton, New Providence, N.J., assignor to C. R. Bard Inc., Murray Hill, N.J., a corporation of New York

Filed Feb. 26, 1968, Ser. No. 10,728

Term of patent 14 years

(Cl. D16—1)



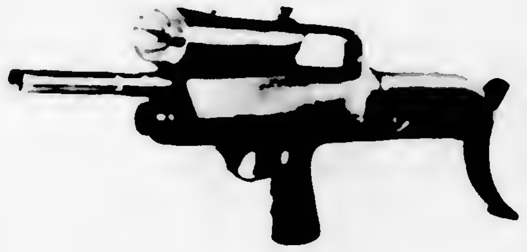
212,219
FIREARM OR SIMILAR ARTICLE

Alfred H. Crouch, 1538 Harvard St., Apt. 1,
Santa Monica, Calif. 90404

Filed June 12, 1967, Ser. No. 7,449

Term of patent 14 years

(Cl. D22—6)



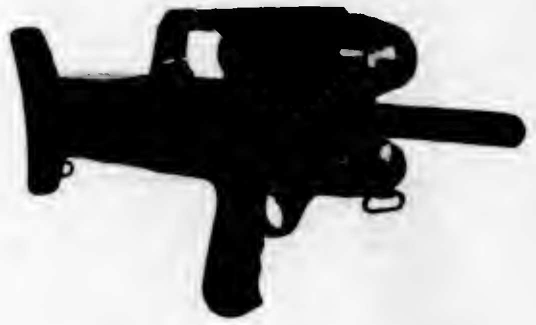
212,220
FIREARM OR SIMILAR ARTICLE

Alfred H. Crouch, Santa Monica, Calif., and Paul A. La Violette, Jr., and Edward M. Marino, North Haven, Conn.; said La Violette and said Marino assignors to The High Standard Manufacturing Corporation, Hamden, Conn., a corporation of Connecticut

Filed Oct. 18, 1967, Ser. No. 9,034

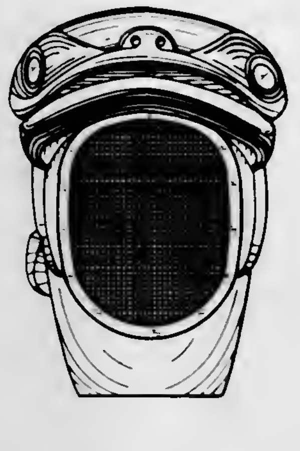
Term of patent 14 years

(Cl. D22—6)



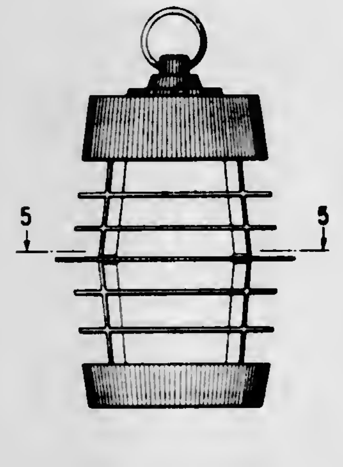
212,221
INSECT CATCHER

Neil W. Callahan, Jr., 18517 E. 7 St. N., Independence, Mo. 64050
Filed Mar. 27, 1968, Ser. No. 11,154
Term of patent 14 years
(Cl. D22—19)



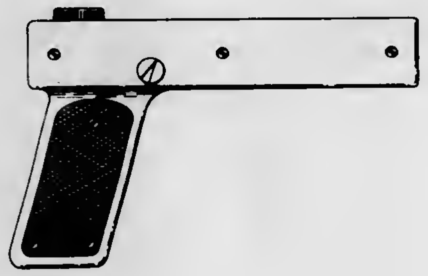
212,222
INSECT TRAP HOUSING

Oscar Miller, 4 Overlook Park, Newton Center, Mass. 02159
Filed Mar. 28, 1968, Ser. No. 11,169
Term of patent 14 years
(Cl. D22—19)



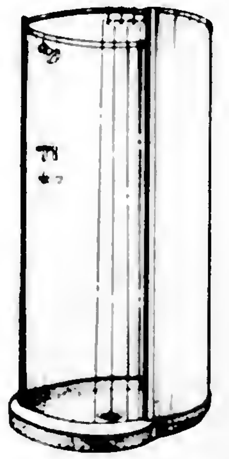
212,223
SPRAY GUN FOR WATER AND SOLUBLE PRODUCTS

Larry N. Lesley, 6206 Llano, Dallas, Tex. 75214, and Donald G. Ray, 818 W. Shady Grove, Irving, Tex. 75060
Filed July 18, 1967, Ser. No. 7,861
Term of patent 14 years
(Cl. D23—17)



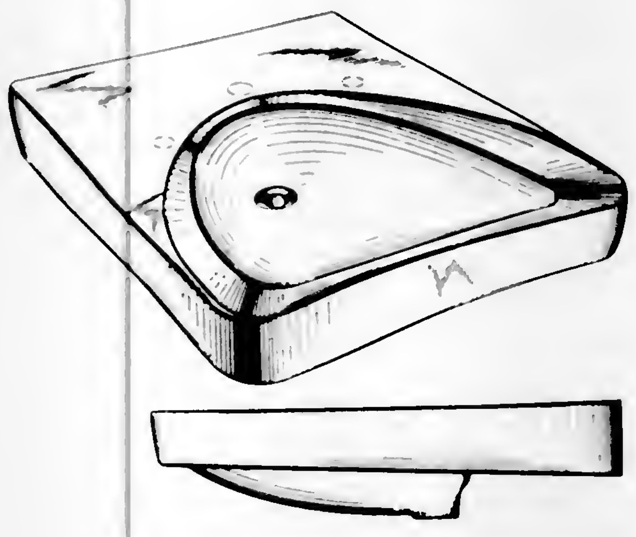
212,224
SHOWER STALL

John W. Moore, St. Louis, Mo., assignor to Swan Corporation, St. Louis, Mo., a corporation of Missouri
Filed Aug. 21, 1967, Ser. No. 8,341
Term of patent 14 years
(Cl. D23—57)



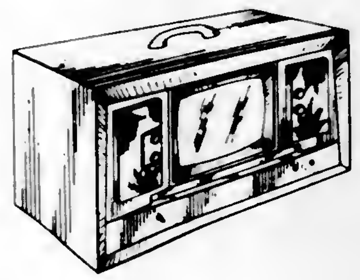
212,225
LAVATORY

E. Peter Robare, 701 Orchard Hill Drive, Louisville, Ky. 40214
Filed Dec. 29, 1967, Ser. No. 9,972
Term of patent 14 years
(Cl. D23—58)



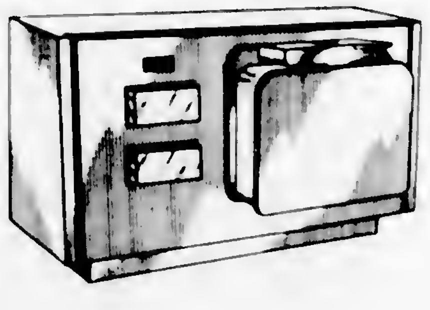
212,226
AUDIO-VISUAL TUTORING DEVICE

Loyd G. Dorsett, Norman, Okla., assignor to Dorsett Industries, Inc., Norman, Okla., a corporation of Oklahoma
Filed Jan. 30, 1967, Ser. No. 5,610
Term of patent 14 years
(Cl. D25—1)



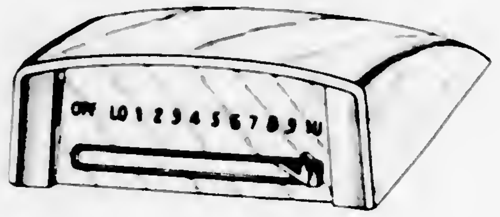
212,227
TAPE CONTROL UNIT FOR AN AUTOMATIC SORTER OR THE LIKE

George D. Del Vecchio, North Rose, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Aug. 2, 1967, Ser. No. 8,099
Term of patent 14 years
(Cl. D26—5)



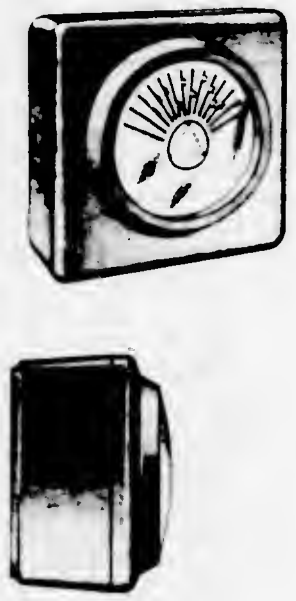
212,228
CONTROL FOR AN ELECTRIC BLANKET

Burton Kelly, Western Springs, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 1, 1967, Ser. No. 9,240
Term of patent 14 years
(Cl. D26—13)



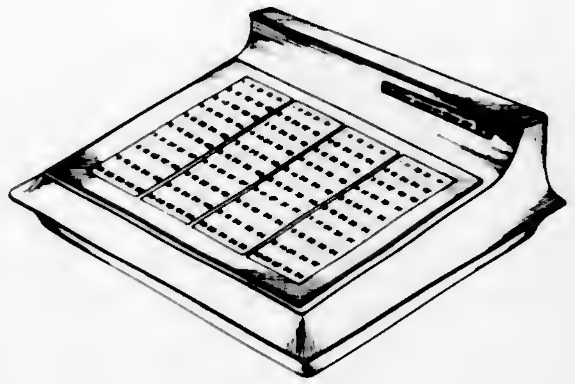
212,229
TELEPHONE SET

James N. Burlin, New York, N.Y., and James F. Ritchey, Carmel, and Stanley E. Seretny, Indianapolis, Ind., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York
Continuation-in-part of design application Ser. No. 86,421, Aug. 3, 1965. This application Mar. 27, 1967, Ser. No. 6,396
Term of patent 14 years
(Cl. D26—14)



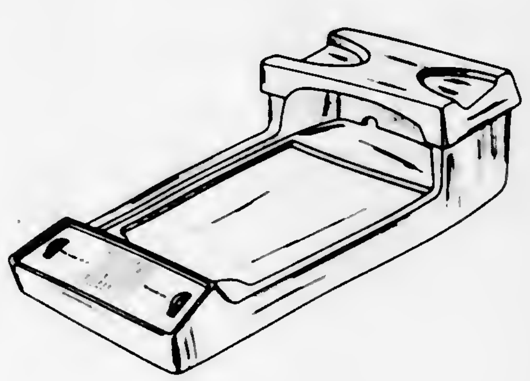
212,230
COMMUNICATION CONSOLE

George Bruce Kamp, Bala Cynwyd, Pa., assignor to International Telephone and Telegraph Corporation
Original design application June 23, 1966, Ser. No. 2,789. Divided and this application Nov. 14, 1967, Ser. No. 9,395
Term of patent 14 years
(Cl. D26—14)



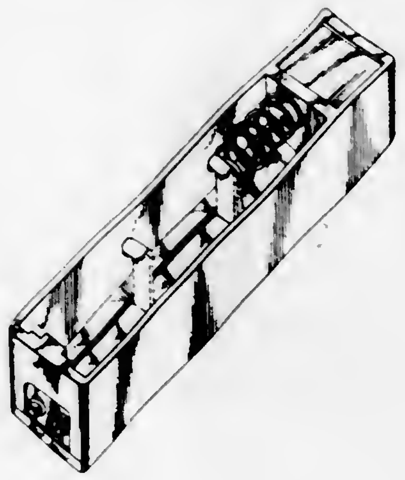
212,231
HANDSFREE TELEPHONE ADAPTER WITH AMPLIFIER THEREFOR

George Bruce Kamp, Bala Cynwyd, and Stanley Rejniak, New Cumberland, Pa., assignors to International Telephone and Telegraph Corporation
Filed Nov. 30, 1967, Ser. No. 9,594
Term of patent 14 years
(Cl. D26—14)

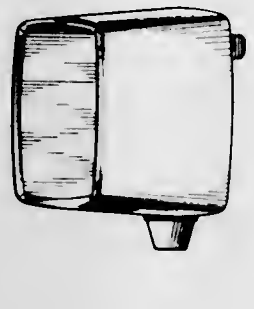


212,232
BATTERY CHARGER

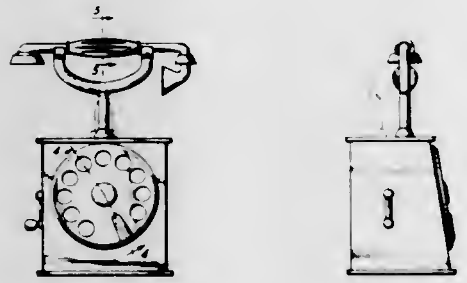
Robert D. Kahn, Rockville Centre, N.Y., assignor to Fedtro, Inc., Rockville Centre, N.Y., a corporation of New York
Filed Apr. 5, 1967, Ser. No. 6,535
Term of patent 14 years
(Cl. D26—15)



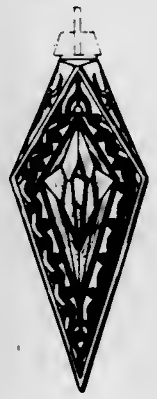
212,233
PLUG-IN POWER SUPPLY
Joseph A. Mas, Woodbury, N.Y., assignor to Dynamics Instrument Corporation, Plainview, N.Y., a corporation of New York
Filed Feb. 23, 1968, Ser. No. 10,689
Term of patent 14 years
(Cl. D26—15)



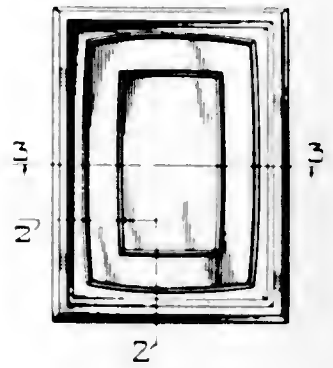
212,234
CHRISTMAS ORNAMENT
Dario Moranduzzo, Via Aretina 161, Florence, Italy
Filed May 9, 1967, Ser. No. 7,028
Term of patent 14 years
(Cl. D29—1)



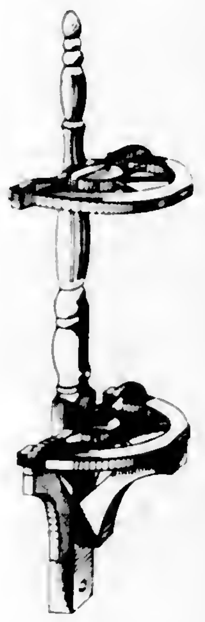
212,235
CHRISTMAS ORNAMENT
Dario Moranduzzo, Via Aretina 161, Florence, Italy
Filed May 9, 1967, Ser. No. 7,029
Term of patent 14 years
(Cl. D29—1)



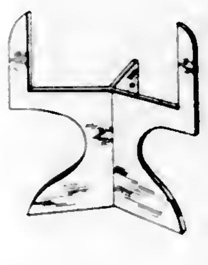
212,236
FURNITURE PANEL
Richard D. Merillat, Adrian, Mich., assignor to Merillat Woodworking Company, Adrian, Mich., a corporation of Michigan
Filed May 17, 1967, Ser. No. 7,167
Term of patent 14 years
(Cl. D33—1)



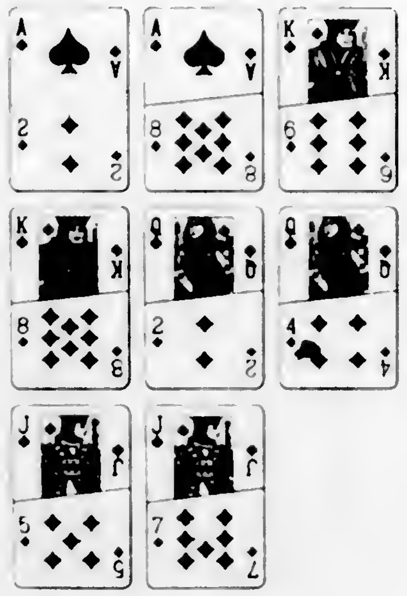
212,237
GUNRACK
Leo C. Smith, 2958 Arrowhead Drive, Abilene, Tex. 79606
Continuation-in-part of design application Ser. No. 4,697, Nov. 16, 1966. This application Aug. 2, 1967, Ser. No. 8,102
Term of patent 14 years
(Cl. D33—3)



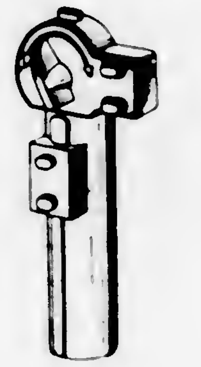
212,238
LOUDSPEAKER SUPPORT STAND
Joseph Belotte, P.O. Box 541, Arlington, Va. 22216
Filed Aug. 23, 1967, Ser. No. 8,353
Term of patent 14 years
(Cl. D33—3)



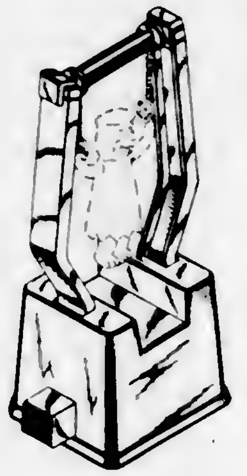
212,239
DECK OF GAME CARDS
Frank J. Schick, 1925 Curdes Ave., Fort Wayne, Ind. 46805
Filed Nov. 15, 1966, Ser. No. 4,680
Term of patent 7 years
(Cl. D34—13)



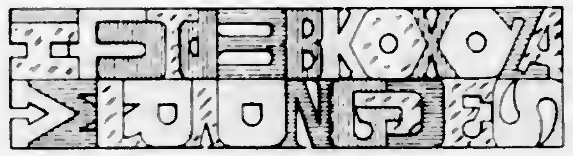
212,240
CONTROLLER UNIT FOR ELECTRICALLY OPERABLE TOYS
Show-Ling Wong, Kowloon, Hong Kong, assignor to China Plastics Company Limited, Kowloon, Hong Kong, a corporation of Hong Kong
Filed Jan. 20, 1967, Ser. No. 5,496
Term of patent 14 years
(Cl. D34—15)



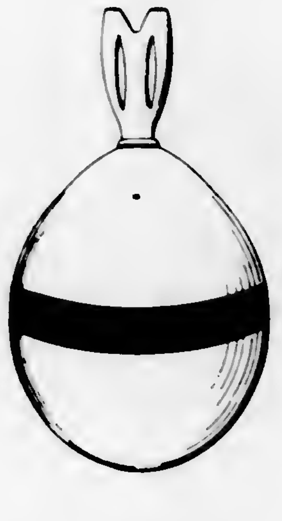
212,241
ACROBATIC FIGURE TOY
Albert Stubbmann, New Hyde Park, N.Y., assignor to Kohner Bros., Inc., East Paterson, N.J., a corporation of New York
Filed Apr. 28, 1967, Ser. No. 6,872
Term of patent 14 years
(Cl. D34—15)



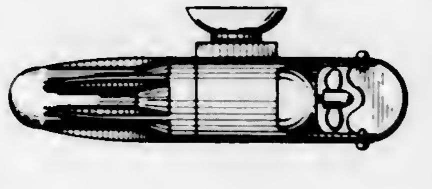
212,242
ALPHABET PUZZLE OR THE LIKE
George J. Paulus, 14 Midway St., San Francisco, Calif. 94133
Filed May 25, 1967, Ser. No. 7,261
Term of patent 14 years
(Cl. D34—15)



212,243
RIDABLE BOUNCING TOY
Reginald Thomas Bennett, 8 Moat Walk Pound Hill, Crawley, England
Filed June 12, 1967, Ser. No. 7,456
Claims priority, application Great Britain May 9, 1967
Term of patent 14 years
(Cl. D34—15)



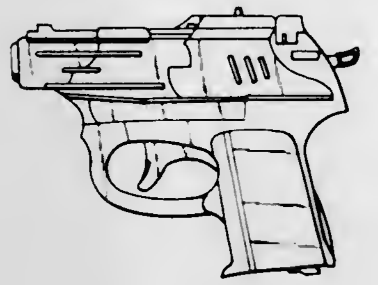
212,244
MOTOR-DRIVEN PROPELLING DEVICE FOR TOYS OR SIMILAR ARTICLE
Takaichi Mabuchi, Tokyo, Japan, assignor to Tokyo Kagaku Kabushikikaisha, Tokyo, Japan, a corporation of Japan
Filed July 13, 1967, Ser. No. 7,785
Term of patent 14 years
(Cl. D34—15)



212,245
TOY GUN

Chiyokazu Iida, % Sekiden Kaihatsu Shoji Kabushiki Kaisha, 2 1-chome, Jinai-cho, Moriguchi-shi, Osaka, Japan

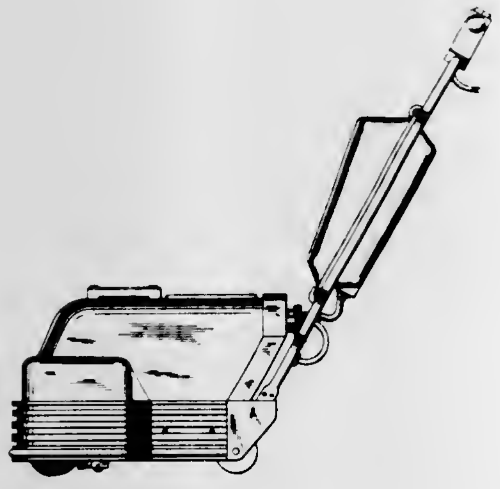
Filed Nov. 2, 1967, Ser. No. 9,256
Claims priority, application Japan June 30, 1967
Term of patent 3½ years
(Cl. D34—15)



212,246
DRY FOAM CARPET SHAMPOOING MACHINE

Lewis G. Schowalter, Racine, Wis., assignor to Von Schrader Manufacturing Company, Racine, Wis., a partnership of Wisconsin

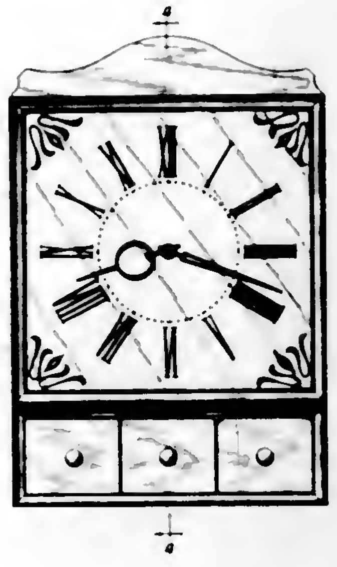
Continuation-in-part of design application Ser. No. 4,415, Oct. 24, 1966. This application Nov. 9, 1967, Ser. No. 9,519
Term of patent 14 years
(Cl. D37—3)



212,247
CLOCK

Walter B. Herbst, Evanston, and Ralph M. La Zar, Skokie, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois

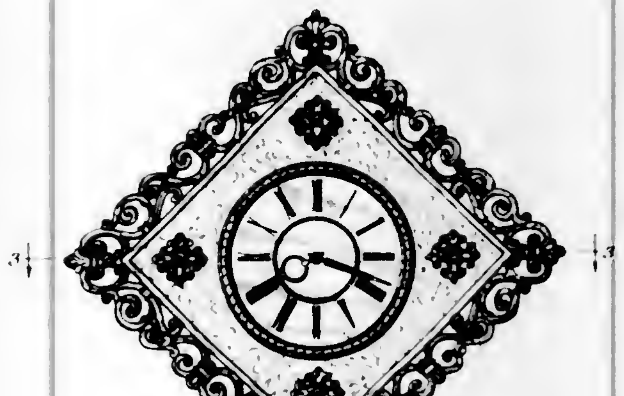
Filed Feb. 1, 1968, Ser. No. 10,395
Term of patent 14 years
(Cl. D42—7)



212,248
CLOCK

Harry L. Laylon, Syracuse, N.Y., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois

Filed Nov. 6, 1967, Ser. No. 9,295
Term of patent 14 years
(Cl. D42—7)

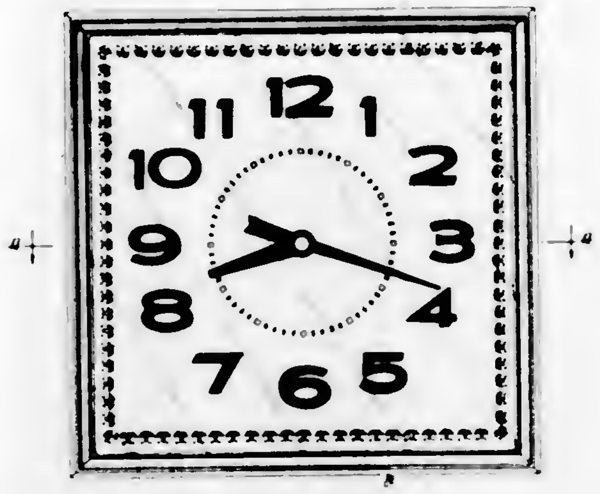


212,249
CLOCK

Walter B. Herbst, Evanston, and Ralph M. La Zar, Skokie, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois

Original design application Feb. 20, 1967, Ser. No. 5,863. Divided and this application Oct. 18, 1967, Ser. No. 9,302

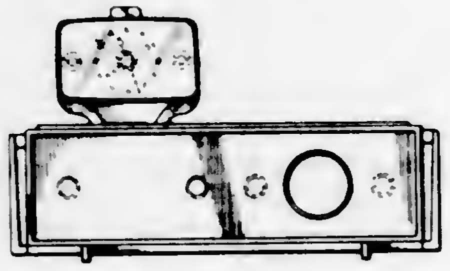
Term of patent 14 years
(Cl. D42—7)



212,250
CLOCK RADIO

Thomas J. David, Columbus, Ind., assignor to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana

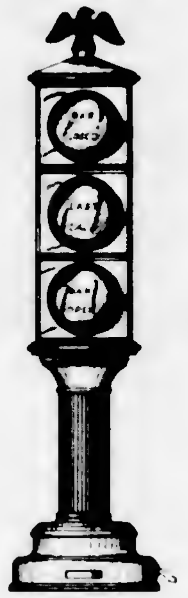
Filed Feb. 1, 1968, Ser. No. 10,405
Term of patent 14 years
(Cl. D42—7)



212,251
BAR LAMP

Mel Appel, Livingston, and Martin Schnur, West Orange, N.J., assignors to Elpo Industries Inc., Fair Lawn, N.J., a corporation of New Jersey

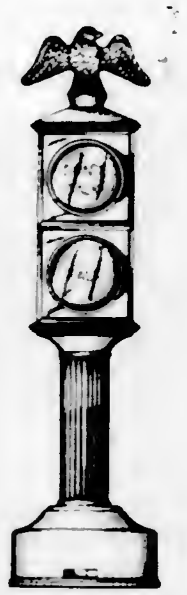
Filed Feb. 28, 1968, Ser. No. 10,752
Term of patent 14 years
(Cl. D48—20)



212,252
LAMP

Mel Appel, Livingston, and Martin Schnur, West Orange, N.J., assignors to Elpo Industries Inc., Fair Lawn, N.J., a corporation of New Jersey

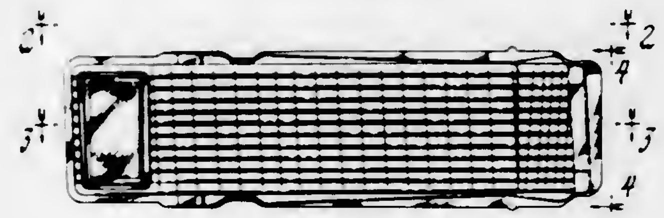
Filed Feb. 28, 1968, Ser. No. 10,753
Term of patent 14 years
(Cl. D48—20)



212,253
MOTOR VEHICLE LAMP LENS

Terry R. Henline, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

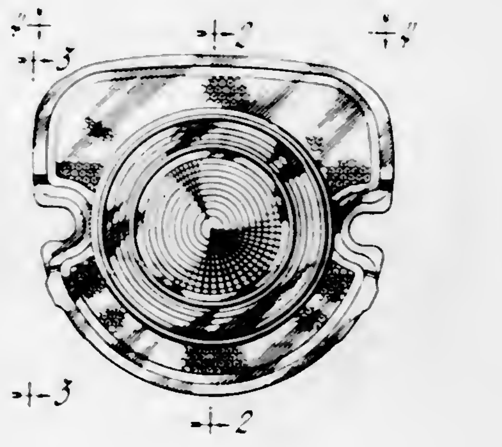
Filed Oct. 18, 1967, Ser. No. 9,038
Term of patent 7 years
(Cl. D48—32)



212,254
MOTOR VEHICLE LAMP LENS

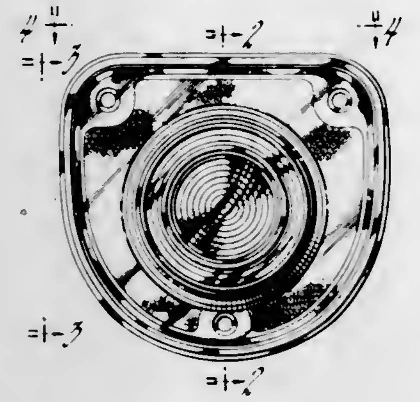
David R. Holls, Bloomfield Hills, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 18, 1967, Ser. No. 9,039
Term of patent 7 years
(Cl. D48—32)



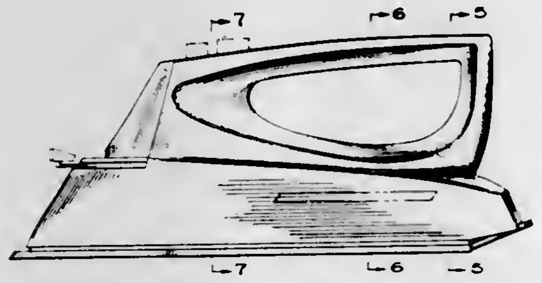
212,255
MOTOR VEHICLE LAMP LENS

David R. Holls, Bloomfield Hills, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 18, 1967, Ser. No. 9,040
Term of patent 7 years
(Cl. D48—32)



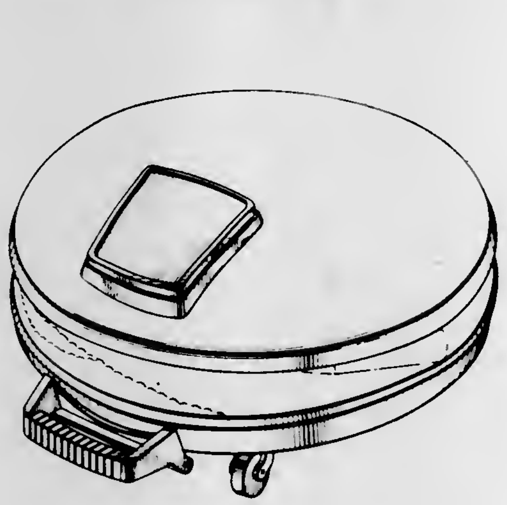
212,256
STEAM AND SPRAY IRON

Donal F. Fitzgerald, Winsted, Conn., assignor to Son-Chief Electrics, Inc., Winsted, Conn., a corporation of Connecticut
Filed Oct. 26, 1967, Ser. No. 9,180
Term of patent 14 years
(Cl. D49—6)



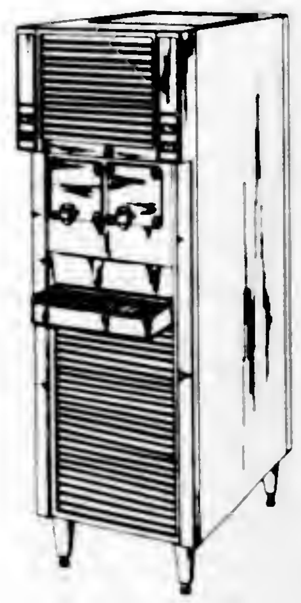
212,257
SUCTION CLEANER

Harold W. Schaefer and Samuel E. Hohulin, Bloomington, Ill., assignors to National Union Electric Corporation, Stamford, Conn., a corporation of Delaware
Filed Nov. 13, 1967, Ser. No. 9,378
Term of patent 14 years
(Cl. D49—14)



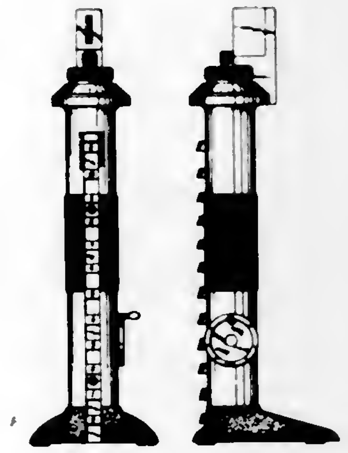
212,258
BEVERAGE VENDING MACHINE, OR SIMILAR ARTICLE

Richard T. Cornelius, Minneapolis, and Clark L. Lofgren, Golden Valley, Minn., assignors to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed Nov. 9, 1967, Ser. No. 9,342
Term of patent 14 years
(Cl. D52—3)



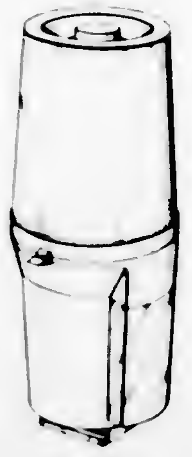
212,259
HEIGHT GAUGE

Nicholas M. Milan, 4215 Courville Ave., Detroit, Mich. 48224
Filed Oct. 6, 1967, Ser. No. 8,899
Term of patent 14 years
(Cl. D52—6)



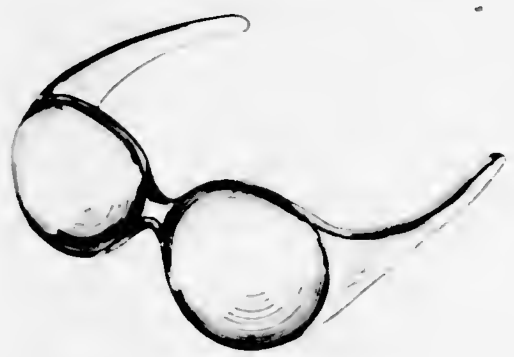
212,260
COFFEE MILL OR THE LIKE

Douglas N. Cabell, Bloomfield Hills, Mich., assignor to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey
Filed Dec. 26, 1967, Ser. No. 10,036
Term of patent 14 years
(Cl. D55—1)



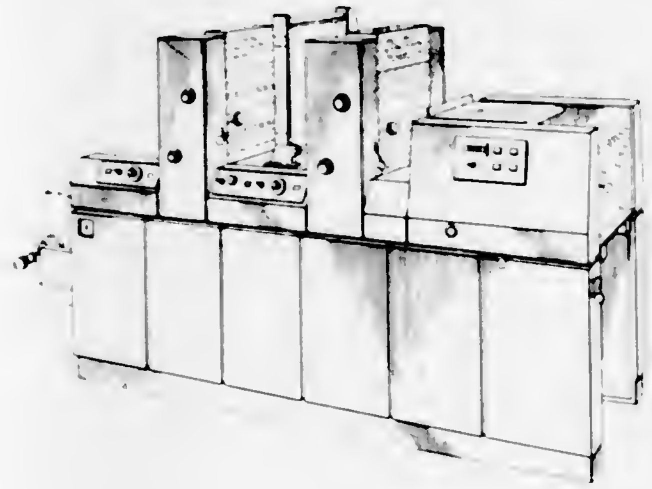
212,261
PAIR OF SUN GLASSES

Maurice Bolle, 13 Rue Balland, and Robert Bolle, 58 Route de Marchon, both of Oyonnax, France, and Ritchard Salvage, 1905 Avenue L, Brooklyn, N.Y. 11230
Filed Oct. 30, 1967, Ser. No. 9,217
Term of patent 14 years
(Cl. D57—1)



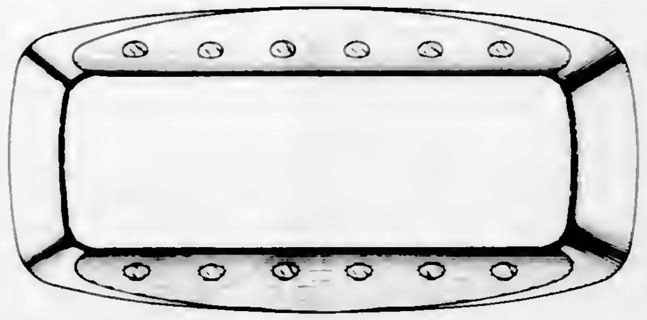
212,262
DOCUMENT REPRODUCER

Robert V. Mallory, Kendall Park, N.J., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 6, 1967, Ser. No. 8,893
Term of patent 14 years
(Cl. D64—11)



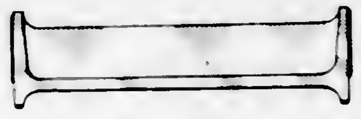
212,263
REFLECTING TRAFFIC GUIDE OR SIMILAR ARTICLE

Roger G. Royer, Parkersburg, W. Va., assignor to Borg-Warner Corporation, a corporation of Illinois
Filed Oct. 25, 1967, Ser. No. 9,154
Term of patent 14 years
(Cl. D72—1)



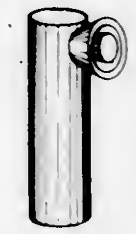
212,264
LETTER TRAY

Herbert M. Rome and Harold J. Fatt, Los Angeles, Calif., assignors to Eldon Industries, Inc., Hawthorne, Calif., a corporation of California
Filed May 18, 1967, Ser. No. 7,173
Term of patent 14 years
(Cl. D74—9)



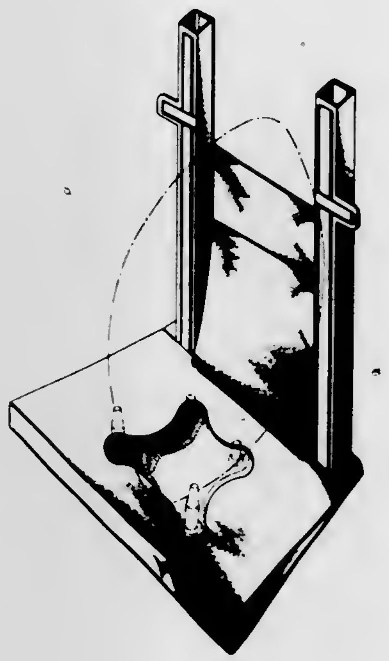
212,265
MARKING DEVICE

John P. Capezzuto, Cambridge, Mass., assignor to The Carter's Ink Company, Cambridge, Mass., a corporation of Massachusetts
Filed Nov. 6, 1967, Ser. No. 9,291
Term of patent 14 years
(Cl. D74—17)



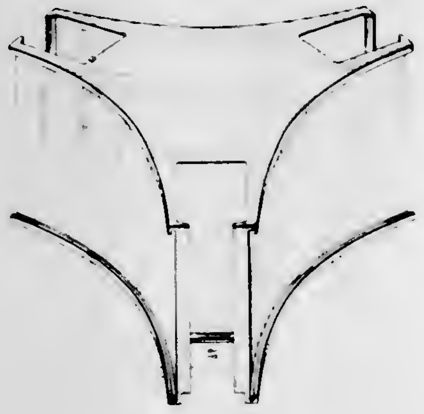
212,266
DISPLAY STAND FOR A FOOTBALL OR THE LIKE

Eli A. Robinson, Amsterdam, N.Y., assignor to Collette Manufacturing Company, Amsterdam, N.Y., a corporation of New York
Filed Nov. 18, 1966, Ser. No. 4,741
Term of patent 14 years
(Cl. D80—9)



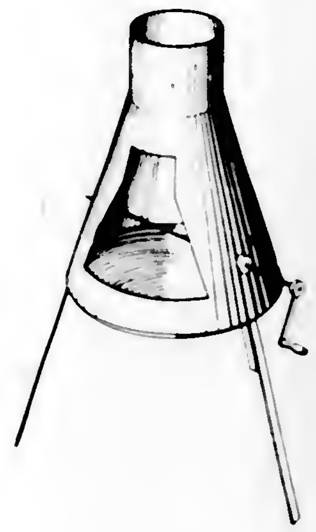
212,267
COMBINED DISPLAY AND DISPENSING STAND FOR NEEDLES OR THE LIKE

Henry Dreyfuss, South Pasadena, Calif., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 3, 1967, Ser. No. 5,264
Term of patent 14 years
(Cl. D80—9)



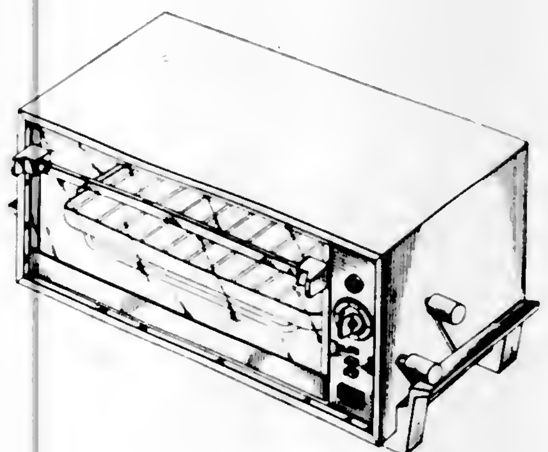
212,268
BARBEQUE GRILL OR THE LIKE

Bailey C. Williams, 1200 Marlboro Road, Raleigh, N.C. 27610
Filed Aug. 18, 1966, Ser. No. 3,521
Term of patent 14 years
(Cl. D81—10)



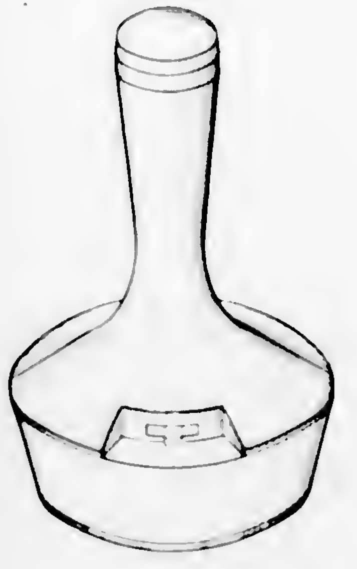
212,269
BROILER

William J. Rakocy, Clifton, N.J., assignor to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey
Filed Oct. 23, 1967, Ser. No. 9,100
Term of patent 14 years
(Cl. D81—10)



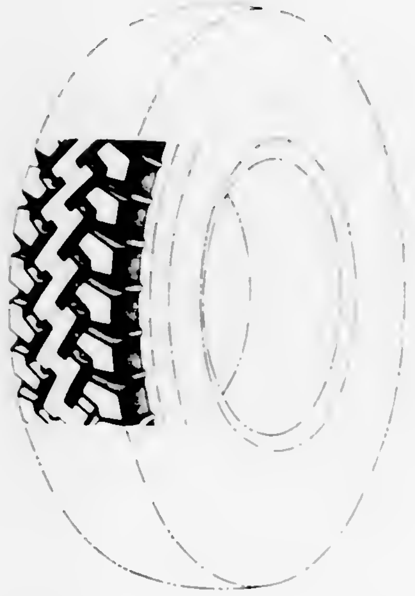
212,270
ELECTRIC MASSAGER

Kurt F. Mizen, Evanston, Ill., assignor to Burges Vibrocrafters, Inc., Grayslake, Ill., a corporation of Delaware
Filed Mar. 8, 1968, Ser. No. 10,900
Term of patent 14 years
(Cl. D83—1)



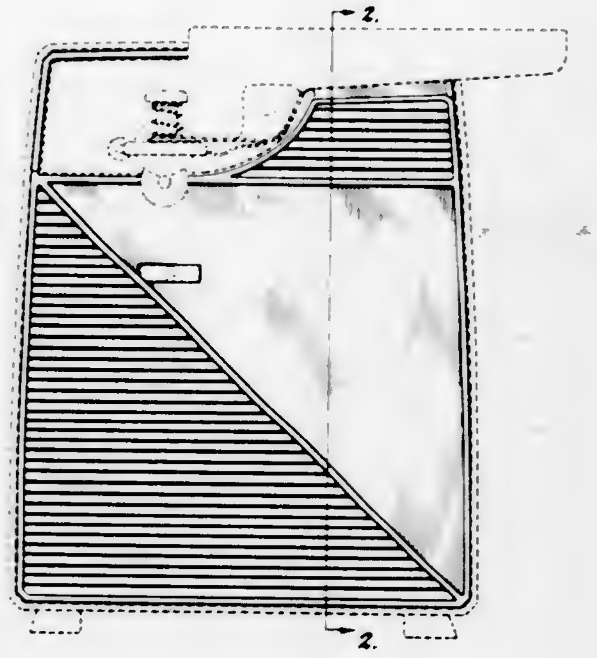
212,271
TIRE

Eathel L. Duncan, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Feb. 28, 1968, Ser. No. 10,778
Term of patent 14 years
(Cl. D90—20)



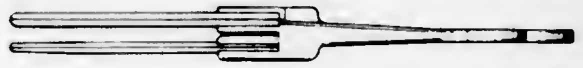
212,272
FRONT PANEL FOR AN ELECTRIC CAN OPENER

Henry J. Talge, Kansas City, Mo., assignor to Dazey Products Company, Kansas City, Missouri, a corporation of Missouri
Filed Nov. 29, 1967, Ser. No. 9,576
Term of patent 14 years
(Cl. D95—2)



212,273
COMBINED TRIMMING AND THINNING SHEARS

Basil Sinko, P.O. Box 203, Pinole, Calif. 94564
Filed Mar. 13, 1968, Ser. No. 10,958
Term of patent 14 years
(Cl. D95—5)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 17TH DAY OF SEPTEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Axelrad, Bernard A., R. F. Matson, and F. J. Touro, by Calgon Corp. Method of inhibiting dissolution of calcium sulfate. Re. 26,460, 9–17–68, Cl. 23—89.

Babcock & Wilcox Co., The: *See*—
  Edgecombe, David A., Marshall, and Evans. Re. 26,457.

Barnes, Philip E., and R. N. Quenneville, to United Aircraft Corp. Pitch control system. Re. 26,461, 9–17–68, Cl. 170—160.32.

Calgon Corp.: *See*—
  Axelrad, Bernard A., Matson, and Touro. Re. 26,460.

Edgecombe, David A., H. W. Marshall, and S. O. Evans, to The Babcock & Wilcox Co. Hot drawing tubes. Re. 26,457, 9–17–68, Cl. 72—42.

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Gamble, John G., 33½ to Elton Industries, Inc. Electronic gas analyzer using paramagnetic properties of the gas to control electron flow. Re. 26,456, 9–17–68, Cl. 324—36.

Lemelson, Jerome H. Radio telephone communication system. Re. 26,459, 9–17–68, Cl. 179—41.

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Bolle, Maurice and R., and R. Salvage. Pair of sun glasses. 212,261, 9–17–68, Cl. D57—1.

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Callahan, Neil W., Jr. Insect catcher. 212,221, 9–17–68, Cl. D22—19.

Capezzuto, John P., to The Carter's Ink Co. Marking device. 212,265, 9–17–68, Cl. D74—17.

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  Appel, Mel, and Schnur. 212,252.

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- Holls, David R., to General Motors Corp. Motor vehicle lamp lens. 212,255, 9–17–68, Cl. D48—32.
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- Kahn, Robert D., to Fedtro, Inc. Battery charger. 212,232, 9–17–68, Cl. D26—15.
- Kamp, George B., to International Telephone and Telegraph Corp. Communication console. 212,230, 9–17–68, Cl. D26—14.
- Kamp, George B., and S. Rejniak, to International Telephone and Telegraph Corp. Handsfree telephone adapter with amplifier therefor. 212,231, 9–17–68, Cl. D26—14.
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- Mallory, Robert V., to International Business Machines Corp. Document reproducer. 212,262, 9–17–68, Cl. D64—11.
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- Merillat, Richard D., to Merillat Woodworking Co. Furniture panel. 212,236, 9–17–68, Cl. D33—1.
- Merillat Woodworking Co.: *See*—
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- Moranduzzo, Dario. Christmas ornament. 212,235, 9–17–68, Cl. D29—1.
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- Paulus, George J. Alphabet puzzle or the like. 212,242, 9–17–68, Cl. D34—15.
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- Ritchey, James F.: *See*—
  - Burlin, James N., Ritchey, and Seretny. 212,229.
- Robare, E Peter. Lavatory. 212,225, 9–17–68, Cl. D23—58.
- Robinson, Eli A., to Collette Mfg. Co. Display stand for a football or the like. 212,266, 9–17–68, Cl. D80—9.
- Rogers, Meyric K., to Sunbeam Corp. Combined display and charging unit for a battery operated toothbrush. 212,208, 9–17–68, Cl. D4—16.
- Rome, Herbert M., and H. J. Fatt, to Eldon Industries, Inc. Letter tray. 212,264, 9–17–68, Cl. D74—9.
- Ronson Corp.: *See*—
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- Royer, Roger G., to Borg-Warner Corp. Reflecting traffic guide or similar article. 212,263, 9–17–68, Cl. D72—1.
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- Schaefer, Harold W., and S. E. Hohulin, to National Union Electric Corp. Suction cleaner. 212,257, 9–17–68, Cl. D49—14.
- Schick, Frank J. Deck of game cards. 212,239, 9–17–68, Cl. D34—13.
- Schnur, Martin: *See*—
  - Appel, Mel, and Schnur. 212,251.
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- Schowalter, Lewis G., to Von Schrader Mfg. Co. Dry foam carpet shampooing machine. 212,246, 9–17–68, Cl. D37—3.
- Seger, Eric, to Frederich Wich and Co. Ltd. Combined brush and shoe horn. 212,209, 9–17–68, Cl. D4—17.
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- Singer Co., The: *See*—
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- Sinko, Basil. Combined trimming and thinning shears. 212,273, 9–17–68, Cl. D95—5.
- Smith, Leo C. Gunrack. 212,237, 9–17–68, Cl. D33—3.
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  - Kelly, Burton. 212,228.
  - Laylon, Harry L. 212,248.
  - Rogers, Meyric K. 212,208.
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- Talge, Henry J., to Dazey Products Co. Front panel for an electric can opener. 212,272, 9–17–68, Cl. D95—2.
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- Williams, Bailey C. Barbeque grill or the like. 212,268, 9–17–68, Cl. D81—10.
- Wong, Show-Ling, to China Plastics Co. Ltd. Controller unit for electrically operable toys. 212,240, 9–17–68, Cl. D84—15.
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- Zinni, Domenic A., to B. B. Greenbert Co. Spring clip for boot buckles or similar articles. 212,207, 9–17–68, Cl. D2—422.
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- AMP Inc.: *See*—
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  - Gaw, John W., Stinner, and Taylor. 3,402,381.
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  - Howard, Henry T., and Auernheimer. 3,402,391.
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  - Van Der Werff. 3,401,661.
- Aaberg, Carl P. N. Plant for ventilation of rooms, more particularly in stables. 3,401,621, 9–17–68, Cl. 98—33.
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  - Coakley, James L., and Lawhead. 3,401,603.
  - Kubilos, Charles A. 3,401,711.
- Abram, George W. Game with rotatable component. 3,401,940, 9–17–68, Cl. 273—139.
- Abrams, Herman B. Battery charger system. 3,402,339, 9–17–68, Cl. 320—40.
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  - Jacobi, Richard, Stahl, Quenett, Achhammer, and Merkel. 3,402,084.
- Acme Appliance Mfg. Co.: *See*—
  - Brandt, Frank H., Aguirre, and Kellems. 3,401,487.
- Adams, Cecil E., and R. E. Griffith, to American Brake Shoe Co. Three area vane type hydraulic pump having force modulating flow restrictor means. 3,401,641, 9–17–68, Cl. 103—136.
- Adams, William M., to International Harvester Co. Vehicle wheel adjustment means. 3,401,981, 9–17–68, Cl. 301—132.
- Adell, Robert, to U.S. Products Development. Ornamental and protective molding for motor vehicle doors. 3,401,486, 9–17–68, Cl. 49—462.
- Adsit, Norman L., to General Motors Corp. Fluid flow control mechanism. 3,401,872, 9–17–68, Cl. 230—157.
- Aero-Med Thermal Instrument Co., Inc.: *See*—
  - Catlin, Richard L., and Shew. 3,402,378.
- Aeronca Mfg. Corp.: *See*—
  - Cripe, Alan R. 3,401,644.
- Aeroquip Corporation: *See*—
  - Christophersen, Clarence E. 3,401,437.
  - McCracken, Donald G. 3,401,956.
  - McCracken, Donald G. 3,402,253.
- Aguirre, David: *See*—
  - Brandt, Frank H., Aguirre, and Kellems. 3,401,487.
- Ahlen, Karl G., to S.R.M. Hydromekanik AB. Gear type pump or motor. 3,401,778, 9–17–68, Cl. 192—61.
- Ahrens, Warren S., and D. A. Viera, to Bridgeport Metal Goods Mfg. Co. Decorative dispensing cap assembly. 3,401,843, 9–17–68, Cl. 222—182.
- Aircars Inc.: *See*—
  - Laufman, Harry A., and Stillman. 3,401,766.
- Akerlund & Rausing, AB: *See*—
  - Holstrom, Kjell I. 3,401,865.
- Akiyama, Shinichi: *See*—
  - Sakuragi, Taketami, Baba, and Akiyama. 3,402,136.
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  - Varfeldt, Knud A., and Thelander. 3,402,095.
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  - Weingartner, Bernhard, Kovacs, and Marschall. 3,402,371.
- Albert, Harry E., and P. G. Haines, to Pennsalt Chemicals Corp. Stopping agents for emulsion polymerization processes comprising N,N'-dialkyl-N,N'-methylenebishydroxylamines. 3,402,138, 9–17–68, Cl. 260—29.7.
- Alfa-Laval AB: *See*—
  - Berglind, Karl L. 3,401,672.
- Allen-Harper, Inc.: *See*—
  - Allen, Kenneth M., and Harper. 3,401,728.
- Allen, Kenneth M., and C. H. Harper. Apparatus for removing stems from cherries. 3,401,726, 9–17–68, Cl. 146—55.
- Allen, Kenneth M., and C. H. Harper, to Allen-Harper, Inc. Potato slicer. 3,401,728, 9–17–68, Cl. 146—78.
- Allen, Merton, and E. C. Shrom, to General Electric Co. Electrohydraulic purification apparatus. 3,402,120, 9–17–68, Cl. 204—328.
- Allen, Oliver L.: *See*—
  - Mought, John J., Greene, Allen, and Lampe. 3,401,417.
- Allen, Ralph H. Fire cartridge. 3,401,633, 9–17–68, Cl. 102—32.
- Allied Chemical Corp.: *See*—
  - Gilbert, Everett E., Lombardo, Rumanowski, and Sukornick. 3,402,209.
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- Allis-Chalmers Mfg. Co.: *See*—
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  - Plate, John R. 3,401,521.
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- Altman, Gerald. Contour projection apparatus. 3,401,592, 9–17–68, Cl. 88—24.
- Altman, Gerald. Projection system for reflected images utilizing polarized light. 3,401,593, 9–17–68, Cl. 88—24.
- Alton, Harry K., to Pierce Trailer & Equipment Co. Logging vehicle with articulated load carrier. 3,401,955, 9–17–68, Cl. 280—404.
- Amalfitano, Jerry S. Quartz radiant heater. 3,401,626, 9–17–68, Cl. 99—386.
- Amberg, Herman R., T. R. Aspitarte, J. F. Cormack, and J. B. Mugg, to Crown Zellerbach Corp. Fermentation of carbohydrate-containing materials. 3,402,103, 9–17–68, Cl. 195—32.
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- American District Telegraph Co.: *See*—
  - Malmborg, Floyd L., and Sellinger. 3,402,337.
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  - Rice, Charles M. 3,401,559.
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  - Cremieux, George V. 3,401,832.
- American Monorail Co., The: *See*—
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- American Motors Corp.: *See*—
  - Puidokas, Stanley V. 3,401,779.
- American Pipe and Construction Co.: *See*—
  - Pingree, Robert J. 3,401,988.
- Amerman, Jack A.: *See*—
  - Gwaltney, Charles W., Amerman, and Olexa. 3,401,757.
- Amis, James W., Jr., and J. H. Andersen, to Korry Mfg. Co. Alternate latch and unlatch and eject mechanism operated by unidirectional forces. 3,402,379, 9–17–68, Cl. 339—45.
- Ammon, Ernst: *See*—
  - Pato, Tibor G., Ammon, Graf, and Wymann. 3,401,745.
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  - Amis, James W., Jr., and Andersen. 3,402,379.
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  - Ross, Gilbert H., Anderson, and Beaty. 3,401,548.
- Anderson, Dallas A. Metal stud for polystyrene foam sheets. 3,401,494, 9–17–68, Cl. 52—309.
- Anderson, James, to Electrolux Corp. Check valve for vent hole of a container. 3,401,850, 9–17–68, Cl. 222—482.
- Aninger, John H. Caster. 3,401,421, 9–17–68, Cl. 16—25.
- Anselmi, James V. Buoy mooring anchor marker. 3,401,413, 9–17–68, Cl. 9—9.
- Anslover, Joseph A. Hoop and supporting handle and releasable starter therefor. 3,401,484, 9–17–68, Cl. 46—220.
- Anthon, Erik W., to Warner-Lambert Pharmaceutical Co. Analytical cuvette and supply system wherein the cuvette inlet and outlet are located on the bottom of the cuvette. 3,401,591, 9–17–68, Cl. 88—14.
- Anthony, Myron L., 25% each to G. W. and G. A. Butler and 50% to T. E. Dorn. Packaging system. 3,401,826, 9–17–68, Cl. 220—72.
- Aoki, Minoru: *See*—
  - Futaki, Hisao, Shimoda, Narita, Kobayashi, Kazuo, Aoki, and Yamada. 3,402,131.
- Archer, Alva I., to Honeywell Inc. Semiconductor integrated circuit apparatus. 3,402,330, 9–17–68, Cl. 317—235.
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  - Bowkley, Herbert L., and Thurman. 3,402,019.
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  - Schnabel, Herbert W. 3,402,034.
  - Schnabel, Herbert W., and Sickle. 3,401,491.
  - Stoll, Edward H., and Nuding. 3,401,565.
- Armstrong, Robert L.: *See*—
  - Obeda, Edward G., and Armstrong. 3,401,446.
- Armstrong, William M., and M. J. Hooey. Ventilator for vehicle roof. 3,401,620, 9–17–68, Cl. 98—2.
- Artos, Dr. Ing. Meier-Windhorst K.G.: *See*—
  - Meier-Windhorst, Christian A. 3,401,412.
- Asada, Takeo: *See*—
  - Mizuta, Yukio, Asada, Tanaka, and Morishita. 3,401,829.
- Asahi Kasei Kogyo Kabushiki Kaisha: *See*—
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- Associated Electrical Industries Ltd.: *See*—
  - Scott, William J. 3,402,276.

- Astheimer, Robert W., to Barnes Engineering Co. Process for measuring the distance from thermal discontinuities in the atmosphere. 3,402,295, 9–17–68, Cl. 250—83.3.
- Ateliers de Constructions de Vaux Andigny (ACOVA): *See*—
  - Guasco, Roger A., and Ignacio. 3,402,326.
- Ateliers de la Molbecane: *See*—
  - Jaulmes, Eric. 3,401,582.
- Atlantic Plastics, Inc.: *See*—
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- Atwater, Bennett I., and J. R. Penisten, to Universal Oil Products Co. Preparation of an absorption medium for hydrocarbon recovery. 3,402,122, 9–17–68, Cl. 208—101.
- Auernheimer, Clarence L.: *See*—
  - Howard, Henry T., and Auernheimer. 3,402,391.
- Automatic Electric Laboratories, Inc.: *See*—
  - Belcastro, Richard J., and Macrander. 3,402,368.
- Automatic Radio Mfg. Co., Inc.: *See*—
  - De Metrick, John S. 3,401,944.
- Automation Industries, Inc.: *See*—
  - Maley, Dale R. 3,401,551.
- Avco Corp.: *See*—
  - Stott, William A., and Carter. 3,401,791.
- Axelrod, Herbert R., and B. Duke, to T.F.H. Publications, Inc. Insulated shipping container for live aquarium fish. 3,401,671, 9–17–68, Cl. 119—5.
- Baba, Osao: *See*—
  - Sakuragi, Taketami, Baba, and Akiyama. 3,402,136.
- Bach, Jose C., to Industrias Cervello, S.A. Dispensing cap for atomizers. 3,401,845, 9–17–68, Cl. 222—211.
- Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See*—
  - Maier, Karl, Eisele, and Federkiel. 3,402,185.
  - Matthies, Hans G., Maahs, Wenger, and Lieseberg. 3,402,141.
  - Reichert, Martin, Wagner, Heitmueller, and Huebner. 3,401,654.
  - Unterstenhoefer, Leo, and Hezel. 3,401,680.
- Baecklund, Johannes. Apparatus for X-ray analysis of a material having a specific filter in the primary X-ray beam path. 3,402,292, 9–17–68, Cl. 250—51.5.
- Bailey, John M., to Caterpillar Tractor Co. Compact speed sensitive timing device for internal combustion engines. 3,401,572, 9–17–68, Cl. 74—395.
- Baker, George A., to Varian Associates. Coaxial receiver coil and capacitor structure for probes of UHF gyromagnetic spectrometers. 3,402,346, 9–17–68, Cl. 324—.5.
- Baldwin, Bradford J.: *See*—
  - Rockwood, Albert M., Russell, Gretzky, and Baldwin. 3,401,937.
- Ballard, Wade E., to Menardi & Co. Baghouse apparatus. 3,401,505, 9–17–68, Cl. 55—341.
- Balliano, Giuseppino. Hand-operated posthole borer for posts, saplings, vines and similar plants, provided with a screw, and with a cutting edge. 3,401,760, 9–17–68, Cl. 175—308.
- Bally Mfg. Corp.: *See*—
  - Benson, Lawrence P., and Reedy. 3,401,992.
- Balon Corp.: *See*—
  - Scaramucci, Domer. 3,401,913.
  - Scaramucci, Domer. 3,401,916.
- Balzer, Rudolf, and R. J. Stensrud. Clothes hanger. 3,401,855, 9–17–68 Cl. 223—94.
- Bargainer, James D., Jr., to Mobil Oil Corp. Radiation measuring system and method. 3,402,294, 9–17–68, Cl. 250—71.5.
- Barna, Theodore M., to Diamond Shamrock Corp. Recovery of alkyl tetrahaloterephthalates from xylene. 3,402,195, 9–17–68, Cl. 260—475.
- Barnes Engineering Co.: *See*—
  - Astheimer, Robert W. 3,402,295.
- Barr, Charles, to Bell Aerospace Corp. Articulated ground effect machine system. 3,401,767, 9–17–68, Cl. 180—121.
- Barr, James M.: *See*—
  - Hardison, Leslie C., and Barr. 3,402,015.
- Basic Inc.: *See*—
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- Baso, Loris: *See*—
  - Tresenreiter, Manfred. 3,401,432.
- Battelle Development Corp., The: *See*—
  - Jones, John B., Jr. 3,401,922.
- Bauer, Charles L., to Sunbeam Corp. Electric dry shaver. 3,401,453, 9–17–68, Cl. 30—43.9.
- Baum, Bernard O., R. K. Walton, and R. E. Reynolds, to Union Carbide Corp. Adherends bonded together by an interpolymer of ethylene and a vinyl amide. 3,402,098, 9–17–68, Cl. 161—190.
- Baur, Gerd R.: *See*—
  - Bynum, George D., Baur, and Thompson. 3,402,231.
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- Beach, Richard G., and H. R. Jaquith, to Taylor Instrument Co. Relay device with adjustment means. 3,401,573, 9–17–68, Cl. 74—469.
- Bear, Fred B., to Victor Comptometer Corp. Arrowhead attaching means. 3,401,938, 9–17–68, Cl. 273—106.5.
- Bearce, Wendell E., to Wilmot Engineering Co. Dryer. 3,401,923, 9–17–68, Cl. 263—32.
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  - Ross, Gilbert H. Anderson, and Beaty. 3,401,548.
- Becker, Ernst, and K. Notz, to Quick-Rotan Becker & Co. Automatic sewing path copying device for sewing and the like machines. 3,401,656, 9–17–68, Cl. 112—2.
- Beehler, Vernon D.: *See*—
  - Sawyer, Harold T. 3,402,009.
- Belcastro, Richard J., and M. S. Macrander, to Automatic Electric Laboratories, Inc. Pulse duration modulating arrangement including monostable multivibrator. 3,402,368, 9–17–68, Cl. 332—9.
- Bell Aerospace Corp.: *See*—
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  - Lerner, Theodore. 3,402,258.
  - Lerner, Theodore. 3,402,352.
  - Wood, Derek. 3,401,600.
- Bell, Ronald I.: *See*—
  - Howe, Frederick A., and Bell. 3,402,310.
- Bellah, Lester R. and W. H., to Travelure, Inc. Buoyant traveling device. 3,401,483, 9–17–68, Cl. 43—42.39.
- Bellah, William H.: *See*—
  - Bellah, Lester R. and W. H. 3,401,483.
- Benedict, Robert A., H. F. Cooper, Jr., and G. E. Fink, to United States of America, Army. Atmospheric infrared radiation scanner. 3,402,296, 9–17–68, Cl. 250—83.3.
- Benson, Lawrence P., and T. A. Reedy, Jr., to Bally Mfg. Corp. Subpanel elevating means for apparatus cabinets. 3,401,992, 9–17–68, Cl. 312—27.
- Bent, William H.: *See*—
  - Walker, Frederick J., and Bent. 3,401,982.
  - Walker, Frederick J., and Bent. 3,401,986.
- Berenbaum, Morris B., J. R. Panek, and L. Citarel, to Thiokol Chemical Corp. Tri and tetra mercapto compounds as cross-link control agents for polysulfide elastomers. 3,402,134, 9–17–68, Cl. 260—18.
- Bergen Laboratories, Inc.: *See*—
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- Berglind, Karl L., to Alfa-Laval AB. Teat cup liner. 3,401,672, 9–17–68, Cl. 119—14.49.
- Bergstrom, David A., to Litton Systems, Inc. Electrostatic precipitator. 3,401,503, 9–17–68, Cl. 55—113.
- Berkhoudt, John G., and J. M. Melisz, to Lisk-Savory Corp. Space heating device. 3,401,920, 9–17–68, Cl. 263—19.
- Berlin, Abe. Hosiery-donning device. 3,401,856, 9–17–68, Cl. 223—111.
- Berman, Jay R., and I. Lieblich, to Hogan Faximile Corp. Electrolytic recording medium. 3,402,109, 9–17–68, Cl. 204—2.
- Berthoux, Jean, and C. Gerbelot-Barrillon, to Progil S.A. Process of aromatic hydrocarbon oxidation. 3,402,184, 9–17–68, Cl. 260—346.4.
- Bertin & Cie Societe: *See*—
  - Pavlin, Cyrille F., and Oudin. 3,401,885.
- Beu, Richard A., to Hanau Engineering Co., Inc. Dental syringe. 3,401,691, 9–17–68, Cl. 128—173.1.
- Bezzerides, Arthur A.: *See*—
  - Bezzerides, Paul A. and A. A. 3,401,753.
- Bezzerides, Paul A. and A. A. Earthworking tool for thinning plants. 3,401,753, 9–17–68, Cl. 172—543.
- Bickel, Frederic W., T. B. Squire, and G. H. Peterson, to McDonnell Douglas Corp. Ethylene-propylene rubber compounding. 3,402,140, 9–17–68, Cl. 260—38.
- Bierbrauerei Becker OHG: *See*—
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- Bierman, Clarence R., and W. A. Fourier, to American Can Co. Homogeneous blend of uncured butyl and cured chlorobutyl rubbers. 3,402,220, 9–17–68, Cl. 260—888.
- Biles, James R.: *See*—
  - Faria, James M., and Biles. 3,402,061.
- Bird Machine Co.: *See*—
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- Birdwell, J. C. Pressure fluid operated motor or the like. 3,401,602, 9–17–68, Cl. 91—56.
- Bishop, Lewis H., to Pierce Specialized Equipment Co. Machine for receiving and translating sheet material for trimming, slicing, scoring or perforating. 3,401,930, 9–17–68, Cl. 271—52.
- Bissell Inc.: *See*—
  - Vanderveer, Frederick B. 3,401,415.
  - Vanderveer, Frederick B. 3,401,884.
- Blackburn, Alan B., to Hobart Bros. Co. Engine overspeed protection device. 3,402,327, 9–17–68, Cl. 317—19.
- Blackstone, Henry, W. Derganc, S. N. Howell, and F. G. Willey, to Servo Corp. of America. Hot-box detector. 3,402,290, 9–17–68, Cl. 246—169.
- Blanchette, Howard M., to Monsanto Co. Variable bulk continuous filament yarn. 3,402,096, 9–17–68, Cl. 161—173.
- Blanshine, Allison W.: *See*—
  - Wallin, Robert E., Blanshine, Heitshu, and Focht. 3,401,729.
- Blanshine, Allison W., C. K. Focht, C. M. Kline, and R. E. Wallin, to Sperry Rand Corp. Corn shelling and cob-husk shredding mechanism. 3,401,727, 9–17–68, Cl. 146—71.
- Blatt, Leland F. Carriage drive mechanism. 3,401,568, 9–17–68, Cl. 74—37.
- Blatt, Leland F., and P. R. Williams, to Industrial Specialties, Inc. Differential area gas cylinder. 3,401,604, 9–17–68, Cl. 91—399.
- Blood, Raymond: *See*—
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- Bloom, Leslie C., to Product Engineering Co. Swiveled golf cart handle. 3,401,951, 9–17–68, Cl. 280—47.17.
- Blue Ridge Enterprise, Inc.: *See*—
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- Blumenfield, John F., and J. T. Merdian, to Emhart Corp. Liquid cooling device for glass furnace electrode. 3,402,249, 9–17–68, Cl. 13—6.
- Bobinski, Jack: *See*—
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- Bock, Helmut, to Protein-Compagnie G.m.b.H. Method for processing oil mill residues to recover highly purified protein. 3,402,165, 9–17–68, Cl. 260—123.5.
- Bockenstette, Kenneth R., to MS Industries, Inc. Bakery tray or the like. 3,401,828, 9–17–68, Cl. 220—97.
- Bocking, Benjamin, and R. G. Catchpole. Fishing rods. 3,401,481, 9–17–68, Cl. 43—20.
- Bohme Chemie Gesellschaft mit beschrankter Haftung: *See*—
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- Bohr, Alexander H., to Thiokol Chemical Corp. Space transportation and maintenance vehicle. 3,401,903, 9–17–68, Cl. 244—1.
- Bolhofer, William A. 2-(Phenoxy), 2-(phenylthio) and 2-(anilino) substituted 2-alkylideneacetic acid derivatives. 3,402,198, 9–17–68, Cl. 260—519.
- Bolkow Gesellschaft mit beschrankter Haftung: *See*—
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- Bonnett, Jean, to Commissariat a l'Energie Atomique. Closed-volume permeameter. 3,401,554, 9–17–68, Cl. 73—38.
- Bookout, Conrad B., to G. W. Murphy Industries, Inc. Textile picker and drive arrangement therefor. 3,401,428, 9–17–68, Cl. 19—89.
- Borle, Richard D., Jr., and A. W. Lockwood, Jr., to Monsanto Co. Novel coagulation process. 3,402,234, 9–17–68, Cl. 264—182.
- Born, Ellis H., to Abex Corp. Temperature responsive hydraulic system and valve means therefor. 3,401,605, 9–17–68, Cl. 91—419.
- Borucki, James S., to Magnaflux Corp. Emulsifier for nondestructive testing methods. 3,401,556, 9–17–68, Cl. 73—104.
- Bose, Arun K.: *See*—
  - Fowler, Brian J., and Bose. 3,401,640.
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  - Gaines, Jack H., and Bourhenne. 3,402,374.
- Bouton, William J., Jr.: *See*—
  - Testa, Carmen, and Bouton. 3,401,968.
- Bowen, William H., and H. E. Ferrill, to Dresser Industries, Inc. Safety valve having parallel flow bleed outlets. 3,401,718, 9–17–68, Cl. 137—470.
- Bowkley, Herbert L., and R. B. Thurman, to Armour Agricultural Chemical Co. Preparation of phosphoric acid, phosphorus oxyfluoride, and related compounds. 3,402,019, 9–17–68, Cl. 23—165.
- Boyd, Keith A., to Eaton Yale & Towne, Inc. Control linkage. 3,401,569, 9–17–68, Cl. 74—96.
- Bozek, John S., to Continental Can Co., Inc. Container having tear-out opening means. 3,401,821, 9–17–68, Cl. 220—54.
- Bradbury, Robert E., Jr., to The Offshore Co. Hydraulic cylinder apparatus. 3,401,917, 9–17–68, Cl. 254—106.
- Bradshaw, Norman F., to International Harvester Co. Internal spring ring clip. 3,401,436, 9–17–68, Cl. 24—256.
- Bragg, John K., to General Electric Co. Word-organized associative cryotron memory. 3,402,399, 9–17–68, Cl. 340—173.1.
- Brand, Willem: *See*—
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- Brandt, Frank H., D. Aguirre, K. K. Kellems, to Acme Appliance Mfg. Co. Door frame and molding construction. 3,401,487, 9–17–68, Cl. 49—504.
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- Breeze Corp., Inc.: *See*—
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- Brett, John J., and A. Hohmann, to said Brett assor to Universal Time Punch, Inc., said Hohmann assor to Taller & Cooper, Inc. Data punch. 3,401,877, 9–17–68, Cl. 234—2.
- Brewster, Marshall L. Freeze drying system and apparatus therefor. 3,401,466, 9–17–68, Cl. 34—92.
- Bridgeport Metal Goods Mfg. Co.: *See*—
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- Bridgestone Cycle Industry Co. Ltd.: *See*—
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- Bridigum, Robert J.: *See*—
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- Bright, Thomas F., to Bergen Laboratories, Inc. Electrical accordion-organ. 3,402,251, 9–17–68, Cl. 84—1.13.
- Brignac, Edmond P., and R. T. Wright, to Monsanto Co. Process for preparing a polyamide. 3,402,152, 9–17–68, Cl. 260—78.
- Brilando, Frank P., to Schwinn Bicycle Co. Bicycle training attachment. 3,401,954, 9–17–68, Cl. 280—293.
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- Brodmann, George L., to E. I. du Pont de Nemours and Co. Binder-lubricant for fiber batts. 3,402,070, 9–17–68, Cl. 117—138.8.
- Bronder, Neil W. Temperature-responsive fluid control system and valve therefor. 3,401,881, 9–17–68, Cl. 236—87.
- Brown, D. S., Co., The: *See*—
  - Scott, James L. 3,401,714.
- Brown, Leonard: *See*—
  - Start, Ernest, and Brown. 3,401,538.
- Brown, Robert J. S., and B. W. Gamson, to Chevron Research Co. High speed, high resolution, nuclear magnetism well logging apparatus having a plurality of receiving coils and an extended polarizing coil, and method for using same. 3,402,343, 9–17–68, Cl. 324—.5.
- Brown, Robert J. S., and B. W. Gamson, to Chevron Research Co. Nuclear magnetism well logging method and apparatus. 3,402,344, 9–17–68, Cl. 324—.5.
- Brown, Robert S., and J. E. Erickson, to United States of America, Air Force. Hypergolic ignition of coated composite propellant grain. 3,401,519, 9–17–68, Cl. 60—39.06.
- Browne, William R., and J. E. McNamara, to General Electric Co. Unitary corona reactor including opposed planar nonvitric dielectric walls. 3,402,119, 9–17–68, Cl. 204—312.
- Brubaker, David W., D. E. Danly, and J. N. Maloney, Jr., to Monsanto Co. Process for reducing anode corrosion in an acrylonitrile hydrodimerization cell. 3,402,112, 9–17–68, Cl. 204—74.
- Brubaker, Robert D., to The Oak Rubber Co. Process for latex dipping. 3,402,239, 9–17–68, Cl. 264—297.
- Bruhns, Robert. Mailbox. 3,401,875, 9–17–68, Cl. 232—34.
- Brunswick Corp.: *See*—
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- Bub, Robert A., to Mine Safety Appliances Co. Filter formed from corrugated and flat sheets. 3,401,803, 9–17–68, Cl. 210—488.
- Buchheit, Otto K., to Verwaltungsgesellschaft Moeller and Neumann, offene Handelsgesellschaft. Tongs turner for rolled material. 3,401,805, 9–17–68, Cl. 214—1.
- Buck, Immanuel. Chamber pot. 3,401,408, 9–17–68. Cl. 4—141.
- Buckbee-Mears Co.: *See*—
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- Bundschuh, John J., and L. F. Kamp, to Eastman Kodak Co. Motion picture projector. 3,402,006, 9–17–68, Cl. 352—79.
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  - Koerner, Ralph J., and Scarbrough. 3,402,398.
- Burdock, Joseph L., to Universal Oil Products Co. Centrifugal separators. 3,401,506, 9–17–68, Cl. 55—344.
- Burke, Hubert K., and G. J. Michon, to General Electric Co. Automatic control system for vehicles incorporating a ranging system for vehicle traffic safety control. 3,402,289, 9–17–68, Cl. 246—167.
- Burke, Nelson, to Honeywell Inc. Electrical data processing apparatus. 3,402,304, 9–17–68, Cl. 307—268.
- Burley, Billy, and C. F. Strawn, to Johnson Service Co. Selective signal transmitting and indicating system. 3,402,404, 9–17–68, Cl. 340——176.
- Burlington Industries, Inc.: *See*—
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- Burns, William E. Fishing rod. 3,401,482, 9–17–68, Cl. 43—22.
- Burroughs Corp.: *See*—
  - Gilligan, Thomas E. 3,402,305.
- Bush, John H.: *See*—
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- Butler, George W.: *See*—
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  - Anthony, Myron L. 3,401,826.
- Butterworth, Archibald L. to Sidler Ltd. Sideways parking devices for motor vehicles and the like. 3,401,762, 9–17–68, Cl. 180—1.
- Bynum, George D., G. R. Baur, and B. T. Thompson, Jr., to Monsanto Co. Process for preparing synthetic fibers for paper products. 3,402,231, 9–17–68, Cl. 264—176.
- CHEPOS Sdruzeni Chemickeho a Potravinarskeho Strojirenstvi: *See*—
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- Caffray, William E. Methods of making decorative articles. 3,402,066, 9–17–68, Cl. 117—104.
- Cain, Russell A., and N. J. Federici, to Chas. Pfizer & Co., Inc. Medicinal tablet and process of making same. 3,402,240, 9–17–68, Cl. 424—22.
- Caldwell, John R., to Eastman Kodak Co. Poly (α-olefins) containing sulfated or sulfonated condensation polymers. 3,402,221, 9–17–68, Cl. 260—897.
- California Institute Research Foundation: *See*—
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  - Cameron, Russell J., Hand, and Komarek. 3,402,225.
- Cameron, Russell J., J. W. Hand, and K. R. Komarek, ½ each to Komarek-Greaves and Co., and Cameron and Iones, Inc. Method of preparing vertical shaft kiln feed for production of portland cement. 3,402,225, 9–17–68, Cl. 263—53.
- Campbell, Charles R., and R. R. Spiegelhalter, to Monsanto Co. Preparation of quaternary ammonium hydroxides by electrodialysis. 3,402,115, 9–17–68, Cl. 204—180.
- Campbell, William E., Jr., to Monsanto Co. Yarn traverse device. 3,401,894, 9–17–68, Cl. 242—43.
- Canadian Patents and Development Ltd.: *See*—
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  - Mancuso, John J., and Capossela. 3,402,049.
- Carlström, Roland. Device in loading pallets. 3,401,651, 9–17–68, Cl. 108—51.

- Carnall, Edward, Jr., and S. E. Hatch, to Eastman Kodak Co. Process of hot pressing magnesium oxide infrared transmitting optical elements. 3,402,226, 9–17–68, Cl. 264—1.
- Carrier Corp.: *See*—
  - Privon, George T., and Tothero. 3,401,873.
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  - Stott, William A., and Carter. 3,401,791.
- Cary, Kenneth H., H. T. Nagamatsu, R. E. Sheer, Jr., and B. C. Graber, to General Electric Co. Compensating means for a piezoelectric sensing element. 3,402,306, 9–17–68, Cl. 310—8.7.
- Cataldo, Roy S., to General Motors Corp. Method and apparatus for transforming fluid power. 3,401,638, 9–17–68, Cl. 103—1.
- Catallo, Frank: *See*—
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  - Cohn, Samuel and E., and Catallo. 3,402,059.
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- Caterpillar Tractor Co.: *See*—
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  - McDowell, Robert D., Tegg, and Branstad. 3,401,679.
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- Catlin, Richard L., and R. E. Shew, to Aero-Med Thermal Instrument Co., Inc. Electronic clinical thermometer and probe therefor. 3,402,378, 9–17–68, Cl. 338—28.
- Caven, James J.: *See*—
  - Ciccone, Thomas Q., Perkins, and Caven. 3,401,636.
- Central Mfg. Co., Inc.: *See*—
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- Chana, Howard E., to General Motors Corp. Transmission. 3,401,581, 9–17–68, Cl. 74—864.
- Chapman, Richard A., and J. J. Connelly, Jr., to Texas Instruments Inc. Energy converter. 3,402,074, 9–17–68, Cl. 117—224.
- Charlesworth, Paul L., and M. S. W. Ruhemann, to Petrocarbon Developments Ltd. Hydrogen recovery with a methane freezing point depressant. 3,401,532, 9–17–68, Cl. 62—23.
- Chemische Werke Huls A.G.: *See*—
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- Cheshire Inc.: *See*—
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- Chevron Research Co.: *See*—
  - Brown, Robert J. S., and Gamson. 3,402,343.
  - Brown, Robert J. S., and Gamson. 3,402,344.
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- Close, Garth. Navigational computer. 3,401,879, 9–17–68, Cl. 235—61.
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- Cohn, Samuel, deceased (by E. Cohn, and J. Rothenberg, executors), and F. Catallo, to Samcoe Holding Corp. Method and apparatus for applying adhesive and slitting tubular fabric. 3,402,059, 9–17–68, Cl. 117—4.
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- Cook, Lyman, to The Foxboro Co. Differential pressure responsive apparatus. 3,401,561, 9–17–68, Cl. 73—205.
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- Couvillon, Lucien A., Jr., to California Institute Research Foundation. Pseudonoise (PN) synchronization of data system with derivation of clock frequency from received signal for clocking receiver PN generator. 3,402,265, 9–17–68, Cl. 178—69.5.
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- Crawford, Norman H. Fiber optical image enlarger. 3,402,000, 9–17–68, Cl. 350—96.
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- De Lange, Herman K. A., to North American Philips Co., Inc. Magnetic recording of television signals with pre-recorded sync signals. 3,402,257, 9–17–68, Cl. 178—6.6.
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- Dinhobel, Friedrich, and J. H. Miller, to United States of America, Air Force. Scale factor correction device. 3,401,595, 9–17–68, Cl. 88—24.
- Doane, Foster P., Jr. High-speed paper making system and method. 3,401,463, 9–17–68, Cl. 34—1.
- Dobo, Emerick J., to Monsanto Co. Polymerization level control apparatus. 3,402,023, 9–17–68, Cl. 23—285.
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- Druschel, William O., and E. J. Rymaszewski, to International Business Machines Corp. Method of controlling a testing apparatus through the use of a photograph of the object tested. 3,401,589, 9–17–68, Cl. 88—14.
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- Enpro Inc. : *See—*
  - Cioffi, Vincent R. 3,402,126.
- Entschel, Roland, to Sandoz Ltd. (also known as Sandoz A.G.). Basic monoazo dyes. 3,402,167, 9–17–68, Cl. 260—154.
- Erickson, James E. : *See—*
  - Brown, Robert S., and Erickson. 3,401,519.
- Erickson, Julius L. E., F. E. Collines, Jr., and R. T. Dahill, Jr., to The Givaudan Corp. Lower alkylene ketals of cyclopentanedione. 3,402,181, 9–17–68, Cl. 260—340.7.
- Erickson, Leonard A. Variable speed transmission. 3,401,570, 9–17–68, Cl. 74—193.
- Etat Francais, représenté par le Ministre des Armees (Delegation Ministerielle pour l'Armement, Direction Technique des Armements Terrestres, Manufacture Nationale d'Armes de Sainte-Etienne) : *See—*
  - Tellie, Paul. 3,401,460.
- Evans, David J. Electrodes and electrode stacks for electrolytic cells. 3,402,117, 9–17–68, Cl. 204—268.
- Evans, John E., and C. W. Fahr, to Small Tube Products, Inc. Filing cabinet safety and locking device. 3,401,998, 9–17–68, Cl. 312—215.
- Evans, Marvin, and D. H. Miller, to College Research Corp. Apparatus for separating materials. 3,401,925, 9–17–68, Cl. 266—37.
- Evans, Raymond V., to Singer-Cobble Ltd. Yarn dyeing means. 3,401,542, 9–17–68, Cl. 68—202.
- Evans, William B., to The New Britain Machine Co. Plastic injection molding machine. 3,401,426, 9–17–68, Cl. 18—30.
- Evershed & Vignoles Ltd. : *See—*
  - Lonnon, Lawrence. 3,401,563.
- Excelsior Hardware Co., The : *See—*
  - Testa, Carmen, and Bouton. 3,401,968.
- Explosive Technology, Inc. : *See—*
  - Hannagan, Harold W., and Dobrel. 3,401,631.
- F & F Enterprises, Inc. : *See—*
  - Podgorski, Matthew C., and Farrell. 3,402,275.
- FMC Corp. : *See—*
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  - Mohan, Joseph C. 3,402,063.
- Fabri-Tek Inc. : *See—*
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  - Vrijma, Berend. 3,402,233.
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  - Evans, John E., and Fahr. 3,401,998.
- Fairchild Hiller Corp. : *See—*
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- Fann, James D. Filter press. 3,401,802, 9–17–68, Cl. 210—446.
- Farbenfabriken Bayer Aktiengesellschaft : *See—*
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  - Schlicke, Hans-Gerd. 3,402,224.
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  - Kramer, Hans B., Messwarb, and Denk. 3,402 156.
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  - Starck, Werner, Winter, Rinno, and Lampe. 3,402,147.
- Faria, James M., and J. R. Biles, to Monsanto Co. Method for improving anti-pilling characteristics of synthetic fibers. 3,402,061, 9–17–68, Cl. 117—47.
- Farnand, Joseph R., F. W. Meadus, and I. E. Puddington, to Canadian Patents and Development Ltd. Beneficiation of tin-bearing ores. 3,401,794, 9–17–68, Cl. 209—5.
- Farrell, Guy M. : *See—*
  - Podgorski, Matthew C., and Farrell. 3,402,275.
- Farrow, Raymond L., to United States of America, Army. High temperature thermocouple. 3,402,079, 9–17–68, Cl. 136—228.
- Fassig, Walter W., to Hercules Inc. Weed control with 1-(tetrahydrodicyclo-pentadienyl)-3,3-dimethyl urea and 2-chloro-4-ethylamino-6-isopropylamino-1,3,5-triazine. 3,402,040, 9–17–68, Cl. 71—93.
- Federici, Nicholas J. : *See—*
  - Cain, Russell A., and Federici. 3,402,240.
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  - Maier, Karl, Eisele, and Federkiel. 3,402,185.
- Feinberg, Richard P., to United States of America, Army. Moldform receptacle. 3,402,385, 9–17–68, Cl. 339—191.
- Feld, Ignatz L., T. W. Franklin, and W. M. Lampkin, to United States of America, Interior. Process for removing phosphorus from iron ores. 3,402,041, 9–17–68, Cl. 75—7.
- Felder, John L. Process for manufacturing structural material. 3,402,229, 9–17–68, Cl. 264—60.
- Felix Robins & Robbins : *See—*
  - Luketa, Frank J. 3,401,477.
- Fendall Co. : *See—*
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- Fenkel, Stanley O. Sectional cabinet. 3,401,993, 9–17–68, Cl. 312—111.
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  - Walker, Frederick J., and Bent. 3,401,982.
  - Walker, Frederick J., and Bent. 3,401,986.
- Ferodo Ltd. : *See—*
  - Wood, Frank, and Clark. 3,402,054.
- Ferrari, Arthur M. Separator unit for lumber strips. 3,401,785, 9–17–68, Cl. 198—34.
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  - Weyand, John E., Bush, and Feyling. 3,401,799.
- Fifield, Thomas B. Coupling. 3,401,529, 9–17–68, Cl. 61—70.
- Film Corp. of America : *See—*
  - Daugherty, Arthur J. 3,401,594.
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  - Benedict, Robert A., Cooper, and Fink. 3,402,296.
- Fink, Robert C., to Ostrander-Seymour Co. Dimensional control system. 3,401,425, 9–17–68, Cl. 18—17.
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- Fischer, Paul W., and J. P. Gallus, to Union Oil Co. of California. Method of preparing aqueous polymer solutions. 3,402,137, 9–17–68, Cl. 260—29.6.
- Fischer & Porter Co. : *See—*
  - Kaltenhauser, Gerhart O., and Schweinsberg. 3,402,116.
- Fishbaugh, Byron L., to The Goodyear Tire & Rubber Co. Hay rake tooth. 3,401,515, 9–17–68, Cl. 56—400.
- Fisher, Earl H. Automatic jacking, levelling and lining railroad track tampers. 3,401,642, 9–17–68, Cl. 104—8.
- Fister, Louis P. : *See—*
  - Scheublein, William A., Jr., and Fister. 3,401,962.
  - Scheublein, William A., Jr., and Fister. 3,401,966.
- Fitzgerald, John J., to United States of America, Air Force. Gas atmosphere counter electrode. 3,402,311, 9–17–68, Cl. 313—231.
- Fleeman, Philip J., and W. Brand, to The General Electric Co. Control system for a closed circuit grinding system for finish cement. 3,401,891, 9–17–68, Cl. 241—34.

- Fleisher, Harold, to International Business Machines Corp. Selective gating of radiation. 3,402,001, 9–17–68, Cl. 350—150.
- Flight Refuelling Ltd. : *See—*
  - Gregory, John E. R. 3,402,269.
- Flock Art Inc. : *See—*
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- Floehr, Walter L., to Midland-Ross Corp. Railway hopper car door sealing assembly. 3,401,645, 9–17–68, Cl. 105—253.
- Flowers, Ann W. : *See—*
  - Reid, Earl N., Jr. 3,401,983.
  - Williams, Allison R., Howland, and Richardson. 3,401,985.
  - Williams, Allison R., Reid, Frazier, and Wedlock. 3,401,984.
- Focht, Claude K. : *See—*
  - Blanshine, Allison W., Focht, Kline, and Wallin. 3,401,727.
  - Wallin, Robert E., Blanshine, Heitshu, and Focht. 3,401,729.
- Fogt, Thomas H., and C. C. Whistler, Jr., to General Motors Corp. Clothes dryer with single dial controller. 3,401,464, 9–17–68, Cl. 34—45.
- Folk, Lee E., to Motorola, Inc. Apparatus for joining metals. 3,401,861, 9–17–68, Cl. 228—1.
- Follett, Archie E., to Monsanto Co. Vinyl aromatic polymers stabilized by phosphorus compounds. 3,402,142, 9–17–68, Cl. 260—45.75.
- Ford Motor Co. : *See—*
  - Paluszny, Antoni, and Topouzian. 3,401,741.
  - Ronzi, Richard C. 3,401,677.
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- Formica Corp. : *See—*
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  - Pursall, Francis W. 3,401,735.
- Foster, Donald P. : *See—*
  - Yackel, Edward C., and Foster. 3,402,087.
- Fouillet, Bernard. Metallic edge members for skis. 3,401,949, 9–17–68, Cl. 280—11.13.
- Fourier, Walter A. : *See—*
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- Fowler, Brian J., and A. K. Bose, to Newage Lyon Ltd. Centrifugal pumps. 3,401,640, 9–17–68, Cl. 103—113.
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  - Cook, Lyman. 3,401,561.
- Francis, Mike J. Automobile cooling shroud. 3,401,743, 9–17–68, Cl. 165—51.
- Francis, Samuel A., to The Sippican Corp. Oceanographic measuring and recording device. 3,401,560, 9–17–68, Cl. 73—170.
- Franklin, Thomas W. : *See—*
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- Frantzen, John J., to Buckbee-Mears Co. Compensator stand. 3,401,860, 9–17–68, Cl. 226—199.
- Franz, Ernst : *See—*
  - Smolka, Thomas G., and Franz. 3,401,950.
- Fraser, Cyril C. Theft protection for vehicles in parking lots. 3,401,544, 9–17–68, Cl. 70—248.
- Fraser, Cyril C. Theft protection for vehicles in parking lots. 3,401,545, 9–17–68, Cl. 70—255.
- Fraze, Ermal C. Container opening devices. 3,401,822, 9–17–68, Cl. 220—54.
- Fraze, Ermal C. Easy open can end. 3,401,823, 9–17–68, Cl. 220—54.
- Frazier, Richard H. : *See—*
  - Williams, Allison R., Reid, Frazier, and Wedlock. 3,401,984.
- Frederick, Leonard L., to MKT Corp. Diesel hammer convertible to single or double action and having energy rating indicating means for each mode of operation. 3,401,755, 9–17–68, Cl. 173—20.
- Fredrickson, Donald M., to American Can Co. Method of electrostatically coating recessed surfaces. 3,401,628, 9–17–68, Cl. 101—129.
- Fredrickson, Einar H., and F. J. Pokorny, to I-T-E Circuit Breaker Co. Electromagnetic overcurrent trip device. 3,402,377, 9–17–68, Cl. 335—240.
- Frentzen, Paul T. : *See—*
  - Mathews, Bentley B., and Frentzen. 3,401,730.
- Frick, Richard H., to Kimberly-Clark Corp. Machine for producing a longitudinally folded stack of webs. 3,401,928, 9–17–68, Cl. 270—40.
- Frick, Richard H., and H. H. Scholz, to Kimberly-Clark Corp. Longitudinal web folding board. 3,401,927, 9–17–68, Cl. 270—40.
- Friend, Albert W. Circuit for regulating the potential between the cathode and the high voltage anode of a cathode ray tube using a tube having two groups of electrodes. 3,402,315, 9–17–68, Cl. 315—1.
- Friend, Albert W. Television horizontal deflection and high voltage system. 3,402,317, 9–17–68, Cl. 315—22.
- Fries, Walter : *See—*
  - Puchta, Rolf, and Fries. 3,402,128.
- Fritch, Junior L., to Robinair Mfg. Corp. Grappling device. 3,401,445, 9–17–68, Cl. 29—261.
- Frump, John A., to Commercial Solvents Corp. Nitrohydroxyethers. 3,402,206, 9–17–68, Cl. 260—615.
- Frump, John A., to Commercial Solvents Corp. Nitrohydroxyethers. 3,402,207, 9–17–68, Cl. 260—615.
- Frump, John A., to Commercial Solvents Corp. Nitrohydroxyethers. 3,402,208, 9–17–68, Cl. 260—615.
- Fujimoto, Keimei, Y. Okuno, K. Ueda, S. Horie, T. Mizutani, and K. Nodera, to Sumitomo Chemical Co., Ltd. Phthalimidomethyl alkynyl ethers. 3,402,179, 9–17–68, Cl. 260—326.
- Furukawa, Shinichi, K. Yamada, and I. Takizawa, to Mitsubishi Jukogyo Kabushiki Kaisha. Apparatus for fixing a waterproof band for use in the cutting or the joining of a structure floating on the water. 3,401,664, 9–17–68, Cl. 114—77.
- Futaki, Hisao, T. Shimoda, K. Narita, K. Kobayashi, M. Aoki, and E. Yamada, to Kabushiki Kaisha Hitachi Seisakusho. Thermistor composition containing vanadium dioxide. 3,402,131, 9–17–68, Cl. 252—512.
- Fuzesi, Stephen, and L. J. Klahs, to Olin Mathieson Chemical Corp. Process for preparing starch-based polyhydroxypolyoxyalkylene ethers. 3,402,170, 9–17–68, Cl. 260—233.3.
- Gabor, Dennis, and J. A. Nilson, to National Research Development Corp. Thermionic generator having auxiliary anodes in the main discharge space. 3,402,313, 9–17–68, Cl. 313—306.
- Gaines, Jack H., and F. K. Bourhenne, to Sierra Electric, Inc. Electrical relay switch actuator. 3,402,374, 9–17–68, Cl. 335—68.
- Galiano, Francis R. : *See—*
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- Gallogly, West H. Toilet flush valve. 3,401,716, 9–17–68, Cl. 137—414.
- Galloway, John J. Structural block coating apparatus. 3,401,669, 9–17–68, Cl. 118—121.
- Gallus, Julius P. : *See—*
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  - Brown, Robert J. S., and Gamson. 3,402,344.
- Gantt, James E., to Universal Oil Products Co. Dehydrogenation of ethylbenzene to styrene. 3,402,212, 9–17–68, Cl. 260—669.
- Gardikes, John J., and M. Matzner, to Union Carbide Corp. Non-crystallizable copolycarbonate/urethane resins prepared from 2,2,4,4-tetraalkyl-1,3-cyclobutanediol and a piperazine. 3,402,150, 9–17–68, Cl. 260—77.5.
- Gardiner, William P. Switch with magnetically controlled inner rotating and reciprocating element. 3,402,376, 9–17–68, Cl. 335—207.
- Gardner, Charles H. : *See—*
  - Gore, James H., Reisman, and Gardner. 3,402,104.
- Garrett, Donald E., J. A. Hermann, M. B. Goren, and A. E. Meyer. Potassium chloride recovery from potash ores using submerged combustion heating. 3,402,025, 9–17–68, Cl. 23—312.
- Garvin, Alex J., to Superpack Vending (Curacao) N.V. Method and apparatus for capping containers of unstable dimensions. 3,401,498, 9–17–68, Cl. 53—41.
- Gausman, Thomas E., and T. L. Taylor, to Sylvania Electric Products Inc. Flux switch protective system for electrical apparatus. 3,402,316, 9–17–68, Cl. 315—20.
- Gaven, Thomas J., to McGraw-Edison Co. Educational apparatus. 3,401,470, 9–17–68, Cl. 35—9.
- Gaw, John W., to AMP Inc. High voltage component package. 3,402,380, 9–17–68, Cl. 339—89.
- Gaw, John W., S. C. Stinner, and W. L. Taylor, to AMP Inc. Corona resistant connector assembly. 3,402,381, 9–17–68, Cl. 339—94.
- Gebauer, Albert W., to Scientific Separators, Inc. Portable pruning equipment. 3,401,455, 9–17–68, Cl. 30—228.
- Gebhardt, Otto, and M. Luderer, to Mueller, Messrs. Ernst. Spray pistol. 3,401,883, 9–17–68, Cl. 239—15.
- General Binding Corp. : *See—*
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- General Dynamics Corp. : *See—*
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  - Horvath, Robert A. 3,401,987.
  - Kesling, Keith K. 3,401,815.
  - Rembold, Charles E., and Mueller. 3,401,996.
  - Schamel, Clyde H. 3,401,977.
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  - Von Kampen, William E. 3,401,575.
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- General Tire & Rubber Co., The : *See—*
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- George, Melvin J., to Keystone Mfg. Co., Division of Avis Industrial Corp. Removable hinged cover for a lay-in wireway. 3,401,721, 9–17–68, Cl. 138—92.
- Gerbelot-Barrillon, Claude: *See—*
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- Gerow, Frank J., to The Dow Corning Corp. Treatment of living bodies by immersion in silicone fluid. 3,402,243, 9–17–68, Cl. 424—184.
- Gibb, Robert F. Load responsive inverter. 3,402,301, 9–17–68, Cl. 307—104.
- Gies, Paul E., to Houdaille Industries, Inc. High pressure shaft seals. 3,401,989, 9–17–68, Cl. 308—36.1.
- Gilbert, Everett E., P. Lombardo, E. J. Rumanowski, and B. Sukornick, to Allied Chemical Corp. Insecticidal tertiary alcohols. 3,402,209, 9–17–68, Cl. 260—617.
- Gilligan, Thomas E., to Burroughs Corp. Cross-coupled flip-flop employing series, input diode connected to output of or gate forming part of cross-couples. 3,402,305, 9–17–68, Cl. 307—292.
- Gillis, Marina N.: *See—*
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- Gionco, Adriano. Press for stamping shaving agglomerate containers, process related thereto and containers thus obtained. 3,401,424, 9–17–68, Cl. 18—16.
- Girard, Peter F., to The Ryan Aeronautical Co. Gyrochute. 3,401,906, 9–17–68, Cl. 244—138.
- Givaudan Corp., The: *See—*
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- Glaser, Milton A.: *See—*
  - Coder, William D., Jr., Glaser, and Stein. 3,402,057.
- Globe-Union Inc.: *See—*
  - Iles, Peter A., and Victoria. 3,401,448.
- Glowka, Arthur. Fisherman's apparatus. 3,401,967, 9–17–68, Cl. 289—17.
- Godefroy, Johan, to Inventa Trust reg. Shaving head for an electric shaver. 3,401,454, 9–17–68, Cl. 30—43.91.
- Godejahn, Gordon C., Jr., to North American Rockwell Corp. Methods of making a semiconductor structure including opposite conductivity segments. 3,401,450, 9–17–68, Cl. 29—580.
- Goldberg, Abraham A.: *See—*
  - Goldmark, Peter C., Goldberg, and Decker. 3,402,260.
- Goldberg, Abraham A., to Columbia Broadcasting System, Inc. Cartridge and cartridge carrier. 3,401,899, 9–17–68, Cl. 242—55.13.
- Goldfogel, Marvin H., and L. A. Labe. Dental impression tray assembly. 3,401,456, 9–17–68, Cl. 32—17.
- Goldmark, Peter C., A. A. Goldberg, and S. M. Decker, to Columbia Broadcasting System, Inc. Television film scanning synchronizing system. 3,402,260, 9–17–68, Cl. 178—7.2.
- Goldware, David. Etching equipment. 3,401,705, 9–17–68, Cl. 134—57.
- Goldwasser, Seymore, C. W. Haefele, Jr., and C. Padden, to Lever Bros. Co. Ultrasonic washing. 3,402,075, 9–17–68, Cl. 134—1.
- Gomory, Margaret B. Pattern lay-out guide or instrument. 3,401,459, 9–17–68, Cl. 33—2.
- Good, Paul F., to Speedco, Inc. Apparatus for orienting articles. 3,401,784, 9–17–68, Cl. 198—33.
- Goodrich, Albert S., Jr., and V. Ignatjev, to Pitney-Bowes, Inc. Record material feeding means. 3,401,630, 9–17–68, Cl. 101—228.
- Goodrum, Leo A., Jr. Magnetically activated toy dog. 3,401,485, 9–17–68, Cl. 46—237.
- Goodwin, Chester H. Manufacture and treatment of synthetic fibres and fabrics containing the same. 3,402,236, 9–17–68, Cl. 264—210.
- Goodyear Tire & Rubber Co., The: *See—*
  - Fishbaugh, Byron L. 3,401,515.
- Gore, James H., H. B. Reisman, and C. H. Gardner, to Merck & Co., Inc. Continuous fermentation of glutamic acid. 3,402,104, 9–17–68, Cl. 195—47.
- Goren, Mayer B.: *See—*
  - Garrett, Donald E., Hermann, Goren, and Meyer. 3,402,025.
- Goren, Mayer B., to Kerr-McGee Corp. Precipitation of phosphorus values from aqueous media. 3,402,026, 9–17–68, Cl. 23—321.
- Gouyou-Beauchamps, Jacques C., and S. A. Cynober, to Saunier Duval Setri. Open cartridge of large dimensions for pneumatic conveying. 3,401,902, 9–17–68, Cl. 243—34.
- Graber, Bruce C.: *See—*
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  - Pato, Tibor G., Ammon, Graf, and Wymann. 3,401,745.
- Graflex, Inc.: *See—*
  - Sanderson, William R., and Padelt. 3,401,615.
- Grafstein, Daniel, and J. Bobinski, to Thiokol Chemical Corp. Preparation of trihydrazine decaborane $[(N_2H_5)N_2H_4B_{10}H_{10}]$ 3,402,028, 9–17–68, Cl. 23—358.
- Grasvoll, Halvor, ⅓ to G. G. Magnusson, and ⅓ to K. I. Weiner. Device for unloading pieces of goods from a pallet and their transfer to a conveyor. 3,401,811, 9–17–68, Cl. 214—8.5.
- Green, Homer T., to The Parker Pen Co. Writing instrument. 3,402,008, 9–17–68, Cl. 401—199.
- Greenberg, Malvin, to General Electronic Laboratories, Inc. Bidirectional limited motion mechanism. 3,402,309, 9–17–68, Cl. 310—80.
- Greenberg, Melvin. Toy baseball game. 3,401,936, 9–17–68, Cl. 273—88.
- Greenberger, Joseph I., to United Engineering and Foundry Co. Strip deflector means and control. 3,401,546, 9–17–68, Cl. 72—10.
- Greene, Frederic S.: *See—*
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- Greenwood, Eugene C. Intra-uterine contraceptive device and method and apparatus for inserting and retaining the same. 3,401,689, 9–17–68, Cl. 128—129.
- Gregory, George E., Jr., R. E. McGinnis, and R. W. Sholle, to Gregory Industries, Inc. Support for reinforcing members. 3,401,497, 9–17–68, Cl. 52—677.
- Gregory, George P., to Hercules Inc. Polyperoxides. 3,402,205, 9–17–68, Cl. 260—610.
- Gregory Industries, Inc.: *See—*
  - Gregory, George E., Jr., McGinnis, and Sholle. 3,401,497.
- Gregory, John E. R., to Flight Refuelling Ltd. Apparatus for the detection of broken yarn and the like on textile machines. 3,402 269, 9–17–68, Cl. 200—61.13.
- Gretzky, Anthony J.: *See—*
  - Conklin, Robert M., Torresen, and Gretzky. 3,401,933.
  - Rockwood, Albert M., Russell, Gretzky, and Baldwin. 3,401,937.
- Grey Donald M., to Sperry Rand Corp. Bale wagon. 3,401,810, 9–17–68, Cl. 214—6.
- Griffith, George L., and W. L. Schwoyer, to Trojan Powder Co. Packaged booster explosive. 3,401,632, 9–17–68, Cl. 102—24.
- Griffith, Randall E.: *See—*
  - Adams, Cecil E., and Griffith. 3,401,641.
- Grigg, Thomas H. Starter solenoid with electrical heating means. 3,402,280, 9–17–68, Cl. 219—209.
- Groschel, Frank J., and H. Van Someren, to Star Machine & Tool Co. Refacing apparatus. 3,401,488, 9–17–68, Cl. 51—5.
- Groskaufmanis, Edvins, to United Ceramics Ltd. Decorative bricks, tiles or the like and methods of manufacturing the same. 3,402,060, 9–17–68, Cl. 117—45.
- Gruver, Helene B. Garment dryer and shaping apparatus. 3,401,852, 9–17–68 Cl. 223—69.
- Grycetko, Carl E., to I-T-E Circuit Breaker Co. Selective mounting of different circuit breaker types within a single panelboard. 3,402,328, 9–17–68, Cl. 317—119.
- Guasco, Roger A., and J. Ignacio; said Ignacio, assor. to Ateliers de Constructions de Vaux Andigny (ACOVA). Insulation fault control device with light sensitive elements. 3 402,326, 9–17–68, Cl. 317—18.
- Guenst, William C., Jr.: *See—*
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- Gulf Oil Corp.: *See—*
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- Gunkelmann, Adolf: *See—*
  - Haller, Peter, and Gunkelmann. 3,401,502.
- Günther, Willi, to Zeiss Ikon Aktiengesellschaft. Mirror reflex camera. 3,401,614, 9–17–68, Cl. 95—42.
- Gutridge Jack E., to Pullman Inc. Cushioned mounting structure. 3,401,648, 9–17–68, Cl. 105—392.5.
- Haberstroh, Gustav, to Olympia Werke AG. Take-up magazine for record-carrying tapes. 3,401,898, 9–17–68, Cl. 252—55.13.
- Haefele, Carl W., Jr.: *See—*
  - Goldwasser Seymore, Haefele, and Padden. 3,402,075.
- Hagemeyer, Hugh J., Jr., and W. J. Gammans, to Eastman Kodak Co. Preparation of imido ester hydrochlorides. 3,402,193, 9–17–68, Cl. 260—453.
- Hagen, Reinhold, to Allplas A.G. Open top tank and covering for the contents thereof. 3,401,818 9–17–68, Cl. 220—26.
- Hagiz, Yehuda. Apparatus for sorting articles according to length. 3,401,796, 9–17–68, Cl. 209—73.
- Hagon, John D. Vehicle safety device. 3,401,765, 9–17–68, Cl. 180—82.
- Haller, Peter, and A. Gunkelmann, to Linde Aktiengesellschaft. Process and apparatus for scrubbing gases. 3,401,502, 9–17–68, Cl. 55—43.
- Haimson, Jacob, and C. S. Nunan, to Varian Associates. High energy charged particle pulse length and energy control apparatus. 3,402,357, 9–17–68, Cl. 328—229.
- Haines, Paul G.: *See—*
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- Hall, Arnold M., and J. A. Trevett, to General Dynamics Corp. Measurement and control of rolled material thickness and quality. 3,401,547, 9–17–68, Cl. 72—16.
- Halliburton Co.: *See—*
  - Telford, E. B. 3,401,720.
- Hallman, Newt M., to Universal Oil Products Co. Method for controlling the conversion of hydrocarbons. 3,402,121, 9–17–68, Cl. 208—59.
- Halstead, William M. Fishing device. 3,401,480, 9–17–68, Cl. 43—19.
- Haluska, Loren A., to Dow Corning Corp. Polyoxyalkylene siloxane branch copolymers. 3,402,192, 9–17–68, Cl. 260—448.2.
- Hamilton Vern E., to Douglas McDonnell Corp. Printing method and printing means for ambient light filters. 3,401,629, 9–17–68, Cl. 101—426.
- Hanau Engineering Co., Inc.: *See—*
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- Hand, John W.: *See—*
  - Cameron, Russell J., Hand, and Komarek. 3 402,225.
- Hanifan, William A., to General Motors Corp. Refrigerator with segmented modular inner liner. 3,401,997, 9–17–68, Cl. 312—214.

- Hank, Theo, to Bierbrauerei Becker OHG. Process for producing beer of the vollbier type. 3,402,048, 9–17–68, Cl. 99—31.
- Hann, Melvin M., and R. J. Lease, to Sundstrand Corp. Hydrostatic transmission. 3,401,522, 9–17–68, Cl. 60—53.
- Hannagan, Harold W., and R. L. Dobrei, to Explosive Technology, Inc. Explosive cutting device. 3,401,631, 9–17–68, 102—24.
- Hannan, William J., and J. F. Schanne, Jr., to United States of America, Army. Electronically variable delay line. 3,402,355, 9–17–68, Cl. 328—151.
- Hanson, Harvey, Jr., to Valve Corp. of America. Aerosol dispenser construction. 3,401,838, 9–17–68, Cl. 222—136.
- Hanson, Harvey, Jr., to Valve Corp. of America. Leakproof aerosol construction. 3,401,844, 9–17–68, Cl. 222—193.
- Hanson, Raymond A. Tranverse joint installing apparatus. 3,401,610, 9–17–68, Cl. 94—39.
- Harbour, John, to Imperial Chemical Industries Ltd. Position responsive switching systems. 3,402,356, 9–17–68, Cl. 328—155.
- Hardison, Leslie C., and J. M. Barr, to Universal Oil Products Co. Multiple stage treatment of a noxious stream with cyclic high quantities of nitrogen oxides. 3,402,015, 9–17–68, Cl. 23—2.
- Harper, Chester H.: *See—*
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  - Allen, Kenneth M., and Harper. 3,401,726.
- Harris, Rano J., Jr., to Micro-Tek Instruments Corp. Syringe provided with a lateral vent and having high compression seals within the syringe bore. 3,401,692, 9–17–68, Cl. 128—218.
- Harris, Ransom S., and G. R. Machlan, to Owens-Corning Fiberglas Corp. Glass composition. 3,402,055, 9–17–68, Cl. 106—50.
- Harris, Thomas J., to International Business Machines Corp. Optical distribution network. 3,402,297, 9–17–68, Cl. 250—199.
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- Hatch, Sherley E.: *See—*
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- Haubein, Albert H., to Hercules Inc. 2-chloro-5-isopropylphenyl N-chloroacetyl-N-methylcarbamates and their use as pesticides. 3,402,247, 9–17–68, Cl. 424—300.
- Haveg Industries, Inc.: *See—*
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  - Trimble, David C. 3,402,091.
- Havens, Richard C., to Motorola, Inc. Integrated microwave signal amplifier circuit. 3,402,361, 9–17–68, Cl. 330—61.
- Hay, Allan S., to General Electric Co. Method for decolorization and capping polyphenylene ethers. 3,402,143, 9–17–68, Cl. 260—47.
- Hay, Allan S., to General Electric Co. Alkali metal-containing polyphenylene ethers. 3,402,144, 9–17–68, Cl. 260—47.
- Hayes, Charles M., to Universal Oil Products Co. N-polyamino-polyalkylene-phenylenediamines. 3,402,200, 9–17–68, Cl. 260—570 5.
- Hayes, John C., to Universal Oil Products Co. Method for producing hydrogen and a catalyst therefor. 3,402,022, 9–17–68, Cl. 23—212.
- Hayes, Robert A., to The Firestone Tire & Rubber Co. Styrene resins. 3,402,160, 9–17–68, Cl. 260—93.5.
- Hayner, Paul F., and J. L. Mason, to Sanders Associates, Inc. Electronically controlled synchronous motor. 3,402,333, 9–17–68, Cl. 318—138.
- Heald Machine Co., The: *See—*
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  - Crouser, Darwin S., and Hecker. 3,401,618.
- Heckl, Leonhard, K. Heinle, and E. Liedek, to Siegle & Co., G.m.b.H. Monoazo and disazo dyes containing cyclic dicarboxylic acid imide groups. 3,402,166, 9–17–68, Cl. 260—152.
- Heckmanns, Heinz, to Titan Eisenwarenfabrik G.m.b.H. Bale ties. 3,401,431, 9–17–68, Cl. 24—20.
- Hein, Delton W., and S. J. Radkowski, to American Cyanamid Co. Process for preparing 3,3′-diamino-2,2′, 4,4′, 6,6′-hexanitrobiphenyl. 3,402,202, 9–17–68, Cl. 260—581.
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- Heitmuller, Paul M., to Monsanto Co. Spindle adapter. 3,401,895, 9–17–68, Cl. 242—46.3.
- Heitshu, Daniel C.: *See—*
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- Held, Hans-Joachim, to Telefunken Patentverwertungsgesellschaft m.b.H. Method and apparatus for scanning. 3,402,299, 9–17–68, Cl. 250—219.
- Henderson, William B., and G. R. Bauer, to Monsanto Co. Manufacture of shaped articles from acrylonitrile polymers by wet spinning. 3,402,235, 9–17–68, Cl. 264—182.
- Henes, Richard W. Device for ultrasonically cleaning phonographic records. 3,401,708, 9–17–68, Cl. 134—149.
- Henkel & Cie, G.m.b.H.: *See—*
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- Henley, Virgil E., to The General Tire & Rubber Co. Tire shaping apparatus. 3,402,090, 9–17–68, Cl. 156—398.
- Henschke, William O., to The Superior Electric Co. Rotary actuated linear motor. 3,402,308, 9–17–68, Cl. 310—80.
- Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, Minister of Supply: *See—*
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- Heisidence, Arthur J. Golf swing training device. 3,401,941, 9–17–68, Cl. 273—186.
- Hess, Emil J. Tape holding device. 3,401,793, 9–17–68, Cl. 206—53.
- Hesse, Holger. Device for training closed chest heart massage. 3,401,471, 9–17–68, Cl. 35—17.
- Hewitt-Robins Inc.: *See—*
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- Heyden, Rudi, and J. Plapper, to Bohme Chemie Gesellschaft mit beschrankter Haftung. Process to render leathers and furs water-resistant. 3,402,071, 9–17–68, Cl. 117—141.
- Hezel, Carl: *See—*
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- Higgins, Horatio L.: *See—*
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- Hill, Robert W., and F. R. Galiano, to Gulf Oil Corp. Coating compositions comprising styrene interpolymer, aminoplast, and hydroxy-containing polyester. 3,402,219, 9–17–68, Cl. 260—850.
- Hills, William H.: *See—*
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- Hilzen, Hy. Heat-dissipating adaptors for single-ended halogen quartz lamps to existing electrical lighting apparatus. 3,402,383, 9–17–68, Cl. 339—112.
- Hindman, Earl L., 25% to Roy E. McAfee. Load compensating headlight adjusting mechanism. 3,402,287, 9–17–68, Cl. 240—7.1.
- Hirsch, Jeffery G. Projection apparatus. 3,401,596, 9–17–68, Cl. 88—24.
- Hiser, Robert D., to Union Carbide Corp. Production of 1-naphthol. 3,402,210, 9–17–68, Cl. 260—621.
- Hobart Brothers Co.: *See—*
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- Hoehn, Gustave L., Jr., and W. H. Rueble, to Mobil Oil Corp. Removal of the effect of micropulsation field from magnetic well logs. 3,240,348, 9–17–68, Cl. 324—8.
- Hoerner Waldorf Corp.: *See—*
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- Holmstrom, Bruno A.: *See—*
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- Holstrom, Kjell I., to Akerlund & Rausing, AB. Package blank for double-walled carton. 3,401,865, 9–17–68, Cl. 229—34.
- Holzinger, Robert D., to The Sherwin-Williams Co. Conjugated drying oil-isobutylene factice potting composition and method. 3,402,237, 9–17–68, Cl. 264—272.
- Honerkamp, Friedrich F., to Dynamics Corp. of America. Air diffuser. 3,401,622, 9–17–68, Cl. 98—40.
- Honeywell Inc.: *See—*
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- Hordis, Victor A., to Hordis Bros., Inc. Apparatus for heating and tempering glass sheets. 3,402,038, 9–17–68, Cl. 65—350.
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- Horiguchi, Yutaka, and A. Saeki, to Nippon Electric Co., Ltd. Single pole, double throw, crystal diode switch. 3,402,369, 9–17–68, Cl. 338—7.

- Horvath, Robert A., to General Motors Corp. Pressure modulator valve for anti-lock brake system. 3,401,987, 9–17–68, Cl. 303—21.
- Horwitz, Mandel. Portable vehicle washing device. 3,401,707, 9–17–68, Cl. 134—100.
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- Houdaille Industries, Inc.: *See*—
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  - Gies, Paul E. 3,401,989.
  - Rumsey, Rollin D. 3,401,947.
- Hough, Ralph L., to United States of America, Air Force. Apparatus for the continuous formation of filaments. 3,401,423, 9–17–68, Cl. 18—8.
- Howaldtswerke-Deutsche Werft Aktiengesellschaft, Hamburg und Kiel: *See*—
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- Howard, Henry T., and C. L. Auernheimer, to A.V. Electronics, Inc. Continuous control using alternating or direct current via a single conductor of plural functions at a remote station. 3,402,391, 9–17–68, Cl. 340—163.
- Howard, Norman B., and J. B. Martin, to The Procter & Gamble Co. All purpose-shortening. 3,402,050, 9–17–68, Cl. 99—118.
- Howe, Frederick A., and R. I. Bell, to United Kingdom Atomic Energy Authority. Particle accelerating tube having axially localised transverse magnetic fields and field-free regions. 3,402,310, 9–17–68, Cl. 313—63.
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- Hrdina, Jiří, to Ceskoslovenska Akademie ved. Apparatus for transferring measured samples. 3,401,564, 9–17–68, Cl. 73—421.
- Hsieh, Henry L., to Phillips Petroleum Co. Process for polymerizing butadiene and styrene terminated in short blocks of polystyrene. 3,402,159, 9–17–68, Cl. 260—85.1.
- Hubbard, Arthur L., to Deere & Co. Blower elevator device. 3,401,510, 9–17–68, Cl. 56—30.
- Hubbs, John C., to E-H Research Laboratories, Inc. Trapezoidal pulse generator with diode bridge for switching independent current sources. 3,402,353, 9–17–68, Cl. 328—59.
- Huebner, Guenter: *See*—
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- Hull, Minert E., III, and D. W. Hoch, to Hooker Chemical Corp. Thermally stable phenolic composition with inorganic phosphorus-nitrogen modifications. 3,402,145, 9–17–68, Cl. 260—54.
- Hullhorst, William B., to Owens-Corning Fiberglas Corp. Method and apparatus for packaging materials. 3,401,896, 9–17–68, Cl. 242—55.1.
- Hurlburt, Joseph C., and J. A. Patterson, to Sperry Rand Corp. Hitch. 3,401,509, 9–17–68, Cl. 56—25.
- Hurst, George P. Wire rope connector and kiln drive structure. 3,401,924, 9–17–68, Cl. 263—33.
- Hutson, Thomas, Jr., to Phillips Petroleum Co. Olefin production. 3,402,216, 9–17–68, Cl. 260—683.2.
- Hutson, Thomas, Jr., and A. D. Holiday, to Phillips Petroleum Co. Photochemical halogenation of hydrocarbons. 3,402,114, 9–17–68, Cl. 204—163.
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- Iles, Peter A., and R. O. Victoria, to Globe-Union Inc. Process for making photosensitive semiconductor devices. 3,401,448, 9–17–68, Cl. 29—572.
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- Imagawa, Tameichi, to Bridgestone Cycle Industry Co. Ltd. Process for formation of non-abrasive refractory rubbing surface having high thermal conductivity by casting. 3,401,736, 9–17–68, Cl. 164—95.
- Imperial Chemical Industries Ltd.: *See*—
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- Ingram, Orville, to Midland-Ross Corp. Hatches for railway covered hopper cars. 3,401,647, 9–17–68, Cl. 105—377.
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- Inose, Fumiyuki, H. Morozumi, K. Suda, T. Numakura, and R. Mori, to Kabushiki Kaisha Hitachi Seisakusho. Magnetic amplifier for low-level input signals. 3,402,359, 9–17–68, Cl. 330—8.
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- Jackson, Donald R., deceased, by R. H. Jackson, special administratrix, to Wyandotte Chemicals Corp. Polyhalogenous polyhydroxy ethers. 3,402,169, 9–17–68, Cl. 260—210.
- Jackson, Ruth H.: *See*—
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- Jacobi, Richard, R. Stahl, R. Quenett, J. Achhammer, and E. Merkel, to Deutsche Fafelglas Aktiengesellschaft Detag. Method for sealing spacing members in a double or multiple glass pane assembly to the margins of the glass panes. 3,402,084, 9–17–68, Cl. 156—109.
- Jacobson, Alden H., B. A. Holmstrom, and H. W. Ostlund, to The Heald Machine Co. Machine tool with tool feed control. 3,401,583, 9–17–68, Cl. 77—3.
- Jaeger, Horst, R. Toepfl, and A. Maeder, to Ciba Ltd. Polymerisation products from monomeric esters of α,β-unsaturated carboxylic acids containing a cycloaliphatic ring in the alcohol residue and method for their preparation. 3,402,153, 9–17–68, Cl. 260—78.5.
- Jahnke, Donald, to Hydrahone Equipment Division of John Mohr & Sons. Bag packaging device. 3,401,499, 9–17–68, Cl. 53—112.
- Jakob, Fritz, to Linde Aktiengesellschaft. Regenerative tube-bundle heat exchanger having screw-like flattened tubes helically wound in spaced-apart relationship. 3,401,682, 9–17–68, Cl. 126—400.
- Janeway, William F. Optical-electronic displacement transducer. 3,402,298, 9–17–68, Cl. 250—203.
- Janome Sewing Machine Co., Ltd.: *See*—
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- Jaquith, Howard R.: *See*—
  - Beach, Richard G., and Jaquith. 3,401,573.
- Jaulmes, Eric, to Ateliers de la Moibecane. Automatic variable speed transmission for automotive vehicles. 3,401,582, 9–17–68, Cl. 74—864.
- Jensen, Otto, to I-T-E Circuit Breaker Co. Dual path current limiting circuit breaker. 3,402,272, 9–17–68, Cl. 200—144.
- Joanell Laboratories, Inc.: *See*—
  - La Mura, Joseph L. 3,401,939.
- Johanson, Ralph A. W., and J. L. Le Baigue, to Electrolux Corp. Anti-tipping rollers. 3,401,952, 9–17–68, Cl. 280—150.
- Johnson, Allie, and H. E. Bryan, 50% to J. Resnick. Cuff making machine. 3,401,655, 9–17–68, Cl. 112—2.
- Johnson, Everett C., and D. G. Meier, to Owens-Illinois, Inc. Container with self-locking lid. 3,401,866, 9–17–68, Cl. 229—45.
- Johnson, Forest. Spherical bearing motion programming means. 3,401,964, 9–17–68, Cl. 287—88.
- Johnson, Francis E., and D. Lorusso. Tamper-proof lock for valves. 3,401,715, 9–17–68, Cl. 137—385.
- Johnson, Lee D. Mechanically actuated electronic switch. 3,402,363, 9–17–68, Cl. 331—75.
- Johnson Service Co.: *See*—
  - Burley, Billy, and Strawn. 3,402,404.
  - Velicer, Wencel J., and Weber. 3,401,601.
- Johnson, Theodore P., 50% to E. C. Presthus. Garment delinting method. 3,402,076, 9–17–68, Cl. 134—25.
- Jones, John B., Jr., to The Battelle Development Corp. Linear grate for shaft kilns. 3,401,922, 9–17–68, Cl. 263—29.
- Jones, Walter T., to Universal Oil Products Co. Plural stage distillation with bottoms stream a side stream column heat exchange. 3,402,124, 9–17–68, Cl. 208—353.
- Josephson, Gilbert M., to Domtar Ltd. Fused sodium chloride flakes. 3,402,016, 9–17–68, Cl. 23—89.

- Jullien-Davin, Jean, to Crouzet. Coin magazine for slot machines designed to return change. 3,401,704, 9–17–68, Cl. 133—5.
- Jullien-Davin, Jean, to Crouzet. Electrical coin tester. 3,401,780, 9–17–68, Cl. 194—100.
- Kabushiki Kaisha Hitachi Seisakusho: *See*—
  - Futaki, Hisao, Shimoda, Narita, Kobayashi, Aoki, and Yamada. 3,402,131.
  - Inose, Fumiyuki, Morozumi, Suda, Numakura, and Mori. 3,402,359.
- Kagi, Jakob, to Sulzer Brothers, Ltd. Nuclear reactor plant. 3,402,102, 9–17–68, Cl. 176—59.
- Kaiser, Anton, and W. Regenass, to Ciba Ltd. Process for the preparation of naphthoquinone by catalytic gas-phase oxidation. 3,402,187, 9–17–68, Cl. 260—396.
- Kalahar, Thomas L. Support fixture. 3,401,909, 9–17–68, Cl. 248—225.
- Kalle Aktiengesellschaft: *See*—
  - Kletschke, Hans. 3,401,848.
- Kalis, Andrew W., to United States of America, Army. Magnut pin. 3,401,587, 9–17–68, Cl. 85—7.
- Kaltenhauser, Gerhart O., and H. Schweinsberg, to Fischer & Porter Co. Apparatus for the measurement of residual chlorine or the like. 3,402,116, 9–17–68, Cl. 204—195.
- Kamp, Leonard F.: *See*—
  - Bundschuh, John J., and Kamp. 3,402,006.
- Karlsson, Elof K., to International Harvester Co. Combine beater grate. 3,401,700, 9–17–68, Cl. 130—27.
- Kasuga, Noboru, to Janome Sewing Machine Co., Ltd. Buttonhole stitching device. 3,401,659, 9–17–68, Cl. 112—158.
- Kato, Osamu: *See*—
  - Miyoshi, Mitsuji, Uemura, Tsuchiya, and Kato. 3,402,164.
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- Kellems, Kenneth K.: *See*—
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- Keller, Arthur H., to International Harvester Co. Cotton harvester with means for automatically cleaning trash screen. 3,401,508, 9–17–68, Cl. 56—11.
- Kelley, Donald W. Firearm loaded condition indicator. 3,401,665, 9–17–68, Cl. 116—114.
- Kemp, John H., Jr. Apparatus for stacking pallets. 3,401,808, 9–17–68, Cl. 214—6.
- Kendall, Jackson W., Jr., and J. D. MacGowan, to Varian Associates. Structure for independently supporting each strand of a medially looped filament in a vacuum tube. 3,402,312, 9–17–68, Cl. 313—278.
- Kephart, Jack C., and R. L. Eigenbrode, to The Lionel Corp. Microscope. 3,401,999, 9–17–68, Cl. 350—86.
- Kerr-McGee Corp.: *See*—
  - Goren, Mayer B. 3,402,026.
- Kesling, Keith K., to General Motors Corp. Refrigerator cabinet trim. 3,401,815, 9–17–68, Cl. 220—9.
- Kesselring, Fritz, and B. Leisi, to Siemens Aktiengesellschaft. Synchronous switching device. 3,402,324, 9–17–68, Cl. 317—11.
- Kessler, Godehard, and W. Scholz, to Linde Aktiengesellschaft. Heat exchange of compressed nitrogen and liquid oxygen in ammonia synthesis feed gas production. 3,401,531, 9–17–68, Cl. 62—20.
- Keto, Jorma R., to United States of America, Army. Pure fluid device for isolating steady flow and for clipping transient signals. 3,401,710, 9–17–68, Cl. 137—81.5.
- Key, Lawrence M., Jr. Direct fired fluid heater. 3,401,673, 9–17–68, Cl. 122—250.
- Keyes, William J. Unattended signal-equipped fishing device. 3,401,479, 9–17–68, Cl. 43—16.
- Keystone Mfg. Co., Division of Avis Industrial Corp.: *See*—
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- Kida, Katuhiko, and K. Yonezu, to Japan Storage Battery Co., Ltd. Storage batteries and method of manufacturing the same. 3,402,077, 9–17–68 Cl. 136—6.
- Kijima, Shizumasa, and T. Nakamura, to Eisai Co., Ltd. Method of isolating and refining tocopherol homologues. 3,402,182, 9–17–68, Cl. 260—345.6.
- Kilmer, Lauren G., to Sinclair Research, Inc. Underwater gas explosion seismic wave generator. 3,401,769, 9–17–68, Cl. 181—.5.
- Kilmer, Lauren G., to Sinclair Research, Inc. Gas exploder apparatus for propagating seismic waves. 3,401,771, Cl. 181—.5.
- Kilmer, Lauren G., and P. W. Wise, to Sinclair Research, Inc. Gas exploder apparatus for propagating seismic waves. 3,401,770, 9–17–68, Cl. 181—.5.
- Kim, Kee W., to M & J Valve Co. Resilient material valve seal ring. 3,401,915 9–17–68, Cl. 251—174.
- Kimberly-Clark Corp.: *See*—
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  - Frick, Richard H., and Scholz. 3,401,927.
- Kimura, Sinzo, M. Nagahiro, and H. Hosono, to Matsushita Electric Industrial Co., Ltd. Fully automatic toaster. 3,401,625, 9–17–68, Cl. 99—329.
- Kinjo, Hisao, to Victor Company of Japan Ltd. FM video recording with white level clamping. 3,402,256, 9–17–68, Cl. 178—6.6.
- Kirby, Dorothy Y. Stitching and seam guide for sewing machines. 3,401,658 9–17–68 Cl. 112—153.
- Kircher, Everett F. Ski lift control mechanism. 3,401,648, 9–17–68, Cl. 104—173.
- Klahs, Leonard J.: *See*—
  - Fuzesi, Stephen, and Klahs. 3,402,170.
- Klancnik, Adolph V. Machine tools. 3,401,833, 9–17–68, Cl. 221—268.
- Kletschke, Hans, to Kalle Aktiengesellschaft. Apparatus for discharging fluid material from a container. 3,401,848, 9–17–68, Cl. 222—363.
- Kline, Charles M.: *See*—
  - Blanshine, Allison W., Focht, Kline, and Wallin. 3,401,727.
- Knee, Terence E. C., to E. I. du Pont de Nemours and Co. Process for preparation of nonwoven webs. 3,402,227, 9–17–68, Cl. 264—24.
- Kneeland, Verne L. Mobile power-operated jack. 3,401,414, 9–17–68, Cl. 12—127.
- Kneese, James L.: *See*—
  - Morehouse, Donald S., and Kneese. 3,401,475.
- Knight, James O., to L. R. Nelson Mfg. Co., Inc. Snap action method of securing a hose fitting to a hose end. 3,401,447, 9–17–68, Cl. 29—453.
- Knoblock, Frederick D. Folding table. 3,401,653, 9–17–68, Cl. 108—124.
- Knoll A.G.: *See*—
  - Suranyi, Laszlo. 3,402,175.
- Knudsen, John P., A. W. Lockwood, Jr., and R. P. Teulings, to Monsanto Co. Bi-component non-elastic filament capable of partial separation. 3,402,097, 9–17–68, Cl. 161—177.
- Kobayashi, Haruhiro, to Nippon Electric Co. Ltd. Three-electrode cold-cathode gas laser tube. 3,402,367, 9–17–68, Cl. 331—94.5.
- Kobayashi, Kazuo: *See*—
  - Futaki, Hisao, Shimoda, Narita, Kobayashi, Kazuo, Aoki, and Yamada. 3,402,131.
- Koch, Reinhold: *See*—
  - Rienks, Frits, and Koch. 3,401,859.
- Koerner, Ralph J., and A. D. Scarbrough, to The Bunker-Ramo Corp. Content addressable memory. 3,402,394, 9–17–68, Cl. 340—172.5.
- Koerner, Ralph J., and A. D. Scarbrough, to The Bunker-Ramo Corp. Plural content addressed memories with a common sensing circuit. 3,402,398, 9–17–68, Cl. 340—173.
- Koester, John P., to The Orr Felt & Blanket Co. Paper makers' felt. 3,401,467, 9–17–68, Cl. 34—95.
- Kohl, Karl. Guide bar drive for a warp knitting machine. 3,401,537, 9–17–68, Cl. 66—86.
- Kokesh, Frank P., to Schlumberger Technology Corp. Method for logging cased boreholes. 3,401,772, 9–17–68, Cl. 181—.5.
- Komarek-Greaves and Co.: *See*—
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- Komarek, Karl R.: *See*—
  - Cameron, Russell J., Hand, and Komarek. 3,402,225.
- Koontz, Joseph J., to Collins Radio Co. Message verification using associative memory techniques. 3,402,389, 9–17–68, Cl. 340—146.1.
- Korber, Josef A. Switch operator. 3,401,578, 9–17–68, Cl. 74—567.
- Korodan, George J., to Chrysler Corp. Rotatable tool. 3,401,462, 9–17–68, Cl. 33—180.
- Korry Mfg. Co.: *See*—
  - Amis, James W., Jr., and Andersen. 3,402,379.
- Kovacs, Ernst: *See*—
  - Weingartner, Bernhard, Kovacs, and Marschall. 3,402,371.
- Kovacs, Karoly. Tool for removing dowel washers from the the dowel. 3,401,444, 9–17–68, Cl. 29—239.
- Kradel, Fred L., to I-T-E Circuit Breaker Co. Phase and voltage detector. 3,402,351, 9–17–68, Cl. 324—87.
- Krahn, Alfred R. Readily removable exhaust muffler for high vertical exhaust stacks. 3,401,774, 9–17–68, Cl. 181—72.
- Kramer, Hans B. A., G. Messwarb, and W. Denk, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Reaction product of polyvinylphosphonic dichloride and glycerol. 3,402,156, 9–17–68, Cl. 260—80.
- Kreikenbaum, Willi: *See*—
  - Wedemeyer, Heinrich, and Kreikenbaum. 3,401,801.
- Kreitz, Lloyd D. Dust collector. 3,401,724, 9–17–68, Cl. 143—6.
- Kriebel, Walter, K.-H. Tiedtke, and W. Eggers, to Electrovacustic Gesellschaft mit beschrankter Haftung. Sound-reproducing apparatus. 3,401,945, 9–17–68, Cl. 274—11.
- Kubilos, Charles A., to Abex Corp. Single receiver port jet displacement servovalve. 3,401,711, 9–17–68, Cl. 137—83.
- Kubota, Hiroyuki, and J. Tanaka, to Nippon Kokan Kabushiki Kaisha. High tensile strength steel alloys. 3,402,080, 9–17–68, Cl. 148—36.
- Kühlkamp, Alfred, and R. Nowack, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Foam plastics and process for making them. 3,402,133, 9–17–68, Cl. 260—2.5.
- Kulka, Marshall: *See*—
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- Kusunose, Tetsuhiro, S. Senoo, and M. Nitta, to Asahi Kasei Kogyo Kabushiki Kaisha. Method for producing threonine. 3,402,199, 9–17–68, Cl. 260—534.
- Kutch, Edward F., to Thiokol Chemical Corp. Storable one-part polysulfide composition containing zeolitic molecular sieves. 3,402,151, 9–17–68, Cl. 260—77.5.
- Kutch, Edward F., to Thiokol Chemical Corp. Storable, one-part polythiol compositions with amine-loaded molecular sieves. 3,402,155, 9–17–68, Cl. 260—79.
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  - Goldfogel, Marvin H., and Labe. 3,401,456.
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- Lamb, Leslie E. Ballcock float control means. 3,401,717, 9–17–68, Cl. 137—421.
- Lambda Electronics Corp.: *See*—
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- Lampe, Robert C.: *See*—
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- Lampkin, William M.: *See—*
  - Feld, Ignatz L., Franklin, and Lampkin. 3,402,041.
- La Mura, Joseph L., to Joanell Laboratories, Inc. Polymer foam projectile-shorting target with hit recorder. 3,401,939, 9-17-68, Cl. 273—102.2.
- Lancor, Joseph H., Jr., and P. J. Cunningham, to Consolidated Electrodynamics Corp. Reel support. 3,401,897, 9-17-68, Cl. 242—55.1.
- Landvater, John H., to Ohaus Scale Corp. Device for loading additional counterbalance weight to beam balance weighing scales. 3,401,761, 9-17-68, Cl. 177—248.
- Lane, Stuart E. Garment hanger attachment. 3,401,853, 9-17-68, Cl. 223—87.
- Langhjelm, Heinrich G.: *See—*
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- Langley, Robert C., to Engelhard Industries, Inc. Method for depositing aluminum film. 3,402,067, 9-17-68, Cl. 117—119.
- Larkin, Joseph F., to IRC, Inc. Transfer mechanism. 3,401,807. 9-17-68, Cl. 214—1.
- Larsen, Agnew E. Flame repellant apparatus. 3,401,750, 9-17-68, Cl. 169—2.
- Larsen, Roy, to Thiokol Chemical Corp. Production of high molecular weight polymers of vicinal episulfides. 3,402,154, 9-17-68, Cl. 260—79.
- Larwill, Johart, to National Lead Co. Means for cooling solid particulate materials with fluids. 3,401,465, 9-17-68, Cl. 34—57.
- Lathrop, Francis M. II, to M&J Valve Co. Electrical positioning apparatus. 3,402,270, 9-17-68, Cl. 200—82.
- Laufman, Harry A., and D. W. Stillman, to Aircars Inc. Air-cushion vehicle. 3,401,766, 9-17-68, Cl. 180—119.
- Laumann, David H. E., and A. F. Lorman, to Parachlor Chemical Corp. Non-irritant quaternary ammonium compound composition. 3,402,242, 9-17-68, Cl. 424—148.
- Laurer, George J.: *See—*
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  - Coakley, James L., and Lawhead. 3,401,603.
- Lazan, Benjamin J., deceased (by J. W. Lazan, special administratrix), to United States of America, Air Force. Adjustable viscoelastic vibration energy dissipator. 3,401,911, 9-17-68, Cl. 248—358.
- Lazan, Jeannette W.: *See—*
  - Lazan, Benjamin J. 3,401,911.
- Lease, Robert J.: *See—*
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- Lefley, Robert G., and J. G. Raffensperger. Pediatric fluid collector. 3,401,697, 9-17-68, Cl. 128—295.
- Lehman, Herbert S., to International Business Machines Corp. Method for controlling the electrical characteristics of a semiconductor surface and product produced thereby. 3,402,081, 9-17-68, Cl. 148—188.
- Leisl, Bruno: *See—*
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- Lemin, Alan J., to The Upjohn Co. Insecticidal 2-halo-and 2,4-dihaloallylphenyl carbamate compositions and method for controlling insects. 3,402,245, 9-17-68, Cl. 424—300.
- Leon Chemicals & Plastics, Inc.: *See—*
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- Leonard, Charles F.: *See—*
  - Prohl, Robert F., Leonard, and Young. 3,401,953.
- Lerner, Theodore, to Bell Aerospace Corp. Variable velocity scanning for TV systems. 3,402,258, 9-17-68, Cl. 178—6.8.
- Lerner, Theodore, to Bell Aerospace Corp. System for transmitting the difference between an information signal and a variable reference voltage. 3,402,352, 9-17-68, Cl. 325—38.
- Lever Bros. Co.: *See—*
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- Levitan, Maurice D.: *See—*
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- Levitch, Robert G., to Burlington Industries, Inc. Carpet tile. 3,402,094, 9-17-68, Cl. 161—44.
- Levy, Alan J., and M. H. Litt, to Allied Chemical Corp. Process for the preparation of heterocyclic iminoethers. 3,402,178, 9-17-68 Cl. 260—307.
- Lewis, Samuel. Steering wheel locking attachment. 3,401,543. 9-17-68, Cl. 70—183.
- Leybold-Anlagen Holding A.G.: *See—*
  - Ellenberg, Hans, and Schmitz. 3,401,468.
- Liautaud, John N., and W. A. Mundt, to Fendall Co. Multi-fit temple having a notched, bendable ear portion and plastic cover member. 3,402,005, 9-17-68, Cl. 351—122.
- Licentia Patent-Verwaltungs-G.m.b.H.: *See—*
  - Schonherr, Armin, and Pestel. 3,401,599.
- Lichowsky, Abraham, to Radio Corp. of America. Rotating head and disc magnetic recording system. 3,402,403, 9-17-68. Cl. 340—174.1.
- Lichty, Lyall J., to Northfield Mines, Inc. Recovery of nickel and cobalt from an aqueous solution. 3,402,042, 9-17-68, Cl. 75—119.
- Lieblich, Irving: *See—*
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  - Jakob, Fritz. 3,401,682.
  - Kessler, Godehard, and Scholz. 3,401,531.
- Lindner, Robert G., to H. H. Robertson Co. Corrugated metal building sheets having a rigid plastic foam coating and connections therefor. 3,401,493. 9-17-68, Cl. 52—309.
- Link, Edwin A., to Ocean Systems, Inc. Crane. 3,401,804, 9-17-68, Cl. 212—58.
- Lionel Corp, The: *See—*
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- Lipp, Alfred, to Elektroschmelzwerk Kempten G.m.b.H. Process for the manufacture of alkali metal metal borides. 3,402,020, 9-17-68, Cl. 23—204.
- Lisk-Savory Corp.: *See—*
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  - Meckler, Gershon. 3,401,742.
  - Meckler, Gershon. 3,402,322.
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  - Knudsen, John P., Lockwood, and Teulings. 3,402,097.
- Lofgren, Gustaf E., to Electrolux Corp. Vacuum cleaner device with hose and cord storage. 3,401,420, 9-17-68, Cl. 15—323.
- Loftin, James W., and J. H. Williams, to Standard Fire Protection Equipment Co. Dry pipes sprinkler system. 3,401,751, 9-17-68, Cl. 169—17.
- Lombardi, Michael: *See—*
  - Chiswell, Alfred P., and Lombardi. 3,401,814.
- Lombardo, Pasquale: *See—*
  - Gilbert, Everett E., Lombardo, Rumanowski, and Sukornick. 3,402,209.
- Long, Florren E., and M. R. McKee, to Continental Can Co., Inc. Self closing dust valve for a disposable vacuum cleaner bag. 3,401,867, 9-17-68, Cl. 229—62.5.
- Longe, Patrick J., and W. A. Root, to International Agri-Systems, Inc. Method of defrosting a frozen block of food pieces. 3,402,053. 9-17-68, Cl. 99—192.
- Longstreth, Joseph G. Disposable overshoes of flexible film material. 3,402,323, 9-17-68, Cl. 317—2.
- Lonnon, Lawrence, to Evershed & Vignoles Ltd. Measurement of the surface level of liquids. 3,401,563, 9-17-68, Cl. 73—313.
- Loofbourrow, Alan G., to Chrysler Corp. Predetermined torque release wrench. 3,401,754, 9-17-68, Cl. 173—12.
- Lord Corp.: *See—*
  - Moyer, Wendell W., Jr., and Reader. 3,402,157.
- Lord, John G. Information comparing and summarizing machine. 3,401,472, 9-17-68, Cl. 35—48.
- Lorman, Alfred F.: *See—*
  - Laumann, David H. E., and Lorman. 3,402,242.
- Lorusso, Daniel: *See—*
  - Johnson, Francis E., and Lorusso. 3,401,715.
- Loun, Bohuslav, M. Martinek, J. Šob, and I. Zelinka, to Výzkumný ústav matematických strojů. Device for continuous digital incremental control of the relative position of moving parts. 3,402,284, 9-17-68, Cl. 235—151.11.
- Lubrizol Corp., The: *See—*
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- Lucas, Victor G., to Dade Reagents, Inc. Mixing and decanting centrifuge. 3,401,876, 9-17-68, Cl. 233—26.
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- Luketa, Frank J., to Felix Robins & Robbins. Attitude control of trawl doors. 3,401,477, 9-17-68, Cl. 43—4.5.
- Lummus Co., The: *See—*
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- Lunsford, Carl D., to A. H. Robins Co., Inc. Analgesic and anti-inflammatory methods and compositions. 3,402,244, 9-17-68, Cl. 424—274.
- Lutke-Daldrup, Maria: *See—*
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- Lutz, Georg, to Telefunken Patentverwertungs-G.m.b.H. Apparatus for producing coil forms. 3,401,900, 9-17-68, Cl. 242—56.1.
- Lymba Products Ltd.: *See—*
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  - Bockenstette, Kenneth R. 3,401,828.
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- Maag Gear Wheel & Machine Co., Ltd.: *See—*
  - Sigg, Hans. 3,401,580.
- Maahs, Günther, to Chemische Werke Huls Aktiengesellschaft. Process for the production of perchlorallene dimers. 3,402,211, 9-17-68, Cl. 260—648.
- Maahs, Paul T.: *See—*
  - Matthies, Hans G., Maahs, Wenger, and Lieseberg. 3,402,141.
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- Marsteller, Kenneth E., to Philco-Ford Corp. Condensate removal means for air conditioners. 3,401,534, 9-17-68, Cl. 62—280.
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- Martin, John W., and R. J. Rosser, to Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, Minister of Supply. Rocketwise propelled projectiles. 3,401,634, 9-17-68, Cl. 102—49.7.
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- Mathews, George P., and A. L. Gummer, to MGM Brake Inc. Internally breathing brake actuator. 3,401,606, 9-17-68, Cl. 91—433.
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- McDonald, James A., and E. K. Retherford, to Radio Corp .of America. Television deflection circuit with temperature compensation. 3,402,319, 9-17-68, Cl. 315—27.
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- McDonald, Louis, and N. A. MacLeod, to United States of America, Atomic Energy Commission. Phenyloxyalkanol coating of particle. 3,402,065, 9-17-68, Cl. 117—100.
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  - Wehner, William C. 3,401,965.
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- Mora, Alcide. Process for manufacturing resiliently yielding bases provided with abrasive surfaces and product thus obtained. 3,401,490, 9-17-68, Cl. 51—295.
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- Mutter, Karl J., to Camag, Chemie-Erzeugnisse und Adsorptionstechnik AG. Apparatus for electrophoretic separation. 3,402,118, 9-17-68, Cl. 204—299.
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- Nelson, Forrest A., to Varian Associates. Field modulated gyromagnetic resonance spectrometer having an internal test signal generator. 3,402,345, 9-17-68, Cl. 324—.5.
- Nelson, Forrest A., to Varian Associates. Vertical stand for a superconductive magnet having a vertically guided probe carriage. 3,402,347, 9-17-68, Cl. 324—.5.
- Nelson, Iver L., and H. V. Dettman, to Hoerner Waldorf Corp. Package forming apparatus. 3,401,609, 9-17-68, Cl. 93—49.
- Nelson, L. R., Mfg., Co., Inc.: *See—*
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- Nicholas, Arthur S., to Leon Chemicals & Plastics, Inc. Housing with plate anchor. 3,401,980, 9-17-68, Cl. 297—389.
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- Norwood, James R., and J. S. Morgan, to International Business Machines Corp. Proportional ribbon feed mechanism. 3,401,783, 9-17-68, Cl. 197—151.
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- Partridge, Raymond W., to Dowty Rotol Ltd. Steering devices for an aircraft wheel mounting. 3,401,577, 9–17–68, Cl. 74—498.
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- Pearl, Judea, to Radio Corp. of America. Radiation sensitive optical logic element using photochromic layers. 3,402,300, 9–17–68, Cl. 250—220.
- Pearl, Judea, to Radio Corp. of America. Motors and generators employing superconductors. 3,402,307, 9–17–68, Cl. 310—10.
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- Plummer, Charles W., and M. R. Radcliffe, to United Shoe Machinery Corp. Process for the production of diaryl sulfones. 3,402,204, 9–17–68, Cl. 260—607.
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- Rait, Joseph M. Apparatus for making copies by contact printing. 3,401,617, 9–17–68, Cl. 95—77.5.
- Ramanathan, Visvanathan, to Ciba Ltd. Dyeing nickel-containing polyolefin fibers with O-alkylmercaptoazo dyes. 3,402,012, 9–17–68, Cl. 8—42.
- Rambousek, Zdenek, to Elitex, Zavody textilniho strojirenstvi. Apparatus for controlling the operation of a weaving loom. 3,401,722, 9–17–68, Cl. 139—341.
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  - Roberts, Donald L. 3,402,051.
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  - Baum, Bernard O., Walton, and Reynolds. 3,402,098.
- Rice, Charles M., to American Enka Corp. Method and apparatus for determining the degree of cohesion in multifilament yarn strands. 3,401,559, 9–17–68, Cl. 73—160.
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- Richtzenhain, Hermann, and W. Vogt, to Dynamit Nobel Aktiengesellschaft. Production of high molecular polyoxymethylenes using a trivalent phosphorus catalyst. 3,402,146, 9–17–68, Cl. 260—67.
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- Rienks, Frits, and R. Koch, to General Dynamics Corp. Low friction wire support for consumable electrode torch. 3,401,859, 9–17–68, Cl. 226—196.
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- Ringereide, Trygve, to Northern Electric Co. Ltd. Frequency multiplier and a plurality of tuning stubs to achieve isolation. 3,402,340, 9–17–68, Cl. 321—69.
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- Risberg, Robert L., to Cutler-Hammer, Inc. Adjustable frequency A.C. motor control system with low speed compensation. 3,402,336, 9–17–68, Cl. 318—227.
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  - Oehlschlaeger, Herman F., and Rodenberg. 3,402,108.
- Rodgers, Samuel H., III. Prefabricated drainage field structures. 3,401,526, 9–17–68, Cl. 61—13.
- Rohrlick, Myles A. Parachute low altitude delivery system. 3,401,905, 9–17–68, Cl. 244—137.
- Rolt, Anthony P. R., to Harry Ferguson Research Ltd. Motor vehicle drive system. 3,401,763, 9–17–68, Cl. 180—44.
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- Rosecrans, Dean A. Inflation attachment for inflatable bag catheter. 3,401,698, 9–17–68, Cl. 128—349.
- Rosenberg, David, and L. Mirando. Disposable syringe package. 3,401,695, 9–17–68, Cl. 128—232.
- Rosenfeld, Arthur. Wax cup and handle for investment casting. 3,401,737, 9–17–68, Cl. 164—244.
- Ross, Gerald F., to United States of America, Air Force. Pulse generator. 3,402,370, 9–17–68, Cl. 333—20.
- Ross, Gilbert H., C. J. Anderson, and B. E. Beaty, to Martin-Marietta Corp. Lead forming tool. 3,401,548, 9–17–68, Cl. 72—389.
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- Ruchelman, Maryon W. Automatic sample injector. 3,401,552, 9–17–68, Cl. 73—23.1.
- Rude, Raymond C. Guard rail mounting. 3,401,910, 9–17–68, Cl. 248—251.
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- Sahut d'Izarn, Philippe, to Societe de Constructions Electromecaniques Jeumont-Schneider. Conditional jump sequencing arrangement for a counter register of a computer. 3,402,283, 9-17-68, Cl. 235—92.
- Sakuragi, Taketami, O. Baba, and S. Akiyama, to The Japanese Geon Co., Ltd. Introduction of polar groups into unsaturated polymers of dienes. 3,402,136, 9-17-68, Cl. 260—23.7.
- Salamone, Joseph P. Container opening caps. 3,401,819, 9-17-68, Cl. 220—48.
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- Sass, Andrew R., to Radio Corp. of America. Nondestructive readout of cryoelectric memories. 3,402,400, 9-17-68, Cl. 340—173.1.
- Saunders, Thomas B., to Robin Products Co. Rod end fastener. 3,401,960, 9-17-68, Cl. 287—20.5.
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- Sawyer, Harold T., 17½% to V. D. Beehler. Plug-in sponge. 3,402,009, 9-17-68, Cl. 401—266.
- Sazhin, Ivan I. Method of electroerosion machining of holes with a curvilinear axis. 3,402,279, 9-17-68, Cl. 219—69.
- Scaramucci, Domer, to Balon Corp. Between flange valve structure. 3,401,913, 9-17-68, Cl. 251—151.
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- Scheublein, William A., Jr., and L. P. Fister, to Moog Industries, Inc. Self-adjusting movable joint device. 3,401,966, 9-17-68, Cl. 287—93.
- Schick, John W., to Mobil Oil Corp. Fuel compositions. 3,402,032, 9-17-68, Cl. 44—17.
- Schick, John W., and J. H. Stockinger, to Mobil Oil Corp. Fuel compositions. 3,402,031, 9-17-68, Cl. 44—14.
- Schicke Hans-Gerd to Farbenfabriken Bayer Aktiengesellschaft. O-pyrazolo-(1,5-α)-pyrimidyl phosphorus-containing esters. 3,402,176, 9-17-68, Cl. 260—256.4.
- Schicke, Hans-Gerd, to Fabenfabriken Bayer Aktiengesellschaft. Diacid ester dimethyl thioether diphosphorus compounds. 3,402,224, 9-17-68, Cl. 260—929.
- Schiel, Christian, to J. M. Voith, G.m.b.H. Roller press for paper machines. 3,402,101, 9-17-68, Cl. 162—358.
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- Schleimer, Bernhard, and H. Weber, to Chemische Werke huls A.G. Production of mixtures of high molecular weight, 1,4-homo-cis-and 1,4-homo-trans-polybutadienes. 3,402,163, 9-17-68, Cl. 260—94.3.
- Schleppnik, Alfred A., to Monsanto Co. Preparation of thiolesters from aliphatic acid anhydrides and aromatic thiols. 3,402,194, 9-17-68, Cl. 260—455.
- Schlumberger Technology Corp.: *See—*
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- Schmermund, Alfred. Cutting arrangements for cutting longitudinally moving webs. 3,401,585, 9-17-68, Cl. 83—341.
- Schmit, Nic C., to Ranier L. Weis. Boat handling device. 3,401,806, 9-17-68, Cl. 214—1.
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- Schnabel, Herbert W., to Armour and Co. Coated abrasive products, 3,402,034, 9-17-68, Cl. 51—295.
- Schnabel, Herbert W., and V. C. Sickle, to Armour and Co. Binder of an epoxy resin, polyamide resin and polyester for fibrous abrasive articles. 3,401,491, 9-17-68, Cl. 51-295
- Schneider, Gordon L. Apparatus and method for repair of pavement. 3,401,611, 9-17-68, Cl. 94—39.
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- Schonherr, Armin, and W. Pestel, to Licentia Patent-Verwaltungs-G.m.b.H. Stabilizer. 3,401,599, 9-17-68, Cl. 89—41.
- Schroeder, Eugene N., to United States of America, Air Force. Time division multiplex matrix data transfer system having transistor cross-points. 3,402,392, 9-17-68, Cl. 340—166.
- Schrom, Edward C.: *See—*
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- Schubert, Johannes, and W. Wessel, to Bolkow Gesellschaft mit beschrankter Haftung. Solid fuel mounting for rocket engine. 3,401,525, 9-17-68, Cl. 60—255.
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- Schuster, Rolf, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Conveyor for heat treating chambers. 3,401,789, 9-17-68, Cl. 198—173.
- Schwartz, Joseph L., and H. L. Elkin, to Thiokol Chemical Corp. Urethane crude processind aid. 3,402,135, 9-17-68, Cl. 260—22.
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- Scott, Augustus R. Anti-skid control valve. 3,401,523, 9-17-68, Cl. 60—54.5.
- Scott, James L., to The D. S. Brown Co. Valve structures for inflatable articles. 3,401,714, 9-17-68, Cl. 137—223.
- Scott, William J., to Associated Electrical Industries Ltd. Hermetically sealed articles. 3,402,276, 9-17-68, Cl. 200—166.
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- Seaman, Burch F., and F. A. Yoder, to Formica Corp. Method and apparatus for pattern registration, 3,402,082, 9-17-68, Cl. 156—10.
- Seaman, Norman R., to Domestic Film Products Corp. Method and apparatus for welding fabric with a thermoplastic seam 3,402,089, 9-17-68, Cl. 156—282.
- Searle, Walter W. R., to The Hoover Co. Electric motor drive for washing machines. 3,401,571, 9-17-68, Cl. 74—336.
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- Seufert, Helmut, and D. L. Colbenson. Remote controlled vehicle carburetor choke. 3,401,919, 9-17-68, Cl. 261—64.
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- Shaul, Duane D., to Phillips Petroleum Co. Crystallization separation and purification utilizing fresh feed to reslurry crystals. 3,402,047, 9-17-68, Cl. 99—31.
- Shaver, John A., E. K. Dole, R. S. Osmond, and T. G. Morrissey. Educational system with mobile student learning stations. 3,401,469, 9-17-68, Cl. 35—8.
- Shaw, Don W., to Texas Instruments Inc. Method of fabricating a metal base transistor. 3,401,449, 9-17-68, Cl. 29—577.
- Shea, Madeline K. Girdle band construction. 3,401,699, 9-17-68, Cl. 128—536.
- Shears, Stuart T., to United-Carr Inc. Placket fastener. 3,401,435, 9-17-68, Cl. 24—224.
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- Smith, Aubrey H., and J. P. Truemper, to Eaton Yale and Towne, Inc. Reversible induction motor hoist control. 3,402,335, 9-17-68, Cl. 318—202.
- Smith, Richard D., to Olin Mathieson Chemical Corp. Copper base alloys. 3,402,043, 9-17-68, Cl. 75—157.5.
- Smith, William F., and D. J. Endsley, to The Dow Chemical Co. Hot-melt extrusion coating process. 3,402,086, 9-17-68, Cl. 156—244.
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- Sons, Charles C., Jr., to Caterpillar Tractor Co. Gun mounting for armed vehicles. 3,401,598, 9-17-68, Cl. 89—40.
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- Starr, William C., to Mobil Oil Corp. Solid fuel compositions. 3,402,033, 9-17-68, Cl. 44—17.
- Start, Ernest, and L. Brown, to William Cotton Ltd. Straight bar knitting machines. 3,401,538, 9-17-68, Cl. 66—90.
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- Sutkowski, Walter S. Apparatus for assembling ball bearing devices. 3,401,441, 9-17-68, Cl. 29—201.
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- Takahashi, Yoshiharu. Television monitoring system. 3,402,259 9-17-68, Cl. 178—7.1.
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- Upjohn Co., The: *See—*
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  - Hanson, Harvey, Jr. 3,401,844.
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- Van Der Werff, Bartele, to A. Vuyk & Zonen's Sheepswerven N.V. Capelle a/d Ijssel. Hopper barge. 3,401,661, 9-17-68, Cl. 114—29.
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- Visser, Bernardus F. Method and device for determining the oxygen and carbonic acid content in a gas mixture. 3,401,553, 9-17-68, Cl. 73—27.
- Vlaardingerbroek, Marinus T., and E. G. Dorgelo, to North American Philips Co., Inc. Gridded electron tube with dispenser cathode having coated surface portions. 3,402,314 9-17-68, Cl. 313—348.
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Weyand, John E., J. H. Bush, and P. L. F. Feyling, to Millipore Filter Corp. Stacked filter plates having prefilters and final filters. 3,401,799, 9-17-68, Cl. 210—344.
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Whitehurst, Joe R., to Ideal Industries, Inc. Drafting roll support for textile machine. 3,401,430, 9-17-68, Cl. 19—294.
Wickersham, Doris L. Rocket-assisted ship reorientation system. 3,401,662, 9-17-68, Cl. 114—51.
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Williams, Allison R., deceased, by H. L. Williams, E. W. Bullard, and A. W. Flowers, executors, and K. N. Reid, Jr., R. H. Frazier, and B. F. Wedlock. Vehicle brake control. 3,401,984, 9-17-68, Cl. 303—21.
Williams, Allison R., deceased, by H. L. Williams, E. W. Bullard, and A. W. Flowers, executors, and J. S. Howland and H. H. Richardson. Vehicle brake control. 3,401,985, 9-17-68, Cl. 303—21.
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  Williams, Allison R., Reid, Frazier, and Wedlock. 3,401,984.
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Wood, Howard O.: *See*—
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Zopnek, Hans. Composite glass panel with disparate edging. 3,401,496, 9-17-68, Cl. 52—586.
Zutty, Nathan L., G. M. Bryant, and A. T. Walter, to Union Carbide Corp. Dyeable polypropylene compositions containing alkoxyethyl acrylate copolymers. 3,402,222, 9-17-68, Cl. 260—897.
Zwick, Daan M., to Eastman Kodak Co. Multilayer color photographic elements. 3,402,046, 9-17-68, Cl. 96—74.

CLASSIFICATION OF PATENTS

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NOTE.–First number, class; second number, subclass; third number, patent number

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GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

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PATENTS

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
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TRADEMARKS

NOTICES

Examination

Pursuant to the provisions of Rule 341(c), an examination for persons seeking registration before the United States Patent Office as patent attorneys or agents will be held on Tuesday, Nov. 19, 1968.

With the exception of those former patent examiners for whom the examination is waived, all persons recognized for practice before the Patent Office in patent cases must, pursuant to the noted rule, pass the examination. Those passing the examination do not thereby qualify for recognition for practice before the Patent Office in trademark cases. Recognition for practice in trademark cases is governed by Rule 2.12 of the Trademark Rules of Practice, which does not require the passing of an examination.

This examination will be given under the supervision of the Civil Service Commission, and may be taken in any of the cities in which the Civil Service Commission regularly conducts examinations. Applications to take the examination must be filed in the Patent Office together with a $15 fee not later than Oct. 18, 1968.

Application blanks may be obtained from the Clerk of the Patent Office Committee on Enrollment, Bldg. 3, 11th Floor, Room C16, Crystal Plaza or by mail directed to the attention of the Clerk of the Committee on Enrollment, U.S. Patent Office, Washington, D.C. 20231.

EDWIN L. REYNOLDS,
Aug. 26, 1968. *Chairman, Committee on Enrollment.*

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 13,064 (ORIGINAL BUDWEISER, ETC.), Anheuser-Busch, Incorporated, Lager beer; **Reg. No. 64,125** (BUDWEISER), same, Beer; **Reg. No. 283,985** ("BUDWEISER YEAST" ETC. AND REPRESENTATION OF PAPER WRAPPER), same, Yeast; **Reg. No. 666,367** (BUD), same, Beer, **filed** May 29, 1968, D.C., W.D. Pa. (Pittsburgh), Doc. 68–605 C.A., *Anheuser-Busch, Incorporated* v. *Pittsburgh Brewing Co., Inc. and Du Bois Brewing Co.*

Reg. No. 64,125. (See Reg. No. 13,064.)

Reg. No. 270,656. (See Reg. No. 703,700.)

Reg. No. 283,985. (See Reg. No. 13,064.)

Reg. No. 407,395. (See Reg. No. 571,785.)

Reg. No. 433,518. (See Reg. No. 571,785.)

Reg. No. 511,195. (See 3,104,121.)

Reg. No. 554,811 (DACRON), E. I. du Pont de Nemours and Company, Synthetic polyester fibers for generalized use in the industrial arts; **Reg. No. 555,065**, same, Yarns of synthetic fibers, **filed** May 10, 1968, D.C., S.D.N.Y., Doc. 68–1925, *E. I. du Pont de Nemours & Co.* v. *Leonard Fabrics, Inc.*

Reg. No. 555,065. (See Reg. No. 554,811.)

Reg. No. 571,785 (LAUNDROMAT), Westinghouse Electric Corp., Renting of washing machines to the public in self-

CONDITION OF TRADEMARK APPLICATIONS AS OF JULY 31, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)] 15,049
Date of oldest new application .... June 9, 1967
Date of oldest amended application (filing date) .... June 15, 1964

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	9-7-67	4-21-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	11-1-67	5-16-66
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	10-27-67	6-15-64
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	6-9-67	3-14-66
Renewals (All Classes)	7-1-68	....
Sec. 12(c) Publications (All Classes)	7-1-68	....

Applications filed during the month of July 1968—2,564

Registrations Issued .... 457—No. 856,803 to No. 857,259
Renewals Issued 100

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service laundries; **Reg. No. 433,518**, same, Electric laundry washers; **Reg. No. 407,395** (WESTINGHOUSE LAUNDROMAT), same; **Reg. No. 823,373** (LAUNDROMAT), same, Electric laundry washers and electric dry cleaning machines, **filed** July 19, 1967, D.C. N.D. Fla. (Tampa), Doc. 67–296–T, *Westinghouse Electric Corp.* v. *Leo Chutz, doing business as The Cleen Spot.* Defendant has infringed and permanently enjoined, Oct. 3, 1967.

Reg. No. 592,331 (MANPOWER), Manpower, Inc., Furnishing of its employees on a contract basis to persons or places of business requiring part-time or temporary help, including stenographers, typists, office and factory workers, salespeople, clerks, car unloaders, warehousemen, kitchen and laundry workers, general laborers and others; **Reg. No. 672,305**, same; **Reg. No. 749,437**, same, Newsletter, **filed** Feb. 13, 1968, D.C., W.D. Tex. (San Antonio), Doc. 68–24–SA, *Manpower, Inc.* v. *Manpower Vocational Training, Inc. et al.* Final order of dismissal, May 24, 1968.

Reg. No. 638,121 (MIRACLE–EAR), The Dahlberg Co., Hearing aids; **Reg. No. 809,973** (DAHLBERG), Dahlberg Electronics, Inc., Electronic hearing aids, **filed** June 10, 1968, D.C., S.D. Fla. (Miami), Doc. 68–676–EC, *Dahlberg Electronics, Inc.* v. *John J. Priestes and Thomas Priestes, doing business as Southern Fla. Hearing Service and Magnatone Hearing Aid Mfg. Co.*

Reg. No. 666,367. (See Reg. No. 13,064.)

Reg. No. 672,305. (See Reg. No. 592,331.)

Reg. No. 699,505 (PIXY STIX), Fruzola Company of St. Louis, Fruit-flavored powder packaged in a tubular container to be eaten as a confectionery, **filed** June 4, 1968, D.C., E.D. Pa. (Philadelphia), Doc. 68–11–63, *Sunline Inc.* v. *Florence Candy Co., Inc.*

Reg. No. 703,700 (AVIS), Avis, Inc., Vehicle rental and leasing service, **filed** Apr. 25, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–683–AAH, *Avis Rent A Car System, Inc.* v. *International Temporary Personnel Corp.* (*formerly Avis Girls, Inc.*) *et al.*

Reg. No. 738,222 (SCM AND DESIGN), Smith-Corona Marchant Inc., Typewriters, accounting machines, adding machines, bookkeeping machines, cashiers (machines combining an adding machine and a cash drawer), photocopying machines, telecommunication equipment, data processing machines and calculating machines; **Reg. No. 774,333**, same, Offset duplicator supplies comprising etching solutions, fountain solutions, gum solution, blanket washes, desensitizers and plate conditioners; and electrostatic printing process developing solutions comprising dispersants and replenishers, in Class 6; Printing materials comprising inks, ink ribbons, carbon ribbons, carbon papers, stencils and lacquers, in Class 11; Offset duplicator supplies comprising direct image masters, xerographic masters, positive and negative duplication papers, in Class 26; Hectographic copy papers, electrostatic copy papers, adding machine tapes, and devices for copying pages in bound form, in Class 37; Cotton pads, clean-up mats, offset blankets and zinc lithographic plates, in Class 50, **filed** Apr. 26, 1968, D.C., S.D.N.Y., Doc. 68–C–1710, *SCM Corporation* v. *Repro Products Corporation of New York.*

Reg. No. 749,437. (See Reg. No. 592 331.)

Reg. No. 749,723. (See 3,197,204.)

Reg. No. 774,333. (See Reg. No. 738,222.)

Reg. No. 781,468 (DINGOS AND DESIGN), Acme Boot Company, Inc., Leather boots, **filed** June 10, 1968, D.C., E.D. Wis. (Milwaukee), Doc. 68–C–150, *Acme Boot Company, Inc.* v. *Fred Rueping Leather Company.*

Reg. No. 809,973. (See Reg. No. 638,121.)

Reg. No. 823,373. (See Reg. No. 571,785.)

3,104,121, Nordin and Hall, HIGH PRESSURE SEAL ASSEMBLY; **Reg. No. 511,195** (TC), Thornhill-Craver Company, Inc., Pipe unions and fittings—namely, crosses, T's, elbows, couplings, chokes, wing valves, ball joints, and connections, **filed** May 15, 1968, D.C., S.D. Tex. (Houston), Doc. 68–H–423, *Thornhill-Craver Company* v. *Stonebor, Inc.*

3,197,204, Holkevick, Hudnall and Adams, EXERCISING DEVICE; **Reg. No. 749,723** (EXER-GENIE), Exer-Genie, Inc., Exerciser device—namely, a mechanical device which can be fastened to a support and which includes a flexible member such as a rope which is partially restrained and which can be actuated by a man, woman or child in order to exercise and/or develop various muscles in the user's body, **filed** May 7, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–751–IH, *Exer-Genie, Inc. and E. E. Holkesvick* v. *Alexander G. McDonald et al.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 256,897. The Scam Instrument Corporation, Skokie, Ill. Filed Oct. 21, 1966.

SCAM

Owner of Reg No. 649,622.

Class 21—Electrical Apparatus, Machines, and Supplies

For Annunciator System Apparatus for Indicating the Conditions of Process and Other Variables, Including Alarm Lights, Plug-In Relay Units, Pre-Wired Chassis Units, Control Switches, and Cabinets for Housing the Same; Self-Policing Annunciator Systems and Parts Therefor; Annunciator Equipment for Indicating the On, Off and Defective Operating Conditions of Electric Motors; Electrical Annunciator Instruments and Component Parts Thereof, Such as Multiple Relay Plug-In Containers (Int. Cl. 9).

First use September 1953.

Class 26—Measuring and Scientific Appliances

For Panel Boards With Integrated Diagrams and/or Recording and/or Indicating Instruments, Such as Thermometers, Pressure Gauges, Potentiometers, and the Like, and Component Parts Thereof; Electric and/or Electronic Supervisory Control Systems, Sequence or Selective Process Scanning Systems, Monitoring Systems for Automatically Determining and/or Recording Physical Data Such as Temperatures and Presence and Location of Electric Short Circuits; Co-Ordinated Control and/or Recording Panels Containing Recording Elements and/or Gauges and/or Control Elements; Automatic Process Measuring and Recording Equipment; Instrumentation for Process Control Equipment in Conventional and Nuclear Power Plants, in Oil Refineries, in Paper Mills, in Metal Working Industries, in Food and Chemical Processing; Digital Computer and Data Handling Systems for Industrial and Commercial Applications; and Hospital Information Systems (Int. Cl. 9).

First use July 1, 1963.

SN 266,553. Klein, Schanzlin & Becker Aktiengesellschaft, Frankenthal/Pfalz, Germany. Filed Mar. 13, 1967.

KSB

Owner of German Reg. No. 822,736, dated Oct. 9, 1963.

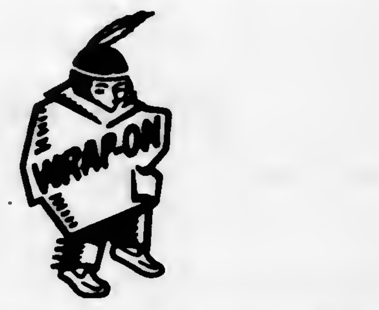
Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Faucets, Slide Valves and Flap Valves, Steam Traps and Fluid Pipe Couplings (Int. Cls. 6 and 11).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pumps—Namely, Rotary Pumps, Reciprocating Pumps and Reciprocating and Rotary-Piston Type Compressors (Int. Cl. 7).

SN 271,397. Wrap-On Company, Inc., Chicago, Ill. Filed May 15, 1967.



Class 6—Chemicals and Chemical Compositions

For Room or House Deodorant (Int. Cl. 5).

First use at least as early as Oct. 14, 1965.

Class 12—Construction Materials

For Insulation for Pipes and Tanks (Int. Cl. 17).

First use at least as early as 1958.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Drain Spout Attachments—Namely, Flexible Perforated Drain Pipe Extensions Designed To Distribute Rain Water Over a Substantial Area of Ground Surface (Int. Cl. 20).

First use at least as early as Oct. 10, 1961.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Heat Tapes and Electric Gutter Cables (Int. Cl. 9).

First use at least as early as 1958.

Class 26—Measuring and Scientific Appliances

For Thermostats (Int. Cl. 9).

First use at least as early as 1958.

Class 52—Detergents and Soaps

For Solvents for Cleaning Drain Pipes and Plumbing Fixtures (Int. Cl. 3).

First use at least as early as July 15, 1964.

SN 271,398. Wrap-On Company, Inc., Chicago, Ill. Filed May 15, 1967.

WRAP-ON

Class 6—Chemicals and Chemical Compositions

For Room or House Deodorant (Int. Cl. 5).

First use as early as Oct. 14, 1965.

Class 12—Construction Materials

For Insulation for Pipes and Tanks (Int. Cl. 17).

First use at least as early as 1958.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Drain Spout Attachments—Namely, Flexible Perforated Drain Pipe Extensions Designed To Distribute Rain Water Over a Substantial Area of Ground Surface (Int. Cl. 20).

First use at least as early as Oct. 10, 1961.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Heat Tapes and Electric Gutter Cables (Int. Cl. 9).
First use at least as early as 1958.

Class 26—Measuring and Scientific Appliances

For Thermostats (Int. Cl. 9).
First use at least as early as 1958.

Class 52—Detergents and Soaps

For Solvents for Cleaning Drain Pipes and Plumbing Fixtures (Int. Cl. 3).
First use at least as early as July 15, 1964.

SN 273,149. Space Research and Development Corporation, d.b.a. P & G Manufacturing Company, Portland, Oreg. Filed May 15, 1967.

TRI-FORM

Class 19—Vehicles

For Chutes for Decelerating Automotive Racing Vehicles (Int. Cl. 12).
First use at least as early as March 1967.

Class 39—Clothing

For Safety Clothing for Automotive Race Drivers—Namely, Suits of Fire Resistant Fabric Including Metalized Fabrics, Protective Hoods, and Driving Gloves (Int. Cl. 9).
First use at least as early as April 1967.

SN 274,280. Hessische Hoelzerwerke Heinrich Schlerf G.m.b.H., Waldmichelbach, Odenwald, Germany. Filed May 22, 1967.

coronet

Owner of German Reg. No. 735,252, dated Mar. 31, 1960.

Class 29—Brooms, Brushes, and Dusters

For Brooms, Brushes, Dusters, Broom Handles and Non-Electric Carpet Sweepers and Floor Polishers (Int. Cl. 21).

Class 50—Merchandise Not Otherwise Classified

For Hangers for Coats, Trousers and Skirts (Int. Cl. 26).

SN 276,337. Metropolitan Wire Goods Corporation, Wilkes-Barre, Pa. Filed July 19, 1967.

METROPOLITAN

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Dish Racks (Int. Cl. 21).
First use as early as 1932.

Class 32—Furniture and Upholstery

For Shelving Units for Industrial and Home Use (Int. Cl. 20).
First use on or about January 1958.

SN 278,790. FS Services, Inc., Bloomington, Ill. Filed Aug. 22, 1967.

FS

Owner of Reg. No. 176,874.

Class 18—Medicines and Pharmaceutical Preparations

For Feed Supplements for Poultry and Livestock (Int. Cl. 5).

Class 46—Foods and Ingredients of Foods

For Animal Feeds for Poultry, Swine, Dairy Cattle, Steers, Rabbits, Lamb, Dogs and Fish (Int. Cl. 31).

First use during August 1955.

SN 281,179. Divcon, Inc., Houston, Tex. Filed Sept. 26, 1967.

DIVCON

Class 100—Miscellaneous

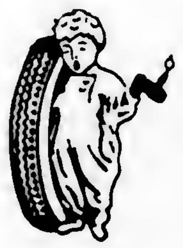
For Services for Offshore and Underwater Industries—Namely, Making Hydrographic and Bottom Surveys, Shallow and Deep Diving and Engineering (Int. Cl. 42).

Class 103—Construction and Repair

For Services for Offshore and Underwater Industries—Namely, Laying Marine Pipelines and Underwater Construction (Int. Cl. 37).

First use 1962.

SN 282,029. Uniroyal, Inc., New York, N.Y. Filed Oct. 9, 1967.



Owner of Reg. Nos. 98,502, 827,448, and others.

Class 4—Abrasives and Polishing Materials

For Car Wax and Cleaner (Int. Cl. 3).
First use Aug. 18, 1967.

Class 6—Chemicals and Chemical Compositions

For Radiator and Cooling System Rust and Corrosion Inhibitor; Radiator and Cooling System Sealer; Windshield Washer Anti-Freeze (Int. Cls. 1 and 17).
First use Sept. 15, 1967.

Class 21—Electrical Apparatus, Machines, and Supplies

For Battery Charger; Voltage Regulators (Int. Cl. 9).
First use Sept. 5, 1967.

Class 52—Detergents and Soaps

For Cleaner for Rubber and Plastic Articles; Radiator and Cooling System Cleaner (Int. Cl. 3).
First use Aug. 18, 1967.

SN 282,274. Curtis Mathes Sales Company, Dallas, Tex. Filed Oct. 11, 1967.

CM CURTIS MATHES

The name "Curtis Mathes" is an officer and director of applicant's company, whose consent is of record.

Class 21—Electrical Apparatus, Machines, and Supplies

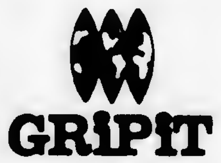
For Television Units, Radio-Receivers, Hi-Fi Components and Parts Thereof (Int. Cl. 9).

Class 36—Musical Instruments and Supplies

For Stereo Phonograph Records Players, Magnetic Tape Recording Units, Tape Play-Back Units (Int. Cl. 9).

First use August 1959.

SN 282,944. Global Adhesives Corporation, Hempstead, N.Y. Filed Oct. 20, 1967.



Class 5—Adhesives

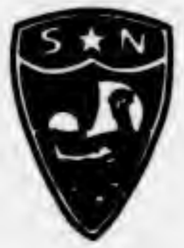
For Spray Adhesive for Use on Floor Tiles, Carpeting, Wallpaper, and Linoleum; and Contact Cement for Bonding Laminates, Plywood, Metals, Rubber and Leather (Int. Cl. 1).

Class 52—Detergents and Soaps

For Cleaning Solvents Used To Clean Brushes, Applicators, Oversprays and Smears of Contact Cement and for Thinning the Same (Int. Cl. 3).

First use Sept. 1, 1967.

SN 284,523. Sons of Norway, Minneapolis, Minn. Filed Nov. 13, 1967.



Class 100—Miscellaneous

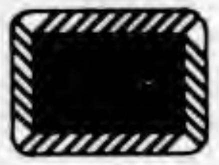
For Fraternal Beneficial Association Services (Int. Cl. 42).

Class 102—Insurance and Financial

For Underwriting Insurance (Int. Cl. 36).

First use during 1895.

SN 284,798. Brooks Manufacturing Company, Cincinnati, Ohio. Filed Nov. 14, 1967.



Class 5—Adhesives

For Putty-Like Reusable Adhesive (Int. Cl. 1).

Class 26—Measuring and Scientific Appliances

For Mechanical Teaching Device on Which Values of Trigonometric Functions May Be Indicated Visually (Int. Cl. 9).

First use Sept. 4, 1967.

SN 286,110. The Dow Chemical Company, Midland, Mich. Filed Dec. 4, 1967.

DIAGNOSTEST

Class 6—Chemicals and Chemical Compositions

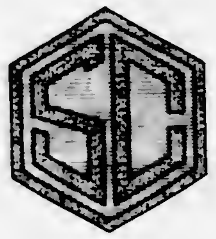
For Chemical Diagnostic Reagents and Standards, and Kits Thereof, for Laboratory and Clinical Use for the Determination of Bilirubin, Cholesterol, Glucose, Hemoglobin, Urea Nitrogen, and Uric Acid in Body Fluids (Int. Cl. 1).

Class 26—Measuring and Scientific Appliances

For Pipettes and Reagent Droppers; Slide Rule Calculator; Constant Temperature Heating Block; Centrifuge; and Photoelectric Colorimeter (Int. Cl. 9).

First use May 24, 1966.

SN 289,147. Shieldalloy Corporation, Newfield, N.J. Filed Jan. 19, 1968.



The drawing is lined for yellow and blue.

Class 1—Raw or Partly Prepared Materials

For Minerals and Ores—Namely, Iron Carbonate, Iron Oxide, Rhodochrosite, Rutile and Zircon Flour (Int. Cls. 1 and 6).
First use July 17, 1967.

Class 14—Metals and Metal Castings and Forgings

For Ferro Alloys, Powdered Metals and Alloys (Int. Cl. 6).
First use July 10, 1967.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 270,668. Ford Motor Company, Dearborn, Mich. Filed May 4, 1967.

FORMOS

For Supported and Unsupported Plastic Film and Sheet (Int. Cl. 17).
First use Aug. 5, 1965.

SN 273,745. Cobon Plastics Corp., Newark, N.J. Filed June 13, 1967.

COBOTHANE

Owner of Reg. Nos. 729,010 and 782,622.
For Plastic Tubing for General Use in the Industrial Arts for Conveying Liquids (Int. Cl. 17).
First use June 1964.

SN 275,556. Seaboard Seed Company, Bristol, Ill. Filed July 7, 1967.

NATIONAL BEAUTIFICATION

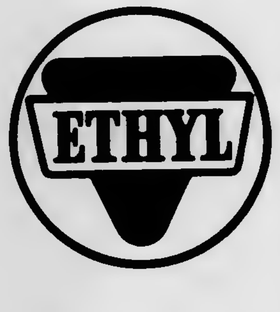
For Grass Seed (Int. Cl. 31).
First use on or before May 11, 1967.

SN 277,369. Nichols & Company, Inc., Boston, Mass. Filed Aug. 2, 1967.

WELLENE

For Polyester Staple (Int. Cl. 22).
First use May 19, 1967.

SN 280,306. Ethyl Corporation, Richmond, Va. Filed Sept. 14, 1967.



Owner of Reg. Nos. 187,410, 399,427, and others.
For Plastic Film and Sheeting for General Use (Int. Cl. 17).
First use Dec. 16, 1963; June 8, 1964, in a different form.

SN 280,939. Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany. Filed Sept. 22, 1967.

ASTRATHERM

Owner of German Reg. No. 723,881, dated Sept. 23, 1958.
For Synthetic Resinous Materials in the Form of Sheets, Film, Plates, Tapes and Blanks for General Use in the Industrial Arts (Int. Cl. 17).

SN 280,940. Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany. Filed Sept. 22, 1967.

CELLON

Owner of German Reg. No. 132,726, dated Nov. 10, 1909.
For Plates, Blocks, Rods, Strips, and Film Made of Synthetic Resinous Material, for General Use in the Industrial Arts (Int. Cl. 17).

SN 282,832. Societe des Usines Chimiques Rhone-Poulenc, Paris, France. Filed Oct. 18, 1967.

RHODEX

Owner of French Reg. No. 721,561, dated Feb. 28, 1967.
For Raw or Partly Prepared Plastic Materials in the Form of Sheets, Leaves, Plates (Int. Cl. 17).

SN 283,375. The Polymer Corporation, Reading, Pa. Filed Oct. 26, 1967.

MC

Owner of Reg. No. 727,606.
For Filled or Unfilled Plastic and Polymeric Materials in the Form of Rods, Plates, Tubes, Discs, Complex Shapes and Other Shapes (Int. Cl. 17).
First use Feb. 8, 1960.

SN 283,546. Nichols & Company, Inc., Boston, Mass. Filed Oct. 27, 1967.

CURLY-Q

For Nylon Monofilament (Int. Cl. 22).
First use Feb. 28, 1967.

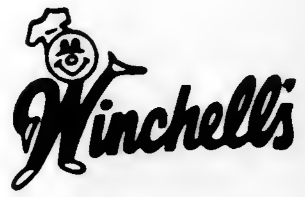
Class 2 — Receptacles

SN 270,684. Ipco Hospital Supply Corporation, New York, N.Y. Filed May 4, 1967.

WP

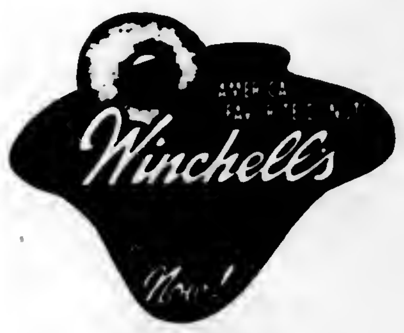
Owner of Reg. Nos. 787,586 and 809,287.
For Polyethylene Waste Liners for Waste Receptacles of the Waste Basket, Hamper and Garbage Can Types (Int. Cl. 20).
First use January 1967.

SN 272,972. Winchell Donut House, Inc., South El Monte, Calif. Filed June 2, 1967.



For Paper Cups (Int. Cl. 16).
First use Apr. 20, 1964.

SN 272,980. Winchell Donut House, Inc., South El Monte, Calif. Filed June 5, 1967.



For Paperboard Boxes and Cartons (Int. Cl. 16).
First use Jan. 12, 1962.

SN 292,353. Continental Can Company, Inc., New York, N.Y. Filed Mar. 4, 1968.

EASY-O

For Metal Cans (Int. Cl. 6).
First use Nov. 21, 1966.

SN 293,456. American Can Company, New York, N.Y. Filed Mar. 18, 1968.

STORYLAND

For Paper and Plastic Cups, Cartons, and Lids and Covers Therefor, Dishes, Plates, Bowls and Trays (Int. Cl. 21).
First use Dec. 21, 1966.

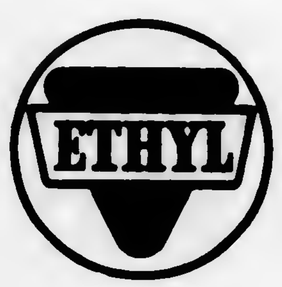
Class 4 — Abrasives and Polishing Materials

SN 300,229. Pappagallo, Inc., New York, N.Y. Filed June 12, 1968.

Owner of Reg. No. 678,919.
For Shoe Creams and Polishes (Int. Cl. 3).
First use at least as early as September 1966.

Class 5 — Adhesives

SN 280,310. Ethyl Corporation, Richmond, Va. Filed Sept. 14, 1967.



Owner of Reg. Nos. 187,410, 399,427, and others.
For Pressure Sensitive Adhesive Tape (Int. Cl. 17).
First use Oct. 22, 1964.

SN 284,282. Rohm and Haas Company, Philadelphia, Pa. Filed Nov. 7, 1967.

TUFFAK

Owner of Reg. No. 715,610.
For Combination of an Adhesive With a Backing of Synthetic Plastic Film or Sheet (Int. Cl. 17).
First use on or about Nov. 3, 1967.

Class 6 — Chemicals and Chemical Compositions

SN 273,282. Imperial Chemical Industries Limited, Millbank, London, England. Filed June 7, 1967.

SILCOLAPSE

Owner of British Reg. No. 817,361, dated Feb. 23, 1961.
For Silicone Anti-Foams (Int. Cl. 1).

SN 273,283. Imperial Chemical Industries Limited, Millbank, London, England. Filed June 7, 1967.

SILCOLOID

Priority claimed under Sec. 44(d) on British Reg. No. 908,837, dated May 1, 1967.
For Transparent Potting and Embedding Compound for Electrical and Electronic Equipment (Int. Cl. 17).

SN 278,223. Leffingwell Chemical Company, Brea, Calif. Filed Aug. 14, 1967.

RYNO-TOX

For Insecticide Comprising Ryania Alkaloid (Int. Cl. 5).
First use June 26, 1964.

SN 281,694. Fairmount Chemical Co., Inc., Newark, N.J. Filed Oct. 3, 1967.

DEOXY-SOL

For Chemical Hydrazine Solution for Use as a Corrosive Inhibitor in Steam Boilers (Int. Cl. 2).
First use Dec. 5, 1956.

SN 287,103. Sandoz, Inc., Hanover, N.J. Filed Dec. 18, 1967.

FOROCEL

For Dyestuffs for Dyeing and Printing Mixtures of Polyester and Cellulosic Fibers (Int. Cl. 2).
First use Nov. 30, 1967.

SN 287,239. Uniroyal, Inc., New York, N.Y. Filed Dec. 19, 1967.

OXAF

For Vulcanization Accelerator (Int. Cl. 1).
First use at least as early as 1940.

SN 287,901. Diamond Crystal Salt Company, St. Clair, Mich. Filed Jan. 2, 1968.

P.M.

For Rock Salt for Use in Water Conditioning Equipment (Int. Cl. 1).
First use Oct. 30, 1967.

SN 294,563. Stellad Products, Inc., Indianapolis, Ind. Filed Apr. 1, 1968.

SPAK

For Liquid Concentrate To Prevent Lime Scale Build-Up and To Control Obnoxious Algae Odors in Manually Water-Filled Humidifiers (Int. Cl. 2).
First use June 17, 1967.

SN 295,084. Standard Spray and Chemical Company, Lakeland, Fla. Filed Apr. 8, 1968.

MICRO-SPERSE

For Fungicides and Insecticides (Int. Cl. 5).
First use at least as early as Nov. 18, 1966.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 294,606. Ake Svensson, Executor of the Estate of Erik Nassils, Stockholm, Sweden. Filed Apr. 1, 1968.

RATOS

Owner of Swedish Reg. No. 60,776, dated Feb. 1, 1946.
For Smoking Pipes (Int. Cl. 34).

SN 300,713. Lane Limited, New York, N.Y. Filed June 18, 1968.

DISTINCTION

For Smoking Pipes (Int. Cl. 34).
First use January 1964.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 286,670. Hercules Incorporated, Wilmington, Del. Filed Dec. 11, 1967.

POWER-GEL

For Nitroglycerin Dynamite High Explosive (Int. Cl. 13).
First use Aug. 23, 1966.

SN 289,304. Hercules Incorporated, Wilmington, Del. Filed Jan. 22, 1968.

FLO-RITE

For Pourable, Water-Resistant, Water-Based Slurry Explosive (Int. Cl. 13).
First use Oct. 23, 1967.

SN 289,305. Hercules Incorporated, Wilmington, Del. Filed Jan. 22, 1968.

GELAPRIME

For Nitroglycerin Based High Performance Dynamite (Int. Cl. 13).
First use Dec. 1, 1967.

Class 10 — Fertilizers

SN 279,458. Continental Oil Company, Ponca City, Okla. Filed Aug. 31, 1967.

YANKEE

For Blended Fertilizer Solids (Int. Cl. 1).
First use July 27, 1967.

SN 284,090. S. S. Kresge Company, Detroit, Mich. Filed Nov. 3, 1967.

SK

For Lawn Fertilizers and Lawn Foods (Int. Cl. 1).
First use on or before Aug. 1, 1967.

SN 295,345. Lite-Weight Products, Inc., Kansas City, Kans. Filed Apr. 10, 1968.

CAPRI

For Bone Meal, Rose Food, 10–6–4 Fertilizer and 20–10–5 Fertilizer (Int. Cl. 1).
First use on or about Mar. 15, 1967.

SN 295,346. Lite-Weight Products, Inc., Kansas City, Kans. Filed Apr. 10, 1968.

TOWN AND COUNTRY

For Bone Meal, Rose Food, 10–6–4 Fertilizer and 20–10–5 Fertilizer (Int. Cl. 1).
First use on or about Mar. 15, 1967.

Class 11 — Inks and Inking Materials

SN 284,468. General Aniline & Film Corporation, New York, N.Y. Filed Nov. 9, 1967.

gaf

Owner of Reg. Nos. 509,124, 744,454, and others.
For Inking Materials, Particularly Typewriter Ribbons, Carbon Paper and Carbon Transfer Sheets (Int. Cl. 16).
First use November 1966.

Class 12 — Construction Materials

SN 271,392. Synfibrit GmbH, Glarus, Switzerland. Filed May 12, 1967.

ZELLSAND

Owner of Swiss Reg. No. 215,994, dated Dec. 10, 1965.
For Insulation Material for Buildings and Construction—Namely, Batts, Granules and Fibers (Int. Cl. 17).

SN 288,652. Toyad Corporation, Latrobe, Pa. Filed Jan. 11, 1968.

yellowjack

For Molded Urethane Pipe Fitting Insulation Covers (Int. Cl. 17).
First use Sept. 28, 1967.

SN 290,457. Acme Highway Products Corporation, Buffalo, N.Y. Filed Feb. 7, 1968.

ACMA

For Joint Seals of Resilient Material for Use in Grooves in Highway and Bridge Pavements, Bridge Pads of Resilient Material for Placing Under Beams on Piers or Supports of Bridges or Similar Structures (Int. Cls. 17 and 19).
First use Nov. 21, 1967.

SN 290,463. Borneo Sumatra Trading Company, Inc., Rutherford, N.J. Filed Feb. 7, 1968.

BORSUMY PLY

Without waiving its common law rights herein, applicant makes no claim for the word "Ply" apart from the mark as shown.
For Plywood Panels (Int. Cl. 19).
First use Dec. 1, 1967.

SN 296,718. H. H. Robertson Company, Pittsburgh, Pa. Filed Apr. 26, 1968.

MAGNA-RIB

Owner of Reg. Nos. 775,211, 778,949, and 782,674.
For Profiled Building Sheets Fabricated From Metal or Plastic (Int. Cls. 6 and 19).
First use Apr. 19, 1968.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 271,470. Heinz Nathanson, Inc., New York, N.Y. Filed May 15, 1967.

Princess

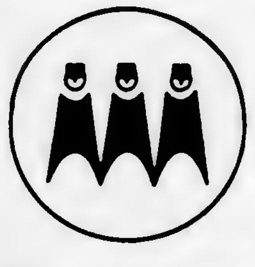
For Shower Curtain Hooks (Int. Cl. 20).
First use May 12, 1965.

SN 282,644. Vistron Corporation, Cleveland, Ohio. Filed Oct. 16, 1967.

DRAVE

For Hardware and Plumbing and Steam-Fitting Supplies Specifically, Plastic Pipe (Int. Cl. 17).
First use prior to Jan. 7, 1964.

SN 287,007. Hamilton C. DeJong, d.b.a. Safety Brothers, South Pasadena, Calif. Filed Dec. 15, 1967.



For Bathroom Fixtures and Accessories—Namely, Bath Benches, Shower Chairs, Wall Grip Bars, Tub Grip Bars, and Toilet Seats (Int. Cl. 11).
First use Mar. 1, 1967.

SN 289,618. Screw Machine Products Company, Denver, Colo. Filed Jan. 25, 1968.

WEDGON

Owner of Reg. No. 612,474.
For Hose Fittings and Couplings (Int. Cl. 6).
First use Jan. 1, 1953.

SN 294,558. Sands Point Manufacturing Co. Inc., Great Neck, N.Y. Filed Apr. 1, 1968.

NATURAL SATINA

For Faucets Having a Special Finish (Int. Cl. 11).
First use on or about Oct. 2, 1967.

Class 14 — Metals and Metal Castings and Forgings

SN 271,162. Materials Research Corporation, Orangeburg, N.Y. Filed May 10, 1967.

MARZ

For Metals and Alloys of High Purity (Int. Cl. 6).
First use Mar. 1, 1967.

SN 294,330. Universal Marion Corporation, Chester, Pa. Filed Mar. 27, 1968.

STATO

For Anchors (Int. Cl. 6).
First use Dec. 23, 1959.

Class 15 — Oils and Greases

SN 275,278. Machinery Lubricants, Incorporated, Boston, Mass. Filed July 3, 1967.

SILVER-CHIP

For Cutting Oils and Grinding Compounds (Int. Cl. 4).
First use Aug. 29, 1945.

SN 282,009. J. A. Sexauer Mfg. Co., Inc., White Plains, N.Y. Filed Oct. 6, 1967.

SEXAUER

Owner of Reg. Nos. 438,879, 558,236, and others.
For Faucet and Valve Stem Lubricating Grease, and for Liquid Penetrating Oil Nut Loosener (Int. Cl. 4).
First use during 1921.

SN 288,922. Louket Markets Inc., Jersey City, N.J., assignee of Supermarkets Oil Company, Inc., Cranford, N.J. Filed Jan. 16, 1968.

PATHMARK

For Lubricants—Namely, Oils (Int. Cl. 4).
First use Dec. 22, 1967.

SN 289,303. Jon Harrison, d.b.a. Slickslide Company, Dearborn Heights, Mich. Filed Jan. 22, 1968.

SLICKSLIDE

For Automotive and Industrial Lubricants (Int. Cl. 4).
First use Jan. 4, 1968.

SN 289,506. Harwick Standard Chemical Company, Akron, Ohio. Filed Jan. 24, 1968.

LUBREX

Owner of Reg. No. 344,546.
For Mold Release Composition (Int. Cl. 4).
First use on or about Jan. 1, 1936.

Class 16 — Protective and Decorative Coatings

SN 267,662. The Polymer Corporation, Reading, Pa. Filed Mar. 27, 1967.

COR-BOND

For Heat-Fusible, Synthetic Resinous Coating Material in the Form of Dry, Free-Flowing Powders (Int. Cl. 2).
First use July 1, 1966.

SN 285,811. Astrachem Polymer Corporation, Chicago, Ill. Filed Nov. 29, 1967.

ASTRA-TONE

For Alkyd Resin Rubber Base Paint (Int. Cl. 2).
First use May 12, 1967.

SN 286,175. Pratt & Lambert-Inc., Buffalo, N.Y. Filed Dec. 4, 1967.

PERMALIZE

For Enamelized House Paint (Int. Cl. 2).
First use Nov. 2, 1967.

SN 286,624. Artex Hobby Products, Inc., Lima, Ohio. Filed Dec. 11, 1967.

XTRA-GLO

For Embossing Glitter Coatings Dispensable From Containers for Decorating and Marking Fabrics, Metal, Glass, Wood, Paper and the Like (Int. Cl. 2).
First use Oct. 7, 1967.

SN 293,050. Rohm and Haas Company, Philadelphia, Pa. Filed Mar. 12, 1968.

TUFFAK

Owner of Reg. No. 715,610.
For Clear Lacquers, Sealers, and Top-Coats for Coating and Sealing Synthetic Plastic Film or Sheet (Int. Cl. 2).
First use on or about Jan. 10, 1968.

Class 17—Tobacco Products

SN 258,317. Theodorus Niemeijer N.V., d.b.a. Theodorus Niemeyer N.V., Groningen, Netherlands. Filed Nov. 9, 1966.

SAMSON

Owner of Dutch Reg. No. 99,770, dated May 4, 1949.
For Tobacco, Cigars and Cigarettes (Int. Cl. 34).

Class 18—Medicines and Pharmaceutical Preparations

SN 272,470. Bristol-Myers Company, New York, N.Y. Filed May 26, 1967.

WITCH PILLS

Applicant disclaims the word "Pills" apart from the mark as shown.
For Table for Relief of Menstrual Pain (Int. Cl. 5).
First use Mar. 22, 1967.

SN 274,405. Bowman, Inc., Canton, Ohio. Filed June 21, 1967.

HYONATOL

For Pharmaceutical Preparation for Use as a Sedative and Antispasmodic (Int. Cl. 5).
First use July 1, 1963.

SN 274,639. Merck & Co., Inc., Rahway, N.J. Filed June 23, 1967.

MERUVAX

For Medicinal Antigenic Preparation for Use as an Immunologic Agent (Int. Cl. 5).
First use May 23, 1967.

SN 275,449. Merck & Co., Inc., Rahway, N.J. Filed July 6, 1967.

EQUIZOLATE

Owner of Reg. No. 843,108.
For Anthelmintic Prepartaion for Veterinary Use (Int. Cl. 5).
First use June 26, 1967.

SN 275,820. American Cyanamid Company, Wayne, N.J. Filed July 12, 1967.

M285

For Antidote for an Analgesic Preparation for Veterinary Use (Int. Cl. 5).
First use July 3, 1967.

SN 275,821. American Cyanamid Company, Wayne, N.J. Filed July 12, 1967.

M99

For Analgesic Preparation for Veterinary Use (Int. Cl. 5).
First use July 3, 1967.

SN 277,623. Bristol-Myers Company, New York, N.Y. Filed Aug. 7, 1967.

ACHIEVE-MINT

Owner of Reg. No. 846,947.
For Analgesic (Int. Cl. 5).
First use Apr. 4, 1967.

SN 278,091. Ciba Limited, Basel, Switzerland. Filed Aug. 11, 1967.

ORIMETRENE

Owner of Swiss Reg. No. 223,355, dated Feb. 24, 1967.
For Preparation for Treatment of Menstrual Disorders (Int. Cl. 5).

SN 278,120. Merck & Co., Rahway, N.J. Filed Aug. 11, 1967.
Owner of Reg. No. 728,798.

THIPRAZOLE

For Veterinary Medicinal Preparation Particularly Useful as an Anthelmintic (Int. Cl. 5).
First use July 31, 1967.

SN 278,272. Bristol-Myers Company, New York, N.Y. Filed Aug. 15, 1967.

PANAPEN

Owner of Reg. No. 837,808.
For Antibiotic (Int. Cl. 5).
First use Mar. 16, 1967.

SN 278,276. Bristol-Myers Company, New York, N.Y. Filed Aug. 15, 1967.

PRO-POLYCILLIN

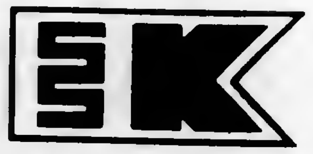
Owner of Reg. No. 733,962.
For Antibiotic (Int. Cl. 5).
First use Jan. 30, 1967.

SN 278,277. Bristol-Myers Company, New York, N.Y. Filed Aug. 15, 1967.

BRISGELS

Owner of Reg. No. 810,081.
For Antibiotic (Int. Cl. 5).
First use Mar. 16, 1967.

SN 284,092. S. S. Kresge Company, Detroit, Mich. Filed Nov. 3, 1967.



For Vitamins (Int. Cl. 5).
First use on or before Sept. 20, 1967.

SN 284,567. American Cyanamid Company, Wayne, N.J. Filed Nov. 13, 1967.

PERFOLIN

Owner of Reg. No. 437,608.
For Multivitamin Preparation (Int. Cl. 5).
First use Aug. 30, 1946.

SN 284,593. Bristol-Myers Company, New York, N.Y. Filed Nov. 13, 1967.

UNWIND

For Sleep Aid Analgesic (Int. Cl. 5).
First use Oct. 2, 1967.

SN 284,796. Bentex Pharmaceutical Company, Houston, Tex. Filed Nov. 14, 1967.

ASCORBICAP

For Time Disintegrating Vitamin Capsules (Int. Cl. 5).
First use Nov. 9, 1967.

SN 284,887. Beach Products, Inc., Tampa, Fla. Filed Nov. 15, 1967.

UROQID-ACID

Owner of Reg. No. 733,673.
For Pharmaceutical Preparations for Treatment of Urinary Infections (Int. Cl. 5).
First use at least as early as Apr. 6, 1964.

SN 284,888. Beach Products, Inc., Tampa, Fla. Filed Nov. 15, 1967.

K-PHOS

For Pharmaceutical Preparations for Urine Acidification (Int. Cl. 5).
First use at least as early as Jan. 30, 1962.

SN 285,214. Eli Lilly and Company, Indianapolis, Ind. Filed Nov. 20, 1967.

KEFGLYCIN

For Antibiotic Preparation (Int. Cl. 5).
First use May 15, 1967.

SN 285,461. A. H. Robins Company, Incorporated, Richmond, Va. Filed Nov. 22, 1967.

DONNASEP-MP

Owner of Reg. No. 762,988.
For Pharmaceutical Preparation Used as a Urinary Antiseptic (Int. Cl. 5).
First use Oct. 20, 1967.

SN 286,631. Bristol-Myers Company, New York, N.Y. Filed Dec. 11, 1967.

DINOCYCLINE

For Antibiotic (Int. Cl. 5).
First use Nov. 10, 1967.

SN 286,632. Bristol-Myers Company, New York, N.Y. Filed Dec. 11, 1967.

TRI-SINUS

For Pharmaceutical Product for Symptomatic Relief of Nasal Congestion Due to Pollen Allergies and Colds (Int. Cl. 5).
First use Nov. 10, 1967.

SN 286,633. Bristol-Myers Company, New York, N.Y. Filed Dec. 11, 1967.

PAN-SINUS

For Pharmaceutical Product for Symptomatic Relief of Nasal Congestion Due to Pollen Allergies and Colds (Int. Cl. 5).
First use Nov. 10, 1967.

SN 286,736. USV Pharmaceutical Corporation, New York, N.Y. Filed Dec. 11, 1967.

HISTASPAN

For Antihistaminic for Symptomatic Relief of Allergic Manifestations in Vasomotor Rhinitis, Hay Fever, Urticara, and Other Allergic Conditions (Int. Cl. 5).
First use Dec. 1, 1967.

SN 287,052. The Upjohn Company, Kalamazoo, Mich. Filed Dec. 15, 1967.

LINCOCIN FORTE

Owner of Reg. No. 760,244 and 827,777.
For Veterinary Antibiotic Steroid Preparation (Int. Cl. 5).
First use Oct. 19, 1967.

SN 293,620. Bristol-Myers Company, New York, N.Y. Filed Mar. 19, 1968.

ACHIEVE

Owner of Reg. No. 846,947.
For Antacid Preparation (Int. Cl. 5).
First use Oct. 24, 1967.

SN 298,288. Menley & James Laboratories Ltd., Philadelphia, Pa. Filed May 16, 1968.

VITYMES

Owner of Reg. No. 577,549.
For Vitamin Supplement (Int. Cl. 5).
First use Apr. 30, 1968.

SN 298,289. Menley & James Laboratories, Ltd., Philadelphia, Pa. Filed May 16, 1968.

VITIME

Owner of Reg. No. 577,549.
For Vitamin Supplement (Int. Cl. 5).
First use Apr. 30, 1968.

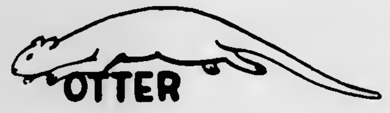
SN 299,529. American Home Products Corporation, New York, N.Y. Filed June 3, 1968.

BONUS

For Analgesic (Int. Cl. 5).
First use May 15, 1968.

Class 19—Vehicles

SN 265,655. Rofra Products, Morton Grove, Ill. Filed Feb. 28, 1967.



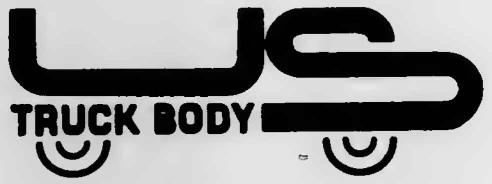
For Surf and Diving Water Gliders and Towed Water Skimming Vehicles (Int. Cl. 12).
First use Feb. 9, 1966.

SN 289,835. Roll-A-Long Inc., South El Monte, Calif. Filed Jan. 29, 1968.

ROLL-A-LONG

For Camper and House Units To Be Mounted or Molded on Truck Frames and/or Pick-Up Truck Beds and House and Camp Trailers (Int. Cl. 12).
First use Nov. 27, 1967.

SN 289,934. U.S. Truck Body Co., Inc., Long Island City, N.Y. Filed Jan. 30, 1968.



Applicant disclaims the term "Truck Body," and the representation of the wheels apart from the mark as shown.
For Truck Bodies and Parts Therefor (Int. Cl. 12).
First use March 1965.

SN 291,614. Larson Industries, Inc., St. Paul, Minn. Filed Feb. 21, 1968.

RETRACTA-WALL

For Travel Trailer (Int. Cl. 12).
First use Jan. 24, 1968.

SN 292,380. The Huntsman, Inc., Chetopa, Kans. Filed Mar. 4, 1968.

HUNTSMAN

For Camper Bodies for Automotive Vehicles (Int. Cl. 12).
First use September 1959.

SN 292,405. National Independent Distributor Associates, Inc., Minneapolis, Minn. Filed Mar. 4, 1968.

VISTA

For Bicycles (Int. Cl. 12).
First use as early as Jan. 31, 1968.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 269,780. The Okonite Company, Passaic, N.J. Filed Apr. 21, 1967.

OKOVOX

Owner of Reg. Nos. 527,570, 663,078, and others.
For Electrical Cable and Insulating Material Therefor (Int. Cls. 9 and 17).
First use Mar. 13, 1945.

SN 270,512. The Simco Company, Inc., Lansdale, Pa. Filed May 2, 1967.

CHARGEMASTER

For Generators of Static Electricity—Namely, High Voltage Devices for Electrostatically Charging Materials, Sheets, Webs, and Parts Without Direct Contact (Int. Cl. 7).
First use on or about Dec. 7, 1966.

SN 271,079. Standard Fire Alarm & Signal Inc., Jenkintown, Pa. Filed May 9, 1967.

ESCAPE-ALARM

For Automatic Heat-Responsive Fire Alarm Unit (Int. Cl. 9).
First use Apr. 28, 1967.

SN 272,215. The Ross Manufacturing Company, Montgomery, Pa. Filed May 23, 1967.

MILROS

For Transistor Mounting Pads and Encapsulating Shells and Headers for Use in Electronic Circuitry (Int. Cl. 9).
First use Mar. 9, 1967.

SN 277,809. Transcient Protection Systems, Inc., d.b.a. Transtector Systems, Alhambra, Calif. Filed Aug. 8, 1967.

TRANSTECTOR

For Electrical Circuit Protectors (Int. Cl. 9).
First use July 10, 1967.

SN 284,003. Fargo Mfg. Company, Inc., Poughkeepsie, N.Y. Filed Nov. 2, 1967.

FARGO-FIST

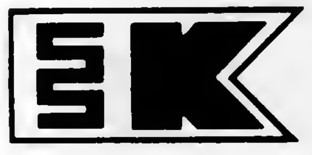
For Electrical Connector Assemblies (Int. Cl. 9).
First use on or about Oct. 5, 1967.

SN 284,104. Reynolds Metals Company, Richmond, Va. Filed Nov. 3, 1967.

ALUMINEX

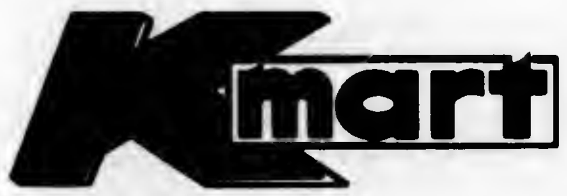
For Sheathed Aluminous Metal Electrical Conductor Cable (Int. Cl. 9).
First use at least as early as Sept. 29, 1967.

SN 284,207. S. S. Kresge Company, Detroit, Mich. Filed Nov. 6, 1967.



For Indoor and Outdoor Lights (Int. Cl. 11).
First use on or before Oct. 15, 1967.

SN 284,208. S. S. Kresge Company, Detroit, Mich. Filed Nov. 6, 1967.



Owner of Reg. No. 743,912 and others.
For Indoor and Outdoor Lights (Int. Cl. 11).
First use on or before Oct. 15, 1967.

SN 288,720. Solar Light Manufacturing Co., Melrose Park, Ill. Filed Jan. 12, 1968.

SOL-U-LINE

For Fluorescent Lighting Fixtures (Int. Cl. 11).
First use Nov. 20, 1967.

SN 289,046. Tandberg of America, Inc., Pelham, N.Y. Filed Jan. 17, 1968.

STENTOFON

Owner of Reg. No. 789,611.
For Intercommunication Systems (Int. Cl. 9).
First use Jan. 8, 1968.

SN 289,405. Ithaco, Inc., Ithaca, N.Y. Filed Jan. 23, 1968.

AUTO-GAIN

For Electronic Amplifiers (Int. Cl. 9).
First use on or about Apr. 1, 1967.

SN 289,728. Target Stores, Inc., Minneapolis, Minn. Filed Jan. 26, 1968.

TARGET

Owner of Reg. No. 816,107 and others.
For Automotive Electrical Equipment—Namely, Storage Batteries (Int. Cl. 9).
First use on or about May 1, 1962.

SN 297,412. International Television Corporation, Los Angeles, Calif. Filed May 6, 1968.

ITC

For Speakers, Speaker Cabinets, Speaker Systems, Amplifiers, Preamplifiers, Crossover-Networks, Head Phones, Microphones; Electronic Components—Namely, Capacitors, Resistors, Jacks, Plugs, Knobs, Switches and Test Leads (Int. Cl. 9).
First use at least as early as 1957.
Subj. to Intf. with SN 295,212.

Class 22—Games, Toys, and Sporting Goods

SN 252,703. DBA Products Co., Inc., Deerfield, Ill. Filed Aug. 12, 1966.

E-Z GRIP

For Preparation Containing Rosin for Application to the Hands To Prevent Slipping of Objects Held in the Hands During Athletic Activities (Int. Cl. 28).
First use January 1960.

SN 267,915. Burich & Capalia, San Pedro, Calif. Filed Mar. 30, 1967.

WEEL-N-DEEL

For Equipment Sold as a Unit for Playing a Hoop and Stick Type Game (Int. Cl. 28).
First use July 9, 1966.

SN 282,721. Raybestos-Manhattan, Inc., Passaic, N.J. Filed Oct. 17, 1967.

U-23

For Billiard Cushions (Int. Cl. 28).
First use at least as early as 1922.

SN 282,722. Raybestos-Manhattan, Inc., Passaic, N.J. Filed Oct. 17, 1967.

K 66

For Billiard Cushions (Int. Cl. 28).
First use at least as early as 1922.

SN 282,723. Raybestos-Manhattan, Inc., Passaic, N.J. Filed Oct. 17, 1967.

S-38

For Billiard Cushions (Int. Cl. 28).
First use at least as early as 1922.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 230,794. Crysto-Products Co., Inc., Auburn, N.Y. Filed Oct. 21, 1965.

CRYSTOLITE

For Cutting Boards (Int. Cl. 21).
First use Jan. 15, 1963.

SN 258,894. J. Brooksbank Limited, Skipton, England. Filed Nov. 17, 1966.

ELBO

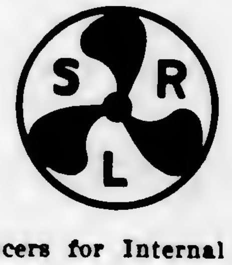
Owner of British Reg. No. B899,406, dated Sept. 14, 1966.
For Lug Straps and Connector Straps Made of Leather, Elastomeric or Plastic Material for Textile Machinery (Int. Cl. 7).

SN 262,982. Universal Manufacturing Company, Hudson, Iowa. Filed Jan. 20, 1967.

UNI-LOADER

For Earth Mover and Loading Vehicles and Attachments Therefor (Int. Cl. 12).
First use Dec. 12, 1963.

SN 263,963. Submarine Research Laboratories, Incorporated, Everett, Mass. Filed Feb. 3, 1967.



For Exhaust Silencers for Internal Combustion Engines (Int. Cl. 7).
First use May 1, 1962.

SN 264,587. Rex Chainbelt Inc., Milwaukee, Wis. Filed Feb. 13, 1967.

SLURRY-MATIC

For Machine for Mixing and Spreading Material on Roadways for Maintenance Purposes (Int. Cl. 7).
First use Apr. 5, 1965.

SN 265,891. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed Mar. 3, 1967.

AUTOMATIC

Owner of Reg. No. 552,636.
For Gasoline Powered Load Transporting and Lifting Trucks (Int. Cl. 12).
First use during the last part of the year 1954.

SN 266,082. Andrew L. Pansini, d.b.a. Jandy Products, San Rafael, Calif. Filed Mar. 6, 1967.

LEAF-MASTER

For Swimming Pool Cleaning Equipment—Namely, Hand-Operated, Waterpowered Devices Adapted To Remove Leaves and Other Debris From the Bottom of Swimming Pools and To Skim Surface-Borne Dirt From Such Pools (Int. Cl. 8).
First use Aug. 14, 1959.

SN 266,668. Landers Machine Company, Fort Worth, Tex. Filed Mar. 14, 1967.

QUICK-CHANGE

For Machines for Converting Animal Feeds Into Pellet Form and for the Components Thereof (Int. Cl. 7).
First use June 26, 1962.

SN 267,243. Gray Company, Inc., Minneapolis, Minn. Filed Mar. 21, 1967.

BULLDOG

For Air Powered Pumps for Pumping Coating Materials, Cleaning Materials and the Like (Int. Cl. 7).
First use Mar. 10, 1958.

SN 268,538. Union Associates, Incorporated, Fitchburg, Mass. Filed Apr. 6, 1967.

AUTO-LOK

For Winder Shafts for Use With Winding Cores on Which Flexible Sheet Material Such as Paper, Plastic or Textiles Are Wound (Int. Cl. 7).
First use Mar. 14, 1967.

SN 269,073. Hardee Manufacturing Company, Inc., Loris, S.C. Filed Apr. 13, 1967.

TIGER

For Grass Clipper Attachments for Tractors and the Like (Int. Cl. 12).
First use Oct. 14, 1966.

SN 270,049. Dazey Products Company, Kansas City, Mo. Filed Apr. 26, 1967.

Cameo

For Can Openers, Combination Can Openers and Knife Sharpeners, and Ice Crushers (Int. Cl. 8).
First use Jan. 14, 1967.

SN 277,559. Kewanee Machinery & Conveyor Company, Kewanee, Ill. Filed Aug. 4, 1967.

TILLAGESAVER

For Farm Equipment—Namely, Tillers (Int. Cl. 7).
First use Feb. 1, 1967.

SN 277,911. Textron, Inc., Providence, R.I., assignee of Gorham Corporation, Providence, R.I. Filed Aug. 9, 1967.

FLOWER SONG

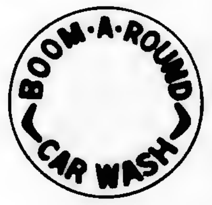
Owner of Reg. No. 689,086.
For Stainless Steel Flatware (Int. Cl. 8).
First use May 18, 1967.

SN 280,126. Writon Manufacturing Co., Inc., Leeds, Ala. Filed Sept. 11, 1967.

RAM-JET

For Refuse Packers (Int. Cl. 7).
First use May 1, 1967.

SN 283,655. H & F Manufacturing Co., Inc., Little Rock, Ark. Filed Oct. 30, 1967.



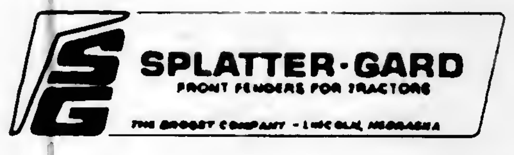
No claim is made to the words "Car Wash."
For Coin-Operated Car Wash Equipment (Int. Cl. 9).
First use on or about Jan. 15, 1967.

SN 285,172. Morey Machinery Co., Inc., Astoria, N.Y. Filed Nov. 20, 1967.

SACEM

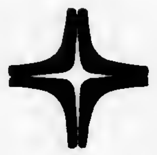
For Horizontal Boring Mills, Milling Machines, and Shapers (Int. Cl. 7).
First use Nov. 2, 1962.

SN 286,808. Probst Company, Lincoln, Nebr. Filed Dec. 13, 1967.


SG
SPLATTER-GARD
FRONT FENDERS FOR TRACTORS
THE PROBST COMPANY · LINCOLN, NEBRASKA

The words "Splatter-Gard" and "Front Fenders for Tractors" and "The Probst Company, Lincoln, Nebraska" are disclaimed apart from the mark as shown.
For Fenders for Tractors (Int. Cl. 12).
First use Mar. 1, 1967.

SN 289,218. Sperry Rand Corporation, New York, N.Y. Filed Jan. 19, 1968.



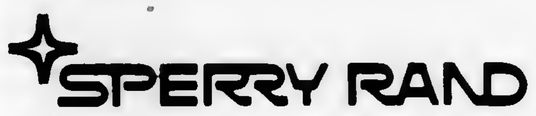
For Electric Dry Shavers and Parts Thereof (Int. Cl. 8).
First use Nov. 2, 1967.

SN 289,219. Sperry Rand Corporation, New York, N.Y. Filed Jan. 19, 1968.

SPERRY RAND

For Electric Dry Shavers and Parts Thereof (Int. Cl. 8).
First use Nov. 2, 1967.

SN 289,220. Sperry Rand Corporation, New York, N.Y. Filed Jan. 19, 1968.



For Electric Dry Shavers and Parts Thereof (Int. Cl. 8).
First use Nov. 2, 1967.

SN 289,221. Sperry Rand Corporation, New York, N.Y. Filed Jan. 19, 1968.

SPERRY RAND

For Electric Dry Shavers and Parts Thereof (Int. Cl. 8).
First use Nov. 2, 1967.

Class 26—Measuring and Scientific Appliances

SN 278,263. Hayakawa Denki Kogyo Kabushiki Kaisha, d.b.a. Hayakawa Electric Co., Ltd., Abeno-ku, Osaka, Japan. Filed July 17, 1967.

COMPET

Owner of Japanese Reg. No. 709,987, dated June 13, 1966.
For Electronic Desk Calculators (Int. Cl. 9).
First use Mar. 18, 1964; in commerce Mar. 22, 1965.

SN 283,426. Cambridge Instrument Company, Inc., Ossining, N.Y. Filed Oct. 26, 1967.

CAMSAFE

For Electrical Safety Testing and Monitoring Instruments—Namely, Power Line Leakage Indicators (Int. Cl. 9).
First use June 15, 1967.

SN 289,893. The Hays Corporation, Michigan City, Ind. Filed Jan. 30, 1968.

MAGNACAL

For Thickness Measuring Gauge, and Parts and Components Thereof, Including a Traversing Structure and a Control Console (Int. Cl. 9).
First use on or before Jan. 1, 1966.

Class 27—Horological Instruments

SN 280,598. Kabushiki Kaisha Hattori Tokeiten, Chuo-ku, Tokyo, Japan. Filed Sept. 18, 1967.

BELL-MATIC

Owner of Japanese Reg. No. 749,520, dated July 31, 1967.
For Watches (Int. Cl. 14).

Class 28—Jewelry and Precious-Metal Ware

SN 283,858. Bonell Creations, Inc., Valley Stream, N.Y. Filed Nov. 1, 1967.

ENGAGE-O-TACK

The representation of a ring is disclaimed apart from the mark as shown.
For Jewelry—Namely, Tie Pins (Int. Cl. 14).
First use Sept. 5, 1967.

Class 30—Crockery, Earthenware, and Porcelain

SN 257,457. Brinn's China and Glassware Co., Pittsburgh, Pa. Filed Oct. 28, 1966.

BRINN'S

For Ceramic Ornamental Houseware and Ceramic Tableware—Namely, China Dishes, Plates, Cups, Saucers, Platters, Vases, Salt and Pepper Shakers, Sugars and Creamers, Canisters, Oven Bakingware and Florist Pottery Such as Platters, Pots, and Jardinieres (Int. Cl. 21).
First use 1934.

SN 292,504. Shenango Ceramics, Inc., New Castle, Pa. Filed Mar. 5, 1968.

GALLANTE

For China Dinnerware (Int. Cl. 21).
First use Nov. 7, 1966.

Class 31—Filters and Refrigerators

SN 271,653. Peter Spence & Sons Limited, Widnes, England. Filed May 16, 1967.

ZEOLOX

Owner of British Reg. No. 854,964, dated Oct. 5, 1963.
For Crystalline Zeolites Being Molecular Sieves for Catalytic, Ion Exchange, Gas Separation and Selective Absorbency Uses (Int. Cl. 1).

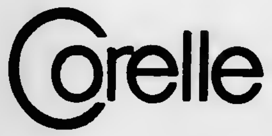
SN 299,621. Becton, Dickinson and Company, East Rutherford, N.J. Filed June 4, 1968.

ENVIRALOK

For Laminar Flow Equipment—Namely, Filter Framing (Int. Cl. 11).
First use Nov. 22, 1967.

Class 33 — Glassware

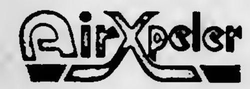
SN 285,398. Corning Glass Works, Corning, N.Y. Filed Nov. 22, 1967.



For Glass Tableware (Int. Cl. 21).
First use Nov. 7, 1967.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 279,912. Ammerman Company, Inc., Stillwater, Minn. Filed Sept. 8, 1967.



Owner of Reg. No. 562,656.
For Air Ventilating, Circulating, and Heating—Namely, Powered Exhausters, Powered Ventilators, Powered Circulators, Powered Heat Exchangers, and Natural Draft Ventilators (Int. Cl. 11).
First use on or about Dec. 1, 1948.

Class 36 — Musical Instruments and Supplies

SN 281,556. Coral Records, Inc., New York, N.Y. Filed Oct. 2, 1967.

CORAL

Owner of Reg. Nos. 543,313, 661,922, and others.
For Musical Instruments—Namely, Electric Guitars and Sitars, and Amplifiers and Speakers for Such Instruments (Int. Cls. 9 and 13).
First use May 22, 1967, on the musical instruments.

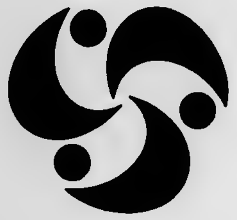
SN 289,868. Thomas J. Alifano, d.b.a. Tommy Wilde, Brooklyn, N.Y. Filed Jan. 30, 1968.

FERUS

"Ferus" is a Latin word meaning "wild."
For Phonograph Records (Int. Cl. 9).
First use Dec. 19, 1967.

Class 37 — Paper and Stationery

SN 277,827. Fisher Pen Company, Forest Park, Ill. Filed Aug. 8, 1967.



For Writing Instruments and Writing Instrument Supplies—Namely, Ball Point Pens, Ball Point Pen Refills, Marking Pens, and Pencils (Int. Cl. 16).
First use July 26, 1967.

SN 282,857. Zellerbach Paper Company, San Francisco, Calif. Filed Oct. 18, 1967.

TANDEM

For Writing Tablets (Int. Cl. 16).
First use prior to Mar. 26, 1962.

SN 286,438. Miller Cardboard Corp., New York, N.Y. Filed Dec. 7, 1967.

PRESENTATION MAT MOUNTS

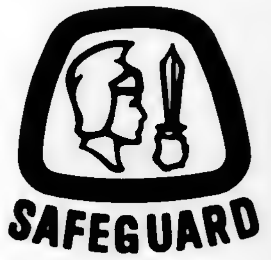
Applicant disclaims the words "Mat Mounts" apart from the mark as shown.
For Two-Piece, Cut-Out and Embossed, Matboard Inserts for Picture Frames (Int. Cl. 16).
First use Oct. 10, 1962.

SN 287,105. Scripto, Inc., Atlanta, Ga. Filed Dec. 18, 1967.

WORDPICKER

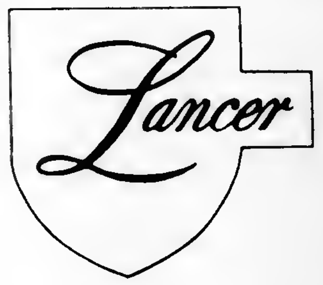
For Fiber Tip Pens (Int. Cl. 16).
First use Nov. 15, 1967.

SN 288,475. Safeguard Business Systems Corporation, Lansdale, Pa. Filed Jan. 10, 1968.



Owner of Reg. Nos. 324,416, 630,447, and others.
For Accounting Forms and Equipment—Namely, Checks, Statements, Ledgers, Summaries and Journals, Envelopes, Indices, Posting Boards, Holding Trays and Binders (Int. Cl. 16).
First use Dec. 14, 1967.

SN 291,794. Vornado, Inc., Garfield, N.J. Filed Feb. 23, 1968.



For Ball Point Pens and Mechanical Pencils (Int. Cl. 16).
First use on or about June 1, 1963.

SN 292,252. Barkley Corporation, Chicago, Ill. Filed Mar. 1, 1968.

PERMA-FLEX

For Hanging File Folders (Int. Cl. 16).
First use Feb. 13, 1968.

SN 292,265. A. W. Faber-Castell Pencil Co., Inc., Newark, N.J. Filed Mar. 1, 1968.

CANDY-STRIPE

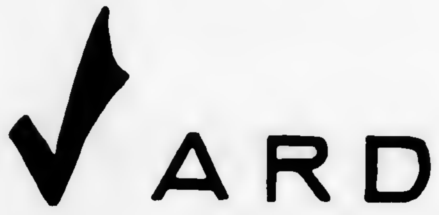
For Wood Encased, Pencil Simulated Erasers (Int. Cl. 16).
First use Aug. 17, 1967.

SN 292,671. Barkley Corporation, Chicago, Ill. Filed Mar. 7, 1968.

PERMATEX

For Card Guides and File Guides (Int. Cl. 16).
First use Oct. 16, 1966.

SN 292,900. Edpco, Inc., New York, N.Y. Filed Mar. 11, 1968.



For Combined Check and Mailing Piece; and Voucher (Int. Cl. 16).
First use Nov. 10, 1967.

SN 293,083. Fox River Paper Corporation, Appleton, Wis. Filed Mar. 13, 1968.

LONDON LIME

Applicant disclaims "London" apart from the mark as used.
For Writing Paper (Int. Cl. 16).
First use Feb. 26, 1968.

SN 293,413. Sperry Rand Corporation, New York, N.Y. Filed Mar. 15, 1968.

SALEMASTER

For Visible Indexes, Loose Leaf Binders, Index Cards and Sheets and Index Card Holders (Int. Cl. 16).
First use Mar. 18, 1939.

SN 294,215. Star Office Supply Co., Inc., New York, N.Y. Filed Mar. 26, 1968.

CHIFFON

Owner of Reg. Nos. 778,941 and 807,277.
For Marking Pens—Namely, Felt Tip Markers, Fiber Tip Markers, and Fine Point Markers (Int. Cl. 16).
First use Jan. 8, 1968.

SN 294,264. Curtis 1000 Inc., St. Paul, Minn. Filed Mar. 27, 1968.

"CURT ERASE"

For Carbon Letter Sets (Int. Cl. 16).
First use Jan. 22, 1968.

SN 294,296. Med-Dent Publishing Co., San Francisco, Calif. Filed Mar. 27, 1968.

INSUR-A-BILL

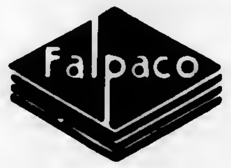
For Paper and Stationery Items Consisting of Insurance Billing Forms (Int. Cl. 16).
First use June 1966.

SN 294,370. Brown Company, New York, N.Y. Filed Mar. 28, 1968.

PAPERMANIA

For Writing and Printing Papers (Int. Cl. 16).
First use Feb. 19, 1968.

SN 294,484. Falulah Paper Company, Fitchburg, Mass. Filed Mar. 29, 1968.



Owner of Reg. Nos. 143,601 and 501,647.
For Coated Cardboard—viz, Coated Blanks, Coated Lithograph Blanks, Coated Railroad Blanks, Coated Car Sign Boards, and Coated Post Card Boards (Int. Cl. 16).
First use Mar. 15, 1968.

SN 299,625. Concel Inc., New York, N.Y. Filed June 4, 1968.

DOESKIN

Owner of Reg. Nos. 509,697, 651,754, and others.
For Bathroom Tissue, Facial Tissue, Luncheon and Dinner Napkins and Towels (Int. Cl. 16).
First use Mar. 1, 1938.

Class 38 — Prints and Publications

SN 265,230. MBM Company, Mason City, Iowa, assignee of The Vernon Company, Newton, Iowa. Filed Feb. 21, 1967.

TIMELY II

For Calendar Attachments for Watch Bands (Int. Cl. 16).
First use Jan. 20, 1967.

SN 273,153. Institute for Scientific Information, Inc., Philadelphia, Pa. Filed June 6, 1967.

ECI

For Encyclopedia Published Yearly on New Chemical Compounds (Int. Cl. 16).
First use May 29, 1967.

SN 275,057. Litton Industries, Inc., Beverly Hills, Calif. Filed June 29, 1967.

PROBLEMATICAL RECREATIONS

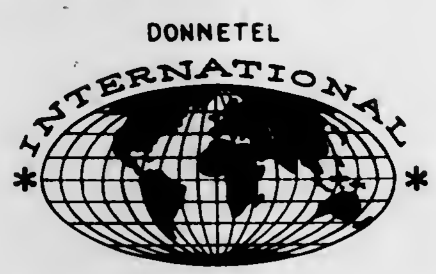
For Column Containing Mathematical Puzzles Appearing in Publications From Time to Time (Int. Cl. 16).
First use on or about Jan. 14, 1957.

SN 276,324. Lorenz Publishing Company, Dayton, Ohio. Filed July 19, 1967.

HERITAGE MUSIC PRESS

Applicant makes no claim to the words "Music Press" apart from the mark as shown.
For Sheet Music Published From Time to Time (Int. Cl. 16).
First use May 15, 1967.

SN 277,269. The Reuben H. Donnelley Corporation, New York, N.Y. Filed Aug. 1, 1967.



Applicant disclaims the word "International" apart from the mark as shown.

For Classified Telephone Directories (Int. Cl. 16).

First use on or before Feb. 1, 1967.

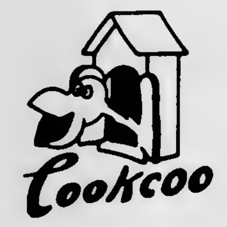
SN 279,868. McLellen Smith, Washington, D.C. Filed Sept. 7, 1967.

FROM POTOMAC'S MUDDY BANKS

For News Media Column Devoted Primarily to Comment on National and International Political Affairs (Int. Cl. 16).

First use July 27, 1967.

SN 281,361. Michael B. Cook and Gail Cook (joint owners), Bow, N.H. Filed Sept. 28, 1967.



For Greeting Cards (Int. Cl. 16).

First use Aug. 28, 1967.

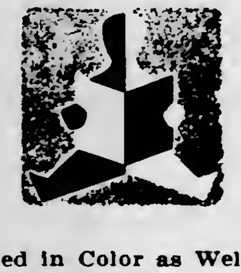
SN 281,473. Robert S. Kachler, Buena Park, Calif. Filed Sept. 29, 1967.

RACING GRAPHIS

For Magazine Published Periodically (Int. Cl. 16).

First use Sept. 8, 1967.

SN 282,837. Taylor Publishing Company, Dallas, Tex. Filed Oct. 18, 1967.



For Pictures Printed in Color as Well as Educational Elementary School Books (Int. Cl. 16).

First use July 1, 1966.

SN 283,354. R. W. and May Orrell (firm), Cardinal, Va. Filed Oct. 25, 1967.

OUR COUNTRY

For Newsletter (Int. Cl. 16).

First use October 1955.

SN 285,596. Unistrut Corporation, Wayne, Mich. Filed Nov. 24, 1967.

CHANNEL CHAT

For Manufacturer's House Organ, Distributed Periodically to Employees, Dealers, Distributors, Service Centers and Customers (Int. Cl. 16).

First use March 1955.

SN 285,737. Harcourt, Brace & World, Inc., New York, N.Y. Filed Nov. 28, 1967.

HARVEST

For Soft Cover or Paper Bound Books (Int. Cl. 16).

First use on or about Aug. 1, 1955.

SN 294,706. Harold E. Hofmeister and Frank Hofmeister (joint owners), Chinchilla, Pa. Filed Apr. 2, 1968.

KENNY KEGLER!

For Newspaper Feature (Int. Cl. 16).

First use at least as early as Mar. 17, 1968.

SN 295,889. Insurance Publications, Inc., West Des Moines, Iowa. Filed Apr. 18, 1968.

LEADER'S MAGAZINE

Applicant disclaims the word "Magazine" other than as part of the mark sought to be registered.

For Magazine Devoted to Matters of Interest to the Insurance Industry Which Are Published and Circulated at Regular Intervals (Int. Cl. 16).

First use July 1938.

SN 299,917. Looart Press, Inc., Colorado Springs, Colo. Filed June 7, 1968.

THE HOLLY TREE

For Greeting Cards (Int. Cl. 16).

First use May 28, 1968.

Class 39 — Clothing

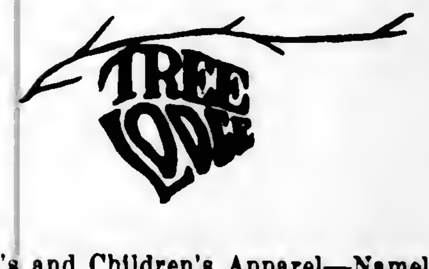
SN 269,583. Superior Safety Shoe Company, Bedford, Ohio. Filed Apr. 19, 1967.

SUPERIOR

For Safety Shoes for Men (Int. Cl. 25).

First use in or about February 1953.

SN 269,642. Raymond L. Dayan, New York, N.Y. Filed Apr. 20, 1967.



For Women's and Children's Apparel—Namely, Sleepwear, Blouses, Slacks, Shorts, Robes, Uniforms, Lingerie, Knits, and Jackets (Int. Cl. 25).

First use on or about Apr. 7, 1967.

SN 270,410. Plymouth Wholesale Corporation, New York, N.Y. Filed May 1, 1967.

FASHION DESIGNERS GROUP

The word "Fashion" is disclaimed apart from the mark as shown. Owner of Reg. No. 841,279.

For Ladies' Hosiery (Int. Cl. 25).

First use Nov. 21, 1966.

SN 271,143. Fun Frills, Inc., New York, N.Y: Filed May 10, 1967.

PUPPET POCKET

For Children's Dresses (Int. Cl. 25).

First use Apr. 26, 1967.

SN 272,120. Volk Bros. Company, Dallas, Tex. Filed May 22, 1967.

MARTHA PEALE

The name "Martha Peale" is fictitious and does not identify a particular individual.

For Ladies' Dresses, Suits and Shoes (Int. Cl. 25).

First use June 13, 1966.

SN 272,121. Volk Bros. Company, Dallas, Tex. Filed May 22, 1967.

MALCOLM TAY

"Malcolm Tay" is a fictitious name and does not identify a particular individual.

For Ladies' Coats and Suits (Int. Cl. 25).

First use June 23, 1966.

SN 273,363. The Baylis Brothers Co., Cincinnati, Ohio. Filed June 8, 1967.

POLLY FLINDERS

The name "Polly Flinders" is fanciful.

For Dresses, Blouses, Pinafores, Kerchiefs, Bonnets and Panties (Int. Cl. 25).

First use Aug. 1, 1946.

SN 276,658. Ervin H. Fishman, Yeadon, Pa. Filed July 24, 1967.

HARVEST

For Ladies' Hosiery (Int. Cl. 25).

First use May 1, 1967.

SN 277,229. The Tailored Woman, Inc., New York, N.Y. Filed July 31, 1967.

ENDURANCE FURS

The word "Furs" is disclaimed apart from the mark as shown.

For Fur Apparel, Cloth Coats and Jackets Trimmed in Fur (Int. Cl. 25).

First use July 16, 1967.

SN 277,258. Cambria-Clover Mercantile Co., Inc., Philadelphia, Pa. Filed Aug. 1, 1967.

JOHN SMITH

The name "John Smith" is fanciful.

For Athletic Shoes—Namely, Basketball, Volleyball and Gym Shoes (Int. Cl. 25).

First use on Nov. 10, 1965.

SN 278,670. Daisy Mills, Inc., High Point, N.C. Filed Aug. 21, 1967.

THE SPOILER

For Hosiery (Int. Cl. 25).

First use Aug. 15, 1967.

SN 281,128. Spalding Knitting Mills, Inc., Griffin, Ga. Filed Sept. 25, 1967.

DOVE-DOWN

Owner of Reg. No. 595,611.

For Ladies', Children's and Men's Hosiery (Int. Cl. 25).

First use Feb. 9, 1932.

SN 281,785. Empress Chinchilla Breeders Cooperative, Incorporated, New York, N.Y. Filed Oct. 4, 1967.

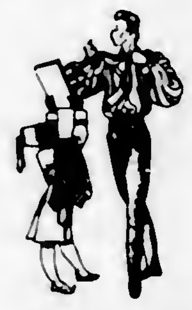
EMPRESS CHINCHILLA

The word "Chinchilla" is disclaimed apart from the mark as shown. Owner of Reg. No. 666,425.

For Processed Chinchilla Pelts Made Up Into Fur Garments—Namely, Stoles, Capes, Coats, Jackets, Boas, and Hats (Int. Cl. 25).

First use September 1954.

SN 284,633. Dominique France, Inc., New York, N.Y. Filed Nov. 13, 1967.

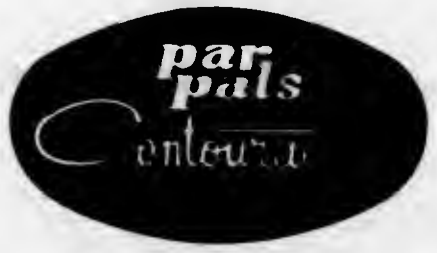


Applicant disclaims the representation of the neckties apart from the mark as shown. The pictorial representation of the two figures is fanciful. Owner of Reg. Nos. 569,911 and 573,625.

For Men's Ties, Mufflers, Handkerchiefs, Shirts (Both Sport and Dress), Jackets, Slacks, Hats, Sweaters, Socks, Suspenders, Belts, Shoes, Slippers, Underwear, Pajamas, Robes, Gloves and Raincoats (Int. Cl. 25).

First use Sept. 21, 1949.

SN 286,360. Frank Noone Shoe Co., Inc., Rockland, Mass. Filed Dec. 6, 1967.



Applicant disclaims the words "Featuring Genuine Insole" apart from the mark as shown. Owner of Reg. No. 834,360.

For Shoes (Int. Cl. 25).

First use Nov. 17, 1967.

SN 286,963. Sprouse-Reitz Co., Inc., Portland, Oreg. Filed Dec. 14, 1967.

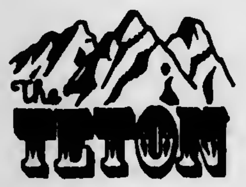
ROSE TEEN

Applicant disclaims the word "Teen" apart from the mark as shown. Owner of Reg. Nos. 779,497 and 833,726.

For Women's Hosiery (Int. Cl. 25).

First use Oct. 31, 1967.

SN 288,147. Woolrich Woolen Mills, Woolrich, Pa. Filed Jan. 5, 1968.



For Garments—Namely, Coats and Hoods Therefor Made With Nylon Outershells and Insulated Linings Containing Down (Int. Cl. 25).

First use Sept. 1, 1967.

SN 288,206. Fleet Street Ltd., New York, N.Y. Filed Jan. 5, 1968.

FLEET STREET

For Raincoats (Int. Cl. 25).

First use June 1966.

SN 288,240. Strawbridge & Clothier, Philadelphia, Pa. Filed Jan. 5, 1968.

REG-IS-TRED

For Nurses' Shoes (Int. Cl. 25).

First use Dec. 16, 1941.

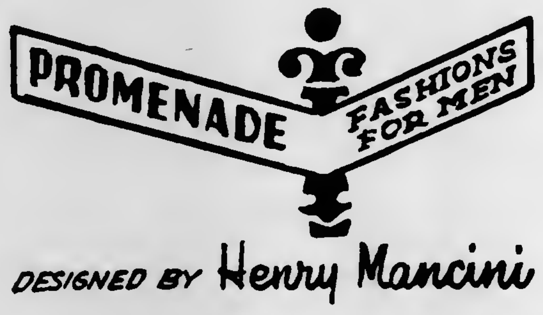
SN 288,441. Mar-Sai Manufacturing Co., Inc., Brooklyn, N.Y. Filed Jan. 9, 1968.

MAR-SAI *Magic*

For Health and Beauty Aids—Namely, Rain Bonnets, and Hairdo Protectors, Wind Bonnets, Wrap-Around Gowns, Hair Cutting Capes and Foot Thongs (Int. Cl. 25).

First use February 1956.

SN 288,470. Hy-Grade Sportswear Co., Inc., New York, N.Y. Filed Jan. 10, 1968.



"Henry Mancini" is the name of an employee of the applicant corporation whose consent is of record. Applicant disclaims the slogan "Fashions for Men" apart from the mark as shown. Owner of Reg. Nos. 589,889, 648,975, and 703,585.

For Men's Clothes—Namely, Men's Sport Coats, Casual Coats and Suits, Slacks, and Sport Suits, Shirt Coats, Tuxedos, Full Dress Summer Formals and Waistcoats (Int. Cl. 25).

First use Oct. 2, 1967.

SN 288,499. The Eastern Isles, Inc., New York, N.Y. Filed Jan. 10, 1968.

POLYFLEECE

For Women's Robes, Coats, Dusters and Sleep Shirts (Int. Cl. 25).

First use Dec. 28, 1967.

SN 291,183. Puritan Fashions Corporation, New York, N.Y. Filed Feb. 15, 1968.

Judy Gibbs

The name "Judy Gibbs" is fictitious.

For Women's Wear—Namely, Dresses and Dress Ensembles (Int. Cl. 25).

First use July 20, 1962.

SN 291,217. Zayre Corp., Natick, Mass. Filed Feb. 15, 1968.

ANGEL FAIR

For Panties, Hosiery, Tights, Slips, Polo Shirts, Gowns and Gloves (Int. Cl. 25).

First use Jan. 13, 1967.

SN 291,504. Genesco Inc., Nashville, Tenn. Filed Feb. 20, 1968.

ACCENT SHAPE

For Men's Suits, Coats and Slacks (Int. Cl. 25).

First use Feb. 2, 1968.

SN 292,213. The Manhattan Shirt Company, New York, N.Y. Filed Feb. 29, 1968.

CUSTOM LIMITED

For Outer Dress and Sport Shirts (Int. Cl. 25).

First use Dec. 7, 1967.

SN 294,443. Weldon, Inc., New York, N.Y. Filed Mar. 29, 1968.

FLIRT SHIRT

Applicant disclaims the word "Shirt" apart from the mark as shown.

For Men's and Women's Sleepwear (Int. Cl. 25).

First use on or about Mar. 11, 1968.

SN 295,995. Variety Supply Company, Clara City, Minn. Filed Apr. 19, 1968.

PAUL BUNYAN

"Paul Bunyon" is a legendary character. Owner of Reg. Nos. 279,562, 505,228, and others.

For Shoes (Int. Cl. 25).

First use at least as early as Mar. 1, 1930.

SN 298,512. Quality Furs-Manos & Block, Inc., New York, N.Y. Filed May 20, 1968.

QMB

For Women's Outerwear Consisting Entirely on in Part of Fur—Namely, Coats, Jackets, Hats, Boots, Stoles, Scarves, Skirts and Dresses (Int. Cl. 25).

First use at least as early as June 1, 1964, on coats.

SN 298,513. Quality Furs-Manos & Block, Inc., New York, N.Y. Filed May 20, 1968.

For Women's Outerwear Consisting Entirely or in Part of Fur—Namely, Coats, Jackets, Hats, Boots, Stoles, Scarves, Skirts and Dresses (Int. Cl. 25).

First use at least as early as June 1, 1964.

SN 300,508. The Alligator Company, Inc., St. Louis, Mo. Filed June 17, 1968.

GOLD ALLIGATOR

Owner of Reg. Nos. 75,365, 706,041 and 841,267.

For All Weather Coats for Men and Women (Int. Cl. 25)

First use in or about March 1967.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 274,026. Yoshichu Co., Ltd., Nakagyo-ku, Kyoto, Japan. Filed June 5, 1967.

SILCOTIQUE

For Fabrics for Making Into Blouses and Dresses and the Like (Int. Cl. 24).

First use at least as early as February 1967.

SN 285,537. Bess Forman, New York, N.Y. Filed Nov. 24, 1967.

BUTTERFLY BESS

For Children's Blankets (Int. Cl. 24).

First use Sept. 7, 1967.

SN 286,679. Indian Head Inc., New York, N.Y. Filed Dec. 11, 1967.

LUTESONG

For Fabrics in the Piece of Polyester Fibers (Int. Cl. 24).

First use Aug. 31, 1967.

SN 287,974. Westwood Textile Manufacturing, Inc., Southbridge, Mass. Filed Jan. 2, 1968.

W.N.K.

For Textile Fabrics for Making Women's Dresses, Coats, Suits, Sportswear and the Like (Int. Cl. 24).

First use Oct. 1, 1967.

SN 296,233. Fonda Manufacturing Corporation, Fonda, N.Y. Filed Apr. 23, 1968.

Fonda

CHINCHILLATTA

For Fabrics by the Yard and by the Piece for Making Men's, Women's and Children's Outerwear and Sportswear, Dresses, Toys, Dolls, Slippers, Boot and Shoe Linings (Int. Cl. 24).

First use Oct. 13, 1967; 1895 as to "Fonda."

SN 299,531. Deering Milliken, Inc., New York, N.Y. Filed June 3, 1968.

STABILON

Owner of Reg. No. 572,871.

For Scrim Fabrics of Cotton and Synthetic Fibers and Combinations Thereof (Int. Cl. 24).

First use Apr. 17, 1968.

Class 44—Dental, Medical, and Surgical Appliances

SN 272,118. United Aircraft Corporation, East Hartford, Conn. Filed May 22, 1967.

TELAMEDIC

For Apparatus for Transmitting, Receiving or Simulating Physiological Signals (Int. Cl. 10).

First use Apr. 26, 1967.

Class 45—Soft Drinks and Carbonated Waters

SN 286,731. Sunline, Inc., St. Louis, Mo. Filed Dec. 11, 1967.

SERENDIPITY

For Flavor Base Compatible With Water for Making Soft Drinks (Int. Cl. 32).

First use Nov. 30, 1967.

Class 46—Foods and Ingredients of Foods

SN 254,318. Benito Villamarin Prieto, Seville, Spain. Filed Sept. 12, 1966.

CAPEA

The word "Capea" means in Spanish the action of flinging a cloak at a bull. Owner of Spanish Reg. No. 444,409, dated Jan. 22, 1965.

For Olives, Stuffed or Unstuffed, in Barrels, Bottles or Cans (Int. Cl. 29).

SN 254,672. Claudel, Paris, France. Filed July 9, 1968.

CLAUDEL

For Cheese, Butter, Condensed Milk, Bottled Milk, Milk in Containers, Powdered Milk, Flavored Milk, Cake and Cookies (Int. Cls. 29 and 30).
First use Dec. 31, 1953; in commerce Dec. 31, 1958.

SN 264,035. DCA Food Industries, Inc., New York, N.Y. Filed Feb. 6, 1967.

KETTLE FRESH

Applicant disclaims the word "Kettle" apart from the mark as shown.
For Jams and Jellies Sold Exclusively to Manufacturers of Cakes, Cookies and Pastries To Be Used as Fillings Therein (Int. Cl. 29).
First use Oct. 6, 1966.

SN 269,419. Glacier Packing Co., Inc., Sanger, Calif. Filed Apr. 18, 1967.

MINIFRUIT

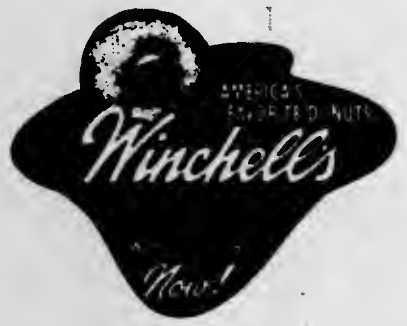
For Individual Servings of Fruit in Plastic Cups (Int. Cl. 29).
First use Feb. 3, 1967.

SN 272,574. Burger King Restaurants, Inc., Miami, Fla. Filed May 29, 1967.

YUMBO

For Sandwiches (Int. Cl. 29).
First use on or about Mar. 1, 1967.

SN 272,981. Winchell Donut House, Inc., South El Monte, Calif. Filed June 5, 1967.



The terms "America's Favorite Donuts" and "Watch Us Grow . . . Now!" and the pictorial representation of the doughnut are disclaimed apart from the mark as shown.
For Doughnuts, Pastries, French Pastries, Cream-Filled Bars, Turnovers, Cinnamon Rolls, Raised Dough Bakery Products Such as Pastries and Sweet-Rolls (Int. Cl. 30).
First use Jan. 12, 1962.

SN 275,772. Miller's Pre-Pared Potato Company, Inc., Blue Island, Ill. Filed July 11, 1967.

MILLER'S

Owner of Reg. No. 732,803.
For Frozen Onion Rings, Frozen Potato Pancakes and Fresh Peeled and Sliced Potatoes (Int. Cls. 29, 30, and 31).
First use October 1948.

SN 278,291. Evangeline Pepper & Food Products, Inc., St. Martinville, La. Filed Aug. 15, 1967.

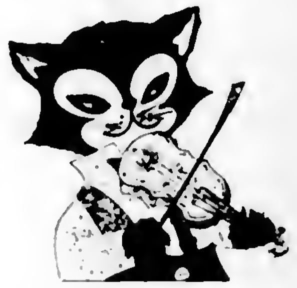
Owner of Reg. Nos. 515,311, 736,512, and others.
For Worcestershire Sauce, Hot Chili Cartilias, Barbecue Sauce, Sweet Cherry Peppers, Hot Cherry Peppers, Hot Jalapenos, Mild Italian Peppers, Hot Ladyfinger Peppers, Pure Distilled Vinegar, Pure Prepared Mustard, Hot Banana Peppers, Tabasco Peppers (Int. Cl. 30).
First use Dec. 1, 1912; Mar. 10, 1965, as to "Evangeline."

SN 279,589. Aubrey D. Copeland, d.b.a. The Stone-Buhr Milling Co., Seattle, Wash. Filed Aug. 22, 1967.

STONE-BUHR

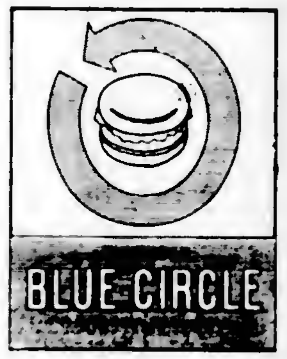
For Wheat Flour and Wheat Cereals, Rolled Oats, Graham Flour, Coarse Graham, Rye Flour, Yellow Corn Meal, Cracked Wheat, Cracked Oats, Soy Flour, Wheat Germ and Brown Rice (Int. Cl. 30).
First use Sept. 4, 1945.

SN 280,148. Castle & Cooke, Inc., Honolulu, Hawaii. Filed Sept. 12, 1967.



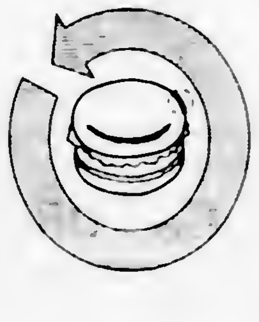
For Cat Food (Int. Cl. 31).
First use at least as early as Apr. 27, 1960.

SN 282,334. Wometco Blue Circle, Inc., Knoxville, Tenn. Filed Oct. 12, 1967.



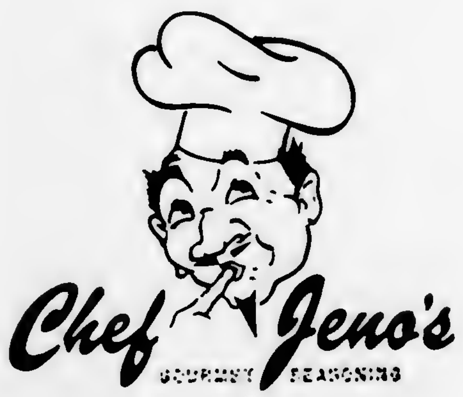
The drawing is lined for blue. Owner of Reg. Nos. 738,022, 833,035, and 841,360.
For Bakery Products—Namely, Cake, Doughnuts, Pies, and Sweet Rolls; Food Beverages in Containers—Namely, Coffee, Milk Shakes, Hot Chocolate, Milk, and Buttermilk; Sandwiches; and Food Products in Prepared Ready-To-Eat Form—Namely, Cheeseburgers, Hamburgers, and Frankfurters in Sandwich Form, Sausages, French Fried Potatoes, and Onion Rings (Int. Cls. 29 and 30).
First use Apr. 21, 1967.

SN 282,335. Wometco Blue Circle, Inc., Knoxville, Tenn. Filed Oct. 12, 1967.



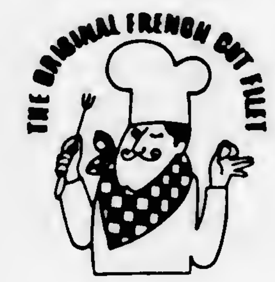
The drawing is lined for blue.
For Bakery Products—Namely, Cake, Doughnuts, Pies, and Sweet Rolls; Food Beverages in Containers—Namely, Coffee, Milk Shakes, Hot Chocolate, Milk, and Buttermilk; Sandwiches; and Food Products in Prepared Ready-To-Eat Form—Namely, Cheeseburgers, Hamburgers, and Frankfurters in Sandwich Form, Sausages, French Fried Potatoes, and Onion Rings (Int. Cls. 29 and 30).
First use Apr. 21, 1967.

SN 282,774. Eugene Cooper, d.b.a. Chef Jeno's Seasonings, San Diego, Calif. Filed Oct. 18, 1967.



Applicant disclaims the term "Gourmet Seasoning" apart from the mark as shown. The words "Chef Jeno's" and the chef design do not identify a particular living individual.
For Food Seasonings (Int. Cl. 30).
First use Aug. 27, 1967.

SN 284,631. Dolphin Seafoods, Inc., Cleveland, Ohio. Filed Nov. 13, 1967.


THE ORIGINAL FRENCH CUT FILET

The words "The Original French Cut Filet" are disclaimed apart from the mark as shown.
For Frozen Breaded Fish Fillets (Int. Cl. 29).
First use on or about Oct. 3, 1967.

SN 285,840. Avelino Maldonado, d.b.a. Lacriolla Food Products Co., Chicago, Ill. Filed Nov. 29, 1967.

La Criolla

SAZON

Without waiver of common law rights, claim is not made to exclusive statutory rights in and to the word "Sazon" per se. The words "La Criolla" translated from Spanish mean "a native of any Latin American country," and the word "Sazon" translated from the Spanish means "season." Owner of Reg. No. 742,445.
First use Oct. 18, 1967.

SN 289,248. A.Q. Poultry Farms, Inc., d.b.a. A.Q. Chicken House, Springdale, Ark. Filed Jan. 22, 1968.

Owner of Reg. Nos. 523,759 and 596,062.
For Barbeque Sauce, Salad Dressing, Chicken a la King, Chicken and Dumplings, Chicken Chow Mein, Honey, Chicken and Noodles and Frying Batter (Int. Cls. 29 and 30).
First use Dec. 4, 1967.

SN 291,190. Rialto Food Supply, Inc., Baltimore, Md. Filed Feb. 15, 1968.

PEP-O-ROONS

For Smoked Sausage (Int. Cl. 29).
First use Mar. 31, 1955.

SN 291,274. Minit Burger Corporation, Nashville, Tenn. Filed Feb. 16, 1968.

KING OF THE ROAD KANDIES

The word "Kandies" is disclaimed apart from the mark as shown.
For Candies (Int. Cl. 30).
First use Mar. 9, 1967.

SN 291,802. Hi-Life Packing Company, Chicago, Ill. Filed Feb. 21, 1968.

UNCLE ROY'S

For Kibbled Dog Food and Meal and Gravy Dog Food (Int. Cl. 31).
First use Nov. 10, 1967.

SN 291,803. Hi-Life Packing Company, Chicago, Ill. Filed Feb. 21, 1968.

UNCLE DON'S

For Kibbled Dog Food and Meal and Gravy Dog Food (Int. Cl. 31).
First use Nov. 10, 1967.

SN 291,804. Hi-Life Packing Company, Chicago, Ill. Filed Feb. 21, 1968.

UNCLE ED'S

For Kibbled Dog Food and Meal and Gravy Dog Food (Int. Cl. 31).
First use Nov. 10, 1967.

SN 291,805. Hi-Life Packing Company, Chicago, Ill. Filed Feb. 21, 1968.

UNCLE JIM'S

For Kibbled Dog Food and Meal and Gravy Dog Food (Int. Cl. 31).
First use Nov. 10, 1967.

SN 292,097. Griffin Craft and Hollis Craft (joint owners), d.b.a. Dixie Syrup Company, Sheffield, Ala. Filed Feb. 28, 1968.

PRIDE OF DIXIE

Owner of Reg. No. 265,714.
For Table Syrup (Int. Cl. 30).
First use Feb. 1, 1928.

SN 292,602. Morrison Melon Company, Inc., Vero Beach, Fla. Filed Mar. 6, 1968.

Sharlyn

For Melons (Int. Cl. 31).
First use Nov. 9, 1961.

SN 292,609. The Pillsbury Company, Minneapolis, Minn. Filed Mar. 6, 1968.

PROTALL

For Wheat Protein Concentrate (Int. Cl. 30).
First use Jan. 12, 1967.

SN 294,000. Agway, Inc., DeWitt, N.Y. Filed Mar. 25, 1968.

FULFLO

For Dairy Feed (Int. Cl. 31).
First use May 4, 1967.

SN 296,063. American Home Products Corporation, New York, N.Y. Filed Apr. 22, 1968.

ONION MONEY

Applicant disclaims the word "Onion" apart from the mark as shown.
For Snack Food Product Consisting Primarily of Cooked Onion Flavored Potato Flour Ready To Be Eaten (Int. Cl. 30).
First use Mar. 25, 1968.

SN 297,342. The Quaker Oats Company, Chicago, Ill. Filed May 6, 1968.

POPCRUNCH

Owner of Reg. Nos. 707,265, 851,567, and others.
For Snack Crackers (Int. Cl. 30).
First use Apr. 22, 1968.

SN 299,739. Van den Bergh en Jurgens N.V., Rotterdam, Netherlands. Filed June 5, 1968.

CAYORA

Owner of Dutch Reg. No. 161,520, dated Nov. 2, 1966.
For Margarine (Int. Cl. 29).

SN 299,904. Brawley-Mendota Packers Inc., d.b.a. Jobb Packing Company, Brawley, Calif. Filed June 7, 1968.

Dos Equis XX

"Dos Equis" is translated to mean "two X."
For Fresh Melons (Int. Cl. 31).
First use June 2, 1967.

SN 299,905. Brawley-Mendota Packers Inc., d.b.a. Jobb Packing Company, Brawley, Calif. Filed June 7, 1968.

TOP-JOBB

For Fresh Melons (Int. Cl. 31).
First use June 5, 1967.

SN 299,919. Phoenix Vegetable Distributors, Phoenix, Ariz. Filed June 7, 1968.

Suits us

For Fresh Vegetables (Int. Cl. 31).
First use about Sept. 1, 1964.

SN 299,920. Sakata Ranches, Inc., d.b.a. L & W Land Co., Watsonville, Calif. Filed June 7, 1968.

The word "Lechuga" means "lettuce" in Spanish. The word "Lechuga" is disclaimed apart from the mark as shown.
For Fresh Vegetables (Int. Cl. 31).
First use at least as early as June 1962.

SN 300,037. Yataro Minami, d.b.a. H. Y. Minami and Sons and YM Produce Co., Santa Maria, Calif. Filed June 10, 1968.

TRU-PAL

For Fresh Vegetables (Int. Cl. 31).
First use in or about June 1944.

SN 300,041. Royal Valley Fruit Growers Association, d.b.a. Royal Valley Fruit Growers Ass'n, Reedley, Calif. Filed June 10, 1968.

RED WAGON

For Fresh Fruits (Int. Cl. 31).
First use 1951.

SN 300,042. Royal Valley Fruit Growers Association, d.b.a. Royal Valley Fruit Growers Ass'n, Reedley, Calif. Filed June 10, 1968.

LAC JAC

For Fresh Fruits (Int. Cl. 31).
First use June 15, 1920.

SN 300,235. The Quaker Oats Company, Chicago, Ill. Filed June 12, 1968.

Burry's Lickity Splits

Owner of Reg. Nos. 764,031, 845,572, and others.
For Cookies (Int. Cl. 30).
First use Dec. 14, 1934; Oct. 1, 1967, as to "Burry's."

Class 47 — Wines

SN 300,791. United Vintners, Inc., d.b.a. Italian Swiss Colony, San Francisco, Calif. Filed June 19, 1968.

BEAU CHALET

For Wines (Int. Cl. 33).
First use May 23, 1968.

Class 49 — Distilled Alcoholic Liquors

SN 290,467. Canadian Schenley Distilleries, Ltd., Montreal, Quebec, Canada. Filed Feb. 7, 1968.

BEACON HILL

Owner of Canadian Reg. No. 154,053, dated Nov. 3, 1967.
For Canadian Whisky (Int. Cl. 33).

SN 290,574. Better Brands of Illinois, Inc., Chicago, Ill. Filed Feb. 8, 1968.

JAMES DOUGLAS

"James Douglas" is the name of a living individual whose consent is of record.
For Blended Scotch Whisky (Int. Cl. 33).
First use Nov. 14, 1966.

SN 290,965. Old Boone Distillery Co., Louisville, Ky. Filed Feb. 13, 1968.

ZAVASKA

For Vodka (Int. Cl. 33).
First use Dec. 18, 1967.

SN 300,411. Joseph E. Seagram & Sons, Inc., New York, N.Y. Filed June 14, 1968.

CLAMDIGGER

For Prepared Alcoholic Cocktails (Int. Cl. 33).
First use May 31, 1968.

Class 50 — Merchandise Not Otherwise Classified

SN 264,694. T.F.H. Publications, Inc., Jersey City, N.J. Filed Feb. 14, 1967.

petmaid

The drawing is lined for yellow or gold and orange.
For Aquarium Accessories—Namely, Ornaments, Scrapers, and Planters for Aquarium Tanks and Decorative Aquarium Plants (Int. Cl. 16).
First use Nov. 2, 1966.

SN 273,673. Park Electrochemical Corporation, Flushing, N.Y. Filed June 12, 1967.

THERMALUM

For Nameplates (Int. Cl. 6).
First use May 5, 1967.

SN 274,464. John R. Schoen, d.b.a. Perm-A-Stand Company, Oakford, Pa. Filed June 21, 1967.

PERM-A-STAND

For Multi-Purpose Stands for Supporting Christmas Trees, Flagpoles, Umbrellas, etc. (Int. Cl. 6).
First use on or about Aug. 10, 1960.

SN 284,383. Mercer Plastics Company, Inc., Eustis, Fla. Filed Nov. 8, 1967.

MERCER FRICTION GRIP

The term "Friction Grip" is disclaimed apart from the mark as shown.
For Stair Tread (Int. Cl. 19).
First use Oct. 27, 1967.

Class 51 — Cosmetics and Toilet Preparations

SN 253,324. Manuel Leaf, New York, N.Y. Filed Aug. 29, 1966.

Body-Rich

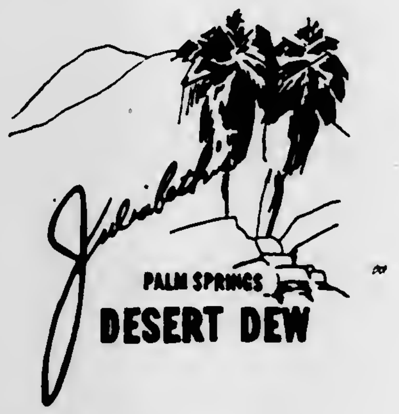
For Hair Setting Preparation (Int. Cl. 3).
First use June 1966.

SN 269,449. Antonio Puig S.A., Barcelona, Spain. Filed Apr. 18, 1967.

ZAMBRA

Owner of Spanish Reg. No. 153,649, dated Dec. 14, 1945.
For Perfumes (Int. Cl. 3).

SN 277,534. Juliabeth Calhoun, d.b.a. Juliabeth's Palm Springs Desert Dew, Palm Springs, Calif. Filed Aug. 4, 1967.



Applicant disclaims the words "Palm Springs" apart from the mark as shown.
For Moisturizing Cream (Int. Cl. 3).
First use Feb. 12, 1962.

SN 284,028. Owen Laboratories Incorporated, Dallas, Tex. Filed Nov. 2, 1967.

TRICOSEB

For Antiseborrheic Hair Dressing (Int. Cl. 3).
First use Oct. 20, 1967.

SN 285,253. Parfums Marcel Rochas, Inc., New York, N.Y. Filed Nov. 20, 1967.

Femme

MARCEL ROCHAS

The English translation of the word "Femme" is "woman." "Marcel Rochas" is the name of a deceased person. Owner of Reg. Nos. 529,403 and 786,059.
For Perfumes, Toilet Waters (Int. Cl. 3).
First use 1951.

SN 288,632. John Oster Manufacturing Co., Milwaukee, Wis. Filed Jan. 11, 1968.

POSEIDON

For Shaving Lotion and Cologne (Int. Cl. 3).
First use Oct. 12, 1967.

SN 288,955. Richard Hudnut, Morris Plains, N.J. Filed Jan. 16, 1968.

THE BEAUTY GAME

For Face Powder (Int. Cl. 3).
First use Jan. 5, 1968.

SN 288,956. Richard Hudnut, Morris Plains, N.J. Filed Jan. 16, 1968.

THE INDIVIDUALS

For Face Cream (Int. Cl. 3).
First use Jan. 5, 1968.

SN 288,957. Richard Hudnut, Morris Plains, N.J. Filed Jan. 16, 1968.

FINDERS/KEEPERS

For Face Cream (Int. Cl. 3).
First use Jan. 5, 1968.

SN 297,943. Avon Products, Inc., New York, N.Y. Filed May 13, 1968.

SUNBONNET

For Hair Coloring Preparation and Sun Tan Lotion (Int. Cl. 3).
First use Apr. 23, 1968.
Subj. to Intf. with SN 299,913.

SN 299,913. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed June 7, 1968.

SUNBONNET

For Hair Spray (Int. Cl. 3).
First use May 10, 1968.
Subj. to Intf. with SN 297,943.

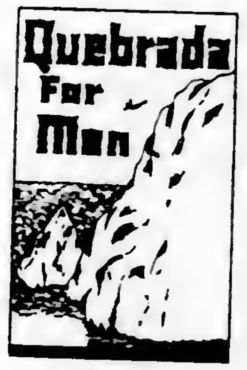
Class 52 — Detergents and Soaps

SN 273,880. Evans Products Corporation, Little Rock, Ark. Filed June 14, 1967.

TRIPLE-D

For Chemical Washing Compound Particularly for Cleaning Plastics (Int. Cl. 3).
First use Sept. 26, 1966.

SN 278,751. Tropical Soap Company, Monroe, Mich. Filed Aug. 21, 1967.



Applicant disclaims the words "For Men" apart from the mark as shown without waiving any of his common law rights in the mark.
For Toilet Soaps (Int. Cl. 3).
First use Aug. 2, 1967.

SN 279,813. Curtis Noll Corporation, Cleveland, Ohio. Filed Sept. 7, 1967.

CURTISOL

For Aerosol Chemicals in Liquid Form—Namely, Grease Solvents (Int. Cl. 1).
First use at least as early as October 1966.

SERVICE MARKS

Class 100 — Miscellaneous

SN 266,399. American Chain & Cable Company, Inc., New York, N.Y. Filed Mar. 10, 1967.

SYSTEMSMANSHIP

For Engineering Services—Namely, Designing Information Processing Systems (Int. Cl. 42).
First use May 1966.

SN 269,345. Planned Tectonics, Inc., New York, N.Y. Filed Apr. 17, 1967.

The mark consists of the letter "T" within a square.
For Wide Variety of Unified and Integrated Design and Consultant Services for Companies, Consisting of Assistance in Selection of New Locations, Analyzing of Leases, Planning of New Space Including Furnishing of Architectural Drawings and Supervising Moving; Creation of Company Symbols, Names, Graphics, Product Design and Packaging, Interior Design Displays, Expositions and Sets for Television Commercials (Int. Cl. 42).
First use Sept. 1, 1966.

SN 275,605. Associated Reporting Companies, Detroit, Mich. Filed July 10, 1967.

The map of the United States is disclaimed apart from the mark as shown.
For Providing Insurance Companies With Confidential Information To Aid Them in Determining the Insurability of Persons Seeking Coverage (Int. Cl. 42).
First use May 1967.

SN 280,681. American Arbitration Association, New York, N.Y. Filed Sept. 19, 1967.

AMERICAN ARBITRATION ASSOCIATION

"Arbitration Association" is disclaimed apart from the mark as shown.
For Association Services—Namely, the Promotion of the Practice of Arbitration (Int. Cl. 42).
First use February 1926.

SN 285,295. The Psychological Corporation, New York, N.Y. Filed Nov. 21, 1967.

The Greek letter shown on the drawing is "psi." Owner of Reg. Nos. 625,027 and 659,847.
For Services Rendered in Connection With Testing of Persons' Knowledge, Skills and Mental Abilities (Int. Cl. 42).
First use Mar. 17, 1967.

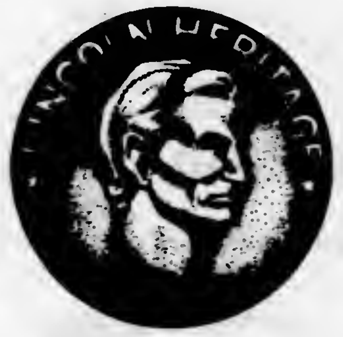
SN 295,404. Inter-Community Programs, Inc., Chicago, Ill. Filed Apr. 11, 1968.

PROJECT WINGSPREAD

For Consulting, Advising and Collaborating in Connection With Educational and Cultural Exchange Programs (Int. Cl. 42).
First use May 1966.

Class 102 — Insurance and Financial

SN 220,520. Lincoln Heritage Life Insurance Company, Mount Vernon, Ill. Filed June 7, 1965.



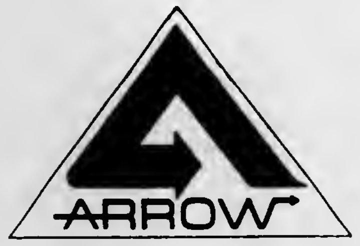
For Issuing and Underwriting Life Insurance Policies (Int. Cl. 36).
First use Aug. 18, 1964.

SN 262,159. The Fund American Companies, San Francisco, Calif. Filed Jan. 9, 1967.

DAILY CASH DURING
FAMILY
MONEY
PLAN
HOSPITAL CONFINEMENT

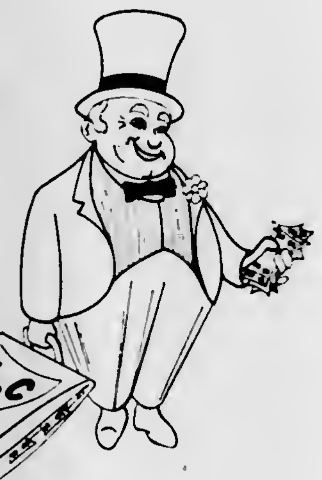
The words "Daily Cash During Hospital Confinement" are disclaimed apart from the mark.
For Underwriting of Insurance (Int. Cl. 36).
First use Aug. 10, 1966.

SN 281,668. Arrow Insurance Co., Bloomington, Minn. Filed Oct. 3, 1967.



For Underwriting of Insurance Services (Int. Cl. 36).
First use Aug. 1, 1967.

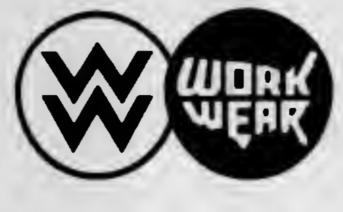
SN 285,708. American Credit Corporation, Charlotte, N.C. Filed Nov. 28, 1967.



For Sales Finance Services (Int. Cl. 36).
First use Dec. 26, 1966.

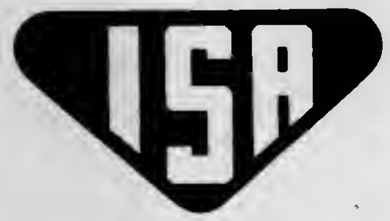
Class 103 — Construction and Repair

SN 264,626. Work Wear Corporation, Cleveland, Ohio. Filed Feb. 13, 1967.



Owner of Reg. No. 819,542.
For Services Rendered in Furnishing Work Uniforms, Industrial Towels, and Linens on a Periodic Basis (Int. Cl. 37).
First use Sept. 1, 1966.

SN 284,373. Industrial Services of America, Inc., Louisville, Ky. Filed Nov. 8, 1967.



For Industrial Waste Disposal Services (Int. Cl. 37).
First use on or about May 1, 1967.

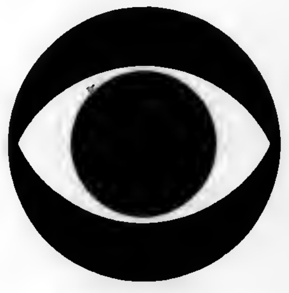
SN 294,711. Offshort Navigation, Inc., New Orleans, La. Filed Apr. 2, 1968.

HIREX

For Horizontal Radiopositioning Services (Int. Cl. 37).
First use July 10, 1967.

Class 104 — Communication

SN 286,599. Columbia Broadcasting System, Inc., New York, N.Y. Filed Dec. 11, 1967.



A CBS AFFILIATE

Applicant disclaims the word "Affiliate" apart from the mark as shown. Owner of Reg. Nos. 645,893, 777,570, and others.
For Television Broadcasting Services (Int. Cl. 38).
First use Nov. 7, 1967.

Class 105 — Transportation and Storage

SN 275,710. Transgo, Inc., San Francisco, Calif. Filed July 10, 1967.

TRANSGO

For Leasing Railroad Cars Such as Tank Cars, Hopper and Cryogenic Cars (Int. Cl. 39).
First use Jan. 1, 1965.

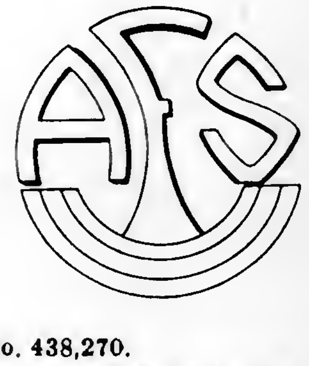
Class 107 — Education and Entertainment

SN 265,683. American Film Studios, Inc., Hamden, Conn. Filed Mar. 1, 1967.

NICKELODEON NIGHTS

For Entertainment and Educational Services in the Production and Exhibition of Motion Picture Films (Int. Cl. 41).
First use Nov. 3, 1966.

SN 261,554. Barnard L. Sackett, Philadelphia, Pa. Filed Dec. 13, 1966.



Owner of Reg. No. 438,270.
For Entertainment Services Consisting in the Showing of Films (Int. Cl. 41).
First use Dec. 9, 1959.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

856,803. LORKACEL. Societe Anonyme Etablissements Kuhlmann. SN 261,235. Pub. 7-2-68. Filed 12-21-66.

856,804. MISCELLANEOUS DESIGN. F. Feyel Fabrique de Pates de Foie Gras, S.A. MULTIPLE CLASS (Classes 1 and 46). SN 266,385. Pub. 7-2-68. Filed 3-10-67.

856,805. CHICAGO VITREOUS AND DESIGN. Eagle-Picher Industries, Inc. SN 268,153. Pub. 7-2-68. Filed 4-3-67.

856,806. PERMA-COLOR AND DESIGN. Clifford W. Estes Co., Inc. SN 274,600. Pub. 7-2-68. Filed 6-23-67.

856,807. WEL-WOOL. Nichols & Company, Inc. SN 277,370. Pub. 7-2-68. Filed 8-2-67.

856,808. PARIGATOR. Bernele Handbag Co., Inc. SN 277,619. Pub. 7-2-68. Filed 8-7-67.

856,809. FABRILOCK. The B. F. Goodrich Company. SN 277,665. Pub. 7-2-68. Filed 8-7-67.

856,810. PINCHO. A. L. Gebhardt Co. SN 278,481. Pub. 7-2-68. Filed 8-17-67.

856,811. CHEROKEE. R. T. Vanderbilt Company, Inc. SN 278,543. Pub. 7-2-68. Filed 8-17-67.

856,812. LUCIDENE. Morton International, Inc. SN 294,779. Pub. 7-2-68. Filed 4-3-68.

856,813. DESIGN OF A SAGUARO CACTUS. William Howard O'Brien. SN 294,892. Pub. 7-2-68. Filed 4-4-68.

Class 2 — Receptacles

856,814. FLEX-O-PAK. Embassy Packaging Corp. SN 252,649. Pub. 7-2-68. Filed 8-18-66.

856,815. XPANDA PAC AND DESIGN. United States Box Crafts, Inc. SN 271,552. Pub. 7-2-68. Filed 5-15-67.

856,816. AUTO RACE. King-Seeley Thermos Co. SN 271,815. Pub. 7-2-68. Filed 5-18-67.

856,817. SYNCHRO RELEASE. Tingue, Brown & Company. SN 279,232. Pub. 7-2-68. Filed 8-28-67.

856,818. SCOPE SLING. Tingue, Brown & Company. SN 279,233. Pub. 7-2-68. Filed 8-28-67.

856,819. GRIPNEAT. Lily-Tulip Cup Corporation. SN 286,018. Pub. 7-2-68. Filed 12-1-67.

856,820. GRIPVENT. Lily-Tulip Cup Corporation. SN 286,162. Pub. 7-2-68. Filed 12-4-67.

856,821. PHILLIPS 66 AND SHIELD (DESIGN). Phillips Petroleum Company. SN 286,717. Pub. 7-2-68. Filed 12-11-67.

856,822. ETCETERAS. Mattel, Inc. SN 291,330. Pub. 7-2-68. Filed 2-19-68.

856,823. SHERRI. Sherri Cup, Inc. SN 291,646. Pub. 7-2-68. Filed 2-21-68.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

856,824. THE LEATHER PEOPLE AND DESIGN. Franklin Neal Eventoff, d.b.a. The Leather People. MULTIPLE CLASS (Classes 3, 28, 32, and 39). SN 254,212. Pub. 7-2-68. Filed 9-12-66.

Class 4 — Abrasives and Polishing Materials

856,825. GODDARD'S. J. Goddard & Sons Limited. MULTIPLE CLASS (Classes 4, 6, 29, and 52). SN 268,913. Pub. 7-2-68. Filed 4-12-67.

Class 6 — Chemicals and Chemical Compositions

856,825. (See Class 4 for this trademark.)

856,826. MYCOFLASK. B-D Laboratories, Inc. MULTIPLE CLASS (Classes 6 and 26). SN 262,392. Pub. 7-2-68. Filed 1-12-67.

856,827. TX ACID. Witco Chemical Company, Inc. SN 265,132. Pub. 7-2-68. Filed 2-20-67.

856,828. GYLAN. Givaudan Corporation. SN 266,966. Pub. 7-2-68. Filed 3-16-67.

856,829. SUNNYSIDE. Sunnyside Products, Inc. MULTIPLE CLASS (Classes 6 and 15). SN 267,877. Pub. 7-2-68. Filed 3-30-67.

856,830. GAL-PAC. Sigma Chemical Company. SN 269,358. Pub. 7-2-68. Filed 4-17-67.

856,831. VINYLCHLOR. Cascade Industries, Inc. SN 273,482. Pub. 7-2-68. Filed 6-9-67.

856,832. POLYARTEST. Polypharma. SN 275,685. Pub. 7-2-68. Filed 7-10-67.

856,833. PARNON. Eli Lilly and Company. SN 278,706. Pub. 7-2-68. Filed 8-21-67.

856,834. MISCELLANEOUS DESIGN. Pfister Chemical, Inc. SN 278,728. Pub. 7-2-68. Filed 8-21-67.

856,835. MISCELLANEOUS DESIGN. Pfister Chemical, Inc. SN 278,729. Pub. 7-2-68. Filed 8-21-67.

856,836. LETTER AND FLASK (DESIGN). Unichem Incorporated. MULTIPLE CLASS (Classes 6 and 52). SN 283,748. Pub. 7-2-68. Filed 10-31-67.

856,837. EM AND DESIGN. E. Merck Aktiengesellschaft. SN 288,923. Pub. 7-2-68. Filed 11-24-67.

Class 7 — Cordage

856,838. ROYAL MAID AND DESIGN. Modglin-Maid, Inc. MULTIPLE CLASS (Classes 7 and 29). SN 289,374. Pub. 7-2-68. Filed 1-23-68.

Class 8 — Smokers' Articles, Not Including Tobacco Products

856,839. HARDCASTLE'S. Parker Hardcastle Limited, assignee of Mastercraft Pipes, Inc. SN 258,827. Pub. 8-22-67. Filed 11-16-66.

856,840. I AM LOVED AND DESIGN. Helzberg's Diamond Shops, Inc. SN 294,995. Pub. 7-2-68. Filed 4-5-68.

856,841. LORD MARK. Premium Corporation of America, Inc. SN 295,165. Pub. 7-2-68. Filed 4-8-68.

Class 10 — Fertilizers

856,842. FABU-GRO. Farm Bureau Association. SN 240,488. Pub. 4-4-67. Filed 2-7-66.

856,843. MAFCO AND DESIGN. MacAndrews & Forbes Company. SN 291,465. Pub. 7-2-68. Filed 2-19-68.

Class 12 — Construction Materials

856,844. SAFTGREEN. Safway Steel Scaffolds Company of Georgia. MULTIPLE CLASS (Classes 12 and 50). SN 245,619. Pub. 7-2-68. Filed 5-13-66.

856,845. SURTAR. CF & I Steel Corporation. SN 253,629. Pub. 7-2-68. Filed 9-1-66.

856,846. MAG-O-CRETE. The Camp Company, Inc. SN 275,116. Pub. 7-2-68. Filed 6-30-67.

856,847. CHEMCERAMIC. The Firestone Tire & Rubber Company. SN 284,641. Pub. 7-2-68. Filed 11-13-67.

856,848. LAZY MAN. Thomas Paint Manufacturing Co. SN 287,772. Pub. 7-2-68. Filed 12-28-67.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

856,849. EZE-LINE FASTENER. Jordan Industries, Inc. SN 249,431. Pub. 7-2-68. Filed 7-1-66.

856,850. SCHAEFER MARINE. Schaefer Equipment Co. SN 263,613. Pub. 7-2-68. Filed 1-30-67.

856,851. JAMESBURY. Jamesbury Corp. SN 267,948. Pub. 7-2-68. Filed 3-30-67.

856,852. VERSA TIE. Griffolyn Co., Inc. SN 268,407. Pub. 7-2-68. Filed 4-5-67.

856,853. ECKEL. Continental Can Company, Inc. SN 268,868. Pub. 7-2-68. Filed 4-11-67.

856,854. HYDRO-FLEX. Hydro-Flex Corporation, Inc. SN 269,537. Pub. 7-2-68. Filed 4-19-67.

856,855. SAFE-T-FLOW. Snap-Tite, Inc. SN 270,164. Pub. 7-2-68. Filed 4-27-67.

856,856. TWIN-SERT. American Standard Products Incorporated. SN 271,580. Pub. 7-2-68. Filed 5-16-67.

856,857. LATHA-LEAF. West Chemical Products, Inc. SN 272,773. Pub. 7-2-68. Filed 5-31-67.

856,858. TREN-CHROME. Trenton Pipe Nipple Company. SN 273,824. Pub. 7-2-68. Filed 6-9-67.

856,859. M DESIGN. The Perry-Fay Company. SN 275,294. Pub. 7-2-68. Filed 7-3-67.

856,860. MANATROL. The Perry-Fay Company. SN 275,295. Pub. 7-2-68. Filed 7-3-67.

856,861. BALSEAL. The Wheelabrator Corporation. SN 279,970. Pub. 7-2-68. Filed 9-8-67.

856,862. RIVCO. Kenneth E. Noyes, Inc. MULTIPLE CLASS (Classes 13 and 23). SN 279,997. Pub. 7-2-68. Filed 9-6-67.

856,863. APCO ETC. AND DESIGN. Airdrome Parts Co. SN 280,381. Pub. 7-2-68. Filed 9-15-67.

856,864. MGS AND DESIGN. M. Greenberg's Sons, Inc. SN 280,414. Pub. 7-2-68. Filed 9-15-67.

856,865. PHELPS DODGE. Phelps Dodge Industries, Inc. SN 286,173. Pub. 7-2-68. Filed 12-4-67.

856,866. FAS-N-IT. Elco Tool and Screw Corporation. MULTIPLE CLASS (Classes 13 and 23). SN 291,313. Pub. 7-2-68. Filed 2-19-68.

Class 14 — Metals and Metal Castings and Forgings

856,867. CIRCUIT-FLEX. Circuit Foil Corporation. SN 246,268. Pub. 6-6-67. Filed 5-23-66.

856,868. C & D. Crawford & Doherty Foundry Co. SN 283,986. Pub. 7-2-68. Filed 11-2-67.

856,869. MISCELLANEOUS DESIGN. National Steel Corporation. SN 288,446. Pub. 7-2-68. Filed 1-9-68.

856,870. HOWBRITE. Howmet Corporation. SN 289,023. Pub. 7-2-68. Filed 1-17-68.

Class 15 — Oils and Greases

856,829. (See Class 6 for this trademark.)

856,871. LUBOCIDE. Weskem Corporation. SN 235,946. Pub. 10-11-66. Filed 1-6-66.

856,872. SEAL·GARD. The Standard Oil Company. SN 268,624. Pub. 7-2-68. Filed 4-7-67.

856,873. POLY-OIL. The Polymer Corporation. SN 276,060. Pub. 7-2-68. Filed 7-17-67.

856,874. TAC AND DESIGN. H.R.L. Inc., d.b.a. HRLubricants Inc. SN 276,131. Pub. 7-2-68. Filed 7-17-67.

Class 16 — Protective and Decorative Coatings

856,875. NOROC. Norton Company. SN 255,997. Pub. 7-2-68. Filed 10-7-66.

856,876. ASTRA-TONE. Astrachem Polymer Corporation. SN 273,585. Pub. 7-2-68. Filed 6-12-67.

Class 17 — Tobacco Products

856,877. ROMEO Y JULIETA. Hipolito Garcia Rodriguez. SN 250,403. Pub. 7-2-68. Filed 7-15-66.

856,878. SAMUEL DE CHAMPLAIN. Turmac Tobacco Company N.V. SN 270,517. Pub. 7-2-68. Filed 5-2-67.

856,879. GUNSTON. Rembrandt Tobacco Corporation (Overseas) Limited. SN 272,212. Pub. 7-2-68. Filed 5-23-67.

856,880. HABANA CLUB. Enrique Perez. SN 272,402. Pub. 7-2-68. Filed 5-25-67.

856,881. CIGAR BAND EMBLEM. Camacho Cigars, Inc. SN 282,511. Pub. 7-2-68. Filed 10-16-67.

856,882. C AND DESIGN. Camacho Cigars, Inc. SN 282,512. Pub. 7-2-68. Filed 10-16-67.

856,883. CIGAR BAND EMBLEM. Camacho Cigars, Inc. SN 282,513. Pub. 7-2-68. Filed 10-16-67.

856,884. TABATIP. Villiger Sohne GmbH. SN 286,219. Pub. 7-2-68. Filed 12-4-67.

856,885. MINI-POUCH. Philip Morris Incorporated. SN 287,942. Pub. 7-2-68. Filed 1-2-68.

856,886. EL CREDITO ETC. AND DESIGN. Ernesto Perez Carrillo, d.b.a. Tabacos El Credito and El Credito Cigars. SN 290,998. Pub. 7-2-68. Filed 2-14-68.

856,887. VILLIGER. Villiger Sohne AG. SN 292,440. Pub. 7-2-68. Filed 3-4-68.

856,888. RÍO 6. Villiger Sohne AG. SN 292,441. Pub. 7-2-68. Filed 3-4-68.

856,889. SAFARI. Abercrombie & Fitch Company. SN 292,750. Pub. 7-2-68. Filed 3-8-68.

Class 18 — Medicines and Pharmaceutical Preparations

856,890. NEURONIKA. Spezialchemie Gesellschaft mit beschränkter Haftung & Co. Arzneimittelfabrik, d.b.a. Manufacturers of Pharmaceuticals. SN 263,622. Pub. 7-2-68. Filed 1-30-67.

856,891. PET-A.D. TABS. The S. E. Massengill Company. SN 268,531. Pub. 7-2-68. Filed 4-6-67.

856,892. COFPAC. Menley & James Laboratories, Ltd. SN 268,974. Pub. 7-2-68. Filed 4-12-67.

856,893. CARLO ERBA AND DESIGN. Carlo Erba S.p.A. SN 270,022. Pub. 7-2-68. Filed 4-26-67.

856,894. STUDENT'S CHOICE. Thomas B. Noble, Inc. SN 272,517. Pub. 7-2-68. Filed 5-26-67.

856,895. COUGH CHEK. Creomulsion Company. SN 273,045. Pub. 7-2-68. Filed 6-5-67.

856,896. LEUKOGEN-TC. Phillips Roxane, Inc. SN 278,247. Pub. 7-2-68. Filed 8-14-67.

856,897. ECONOLIN. Bristol-Myers Company. SN 278,271. Pub. 7-2-68. Filed 8-15-67.

856,898. REXECONOLIN. Bristol-Myers Company. SN 278,274. Pub. 7-2-68. Filed 8-15-67.

856,899. HIECAPS. Bristol-Myers Company. SN 278,279. Pub. 7-2-68. Filed 8-15-67.

856,900. BREATH WASH. Bristol-Myers Company. SN 279,622. Pub. 7-2-68. Filed 9-5-67.

856,901. PREFERID. Aktiebolaget Astra. SN 279,909. Pub. 7-2-68. Filed 9-8-67.

856,902. HISTABID. Meyer Laboratories Inc. SN 280,324. Pub. 7-2-68. Filed 9-14-67.

856,903. MEDI-TRATING. Richardson-Merrell Inc. SN 280,970. Pub. 7-2-68. Filed 9-22-67.

856,904. THREE LEAVES. Union Carbide Corporation. SN 281,138. Pub. 7-2-68. Filed 9-25-67.

856,905. DEMILETS. Schering Corporation. SN 281,318. Pub. 7-2-68. Filed 9-27-67.

856,906. SAFER SIDE. Sheldon M. Hall, d.b.a. Hy G. Laboratories. SN 281,702. Pub. 7-2-68. Filed 10-3-67.

856,907. DOG WITH WAND (DESIGN). E & E Enterprises, Inc. SN 281,784. Pub. 7-2-68. Filed 10-4-67.

856,908. JOHNSON'S. Johnson & Johnson. SN 291,233. Pub. 7-2-68. Filed 2-16-68.

856,909. CENTRAC. Parke, Davis & Company. SN 291,680. Pub. 5-14-68. Filed 2-23-68.

856,910. TALSIS. American Home Products Corporation. SN 292,531. Pub. 7-2-68. Filed 3-6-68.

Class 19 — Vehicles

856,911. PD 3900. Butler Manufacturing Company. SN 239,370. Pub. 7-2-68. Filed 2-23-66.

856,912. PHANTOM. Rolls-Royce Limited. SN 276,765. Pub. 7-2-68. Filed 7-25-67.

856,913. TOW LOW AND DESIGN. Ratcliff Industries, Inc. SN 277,214. Pub. 7-2-68. Filed 7-31-67.

856,914. AUTO-BABE. Life Manufacturing Company, Inc. SN 277,922. Pub. 7-2-68. Filed 8-9-67.

856,915. FLOTE-BOTE. Harris Manufacturing Corporation. SN 282,583. Pub. 7-2-68. Filed 10-16-67.

Class 21 — Electrical Apparatus, Machines, and Supplies

856,916. REPRESENTATION OF A GREEN TRIGGER. Skil Corporation. SN 221,544. Pub. 3-1-66. Filed 6-21-65.

856,917. ELECMA AND DESIGN. Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. MULTIPLE CLASS (Classes 21 and 26). SN 223,463. Pub. 7-2-68. Filed 7-15-65.

856,918. FASHIONABLES BY SHETLAND LEWYT. Lewyt Corporation, d.b.a. Shetland/Lewyt. SN 241,908. Pub. 7-2-68. Filed 3-25-66.

856,919. ROTUNDA. Ford Motor Company. SN 258,222. Pub. 7-2-68. Filed 11-8-66.

856,920. TAWSTAT. Flomak Corp. SN 263,262. Pub. 7-2-68. Filed 1-25-67.

856,921. TRAN AND DESIGN. Stow Laboratories, Inc. SN 263,409. Pub. 7-2-68. Filed 1-26-67.

856,922. AIR·MAKER GUARANTEED AND DESIGN. Jacob Eisenbaum, d.b.a. Jacob's Fan Mfg. Co. SN 263,752. Pub. 7-2-68. Filed 2-1-67.

856,923. COLOR-DUCT 82. Avnet, Inc., assignee of Channel Master Corporation. SN 264,299. Pub. 7-2-68. Filed 2-9-67.

856,924. SUPER COLORTRON. Winegard Company. SN 265,859. Pub. 7-2-68. Filed 3-2-67.

856,925. FIT SHRINKABLE TUBING ETC. AND DESIGN. Alpha Wire Corporation. SN 266,492. Pub. 7-2-68. Filed 3-13-67.

856,926. NIPHAN AND DESIGN. Niphan Limited. SN 267,651. Pub. 7-2-68. Filed 3-27-67.

856,927. SILAFON. Siemens Aktiengesellschaft. SN 267,986. Pub. 7-2-68. Filed 3-30-67.

856,928. POWR/DOOR. General Electric Company. SN 269,070. Pub. 7-2-68. Filed 4-13-67.

856,929. AMPLIVISION. International Telemeter Corporation. SN 270,062. Pub. 7-2-68. Filed 4-26-67.

856,930. T TRIUMPH AND DESIGN. Trans-American Electronics International Co., Inc. SN 274,102. Pub. 7-2-68. Filed 6-16-67.

856,931. TOTAL-CARE AND DESIGN. Western Vacuum Bag Mfg. Inc. SN 275,093. Pub. 7-2-68. Filed 6-29-67.

856,932. H (DESIGN). Hardwick Stove Company. SN 276,132. Pub. 7-2-68. Filed 7-17-67.

856,933. CORRGARD. Superior Continental Corporation, by change of name from Superior Cable Corporation. SN 279,579. Pub. 7-2-68. Filed 9-1-67.

856,934. POLY-LOK. Superior Continental Corporation, by change of name from Superior Cable Corporation. SN 279,580. Pub. 7-2-68. Filed 9-1-67.

856,935. ENVIRO-BOND. Superior Continental Corporation, by change of name from Superior Cable Corporation. SN 279,584. Pub. 7-2-68. Filed 9-1-67.

856,936. SUPRALOX. Porcelainfabriken Norden A/S (Porcelainfabrikerne Bing & Grondahl Og Norden A/S). SN 280,459. Pub. 7-2-68. Filed 9-15-67.

856,937. QUIETTE. Arrow-Hart, Inc., by change of name from The Arrow-Hart & Hegeman Electric Company. SN 280,683. Pub. 7-2-68. Filed 9-19-67.

856,938. VERSA/METER. Technology Incorporated. SN 280,740. Pub. 7-2-68. Filed 8-24-67.

856,939. DIGARD. Westinghouse Electric Corporation. SN 280,902. Pub. 7-2-68. Filed 9-21-67.

856,940. STYLIZED REPRESENTATION OF SENTRY. The Rucker Company. SN 281,922. Pub. 7-2-68. Filed 10-5-67.

856,941. SAFETY SENTRY. The Rucker Company. SN 281,923. Pub. 7-2-68. Filed 10-5-67.

856,942. HI-N-DRI. Jefferson Electric Company. SN 282,093. Pub. 7-2-68. Filed 10-9-67.

856,943. PCI AND DESIGN. Printed Circuits, Inc. SN 282,131. Pub. 7-2-68. Filed 10-9-67.

856,944. PEPI. Philips Electronics and Pharmaceutical Industries Corp. SN 282,206. Pub. 7-2-68. Filed 10-10-67.

856,945. STICPAC. Semtech Corporation. SN 282,402. Pub. 7-2-68. Filed 10-12-67.

856,946. NOW HEAR THIS. Ronald N. Knudsen. SN 282,808. Pub. 7-2-68. Filed 10-18-67.

856,947. KEYTAP. Avis Industrial Corporation. SN 283,010. Pub. 7-2-68. Filed 10-20-67.

856,948. BEAUPLUGS. Beauchaine & Sons, Inc. SN 284,531. Pub. 7-2-68. Filed 11-13-67.

856,949. PATRIARCH. A. A. Friedman Co. Inc. SN 284,811. Pub. 7-2-68. Filed 11-14-67.

856,950. ANAMID. Anaconda Wire and Cable Company. SN 284,882. Pub. 7-2-68. Filed 11-15-67.

856,951. CINE-PAK. Bach Auricon, Inc. SN 286,078. Pub. 7-2-68. Filed 12-4-67.

856,952. PHELPS DODGE. Phelps Dodge Industries, Inc. SN 286,172. Pub. 7-2-68. Filed 12-4-67.

856,953. FLAME AND ARROW (DESIGN). Norris Industries, Inc. SN 287,038. Pub. 7-2-68. Filed 12-15-67.

Class 22 — Games, Toys, and Sporting Goods

856,954. SANI/GARD. Sears, Roebuck and Co. SN 181,574. Pub. 7-2-68. Filed 11-20-63.

856,955. TROLL-NIKS. M. & S. Shillman. SN 219,361. Pub. 10-25-66. Filed 5-20-65.

856,956. CHAMPION SLOT CAR PRODUCTS INC. AND DESIGN. J. M. Williams, Jr., d.b.a. Champion Slot Racing Products, assignee of Champion Slot Car Products, Inc. SN 228,630. Pub. 8-2-66. Filed 9-27-65.

856,957. CHAMPION. J. M. Williams, Jr., d.b.a. Champion Slot Racing Products. SN 230,732. Pub. 1-3-67. Filed 10-20-65.

856,958. REESES' FOXES AND GEESE. Hellier Creative Industries, Inc. SN 251,725. Pub. 7-2-68. Filed 8-4-66.

856,959. GRAND PRIX. Vornado, Inc. SN 260,111. Pub. 9-26-67. Filed 12-5-66.

856,960. GRAND PRIX. Look Company, assignee of Beconta Inc. SN 265,038. Pub. 11-21-67. Filed 2-20-67.

856,961. TRIM AND DESIGN. Trim Molded Products Corporation. SN 266,948. Pub. 7-2-68. Filed 3-16-67.

856,962. SAFETY GUARD. Everlast World's Boxing Headquarters Corporation. SN 272,366. Pub. 7-2-68. Filed 5-25-67.

856,963. DUR-O-LITE. Everlast World's Boxing Headquarters Corporation. SN 272,367. Pub. 7-2-68. Filed 5-25-67.

856,964. TINY TRIX. Uneeda Doll Co., Inc. SN 275,185. Pub. 7-2-68. Filed 6-30-67.

856,965. BABY SMALL-TALK. Mattel, Inc. SN 286,475. Pub. 7-2-68. Filed 12-8-67.

856,966. FAMOUS KEYSTONE AND DESIGN. Famous Keystone Corporation. SN 288,295. Pub. 7-2-68. Filed 1-8-68.

856,967. TRIG-EE. John Cassaro. SN 289,170. Pub. 7-2-68. Filed 1-19-68.

856,968. COMPETENT. Gentex Corporation. SN 289,394. Pub. 7-2-68. Filed 1-23-68.

856,969. SEA SCAPE. Gentex Corporation. SN 289,396. Pub. 7-2-68. Filed 1-23-68.

856,970. THUMKINS. Goldberger Doll Mfg. Co., Inc. SN 289,987. Pub. 7-2-68. Filed 1-31-68.

856,971. BABY SMALL-WALK. Mattel, Inc. SN 291,327. Pub. 7-2-68. Filed 2-19-68.

856,972. PROP-UPS. Mattel, Inc. SN 294,140. Pub. 7-2-68. Filed 3-26-68.

856,973. HOT HEAP. Mattel, Inc. SN 294,142. Pub. 7-2-68. Filed 3-26-68.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

856,862. (See Class 13 for this trademark.)

856,866. (See Class 13 for this trademark.)

856,974. SISTER. Brother International Corporation. SN 239,877. Pub. 3-7-67. Filed 3-1-66.

856,975. MINOTAURE AND DESIGN. Minotaure S.a.r.l. SN 261,864. Pub. 7-2-68. Filed 1-3-67.

856,976. HYDRO-JET. Barry-Wehmiller Company. SN 261,968. Pub. 7-2-68. Filed 1-5-67.

856,977. "K-RIB." CLR Manufacturing, Incorporated. SN 262,474. Pub. 7-2-68. Filed 1-13-67.

856,978. SHRINK-IT. Welles Products Corporation. SN 266,956. Pub. 7-2-68. Filed 3-16-67.

856,979. DOUGLAS AND DESIGN. Radiator Specialty Company. MULTIPLE CLASS (Classes 23 and 26). SN 268,842. Pub. 5-7-68. Filed 4-11-67.

856,980. RED CAP. R.C. Industries, Inc. SN 270,155. Pub. 7-2-68. Filed 4-27-67.

856,981. ACU-CUT 7/11. The Stephan Co. SN 272,960. Pub. 7-2-68. Filed 6-2-67.

856,982. P AND DESIGN. Cam Industries, Inc. SN 273,032. Pub. 7-2-68. Filed 6-5-67.

856,983. DANA AND DESIGN. Dana Corporation. SN 273,046. Pub. 7-2-68. Filed 6-5-67.

856,984. DUOMET. Buehler Ltd. SN 273,940. Pub. 7-2-68. Filed 6-15-67.

856,985. ANTHONY. Anthony F. Pingatore, d.b.a. Anthony Sales & Mfg. SN 278,238. Pub. 7-2-68. Filed 8-14-67.

856,986. GROGARDS. Patrick M. Grogan, d.b.a. Grogards. SN 280,415. Pub. 7-2-68. Filed 9-15-67.

856,987. DREXAMATIC. Drexel Dynamics Corporation. SN 280,774. Pub. 7-2-68. Filed 9-20-67.

856,988. BUTTERFIELD 100% INSPECTED TOOLS AND DESIGN. UTD Corporation. SN 281,426. Pub. 7-2-68. Filed 9-29-67.

856,989. QUICKIE AND DESIGN. Robert G. Evans Company. SN 282,558. Pub. 7-2-68. Filed 10-16-67.

856,990. LABEL ALL AND DESIGN. Dennison Duramatic Corporation, assignee of Universal Duramatic Corporation. SN 282,640. Pub. 7-2-68. Filed 10-16-67.

856,991. POP-TOP. Barry Industries Incorporated, d.b.a. Barry Industries, Inc. SN 282,668. Pub. 7-2-68. Filed 10-17-67.

856,992. MISCELLANEOUS DESIGN. General Time Corporation. SN 282,795. Pub. 7-2-68. Filed 10-18-67.

856,993. LEAF DESIGN. Lily-Tulip Cup Corporation. SN 283,130. Pub. 7-2-68. Filed 10-23-67.

856,994. LILY (SCRIPT). Lily-Tulip Cup Corporation. SN 283,131. Pub. 7-2-68. Filed 10-23-67.

856,995. LILY. Lily-Tulip Cup Corporation. SN 283,132. Pub. 7-2-68. Filed 10-23-67.

856,996. LILY AND LEAF DESIGN. Lily-Tulip Cup Corporation. SN 283,133. Pub. 7-2-68. Filed 10-23-67.

856,997. FLAME AND ARROW (DESIGN). Norris Industries, Inc. SN 287,040. Pub. 7-2-68. Filed 12-15-67.

856,998. PAPER-WELDER. Paper Welder, Inc. SN 293,440. Pub. 7-2-68. Filed 3-18-68.

Class 24 — Laundry Appliances and Machines

856,999. THE GOLDEN TOUCH AND DESIGN. Pinnacle Products Corporation. SN 286,958. Pub. 7-2-68. Filed 12-14-67.

857,000. PRO-QUA-TROL BY JENSEN AND DESIGN. Jensen Machinery, Inc. SN 289,406. Pub. 7-2-68. Filed 1-23-68.

Class 26 — Measuring and Scientific Appliances

856,826. (See Class 6 for this trademark.)

856,917. (See Class 21 for this trademark.)

856,979. (See Class 23 for this trademark.)

857,001. POLYCHROME. Polychrome Corporation. SN 234,232. Pub. 7-2-68. Filed 12-8-65.

857,002. VOTRONICS. Cubic Corporation. SN 250,565. Pub. 7-2-68. Filed 7-19-66.

857,003. PAN-ASPHERIC. Bausch & Lomb Incorporated. SN 253,836. Pub. 7-2-68. Filed 9-6-66.

857,004. LOGIT. General Dynamics Corporation. SN 254,272. Pub. 7-2-68. Filed 9-12-66.

857,005. VER I COM AND DESIGN. Vericom, Inc. SN 257,219. Pub. 7-2-68. Filed 10-25-66.

857,006. MONITRON AND DESIGN. Cybetronics, Inc. SN 263,360. Pub. 11-21-67. Filed 1-26-67.

857,007. GREEK LETTER OMEGA AND LETTER E. Omega Engineering, Inc. SN 263,687. Pub. 7-2-68. Filed 1-31-67.

857,008. THE SWEANY. John B. Sweany. SN 268,627. Pub. 7-2-68. Filed 4-7-67.

857,009. TECH. Idex Corporation. SN 270,783. Pub. 7-2-68. Filed 5-5-67.

857,010. GEMINI AND DESIGN. The Caltype Corporation. SN 270,859. Pub. 8-29-67. Filed 5-8-67.

857,011. MERCURY. Litton Business Systems, Inc., by merger and change of name from Royal Typewriter Company, Inc. SN 273,690. Pub. 7-2-68. Filed 6-12-67.

857,012. WASSP AND DESIGN. Teledyne Industries, Inc., d.b.a. Geotech—A Teledyne Company. SN 278,536. Pub. 7-2-68. Filed 8-17-67.

857,013. ATHENA. L-W Photo, Inc. SN 280,070. Pub. 7-2-68. Filed 9-11-67.

857,014. ILFOBROM. Ilford, Limited. SN 280,164. Pub. 7-2-68. Filed 9-12-67.

857,015. DESIGN-O-GRAPH AND DESIGN. Classic Industries, Inc. SN 280,208. Pub. 7-2-68. Filed 9-13-67.

857,016. APO-RODAGON. Optische Werke G. Rodenstock. SN 280,622. Pub. 7-2-68. Filed 9-18-67.

857,017. POCO. Itek Corporation. SN 282,591. Pub. 7-2-68. Filed 10-16-67.

857,018. RAYMOND. The Raymond Corporation. SN 286,554. Pub. 7-2-68. Filed 12-8-67.

857,019. RISTON. E. I. du Pont de Nemours and Company. SN 290,931. Pub. 7-2-68. Filed 2-13-68.

857,020. POLYKON. HLC Manufacturing Co., Inc. SN 291,230. Pub. 7-2-68. Filed 2-16-68.

Class 28 — Jewelry and Precious-Metal Ware

856,824. (See Class 3 for this trademark.)

857,021. PC. Harlyn Products, Inc., d.b.a. The Palomar Company and Del Conte Manufacturing Co. SN 236,817. Pub. 7-2-68. Filed 1-19-66.

857,022. BRISTOLITE. Bristol Seamless Ring Corp. SN 273,251. Pub. 7-2-68. Filed 6-7-67.

857,023. LW. Louis Weisbrod. SN 281,909. Pub. 7-2-68. Filed 10-2-67.

857,024. SPRING-EZE. Davinci Creations, Inc. SN 283,772. Pub. 7-2-68. Filed 10-31-67.

Class 29 — Brooms, Brushes, and Dusters

856,825. (See Class 4 for this trademark.)

856,838. (See Class 7 for this trademark.)

857,025. SANI-SPONGE. Simoniz Company. SN 288,719. Pub. 7-2-68. Filed 1-12-68.

857,026. MULTI-MITT. Charles Grossman, d.b.a. The Victor Co. SN 288,812. Pub. 7-2-68. Filed 1-15-68.

857,027. PICK-UP STICKS AND DESIGN. Tackmer Corporation. SN 291,818. Pub. 7-2-68. Filed 2-26-68.

Class 31 — Filters and Refrigerators

857,028. THERMOFICIENT. Pet Incorporated, assignee of Ray Winther Company. SN 154,186. Pub. 3-15-66. Filed 9-28-62.

857,029. CYROFREEZE. Frigoscandia Aktiebolag. SN 265,299. Pub. 7-2-68. Filed 2-23-67.

857,030. SNODA. Bauer Audio Video Company. SN 267,603. Pub. 7-2-68. Filed 3-27-67.

857,031. FRIG-I-BATOR. Cherne Scientific, Inc., by change of name from Cherne-Potter, Inc. SN 273,602. Pub. 7-2-68. Filed 6-12-67.

857,032. BALLY. Bally Case & Cooler, Inc., by merger from Bally Case and Cooler, Inc. SN 281,536. Pub. 7-2-68. Filed 10-2-67.

Class 32 — Furniture and Upholstery

856,824. (See Class 3 for this trademark.)

857,033. MARK VI. Purofied Down Products Corp. SN 272,945. Pub. 7-2-68. Filed 6-2-67.

857,034. DIPLOMAT. Baron Equipment Corp. SN 281,266. Pub. 7-2-68. Filed 9-27-67.

857,035. CONSERV-A-STOR. Supreme Equipment & Systems Corp. by change of name from Supreme Steel Equipment Corporation. SN 283,286. Pub. 7-2-68. Filed 10-24-67.

Class 34 — Heating, Lighting, and Ventilating Apparatus

857,036. TRU WELD. Tru-Fit Screw Products Corporation. SN 246,623. Pub. 7-2-68. Filed 5-25-66.

857,037. SPEED POINT. Iwatani & Co., Ltd. SN 261,660. Pub. 7-2-68. Filed 12-29-66.

857,038. STATOSEC. Messer Griesheim G.m.b.H. SN 281,208. Pub. 7-2-68. Filed 9-26-67.

857,039. BINUMAT. Messer Griesheim G.m.b.H. SN 281,210. Pub. 7-2-68. Filed 9-26-67.

857,040. SLIM SR. Hexacon Electric Company. SN 282,459. Pub. 7-2-68. Filed 10-13-67.

857,041. MINIRON. Hexacon Electric Company. SN 282,460. Pub. 7-2-68. Filed 10-13-67.

857,042. RENAISSANCE. The Tappan Company. SN 282,637. Pub. 7-2-68. Filed 10-16-67.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

857,043. NYLAPLATE-K. McGill Manufacturing Company, Inc. SN 276,849. Pub. 7-2-68. Filed 7-26-67.

857,044. GOLDEN SIGNET. The Armstrong Rubber Company. SN 286,751. Pub. 7-2-68. Filed 12-12-67.

857,045. V VIC PIPING METHOD AND DESIGN. Victaulic Company of America. SN 287,845. Pub. 7-2-68. Filed 12-29-67.

Class 36 — Musical Instruments and Supplies

857,046. MOBILE FIDELITY RECORDS AND DESIGN. Brad S. Miller, d.b.a. Mobile Fidelity Records. SN 263,282. Pub. 7-2-68. Filed 1-25-67.

857,047. THE EARLY YEARS AND DESIGN. Record Club of America, Inc. SN 268,526. Pub. 7-2-68. Filed 4-6-67.

857,048. RHYTHMLINE. Remco Industries, Inc. SN 272,095. Pub. 7-2-68. Filed 5-22-67.

857,049. D'MERLE NEW YORK AND DESIGN. D'Merle Guitars, Inc. SN 283,109. Pub. 7-2-68. Filed 10-23-67.

857,050. UNART. United Artists Records, Inc. SN 283,739. Pub. 7-2-68. Filed 10-30-67.

857,051. PRISMATONE. D. H. Baldwin Company. SN 284,575. Pub. 7-2-68. Filed 11-13-67.

857,052. PLATINUM. Platinum Records, Inc. SN 285,057. Pub. 7-2-68. Filed 11-16-67.

857,053. MASTERS OF RELIGIOUS ART. Masters of Religious Art, Inc. SN 285,845. Pub. 7-2-68. Filed 11-29-67.

Class 37 — Paper and Stationery

857,054. DUAL. Zellerbach Paper Company. SN 282,856. Pub. 7-2-68. Filed 10-18-67.

857,055. C-PACK. Quality Park Envelope Company. SN 283,274. Pub. 7-2-68. Filed 10-24-67.

857,056. MULTI-MATIC. The Multistamp Company. SN 283,688. Pub. 7-2-68. Filed 10-30-67.

857,057. CHASEBRITE. Chase Bag Company. SN 284,994. Pub. 7-2-68. Filed 11-16-67.

857,058. BATES 501. The Bates Manufacturing Company. SN 285,387. Pub. 7-2-68. Filed 11-22-67.

857,059. T AND DESIGN. Tension Envelope Corporation. SN 285,683. Pub. 7-2-68. Filed 11-27-67.

857,060. PERPETULOG. Henry S. Grossman. SN 286,344. Pub. 7-2-68. Filed 12-6-67.

857,061. SSK AND DESIGN. S. S. Kresge Company. SN 286,433. Pub. 7-2-68. Filed 12-7-67.

Class 38 — Prints and Publications

857,062. THE DINES LETTER AND DESIGN. James Dines & Co., Inc. SN 260,536. Pub. 7-2-68. Filed 12-12-66.

857,063. CLASSIC GUIDELINES. Al Herr Advertising Agency, Inc. SN 267,524. Pub. 7-2-68. Filed 3-24-67.

857,064. PEEPUL PALS. Western Publishing Company, Inc. SN 272,434. Pub. 7-2-68. Filed 5-25-67.

857,065. AIR READERS MAKE LEADERS AND DESIGN. Family Record Plan, Incorporated. SN 273,628. Pub. 7-2-68. Filed 6-12-67.

857,066. COMPUTERWORLD. Computerworld, Inc. SN 276,003. Pub. 7-2-68. Filed 7-14-67.

857,067. ELMCREST. Elmcraft Inc. SN 276,108. Pub. 7-2-68. Filed 7-17-67.

857,068. LINK. David Lindsey, d.b.a. Link Publishing Company. SN 276,209. Pub. 7-2-68. Filed 7-18-67.

857,069. UNITED FAMILY NEWS. United Grocers, Ltd. SN 277,318. Pub. 7-2-68. Filed 8-1-67.

857,070. HANKY PANKYS. Regency Productions, Inc. SN 278,419. Pub. 7-2-68. Filed 8-16-67.

857,071. UNISLIDE. United Press International, Inc. SN 283,740. Pub. 7-2-68. Filed 10-30-67.

857,072. ZZOOOMMM. Success Motivation Institute, Inc. SN 293,616. Pub. 7-2-68. Filed 3-19-68.

Class 39 — Clothing

856,824. (See Class 3 for this trademark.)

857,073. DUOFOLD AND DESIGN. Duofold, Inc. SN 267,619. Pub. 7-2-68. Filed 3-27-67.

857,074. 77 SEVEN SEVEN AND DESIGN. University Shops, Inc. SN 268,802. Pub. 7-2-68. Filed 4-10-67.

857,075. SKYDIVER. Acme Boot Company, Inc. SN 271,997. Pub. 12-5-67. Filed 5-22-67.

857,076. SAND PEBBLES AND DESIGN. Charles W. Brady. SN 278,187. Pub. 7-2-68. Filed 8-14-67.

857,077. WATERWORKS. Monsanto Company, assignee of Helen Harper Inc. SN 282,699. Pub. 7-2-68. Filed 10-17-67.

857,078. TRALEE. Ellen Girl Coat Company, Inc. SN 284,178. Pub. 7-2-68. Filed 11-6-67.

857,079. LADY PLAINFIELD. John Plain & Company. SN 284,237. Pub. 7-2-68. Filed 11-6-67.

857,080. CROFTERS' CHOICE GGG CLOTHES AND DESIGN. Wm. P. Goldman & Bros., Inc. SN 284,303. Pub. 7-2-68. Filed 11-7-67.

857,081. CROFTERS' CHOICE AND DESIGN. Wm. P. Goldman & Bros., Inc. SN 284,304. Pub. 7-2-68. Filed 11-7-67.

857,082. FILLY AND DESIGN. The Salem Company, Inc. SN 284,839. Pub. 7-2-68. Filed 11-14-67.

857,083. HONEY MAE. Diana Stores Corporation. SN 290,588. Pub. 7-2-68. Filed 2-8-68.

857,084. WINTERNAP. Charles Pindyck, Inc. SN 291,095. Pub. 7-2-68. Filed 2-14-68.

857,085. AQUACUNA. Jacob Siegel Co., Inc. SN 291,551. Pub. 7-2-68. Filed 2-21-68.

857,086. PRINT-TIME. Maidenform, Inc. SN 294,889. Pub. 7-2-68. Filed 4-4-68.

Class 40 — Fancy Goods, Furnishings, and Notions

857,087. FONTAINE. Kanegafuchi Chemical Industry Company, Ltd. SN 244,331. Pub. 7-2-68. Filed 4-26-66.

857,088. LADY ACE. Amerace Corporation. SN 281,018. Pub. 7-2-68. Filed 9-25-67.

857,089. SHUGOR. Thomas Taylor & Sons, Inc. SN 284,514. Pub. 7-2-68. Filed 11-9-67.

Class 41 — Canes, Parasols, and Umbrellas

857,090. ROYAL KNIGHT. Mercantile Stores Company, Inc. SN 288,916. Pub. 7-2-68. Filed 1-16-68.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

857,091. GLO-GLO. Old Deerfield Fabrics, Inc. SN 268,214. Pub. 7-2-68. Filed 4-3-67.

857,092. ABA-SET. Abaco Fabrics Corp. SN 271,416. Pub. 7-2-68. Filed 5-15-67.

857,093. CRAN-CRIMP. Cranston Print Works Company. SN 273,873. Pub. 7-2-68. Filed 6-14-67.

857,094. PRINCE LUXURY FABRICS AND DESIGN. Amicale Fabrics, Inc. SN 280,682. Pub. 7-2-68. Filed 9-19-67.

857,095. KNOLL. Knoll Associates, Inc. SN 285,666. Pub. 7-2-68. Filed 11-27-67.

Class 43 — Thread and Yarn

857,096. NANTUK DIMENSION. Columbia-Minerva Corporation. SN 265,048. Pub. 9-19-67. Filed 2-20-67.

857,097. DIMENSION THREE. Deering Milliken, Inc. SN 273,443. Pub. 9-19-67. Filed 6-9-67.

857,098. ENKA. American Enka Corporation. SN 286,802. Pub. 7-2-68. Filed 12-13-67.

Class 44 — Dental, Medical, and Surgical Appliances

857,099. SANI/GARD. Sears, Roebuck and Co. SN 181,573. Pub. 7-2-68. Filed 11-20-63.

857,100. SURETAM. The Procter & Gamble Company, by change of name and assignment from International Latex Corporation. SN 210,679. Pub. 6-29-65. Filed 1-26-65.

857,101. PHONOCARDIOSCAN. Thiokol Chemical Corporation. SN 250,697. Pub. 7-2-68. Filed 7-20-66.

857,102. REVIV-A-BAG. Oxygen Equipment and Service Company. SN 263,773. Pub. 7-2-68. Filed 2-1-67.

857,103. MAGIC CHARM. Dynapak, Incorporated. SN 265,284. Pub. 7-2-68. Filed 2-23-67.

857,104. CARDIO$_2$. Corbin-Farnsworth, Inc. SN 273,044. Pub. 7-2-68. Filed 6-5-67.

857,105. SAUNA WHIRL AND DESIGN. Lauren Edgar Berry. SN 277,620. Pub. 7-2-68. Filed 8-7-67.

857,106. HAS. Air Instruments, Inc. SN 278,357. Pub. 7-2-68. Filed 8-16-67.

857,107. IHA AND DESIGN. International Hearing Aids, Inc. SN 279,655. Pub. 7-2-68. Filed 9-5-67.

857,108. SELF-AID. James W. Daly, Inc. SN 281,041. Pub. 7-2-68. Filed 9-25-67.

857,109. REJUVINATOR. Russell Rotko, assignee of Modern Shoe Arch Corporation. SN 284,708. Pub. 7-2-68. Filed 11-13-67.

857,110. ECHO-CARDIO-TRACE. Metrix, Incorporated. SN 285,846. Pub. 7-2-68. Filed 11-29-67.

857,111. HYDROMIX. Unitek Corporation. SN 285,869. Pub. 7-2-68. Filed 11-29-67.

857,112. ARTILK. Pascal Company, Inc. SN 286,031. Pub. 7-2-68. Filed 12-1-67.

857,113. OMNITON. Robert Bosch Elektronik und Photokino GmbH. SN 286,183. Pub. 7-2-68. Filed 12-4-67.

857,114. DAM-E-Z-RAY. Harry G. Greene. SN 286,664. Pub. 7-2-68. Filed 12-11-67.

Class 45 — Soft Drinks and Carbonated Waters

857,115. STICKY-ICKY. The Southland Corporation. SN 261,330. Pub. 3-12-68. Filed 12-22-66.

857,116. BLUE GOOK. The Southland Corporation. SN 261,331. Pub. 7-2-68. Filed 12-22-66.

857,117. RED HOG AND DESIGN. Arkansas Beverage Company. SN 265,151. Pub. 7-2-68. Filed 2-21-67.

857,118. EVERVESS. Vess Beverage Company. SN 281,650. Pub. 7-2-68. Filed 10-2-67.

857,119. LEMON-ELEVEN. Canada Dry Corporation. SN 284,599. Pub. 7-2-68. Filed 11-13-67.

857,120. OLD SABER TOOTH. Canada Dry Corporation. SN 284,603. Pub. 7-2-68. Filed 11-13-67.

857,121. GREEN GROWLER. Canada Dry Corporation. SN 284,604. Pub. 7-2-68. Filed 11-13-67.

857,122. SOCIAL HOUR. E. R. Squibb & Sons, Inc. SN 285,071. Pub. 7-2-68. Filed 11-16-67.

857,123. TASTY-MATES. Tasty-Mates Company. SN 289,246. Pub. 7-2-68. Filed 1-22-68.

Class 46 — Foods and Ingredients of Foods

856,804. (See Class 1 for this trademark.)

857,124. RADAR SHAKE. Pine Forest Company, d.b.a. Pine Forest Co. SN 225,058. Pub. 6-7-66. Filed 8-5-65.

857,125. FILL-THINGS. R. J. Reynolds Foods, Inc., assignee, by mesne assignments, of Filler Products, Inc. SN 248,607. Pub. 7-2-68. Filed 6-21-66.

857,126. MISCELLANEOUS DESIGN. Copper Pot Fudge, Inc. SN 266,864. Pub. 7-2-68. Filed 3-16-67.

857,127. SAMMY'S PRIDE. Waples-Platter Company. SN 267,085. Pub. 7-2-68. Filed 3-17-67.

857,128. "BREAK-FRESH." Roger E. Lawmaster. SN 272,509. Pub. 7-2-68. Filed 5-26-67.

857,129. PET'S CHOICE. The Fleming Co. Incorporated. SN 275,044. Pub. 7-2-68. Filed 6-29-67.

857,130. THE BULLY BURGER BURGER BARN'S DELICIOUS MEAL IN A BUN AND DESIGN. Burger Barn Corporation. SN 275,361. Pub. 7-2-68. Filed 7-5-67.

857,131. BURGER BARN AND DESIGN. Burger Barn Corporation. SN 275,362. Pub. 7-2-68. Filed 7-5-67.

857,132. WANTED POSTERS. Toppa Chewing Gum, Incorporated. SN 279,877. Pub. 7-2-68. Filed 9-7-67.

857,133. FIRDA. Firda Canning Co. SN 280,037. Pub. 7-2-68. Filed 9-11-67.

857,134. HANDI POP. Vegetable Oil Products Company, Inc. SN 280,655. Pub. 7-2-68. Filed 9-18-67.

857,135. WHEE-E-E. Delaware Punch Company. SN 281,558. Pub. 7-2-68. Filed 10-2-67.

857,136. CAL-DATE AND DESIGN. California Date Growers Association. SN 281,865. Pub. 7-2-68. Filed 10-5-67.

857,137. SCOOPER DOOPER. Scooper Dooper Ice Cream Shoppes, Inc. SN 283,166. Pub. 7-2-68. Filed 10-23-67.

857,138. CROWN ROYAL AND DESIGN. Russell B. Staples, d.b.a. Staples & Son Fruit Co. SN 283,585. Pub. 7-2-68. Filed 10-27-67.

857,139. REDBOW. The Graham Co., Inc. SN 284,654. Pub. 7-2-68. Filed 11-13-67.

857,140. ZIPPITY-ZOOS. Frito-Lay, Inc. SN 285,012. Pub. 7-2-68. Filed 11-16-67.

857,141. GARDEN STATE BRAND. Garden State Packing Co. SN 285,323. Pub. 7-2-68. Filed 11-21-67.

857,142. TEDDY BEAR. Hollywood Brands, Inc. SN 286,145. Pub. 7-2-68. Filed 12-4-67.

857,143. MINI-MEAL. John Morrell & Co. SN 289,323. Pub. 7-2-68. Filed 1-22-68.

857,144. LANCO SUPER STUFF. Lanco Products Corporation. SN 289,861. Pub. 7-2-68. Filed 1-30-68.

857,145. RED LION. Fritzsche Brothers, Inc. SN 293,984. Pub. 7-2-68. Filed 3-25-68.

857,146. ROUSERS. Philip Morris Incorporated, d.b.a. Flavor Tree Foods Co. SN 295,408. Pub. 7-2-68. Filed 4-11-68.

Class 47 — Wines

857,147. LACRIMA D'ARNO. Chianti Melini Societa per Azioni. SN 260,239. Pub. 7-2-68. Filed 12-7-66.

857,148. GALLO RUBIROSA. E. & J. Gallo Winery, d.b.a. Gallo Vineyards. SN 269,528. Pub. 7-2-68. Filed 4-19-67.

857,149. JACQUES PRIEUR. Madeleine Prieur. SN 276,687. Pub. 7-2-68. Filed 7-24-67.

857,150. CAFE DE PARIS. CDC. SN 289,151. Pub. 7-2-68. Filed 1-19-68.

Class 48 — Malt Beverages and Liquors

857,151. WHITBREAD BREWMASTER AND DESIGN. Whitbread and Company Limited. SN 238,814. Pub. 4-11-67. Filed 2-14-66.

857,152. BARON. Jos. Schlitz Brewing Company. SN 295,704. Pub. 7-2-68. Filed 4-16-68.

857,153. ELITE. Jos. Schlitz Brewing Company. SN 295,705. Pub. 7-2-68. Filed 4-16-68.

Class 49 — Distilled Alcoholic Liquors

857,154. SKYBALL. Heublein, Inc. SN 271,041. Pub. 7-2-68. Filed 5-9-67.

857,155. WICKET. Barton Distilling Company, d.b.a. Famous Imported Brands. SN 282,764. Pub. 7-2-68. Filed 10-18-67.

857,156. LONDON MIST. Barton Distilling Company, d.b.a. Famous Imported Brands. SN 282,765. Pub. 7-2-68. Filed 10-18-67.

Class 50 — Merchandise Not Otherwise Classified

856,844. (See Class 12 for this trademark.)

857,157. RUBLOC. "Imexin," Import-Export pour l'Industrie. SN 268,962. Pub. 7-2-68. Filed 4-12-67.

857,158. SPANIT. Godbersen-Smith Construction Co., Inc. SN 275,258. Pub. 7-2-68. Filed 7-3-67.

857,159. VERSA TARP. Griffolyn Company Inc. SN 278,384. Pub. 7-2-68. Filed 8-16-67.

857,160. A ACME AND DESIGN. Acme Supply and Sales, Inc. SN 281,853. Pub. 7-2-68. Filed 10-5-67.

857,161. FLAT DECK. U.S. Industries, Inc., assignee of Big Dutchman, Inc. SN 284,157. Pub. 7-2-68. Filed 11-6-67.

857,162. GMCO AND DESIGN. The Georgia Marble Company. SN 291,982. Pub. 7-2-68. Filed 2-27-68.

857,163. PETALS PLUS. Greenblossom. SN 293,252. Pub. 7-2-68. Filed 3-14-68.

Class 51 — Cosmetics and Toilet Preparations

857,164. UNDERGROUND. Kenneth Beauty Salons & Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 264,938. Pub. 7-2-68. Filed 2-17-67.

857,165. LOVE SET. Del Laboratories, Inc. SN 267,323. Pub. 7-2-68. Filed 3-22-67.

857,166. 8-LINE. Pharmaco, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 267,976. Pub. 7-2-68. Filed 3-30-67.

857,167. WINSLOW AND DESIGN. Watsco, Inc., assignee of Winslow Manufacturing Corporation. MULTIPLE CLASS (Classes 51 and 52). SN 268,258. Pub. 7-2-68. Filed 4-3-67.

857,168. COLOR A LA MODE. Avon Products, Inc. SN 269,620. Pub. 7-2-68. Filed 4-20-67.

857,169. BRECK. John H. Breck, Inc. SN 273,473. Pub. 7-2-68. Filed 6-9-67.

857,170. ORO MINT. Stur-Dee Health Products, Inc. SN 275,478. Pub. 7-2-68. Filed 7-6-67.

857,171. MOISTURE FLUFF. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company. SN 275,689. Pub. 7-2-68. Filed 7-10-67.

857,172. TISKET-TASKET. Avon Products, Inc. SN 277,771. Pub. 7-2-68. Filed 8-8-67.

857,173. FIRST STAR. Avon Products, Inc. SN 277,777. Pub. 7-2-68. Filed 8-8-67.

857,174. WET KISSES. Helene Curtis Industries, Inc. SN 278,692. Pub. 7-2-68. Filed 8-21-67.

857,175. FLASH FIRE. The Mennen Company. SN 279,207. Pub. 7-2-68. Filed 8-28-67.

857,176. DIRKS. Bristol-Myers Company. SN 279,361. Pub. 7-2-68. Filed 8-30-67.

857,177. BLITZ. Bristol-Myers Company. SN 279,362. Pub. 7-2-68. Filed 8-30-67.

857,178. COMBO. Bristol-Myers Company. SN 279,528. Pub. 7-2-68. Filed 9-1-67.

857,179. AVERT. Bristol-Myers Company. SN 279,529. Pub. 7-2-68. Filed 9-1-67.

857,180. SQUASH. Bristol-Myers Company. SN 279,531. Pub. 7-2-68. Filed 9-1-67.

857,181. STRAFE. Bristol-Myers Company. SN 279,532. Pub. 7-2-68. Filed 9-1-67.

857,182. MARY CHESS. Mary Chess, Inc. SN 280,716. Pub. 7-2-68. Filed 9-19-67.

857,183. ROUGH 'N TUMBLE. Clairol Incorporated. SN 281,036. Pub. 7-2-68. Filed 9-25-67.

857,184. SOFTY. Caryl Richards, Inc. SN 281,721. Pub. 7-2-68. Filed 10-3-67.

857,185. CRYSTAL NET. Gem, Incorporated. SN 287,252. Pub. 7-2-68. Filed 12-20-67.

857,186. ZAZZETTE. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 288,919. Pub. 7-2-68. Filed 1-16-68.

Class 52 — Detergents and Soaps

856,825. (See Class 4 for this trademark.)

856,836. (See Class 6 for this trademark.)

857,164. (See Class 51 for this trademark.)

857,166. (See Class 51 for this trademark.)

857,167. (See Class 51 for this trademark.)

857,187. BASIC-L. Shaklee Products. SN 247,260. Pub. 9-12-67. Filed 6-3-66.

857,188. 5 O'CLOCK. Luchemco Distributing Co. SN 253,321. Pub. 7-2-68. Filed 8-29-66.

857,189. DRIPMATIC. Avmor Ltd. SN 260,317. Pub. 7-2-68. Filed 12-8-66.

857,190. CLEAN AS A WHISTLE. The Drackett Company. SN 265,054. Pub. 7-2-68. Filed 2-20-67.

857,191. VINSTRIP. Texize Chemicals, Inc. SN 266,800. Pub. 7-2-68. Filed 3-15-67.

857,192. WES LEAF. West Chemical Products, Inc. SN 271,395. Pub. 7-2-68. Filed 5-12-67.

857,193. GUN KOTE. James E. Swett, d.b.a. California Coatings Co. SN 271,657. Pub. 7-2-68. Filed 5-16-67.

857,194. FLOZYME. Cudahy Company. SN 272,541. Pub. 7-2-68. Filed 5-29-67.

857,195. PHENOLA. West Chemical Products, Inc. SN 272,772. Pub. 7-2-68. Filed 5-31-67.

857,196. SPRAYTEK. Sanitek Products, Inc. SN 273,711. Pub. 9-12-67. Filed 6-14-67.

857,197. UNFAIR ADVANTAGE. Block Drug Company, Inc. SN 275,616. Pub. 7-2-68. Filed 7-10-67.

857,198. AN-CHLOR. Anderson Chemical Company. SN 276,625. Pub. 7-2-68. Filed 7-24-67.

857,199. QUICKEE. Quickee, Inc. SN 277,069. Pub. 7-2-68. Filed 7-28-67.

857,200. FINISH LINE. Avon Products, Inc. SN 278,358. Pub. 7-2-68. Filed 8-16-67.

857,201. EXCALIBUR. Avon Products, Inc. SN 278,361. Pub. 7-2-68. Filed 8-16-67.

857,202. AVCOM. A-V Communications, Inc. SN 280,845. Pub. 7-2-68. Filed 9-21-67.

857,203. METRO. Bristol-Myers Company. SN 282,050. Pub. 7-2-68. Filed 10-9-67.

857,204. APPOINT. Madison Chemical Corporation. SN 282,108. Pub. 7-2-68. Filed 10-9-67.

857,205. SO MUCH. Alberto-Culver Company. SN 294,130. Pub. 7-2-68. Filed 3-26-68.

857,206. MISCELLANEOUS DESIGN. Jiffee Chemical Corporation. SN 294,354. Pub. 7-2-68. Filed 3-28-68.

857,207. TU-DU. Stellad Products, Inc. SN 294,564. Pub. 7-2-68. Filed 4-1-68.

Service Marks

Class 100 — Miscellaneous

857,208. FILPER. Filper Corporation. SN 260,328. Pub. 260,328. Pub. 7-2-68. Filed 12-8-66.

857,209. BRITTANY BEEF. Burger Chef Systems, Inc. SN 270,032. Pub. 7-2-68. Filed 4-26-67.

857,210. THIS IS LIVING . . . THIS IS MARRIOTT. Marriott Corporation, by change of name from Marriott-Hot Shoppes, Inc. SN 270,257. Pub. 7-2-68. Filed 4-28-67.

857,211. HOTROD. United Aircraft Corporation. SN 272,322. Pub. 7-2-68. Filed 5-24-67.

857,212. TACO GRANDE. Taco Grande, Inc. SN 273,127. Pub. 7-2-68. Filed 6-5-67.

857,213. TACO GRANDE AND DESIGN. Taco Grande, Inc. SN 273,129. Pub. 7-2-68. Filed 6-5-67.

857,214. CACTUS AND BOY (DESIGN). Taco Grande, Inc. SN 273,130. Pub. 7-2-68. Filed 6-5-67.

857,215. MISCELLANEOUS DESIGN. Roy F. Weston, Inc. SN 274,474. Pub. 7-2-68. Filed 6-21-67.

857,216. PLAYBOY. HMH Publishing Co., Inc. SN 277,167. Pub. 7-2-68. Filed 7-31-67.

857,217. CHANCES R. North Wells Corporation. SN 278,987. Pub. 7-2-68. Filed 8-24-67.

857,218. TRAV-L-DEX. General Data Corporation. SN 280,226. Pub. 7-2-68. Filed 9-13-67.

857,219. NEUROPRACTIC INSTITUTE, INC. ETC. AND DESIGN. Neuropractic Institute, Inc. SN 280,963. Pub. 7-2-68. Filed 9-22-67.

857,220. WOMETCO BLUE CIRCLE AND DESIGN. Wometco Blue Circle, Inc. SN 282,333. Pub. 7-2-68. Filed 10-12-67.

857,221. MISCELLANEOUS DESIGN. Scan-Data Corporation. SN 283,164. Pub. 7-2-68. Filed 10-23-67.

857,222. MISCELLANEOUS DESIGN. Thiokol Chemical Corporation. SN 284,406. Pub. 7-2-68. Filed 11-8-67.

857,223. DIAL-A-HOTEL. Hotel Corporation of America. SN 292,452. Pub. 7-2-68. Filed 3-5-68.

857,224. THE OLD BARN. The Old Barn, Inc. SN 293,438. Pub. 7-2-68. Filed 3-18-68.

857,225. JA. James Associates, Inc. SN 293,882. Pub. 7-2-68. Filed 3-22-68.

857,226. PERRY BOYS' SMORGY. Perry Enterprises, Inc. SN 294,895. Pub. 7-2-68. Filed 4-4-68.

857,227. SMORGY. Perry Enterprises, Inc. SN 294,896. Pub. 7-2-68. Filed 4-4-68.

Class 101 — Advertising and Business

857,228. GB GARRETT-BUCHANAN. Garrett-Buchanan Company. SN 246,167. Pub. 7-2-68. Filed 5-20-66.

857,229. WELCOME NEIGHBOR. Midwest Publishing Company, d.b.a. Welcome Neighbor. SN 264,075. Pub. 7-2-68. Filed 2-6-67.

857,230. LIFE LISTED INFORMATION FOR EMERGENCY AND DESIGN. Pierce National Life Insurance Company, d.b.a. Life Emergency Foundation. SN 274,087. Pub. 7-2-68. Filed 6-16-67.

857,231. ROUND-UP AND DESIGN. Gold Bond Stamp Company of Dallas. SN 279,641. Pub. 7-2-68. Filed 9-5-67.

857,232. SKAT PRINT ETC. AND DESIGN. E. G. Oswald Publishing Co., Inc. SN 280,458. Pub. 7-2-68. Filed 9-15-67.

857,233. ADP AUTOPAY AND DESIGN. Automatic Data Processing, Inc. SN 282,033. Pub. 7-2-68. Filed 10-9-67.

857,234. REX ETC. AND DESIGN. Gitomer and Company. SN 282,162. Pub. 7-2-68. Filed 10-10-67.

857,235. EXTENSION I. The Emporium Capwell Company. SN 285,732. Pub. 7-2-68. Filed 11-28-67.

857,236. FANCIFUL DESIGN. John O. Morris, d.b.a. Morris Associates. SN 289,642. Pnb. 7-2-68. Filed 1-26-68.

857,237. GILBERT'S WHILE-U-WAIT PRINTING AND DESIGN. Michael Gilbert, d.b.a. Gilbert's While-U-Wait Printing. SN 291,814. Pub. 7-2-68. Filed 2-26-68.

Class 102 — Insurance and Financial

857,238. INCARD. Industrial National Bank of Rhode Island. SN 294,888. Pub. 7-2-68. Filed 4-4-68.

Class 103 — Construction and Repair

857,239. KNOLL. Knoll Associates, Inc. SN 262,341. Pub. 7-2-68. Filed 1-11-67.

857,240. MECH-LOCK. Mech-Lock Casting Repair System, Inc. SN 279,205. Pub. 7-2-68. Filed 8-28-67.

857,241. MISCELLANEOUS DESIGN. Pieper Electric, Inc. SN 279,494. Pub. 7-2-68. Filed 8-31-67.

Class 105 — Transportation and Storage

857,242. S & S Smith & Solomon Trucking Company. SN 272,313. Pub. 7-2-68. Filed 5-24-67.

Class 106 — Material Treatment

857,243. H AND DESIGN. Hayden Corporation West Springfield. SN 275,049. Pub. 7-2-68. Filed 6-29-67.

857,244. LUMELITE. Richardson-Merrell Inc. SN 277,383. Pub. 7-2-68. Filed 8-2-67.

Class 107 — Education and Entertainment

857,245. CHICAGO MUSTANGS, AND DESIGN. Chicago Mustangs, Inc. SN 273,603. Pub. 7-2-68. Filed 6-12-67.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 17—Tobacco Products

857,246. Peterson's Ltd., Inc., New York, N.Y. SN 268,425. Filed P.R. 4-5-67; Am. S.R. 1-25-68.

CUSTOM MIX

For Smoking Tobacco (Int. Cl. 34).
First use June 17, 1947.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

857,247. Missouri-Rogers Corporation, Joplin, Mo. SN 259,450. Filed P.R. 11-25-66; Am. S.R. 7-8-68.

ROK-ORE

For Apron Feeders (Int. Cl. 7).
First use December 1959.

Class 26 — Measuring and Scientific Appliances

857,248. Thadeus R. Kwarciak, Southbridge, Mass. SN 273,784. Filed P.R. 6-13-67; Am. S.R. 7-16-68.

TRIG-CHECK

For Instrument With Rotary Scales for Assisting in Solving Trigonometric Problems (Int. Cl. 9).
First use May 22, 1967.

857,249. Instrumentation Specialties Company, Lincoln, Nebr. SN 287,652. Filed 12-27-67.

DIALAGRAD

For Programmed Gradient Pump for Combining Liquids (Int. Cl. 9).
First use July 9, 1966.

Class 32 — Furniture and Upholstery

857,250. Robert D. Gunnell, d.b.a. Gunnell Cabinet Shop, Vassar, Mich. SN 273,890. Filed P.R. 6–14–67; Am. S.R. 7–10–68.

GUNNELL

For Chairs (Int. Cl. 20).
First use Feb. 6, 1967.

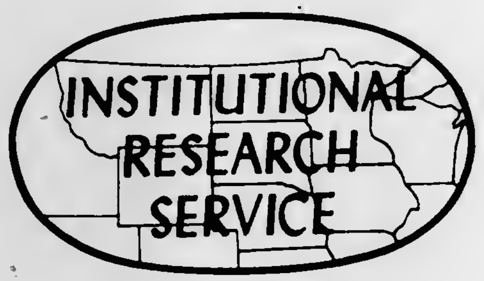
Class 38 — Prints and Publications

857,251. Grolier Educational Corporation, New York, N.Y. SN 270,059. Filed P.R. 4–26–67; Am. S.R. 7–15–68.

READING ATTAINMENT SYSTEM

For Reading Lesson Pamphlets, Vocabulary Cards and Vocabulary Answer Cards for Use in a Remedial Reading System, Published Serially and Periodically (Int. Cl. 16).
First use Mar. 16, 1967.

857,252. Piper, Jaffray & Hopwood, Minneapolis, Minn. SN 282,391. Filed P.R. 10–12–67; Am. S.R. 7–5–68.



For Periodic Reports on Investor-Business (Int. Cl. 16).
First use Oct. 20, 1966.

Class 39 — Clothing

857,253. Weyenberg Shoe Manufacturing Company, Milwaukee, Wis. SN 278,624. Filed 8–18–67.

SHEFFIELD

For Men's Leather Shoes (Int. Cl. 25).
First use July 19, 1940.

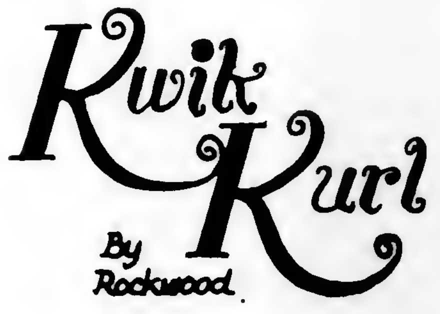
Class 40 — Fancy Goods, Furnishings, and Notions

857,254. Inter-All Corporation, South Hadley Falls, Mass. SN 286,936. Filed P.R. 12–14–67; Am. S.R. 7–11–68.

FINGER PRESS

For Appliques Coated With a Pressure-Sensitive Adhesive Backing (Int. Cl. 26).
First use Jan. 10, 1963.

857,255. Rockwood Industries, New Windsor, N.Y. SN 287,319. Filed P.R. 12–20–67; Am. S.R. 7–12–68.



For Ladies' Hair Curlers (Int. Cl. 26).
First use Mar. 2, 1967.

Class 44 — Dental, Medical, and Surgical Appliances

857,256. The Denticator Co., Inc., San Francisco, Calif. SN 264,040. Filed P.R. 2–6–67; Am. S.R. 7–3–68.

NIB

For Dental Instrument for Massaging Gingival Margin, Which Instrument Includes a Replacement Body of Surgical Gum Rubber Adapted To Engage and To Massage the Gingival Margin and a Tip Thereon To Position Said Body Between Teeth Against Said Gingival Margin (Int. Cl. 10).
First use July 1966.

857,257. Popper & Sons, Inc., New York, N.Y. SN 264,239. Filed P.R. 2–8–67; Am. S.R. 7–9–68.

EZE READ

For Fever Thermometers (Int. Cl. 9).
First use October 1958.

Class 50 — Merchandise Not Otherwise Classified

857,258. Keller Industries, Inc., Miami, Fla. SN 281,988. Filed P.R. 10–6–67; Am. S.R. 7–1–68.

SAFTI-PLUS

For Step Ladders (Int. Cl. 20).
First use Jan. 1, 1966.

Service Mark

Class 105 — Transportation and Storage

857,259. Interstate Van Lines, Inc., Washington, D.C. SN 268,413. Filed P.R. 4–5–67; Am. S.R. 5–20–68.

INTERSTATE

For Transportation of Goods by Van and Storage of Same (Int. Cl. 39).
First use Jan. 1, 1967.

TRADEMARK REGISTRATIONS RENEWED

31,900. 'SALADA.' Cl. 46 (Int. Cl. 30). 8–23–1898.
68,998. "STAR" ETC. AND REPRESENTATION OF STAR. Cl. 46 (Int. Cl. 29). 5–12–08.
70,157. ABDULLA. Cl. 17 (Int. Cl. 34). 8–4–08.
70,662. REPRESENTATION OF KEY. Cl. 40 (Int. Cl. 26). 9–22–08.
70,704. REPRESENTATION OF KEY. Cl. 22 (Int. Cl. 28). 9–29–08.
242,739. CRAVATESE. Cl. 39 (Int. Cl. 25). 6–5–28.
243,250. "ELAM'S STONE GROUND" AND DESIGN. Cl. 46 (Int. Cl. 30). 6–12–28.
244,828. SUNNY. Cl. 46 (Int. Cls. 29, 30, and 31). 7–31–28.
246,706. JUNIOR JOHNSONS. Cl. 22 (Int. Cl. 28). 9–11–28.
246,918. "SUPER SMOOTH" AND REPRESENTATION OF A ROLLER. Cl. 4 (Int. Cl. 8). 9–18–28.
247,563. THE BURROUGHS CLEARING HOUSE. Cl. 38 (Int. Cl. 16). 10–2–28.
247,949. ENCHANTMENT. Cl. 28 (Int. Cls. 8 and 14). 10–9–28.
248,700. SENATOR. Cl. 39 (Int. Cl. 25). 10–30–28.
248,733. "ROMAN STRIPE" AND DESIGN. Cl. 39 (Int. Cl. 25). 10–30–28.
248,843. RAINIER PARK. Cl. 42 (Int. Cl. 24). 10–30–28.
249,891. "HEINE'S BLEND" ETC. AND DESIGN. Cl. 17 (Int. Cl. 34). 11–20–28.
251,027. PLEE-ZING. Cl. 6 (Int. Cl. 1). 12–25–28.
438,344. OPEN BOOK. Cl. 17 (Int. Cl. 34). 4–13–48.
438,345. POLAR. Cl. 17 (Int. Cl. 34). 4–13–48.
438,346. HONEST. Cl. 17 (Int. Cl. 34). 4–13–48.
438,348. TALLY-HO. Cl. 17 (Int. Cl. 34). 4–13–48.
438,576. RENCH AID. Cl. 15 (Int. Cl. 4). 5–4–48.
439,605. DAY-LEE BRUSH AND DESIGN. Cl. 29 (Int. Cl. 21). 7–6–48.
439,741. PINCOR. Cl. 23 (Int. Cl. 7). 7–20–48.
439,904. COASTAL OIL CO. AND DESIGN. Cl. 15 (Int. Cl. 4). 7–27–48.
440,163. SOU'WESTER. Cl. 19 (Int. Cl. 12). 8–17–48.
440,755. MONOMEL. Cl. 1 (Int. Cl. 17). 9–28–48.
440,802. ADVARESIN. Cl. 1 (Int. Cl. 1). 9–28–48.
441,036. PENNSALT PM 90. Cl. 6 (Int. Cl. 1). 10–19–48.
441,528. HOME KRAFT. Cl. 16 (Int. Cl. 2). 12–7–48.
441,612. FALLS AND DESIGN. Cl. 46 (Int. Cl. 31). 12–14–48.
441,729. REALOCK. Cl. 13 (Int. Cl. 6). 12–28–48.
500,393. SUPER FLARE. Cl. 29 (Int. Cl. 21). 5–18–48.
500,394. HEALTHADE. Cl. 29 (Int. Cl. 21). 5–18–48.
501,025. RHOTEX. Cl. 6 (Int. Cl. 1). 7–13–48.
501,027. SANTOQUIN. Cl. 6 (Int. Cl. 5). 7–13–48.
501,177. OMAR. Cl. 37 (Int. Cl. 16). 7–27–48.
501,260. FILMKOTE. Cl. 37 (Int. Cl. 16). 7–27–48.
501,297. MONOCOL. Cl. 6 (Int. Cl. 1). 8–3–48.
501,364. SANGER'S. Cl. 4 (Int. Cl. 3). 8–3–48.
501,508. SOLITE ETC. AND DESIGN. Cl. 12 (Int. Cl. 19). 8–10–48.
501,556. WUNDERSHEER. Cl. 39 (Int. Cl. 25). 8–17–48.
501,752. STRATFORD. Cl. 17 (Int. Cl. 34). 8–24–48.
501,859. PROMTOR. Cl. 18 (Int. Cl. 5). 8–24–48.
502,019. BANJO AND DESIGN. Cl. 17 (Int. Cl. 34). 9–7–48.
502,040. BORNOT INC. CLEANERS. Cl. 103 (Int. Cl. 37). 9–7–48.
502,068. REELITE. Cl. 21 (Int. Cl. 9). 9–14–48.
502,176. DE MIRACLE. Cl. 51 (Int. Cl. 3). 9–14–48.
502,317. GREY-ROCK. Cl. 35 (Int. Cl. 17). 9–21–48.
502,334. BEVERIDGE. Cl. 37 (Int. Cl. 16). 9–21–48.
502,473. WHITNEY. Cl. 36 (Int. Cl. 15). 9–28–48.
502,524. ERWIN SUPERB. Cl. 42 (Int. Cl. 24). 9–28–48.
502,751. DURO-CHROME. Cl. 106 (Int. Cl. 40). 10–5–48.
502,824. WAYNE. Cl. 46 (Int. Cl. 31). 10–12–48.
502,910. TREK-ON. Cl. 16 (Int. Cl. 2). 10–12–48.
502,956. OLD SALEM. Cl. 39 (Int. Cl. 25). 10–12–48.
502,980. BIBB THE FIRST NAME IN TEXTILES. Cl. 7 (Int. Cl. 22). 10–19–48.
502,981. BIBB THE FIRST NAME IN TEXTILES. Cl. 43 (Int. Cl. 23). 10–19–48.
503,101. VACATIONER. Cl. 3 (Int. Cl. 18). 10–19–48.
503,152. LA ROSE FRANCE. Cl. 51 (Int. Cl. 3). 10–19–48.
503,334. NEW-TYPE. Cl. 44 (Int. Cl. 10). 10–26–48.
503,343. BIBB THE FIRST NAME IN TEXTILES. Cl. 42. (Int. Cl. 24). 10–26–48.
503,411. PYROTEX. Cl. 1 (Int. Cl. 17). 10–26–48.
503,475. LAKEVIEW. Cl. 1 (Int. Cl. 31). 10–26–48.
503,482. HONOR. Cl. 1 (Int. Cl. 31). 10–26–48.
503,503. MYERSON'S. Cl. 44 (Int. Cl. 10). 10–26–48.
503,580. TURKEY AND DESIGN. Cl. 46 (Int. Cl. 30). 11–2–48.
503,637. SMITHDALE. Cl. 45 (Int. Cl. 32). 11–2–48.
503,696. YES MAN. Cl. 102 (Int. Cl. 36). 11–2–48.
503,725. SWEET CLOVER. Cl. 46 (Int. Cls. 29, 30, and 32). 11–9–48.
503,768. VISUTAC. Cl. 26 (Int. Cl. 9). 11–9–48.
503,803. PERSONAL FINANCE CO. AND DESIGN. Cl. 102 (Int. Cl. 36). 11–9–48.
503,950. CHYPRE AND DESIGN. Cl. 51 (Int. Cl. 3). 11–16–48.
503,951. COTYAND DESIGN. Cl. 51 (Int. Cl. 3). 11–16–48.
504,108. QUIK FLAME. Cl. 34 (Int. Cl. 4). 11–23–48.
504,138. SNAKE EYES. Cl. 22 (Int. Cl. 28). 11–23–48.
504,422. ZIVCO. Cl. 14 (Int. Cl. 6). 11–30–48.
504,568. HALLERS 89. Cl. 49 (Int. Cl. 33). 12–7–48.
504,631. HARDTMUTH. Cl. 37 (Int. Cl. 16). 12–7–48.
504,639. TRUE'S. Cl. 16 (Int. Cl. 2). 12–7–48.
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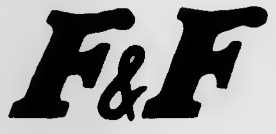
246,040. F & F. Cl. 18. 8–28–28. Organ-Iron Laboratories. F & F Laboratories, Inc., Chicago, Ill. Amended to appear:



500,312. YELLOTONE. Cl. 6. 5–11–48. Stauffer Chemical Company, New York, N.Y. Amended to appear:

YELLOTONE

502,243. ZEE. Cl. 37. 9–21–48. Comfort Paper Corporation. Crown Zellerbach Corporation, San Francisco, Calif. Amended to appear:

ZEE

502,496. TIRE. Cl. 6. 9–28–48. Stauffer Chemical Company, New York, N.Y. Amended to appear:

TIRE

502,499. TUBE. Cl. 6. 9–28–48. Stauffer Chemical Company, New York, N.Y. Amended to appear:

TUBE

747,905. HARDER HALL. Cl. 39. 4–9–63. Lytton's, Henry C. Lytton & Company, Chicago, Ill. Corrected: In the statement, column 1, line 1, before "Henry" *Lytton's,* should be inserted.

782,042. GRUNDFOSS. Cl. 23. 12–22–64. Grundfoss Bjerringbro Pumpefabrik A/S, Bjerringbro, Denmark. Amended: In the statement, column 1, line 1, after "A/S" *, now by change of name Grundfos A/S* should be inserted.

849,853. HARDY AMIES. Cl. 39. 5–28–68. Hardy Amies Limited, London, England. Corrected: In the statement, column 1, line 4, after "dresses;" *coats;* should be inserted, in column 1, line 7, "skirts" should be deleted and *shorts* should be inserted and in column 2, line 9, "Dec. 20" should be deleted and *Dec. 2* should be inserted.

849,854. HARDY AMIES AND DESIGN. Cl. 39. 5–28–68. Hardy Amies Limited, London, England. Corrected: In the statement, column 1, line 4, after "dresses," *coats;* should be inserted, in the statement, column 1, line 7, "skirts" should be deleted and *shorts* should be inserted.

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Computerworld, Inc., Cambridge, Mass. 857,066, pub. 7-2-68. Cl. 38.

Conax Corp., Buffalo, N.Y. 735,345, canc. Cl. 26.

Consolidated Diesel Electric Corp., Stamford, Conn. 735,320, canc. Cl. 26.

Consolidated Mining & Smelting Co. of Canada Ltd., The, Montreal, Quebec, Canada. 735,214, canc. Cl. 18.

Consolidated Royal Chemical Corp., Chicago, Ill. 502,176, ren. 9-17-68. Cl. 51.

Consumer Research Associates: *See*—

Pillsbury Co., The.

Continental Can Co., Inc., New York, N.Y. 856,853, pub. 7-2-68. Cl. 13.

Continental Contact Lenses, Elmhurst, N.Y. 735,306, canc. Cl. 26.

Copper Pot Fudge, Inc., Milwaukee, Wis. 857,126, pub. 7-2-68. Cl. 46.

Corbin-Farnsworth, Inc., Palo Alto, Calif. 857,104, pub. 7-2-68. Cl. 44.

Coty, Inc., to Chas. Pfizer & Co., Inc., New York, N.Y. 503,950-1, ren. 9-17-68. Cl. 51.

Courtaulds, Ltd., London, England. 735,397, canc. Cl. 39.

Cranston Print Works Co., New York, N.Y. 857,093, pub. 7-2-68. Cl. 42.

Crawford & Doherty Foundry Co., Portland, Oreg. 856,868, pub. 7-2-68. Cl. 14.

Creomulsion Co., Atlanta, Ga. 856,895, pub. 7-2-68. Cl. 18.

Cubic Corp., San Diego, Calif. 857,002, pub. 7-2-68. Cl. 26.

Cudahy Co., Phoenix, Ariz. 857,194, pub. 7-2-68. Cl. 52.

Curtis, Helene, Industries, Inc., Chicago, Ill. 857,174, pub. 7-2-68. Cl. 51.

Cybetronics, Inc., Waltham, Mass. 857,006, pub. 11-21-67. Cl. 26.

Dakota Farmer Co., The, Aberdeen, S. Dak. 735,373, canc. Cl. 38.

Daly, James W., Inc., Lawrence, Mass. 857,108, pub. 7-2-68. Cl. 44.

Dana Corp., Toledo, Ohio. 856,983, pub. 7-2-68. Cl. 23.

Davinci Creations, Inc., Providence, R.I. 857,024, pub. 7-2-68. Cl. 28.

Deering Milliken, Inc., New York, N.Y. 857,097, pub. 9-19-67. Cl. 43.

Del Conte Mfg. Co.: *See*—

Harlyn Products, Inc.

Del Laboratories, Inc., Farmingdale, N.Y. 857,165, pub. 7-2-68. Cl. 51.

Delaware Punch Co., San Antonio, Tex. 857,135, pub. 7-2-68. Cl. 46.

Dennison Duramatic Corp., Monmouth Junction, from Universal Duramatic Corp., Princeton, N.J. 856,990, pub. 7-2-68. Cl. 23.

Denticator Co., Inc., The, San Francisco, Calif. 857,256. Cl. 44.

Developmental Engineering Corp., Washington, D.C. 735,231, canc. Cl. 21.

Dewey Portland Cement Co., Kansas City, Mo., to Martin-Marietta Corp., New York, N.Y. 505,018, ren. 9-17-68. Cl. 12.

De Witt Custom Lubricants: *See*—

Headden, De Witt.

Dianna Stores Corp., North Bergen, N.J. 857,083, pub. 7-2-68. Cl. 39.

Dines, James, & Co., Inc., New York, N.Y. 857,062, pub. 7-2-68. Cl. 38.

D'Merle Guitars, Inc., Huntington Station, N.Y. 857,049, pub. 7-2-68. Cl. 36.

Drackett Co., The, Cincinnati, Ohio. 857,190, pub. 7-2-68. Cl. 52.

Drexel Dynamics Corp., Horsham, Pa. 856,987, pub. 7-2-68. Cl. 23.

Duofold, Inc., Mohawk, N.Y. 857,073, pub. 7-2-68. Cl. 39.

Duplex Straw Dispenser Co., Los Angeles, Calif. 735,124, canc. Cl. 2.

Du Pont de Nemours, E. I., & Co., Wilmington, Del. 857,019, pub. 7-2-68. Cl. 26.

Duro-Chrome of Chicago, Inc., to Vacuum Can Co., Chicago, Ill. 502,751, ren. 9-17-68. Cl. 106.

Dynapak, Inc., Des Plaines, Ill. 857,103, pub. 7-2-68. Cl. 44.

E & E Enterprises, Inc., Lawrenceville, Ga. 856,907, pub. 7-2-68. Cl. 18.

Eagle-Picher Industries, Inc., Cicero, Ill. 856,805, pub. 7-2-68. Cl. 1.

Ehrhart-Conrad Co., Hanover, Pa. 503,725, ren. 9-17-68. Cl. 46.

Eisenbaum, Jacob, d.b.a. Jacob's Fan Mfg. Co., Houston, Tex. 856,922, pub. 7-2-68. Cl. 21.

Elam Mills, Inc., Chicago, Ill., to National Bakers Services, Inc., Hollywood, Calif. 243,250, ren. 9-17-68. Cl. 46.

Elco Tool & Screw Corp., Rockford, Ill. 856,866, pub. 7-2-68. Multiple Class (Classes 13 and 23).

Ellen Girl Coat Co., Inc., New York, N.Y. 857,078, pub. 7-2-68. Cl. 39.

Elmcraft Inc., Chicago, Ill. 857,067, pub. 7-2-68. Cl. 38.

Embassy Packaging Corp., Cherry Hill, N.J. 856,814, pub. 7-2-68. Cl. 2.

Emergency Shelter Co., Bryan, Tex. 735,177, canc. Cl. 12.

Emporium Capwell Co., The, San Francisco, Calif. 857,235, pub. 7-2-68. Cl. 101.

Erba, Carlo, S.p.A., Milan, Italy. 856,893, pub. 7-2-68. Cl. 18.

Erwin Cotton Mills Co., to Erwin Mills, Inc., Durham, N.C. 502,524, ren. 9-17-68. Cl. 42.

Erwin Mills, Inc.: *See*—

Erwin Cotton Mills Co.

Estes, Clifford W., Co., Inc., Kearny, N.J. 856,806, pub. 7-2-68. Cl. 1.

Evans, Robert G., Co., Kansas City, Mo. 856,989, pub. 7-2-68. Cl. 23.

Eventoff, Franklin N., d.b.a. The Leather People, Baltimore, Md. 856,824, pub. 7-2-68. Multiple Class (Classes 3, 28, 32, and 39).

Everlast World's Boxing Headquarters Corp., Bronx, N.Y. 856,962-3, pub. 7-2-68. Cl. 22.

Faber-Castell, A. W., Pencil Co., Inc., Newark, N.J. 501,177, ren. 9-17-68. Cl. 37.

Fam Corp., Portland, Oreg. 735,248, canc. Cl. 21.

Family Record Plan, Inc., Los Angeles, Calif. 857,065, pub. 7-2-68. Cl. 38.

Famous Imported Brands: *See*—

Barton Distilling Co.

Famous Keystone Corp., Chicago, Ill. 856,966, pub. 7-2-68. Cl. 22.

Farm Bureau Association, Waltham, Mass. 856,842, pub. 4-4-67. Cl. 10.

Feyel, F., Fabrique de Pates de Foie Gras, S.A., Schiltigheim (Bas-Rhin), France. 856,804, pub. 7-2-68. Multiple Class (Classes 1 and 46).

Filler Products, Inc.: *See*—

Reynolds, R. P., Foods, Inc.

Filper Corp., San Ramon, Calif. 857,208, pub. 7-2-68. Cl. 100.

Finegrade Furniture Refinishers, Inc., Brooklyn, N.Y. 735,503, canc. Cl. 103.

Firda Canning Co., Maloy, Norway. 857,133, pub. 7-2-68. Cl. 46.

Firestone Tire & Rubber Co., The, Akron, Ohio. 856,847, pub. 7-2-68. Cl. 12.

Flavor Tree Foods Co.: *See*—

Morris, Philip, Inc.

Fleming Co. Inc., The, Topeka, Kans. 857,129, pub. 7-2-68. Cl. 46.

Fleming-Hall Tobacco Co., Inc., to United States Tobacco Co., New York, N.Y. 501,752, ren. 9-17-68. Cl. 17.

Flomak Corp., Chicago, Ill. 856,920, pub. 7-2-68. Cl. 21.

Ford, Kling & Wilson, St. Petersburg Beach, Fla. 735,216, canc. Cl. 18.

Ford Motor Co., Dearborn, Mich. 856,919, pub. 7-2-68. Cl. 21.

Foto-Field, Inc., Morton Grove, Ill. 735,187, canc. Cl. 13.

Freeman, Bishop, Co., Evanston, Ill. 735,295, canc. Cl. 24.

Friedman, A. A., Co. Inc., Augusta, Ga. 856,949, pub. 7-2-68. Cl. 21.

Frigoscandia Aktiebolag, Halsingborg, Sweden. 857,029, pub. 7-2-68. Cl. 31.

Frito-Lay, Inc., Exchange Park, Dallas, Tex. 857,140, pub. 7-2-68. Cl. 46.

Fritzsche Bros., Inc., New York, N.Y. 857,145, pub. 7-2-68. Cl. 46.

Frontier Electronics, Phoenix, Ariz. 735,317, canc. Cl. 26.

Gallo, E. & J., Winery, d.b.a. Gallo Vineyards, Modesto, Calif. 857,148, pub. 7-2-68. Cl. 47.

Gallo Vineyards: *See*—

Gallo, E. & J., Winery.

Garden State Packing Co., Elm, N.J. 857,141, pub. 7-2-68. Cl. 46.

Garrett-Buchanan Co., Philadelphia, Pa. 857,228, pub. 7-2-68. Cl. 101.

Gebhardt, A. L., Co., Milwaukee, Wis. 856,810, pub. 7-2-68. Cl. 1.

Gem, Inc., Byhalia, Miss. 857,185, pub. 7-2-68. Cl. 51.

General Data Corp., Memphis, Tenn. 857,218, pub. 7-2-68. Cl. 100.

General Dynamics Corp., San Diego, Calif. 857,004, pub. 7-2-68. Cl. 26.

General Electric Co., Hendersonville, N.C. 856,928, pub. 7-2-68. Cl. 21.

General Mills, Inc.: *See*—

Oneida Community Ltd.

General Time Corp., Stamford, Conn. 856,992, pub. 7-2-68. Cl. 23.

Genesco Inc., Nashville, Tenn. 735,116, canc. Cl. 2.

Gentex Corp., New York, N.Y. 856,968-9, pub. 7-2-68. Cl. 22.

Georgia Marble Co., The, Atlanta, Ga. 857,162, pub. 7-2-68. Cl. 50.

Geotech—A Teledyne Co.: *See*—

Teledyne Industries, Inc.

Gilbert, Michael, d.b.a. Gilbert's While-U-Wait Printing, San Francisco, Calif. 857,237, pub. 7-2-68. Cl. 101.

Gilbert's While-U-Wait Printing: *See*—

Gilbert, Michael.

Gitomer & Co., Cherry Hill, N.J. 857,234, pub. 7-2-68. Cl. 101.

Givaudan Corp., Clifton, N.J. 856,828, pub. 7-2-68. Cl. 6.

Godbersen-Smith Construction Co., Inc., Ida Grove, Iowa. 857,158, pub. 7-2-68. Cl. 50.

Goddard, J., & Sons Ltd., Leicester, England. 856,825, pub. 7-2-68. Multiple Class (Classes 4, 6, 29, and 52).

Gold Bond Stamp Co. of Dallas, Minneapolis, Minn. 857,231, pub. 7-2-68. Cl. 101.

Goldberger Doll Mfg. Co., Inc., Brooklyn, N.Y. 856,970, pub. 7-2-68. Cl. 22.

Goldman, Wm. P., & Bros., Inc., New York, N.Y. 857,080-1, pub. 7-2-68. Cl. 39.

Good Humor Corp., Brooklyn, N.Y. 735,447, canc. Cl. 46.

Goodrich, B. F., Co., The, Akron, Ohio. 856,809, pub. 7-2-68. Cl. 1.

Grace-Lee Products Inc., Minneapolis, Minn. 826,532, canc. Cl. 52.

Graham Co., Inc., The, New York, N.Y. 857,139, pub. 7-2-68. Cl. 46.

Greenberg's, M., Sons, Inc., San Francisco, Calif. 856,864, pub. 7-2-68. Cl. 13.

Greenblossom, New York, N.Y. 857,163, pub. 7-2-68. Cl. 50.

Greene, Harry G., Chicago, Ill. 857,114, pub. 7-2-68. Cl. 44.

Griesheim G.m.b.H., Frankfurt Main, Germany. 857,038-9, pub. 7-2-68. Cl. 34.

Griffin Mfg. Co., Inc., Brooklyn, to American Home Products Corp., New York, N.Y. 505,081, ren. 9-17-68. Cl. 4.

Griffolyn Co., Inc., Houston, Tex. 856,852, pub. 7-2-68. Cl. 13.

Griffolyn Co., Inc., Houston, Tex. 857,159, pub. 7-2-68. Cl. 50.

Grogan, Patrick M., d.b.a. Grogards, Salem, Oreg. 856,986, pub. 7-2-68. Cl. 23.

Grogards: *See*—

Grogan, Patrick M.

Grolier Educational Corp., New York, N.Y. 857,251. Cl. 38.

Grossman, Charles, d.b.a. The Victor Co., Malverne, N.Y. 857,026, pub. 7-2-68. Cl. 29.

Grossman, Henry S., Cleveland, Ohio. 857,060, pub. 7-2-68. Cl. 37.

Grundfoss Bjerringbro Pumpefabrik A/S, Bjerringbro, Denmark. 782,042. Am. 7(d). Cl. 23.

Gunnell Cabinet Shop: *See*—

Gunnell, Robert D.

Gunnell, Robert D., d.b.a. Gunnell Cabinet Shop, Vassar, Mich. 857,250. Cl. 32.

HLC Mfg. Co., Inc., Oreland, Pa. 857,020, pub. 7-2-68. Cl. 26.

HMH Publishing Co., Inc., Chicago, Ill. 857,216, pub. 7-2-68. Cl. 100.

HR Lubricants Inc.: *See*—

H. R. L. Inc.

H. R. L. Inc., d.b.a. HR Lubricants Inc., Los Angeles, Calif. 856,874, pub. 7-2-68. Cl. 15.

Haggar Co., Dallas, Tex. 735,388, canc. Cl. 39.

Haircare, Inc., New York, N.Y. 735,465, canc. Cl. 52.

Hall, Sheldon M., d.b.a. Hy G. Laboratories, Short Hills, N.J. 856,906, pub. 7-2-68. Cl. 18.

Haller, W. A., Corp., Philadelphia, Pa. 504,568, ren. 9-17-68. Cl. 49.

Hammel, Riglander & Co., Inc., New York, N.Y. 501,364, ren. 9-17-68. Cl. 4.

Hardtmuth, L. & C., Inc., Bloomsbury, N.J. 504,631, ren. 9-17-68. Cl. 37.

Hardwick Stove Co., Cleveland, Tenn. 856,932, pub. 7-2-68. Cl. 21.

Harem Scarums: *See*—

Shirek, Alan.

Harlyn Products, Inc., d.b.a. The Palomar Co., and Del Conte Mfg. Co., Los Angeles, Calif. 857,021, pub. 7-2-68. Cl. 28.

Harper, Helen, Inc.: *See*—

Monsanto Co.

Harris Mfg. Corp., Fort Wayne, Ind. 856,915, pub. 7-2-68. Cl. 19.

Hat Corp. of America, Norwalk, Conn. 505,271, ren. 9-17-68. Cl. 39.

Hat Corp. of America, New York, N.Y. 505,279, ren. 9-17-68. Cl. 39.

Haveg Industries, Inc., Wilmington, Del. 735,104, canc. Cl. 1.

Hayden Corp. West Springfield, West Springfield, Mass. 857,243, pub. 7-2-68. Cl. 106.

Headden, De Witt, d.b.a. De Witt Custom Lubricants, Glendale, Calif. 735,201, canc. Cl. 15.

Hellier Creative Industries, Inc., Hellier, Ky. 856,958, pub. 7-2-68. Cl. 22.

Helzberg's Diamond Shops, Inc., Kansas City, Mo. 856,840, pub. 7-2-68. Cl. 8.

Herr, Al, Advertising Agency, Inc., Milwaukee, Wis. 857,063, pub. 7-2-68. Cl. 38.

Heublein, Inc., Hartford, Conn. 857,154, pub. 7-2-68. Cl. 49.

Hexacon Electric Co., Roselle Park, N.J. 857,040-1, pub. 7-2-68. Cl. 34.

Hinckley, Henry R., & Co., Inc., Southwest Harbor, Maine. 440,163, ren. 9-17-68. Cl. 19.

Hipolito Garcia Rodriguez, Colloto, Oviedo, Spain. 856,877, pub. 7-2-68. Cl. 17.

Hollister Canning Co., Hollister, Calif. 505,342, ren. 9-17-68. Cl. 46.

Hollywood Brands, Inc., Centralia, Ill. 857,142, pub. 7-2-68. Cl. 46.

Hotel Corp. of America, Boston, Mass. 857,223, pub. 7-2-68. Cl. 100.

Houbigant, Inc., New York, N.Y. 503,152, ren. 9-17-68. Cl. 51.

Howmet Corp., New York, N.Y. 856,870, pub. 7-2-68. Cl. 14.

Hurst, Vanda S.: *See*—

Sauerborn, L. J.

Hy G. Laboratories: *See*—

Hall, Sheldon M.

Hydro-Flex Corp., Inc., Topeka, Kans. 856,854, pub. 7-2-68. Cl. 13.

Hy-Genic Products, Inc., Lyons, Ill. 735,483, canc. Cl. 6.

I.H. Mfg. Co., Inc., New York, N.Y. 735,301, canc. Cl. 26.

Idex Corp., Danbury, Conn. 857,009, pub. 7-2-68. Cl. 26.

Ilford, Ltd., Essex, England. 857,014, pub. 7-2-68. Cl. 26.

"Imexin," Import-Export pour l'Industrie, Brussels, Belgium. 857,157, pub. 7-2-68. Cl. 50.

Industrial National Bank of Rhode Island, Providence, R.I. 857,238, pub. 7-2-68. Cl. 102.

Instrumentation Specialties Co., Lincoln, Nebr. 857,249. Cl. 26.

Inter-All Corp., South Hadley Falls, Mass. 857,254. Cl. 40.

Inter-American Industrial Services Corp., Boston, Mass. 735,251-2, canc. Cl. 22.

International Hearing Aids, Inc., Minneapolis, Minn. 857,107, pub. 7-2-68. Cl. 44.

International Latex Corp.: *See*—

Procter & Gamble Co., The.

International Telemeter Corp., Los Angeles, Calif. 856,929, pub. 7-2-68. Cl. 21.

Interstate Van Lines, Inc., Washington, D.C. 857,259. Cl. 105.
Itek Corp., Lexington, Mass. 857,017, pub. 7–2–68. Cl. 26.
Iwatani & Co., Ltd., Osaka, Japan. 857,037, pub. 7–2–68. Cl. 34.
Jacob's Fan Mfg. Co.: *See—*
Eisenbaum, Jacob.
James Associates, Inc., Indianapolis, Ind. 857,225, pub. 7–2–68. Cl. 100.
Jamesbury Corp., Worcester, Mass. 856,851, pub. 7–2–68. Cl. 13.
Jefferson Electric Co., Bellwood, Ill. 856,942, pub. 7–2–68. Cl. 21.
Jenkins, M. S.: *See—*
Bornot, Inc.
Jensen Machinery, Inc., Fort Lauderdale, Fla. 857,000, pub. 7–2–68. Cl. 24.
Jet Research Center, Inc., Arlington, Tex. 735,159, canc. Cl. 9.
Jiffee Chemical Corp., Indianapolis, Ind. 857,206, pub. 7–2–68. Cl. 52.
Johnson & Johnson, New Brunswick, N.J. 856,908, pub. 7–2–68. Cl. 18.
Johnson, Nestor, Mfg. Co., Chicago, Ill. 246,706, ren. 9–17–68. Cl. 22.
Johnson, S. C., & Son, Inc., Racine, Wis. 735,145, canc. Cl. 6.
Jordan Industries, Inc., Miami, Fla. 856,849, pub. 7–2–68. Cl. 13.
Kanegafuchi Chemical Industry Co., Ltd., Osaka, Japan. 857,087, pub. 7–2–68. Cl. 40.
Keller Industries, Inc., Miami, Fla. 857,258. Cl. 50.
Kenneth Beauty Salons & Products, Inc., New York, N.Y. 857,164, pub. 7–2–68. Multiple Class (Classes 51 and 52).
Kenneweg Co., The, Cumberland, Md., to The Borden Co., New York, N.Y. 68,998, ren. 9–17–68. Cl. 46.
Kimball Piano & Organ Co.: *See—*
Kimball, W. W., Co.
Kimball, W. W., Co., Chicago, Ill., to Kimball Piano & Organ Co., Jasper, Ind. 502,473, ren. 9–17–68. Cl. 36.
King-Seeley Thermos Co., Ann Arbor, Mich. 856,816, pub. 7–2–68. Cl. 2.
Knoll Associates, Inc., New York, N.Y. 857,095, pub. 7–2–68. Cl. 42.
Knoll Associates, Inc., New York, N.Y. 857,239, pub. 7–2–68. Cl. 103.
Knudsen, Ronald N., Arlington, Va. 856,946, pub. 7–2–68. Cl. 21.
Kresge, S. S., Co., Detroit, Mich. 857,061, pub. 7–2–68. Cl. 37.
Kurtz Bros., Clearfield, Pa. 505,379, ren. 9–17–68. Cl. 37.
Kwarciak, Thadeus R., Southbridge, Mass. 857,248. Cl. 26.
L-W Photo, Inc., Van Nuys, Calif. 857,013, pub. 7–2–68. Cl. 26.
Lakewood Mfg. Co., Westlake, Ohio. 735,117, canc. Cl. 2.
Lanco Products Corp., New York, N.Y. 857,144, pub. 7–2–68. Cl. 46.
Lane Co., Inc., The, Altavista, Va. 735,351, canc. Cl. 32.
Lantery, Harry E., Wollaston, Mass. 735,303, canc. Cl. 26.
Larkin, Peter C., Toronto. to Salad Foods Ltd., Don Mills, Ontario, Canada. 31,900, ren. 9–17–68. Cl. 46.
Lawmaster, Roger E., Tulsa, Okla. 857,128, pub. 7–2–68. Cl. 46.
Leather People, The: *See—*
Eventoff, Franklin N.
Lewyt Corp., d.b.a. Shetland/Lewyt, Salem, Mass. 856,918, pub. 7–2–68. Cl. 21.
Liberty Steel Chest Corp., The, Rochester, N.Y .735,255, canc. Cl. 22.
Life Emergency Foundation: *See—*
Pierce National Life Insurance Co.
Life Mfg. Co., Inc., East Boston, Mass. 856,914, pub. 7–2–68. Cl. 19.
Lilly, Eli, & Co., Indianapolis, Ind. 856,833, pub. 7–2–68. Cl. 6.
Lily-Tulip Cup Corp., New York, N.Y. 856,819–20, pub. 7–2–68. Cl. 2.
Lily-Tulip Cup Corp., New York, N.Y. 856,993–6, pub. 7–2–68. Cl. 23.
Lindsey, David, d.b.a. Link Publishing Co., New York, N.Y. 857,068, pub. 7–2–68. Cl. 38.
Link Publishing Co.: *See—*
Lindsey, David.
Litton Business Systems, Inc., New York, N.Y., from Royal Typewriter Co., Inc., Hartford, Conn. 857,011, pub. 7–2–68. Cl. 26.
Look Co., Nevers (Nievre), France, from Beconta Inc., New York, N.Y. 856,960, pub. 11–21–67. Cl. 22.
Loren International Corp., New York, N.Y. 735,365, canc. Cl. 36.
Lorillard, P., Co., New York, N.Y. 438,344–6, ren. 9–17–68. Cl. 17.
Lorillard, P., Co., New York, N.Y. 438,348, ren. 9–17–68. Cl. 17.
Lubaid Co.: *See—*
Sauerborn, L. J.
Luchemco Distributing Co., Denver, Colo. 857,188, pub. 7–2–68. Cl. 52.
Lytton's, Henry C., to Lytton & Co., Chicago, Ill. 747,905, cor. Cl. 39.
MacAndrews & Forbes Co., Camden, N.J. 856,843, pub. 7–2–68. Cl. 10.
Madeleine De Martel Cosmetics: *See—*
Sherman, Robert M.
Madison Chemical Corp., Maywood, Ill. 857,204, pub. 7–2–68. Cl. 52.
Maidenform, Inc., New York, N.Y. 857,086, pub. 7–2–68. Cl. 39.
Maigu Co., Inc., Tehran, Iran. 735,493, canc. Cl. 46.
Manufacturers of Pharmaceuticals: *See—*
Spezialchemie Gesellschaft mit beschrankter Haftung & Co. Arzneimittelfabrik.
Marine Securitainer Corp., The, New York, N.Y. 735,128, canc. Cl. 2.
Marriott Corp., from Marriott-Hot Shoppes, Inc., Washington, D.C., 857,210, pub. 7–2–68. Cl. 100.
Marriott-Hot Shoppes, Inc.: *See—*
Marriott Corp.
Mars, Ernest P., d.b.a. Superior Products Co., to Superior Products Laboratories, Inc., Chicago, Ill. 246,918, ren. 9–17–68. Cl. 4.
Martin Marietta Corp.: *See—*
Dewey Portland Cement Co.
Masonic Service Association of The United States, The, Washington, D.C. 504,930, ren. 9–17–68. Cl. 38.
Massengill, S. E., Co., The, Bristol, Tenn. 856,891, pub. 7–2–68. Cl. 18.
Mastercraft Pipes, Inc.: *See—*
Hardcastle, Parker, Ltd.
Masters of Religious Art, Inc., New York, N.Y. 857,053, pub. 7–2–68. Cl. 36.
Mattel, Inc., Hawthorne, Calif. 856,822, pub. 7–2–68. Cl. 2.
Mattel, Inc., Hawthorne, Calif. 856,965, pub. 7–2–68. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 856,971–3, pub. 7–2–68. Cl. 22.
McGill Mfg. Co., Inc., Valparaiso, Ind. 857,043, pub. 7–2–68. Cl. 35.
McQuade, John, & Co., Inc., to Sapolin Paints Inc., New York, N.Y. 441,528, ren. 9–17–68. Cl. 16.
Mech-Lock Casting Repair System, Inc., Oak Lawn, Ill. 857,240, pub. 7–2–68. Cl. 103.
Menley & James Laboratories, Ltd., Philadelphia, Pa. 856,892, pub. 7–2–68. Cl. 18.
Mennen Co., The, Morristown, N.J. 857,175, pub. 7–2–68. Cl. 51.
Mercantile Stores Co., Inc., New York, N.Y. 857,090, pub. 7–2–68. Cl. 41.
Merck, E., Aktiengesellschaft, Darmstadt, Germany. 856,837, pub. 7–2–68. Cl. 6.
Metrix, Inc., Denver, Colo. 857,110, pub. 7–2–68. Cl. 44.
Meyer Laboratories Inc., Detroit, Mich. 856,902, pub. 7–2–68. Cl. 18.
Midwest Publishing Co., d.b.a. Welcome Neighbor, Davenport, Iowa. 857,229, pub. 7–2–68. Cl. 101.
Miller, Brad S., d.b.a. Mobile Fidelity Records, Burbank, Calif. 857,046, pub. 7–2–68. Cl. 36.
Minotaure S.a.r.l., Vaud, Switzerland. 856,975, pub. 7–2–68. Cl. 23.
Missouri-Rogers Corp., Joplin, Mo. 857,247. Cl. 23.
Mobile Fidelity Records: *See—*
Miller, Brad S.
Modern Shoe Arch Corp.: *See—*
Rotko, Russell.
Modernair Corp., Bryan, Ohio, from Modernair Corp., San Leandro, Calif. 735,282, canc. Cl. 23.
Modglin-Maid, Inc., Hazlehurst, Miss. 856,838, pub. 7–2–68. Cl. 29.
Monsanto Chemical Co., to Monsanto Co., St. Louis, Mo. 440,755, ren. 9–17–68. Cl. 1.
Monsanto Chemical Co., to Monsanto Co., St. Louis, Mo. 501,027, ren. 9–17–68. Cl. 6.
Monsanto Co.: *See—*
Monsanto Chemical Co.
Monsanto Co., St. Louis, Mo., from Helen Harper Inc., New York, N.Y. 857,077, pub. 7–2–68. Cl. 39.
Morgan-Jones, Inc., New York, N.Y. 735,413, canc. Cl. 42.
Morrell, John, & Co., Chicago, Ill. 857,143, pub. 7–2–68. Cl. 46.
Morris Associates: *See—*
Morris, John O.
Morris, John O., d.b.a. Morris Associates, Hartford, Conn. 857,236, pub. 7–2–68. Cl. 101.
Morris, Philip, Inc., New York, N.Y. 856,885, pub. 7–2–68. Cl. 17.
Morris, Philip, Inc., d.b.a. Flavor Tree Foods Co., New York, N.Y. 857,146, pub. 7–2–68. Cl. 46.
Morton International, Inc., Chicago, Ill. 856,812, pub. 7–2–68. Cl. 1.
Multistamp Co., The, Norfolk, Va. 857,056, pub. 7–2–68. Cl. 37.
Mustad, O., & Son, Oslo, Norway. 70,662, ren. 9–17–68. Cl. 40.
Mustad, O., & Son, Oslo, Norway. 70,704, ren. 9–17–68. Cl. 22.
Myerson Tooth Corp., Cambridge, Mass. 503,334, ren. 9–17–68. Cl. 44.
Myerson Tooth Corp., Cambridge, Mass. 503,503, ren. 9–17–68. Cl. 44.
Nail Tone, Inc., Miami, Fla. 741,024, canc. Cl. 51.
National Bakers Services, Inc.: *See—*
Elam Mills, Inc.
National Lead Co., New York, N.Y. 735,168, canc. Cl. 12.
National Pectin Products Co., Chicago, Ill. 504,805, ren. 9–17–68. Cl. 46.
National Steel Corp., Pittsburgh, Pa. 856,869, pub. 7–2–68. Cl. 14.
Neuropractic Institute, Inc., Lindenhurst, N.Y. 857,219, pub. 7–2–68. Cl. 100.
New England Printed Tape Co., Pawtucket, R.I. 735,155, canc. Cl. 7.
Newsweek, Inc., New York, N.Y. 735,489–90, canc. Cl. 38.
Nichols & Co., Inc., Boston, Mass. 856,807, pub. 7–2–68. Cl. 1.
Niphan Ltd., London, England. 856,926, pub. 7–2–68. Cl. 21.
Noble, Thomas B., Inc., East Durham, N.Y. 856,894, pub. 7–2–68. Cl. 18.
Norris Industries, Inc., Los Angeles, Calif. 856,953, pub. 7–2–68. Cl. 21.
Norris Industries, Inc., Los Angeles, Calif. 856,997, pub. 7–2–68. Cl. 23.
North Wells Corp., Chicago, Ill. 857,217, pub. 7–2–68. Cl. 100.

Northwestern Corp., The, Morris, Ill. 735,292, canc. Cl. 23.
Norton Co., Worcester, Mass. 856,975, pub. 7–2–68. Cl. 16.
Noyes, Kenneth E., Inc., Newburyport, Mass. 856,862, pub. 7–2–68. Multiple Class (Classes 13 and 23).
Nye-Wait Co., Inc., Auburn, N.Y. 735,410, canc. Cl. 42.
O'Brien, William H., Phoenix, Ariz. 856,813, pub. 7–2–68. Cl. 1.
Old Barn, Inc., The, Oak Lawn, Ill. 857,224, pub. 7–2–68. Cl. 100.
Old Deerfield Fabrics, Inc., New York, N.Y. 857,091, pub. 7–2–68. Cl. 42.
Ollstein, Lea J., d.b.a. "Bark"-Ly Products Co., New York, N.Y. 735,127, canc. Cl. 3.
Olympia Aktiengesellschaft, Wilhelmshaven, Germany. 735,269, canc. Cl. 23.
Omega Engineering, Inc., Stamford, Conn. 857,007, pub. 7–2–68. Cl. 26.
Oneida Community Ltd., Oneida, N.Y., to General Mills, Inc., Minneapolis, Minn. 247,949, ren. 9–17–68. Cl. 28.
Optische Werke G. Rodenstock, Munich, Germany. 857,016, pub. 7–2–68. Cl. 26.
Organ-Iron Laboratories, to F & F Laboratories, Inc., Chicago, Ill. 246,040. Am. 7(d). Cl. 18.
Oswald, E. G., Publishing Co., Inc., New Ulm, Minn. 857,232, pub. 7–2–68. Cl. 101.
Ovaltine Food Products: *See—*
Wander Co., The.
Owens Brush Co., Toledo, Ohio, to Chemway Corp., Wayne, N.J. 500,393–4, ren. 9–17–68. Cl. 29.
Oxygen Equipment & Service Co., Chicago, Ill. 857,102, pub. 7–2–68. Cl. 44.
Pacific Industrial Controls, Inc., The, Berkeley, Calif. 735,244, canc. Cl. 21.
Palm Beach Co., Portland, Maine. 735,389, canc. Cl. 39.
Palomar Co., The: *See—*
Harlyn Products, Inc.
Paper Welder, Inc., Medina, N.Y. 856,998, pub. 7–2–68. Cl. 23.
Parke, Davis & Co., Detroit, Mich. 856,909, pub. 5–14–68. Cl. 18.
Parker Hardcastle Ltd., London, England, from Mastercraft Pipes, Inc., New York, N.Y. 856,839, pub. 8–22–67. Cl. 8.
Pascal Co., Inc., Seattle, Wash. 857,112, pub. 7–2–68. Cl. 44.
Pendleton Woolen Mills, Portland, Oreg. 248,843, ren. 9–17–68. Cl. 42.
Pennsalt Chemicals Corp.: *See—*
Pennsylvania Salt Mfg. Co., The.
Pennsylvania Salt Mfg. Co., The, to Pennsalt Chemicals Corp., Philadelphia, Pa. 441,036, ren. 9–17–68. Cl. 6.
Pennsylvania Silk Hosiery Mills, Inc., Bangor, Pa., to Alba Waldensian, Inc., Valdese, N.C. 248,733, ren. 9–17–68. Cl. 39.
Perez, Enrique, Miami Beach, Fla. 856,880, pub. 7–2–68. Cl. 17.
Perry Enterprises, Inc., Fresno, Calif. 857,226–7, pub. 7–2–68. Cl. 100.
Perry-Fay Co., The, Elyria, Ohio. 856,859–60, pub. 7–2–68. Cl. 13.
Pet Inc., St. Louis, Mo., from Ray Winther Co., South San Francisco, Calif. 857,028, pub. 3–15–66. Cl. 31.
Peterson's Ltd., Inc., New York, N.Y. 857,246. Cl. 17.
Pfister Chemical, Inc., Ridgefield, N.J. 856,834–5, pub. 7–2–68. Cl. 6.
Pfizer, Chas., & Co., Inc.: *See—*
Coty, Inc.
Pharmaco, Inc., Kenilworth, N.J. 857,166, pub. 7–2–68. Multiple Class (Classes 51 and 52).
Phelan-Faust Paint Mfg. Co., St. Louis, Mo. 502,910, ren. 9–17–68. Cl. 16.
Phelps Dodge Industries, Inc., New York, N.Y. 856,865, pub. 7–2–68. Cl. 13.
Phelps Dodge Industries, Inc., New York, N.Y. 856,952, pub. 7–2–68. Cl. 21.
Philips Electronics & Pharmaceutical Industries Corp., New York, N.Y. 856,944, pub. 7–2–68. Cl. 21.
Phillips Petroleum Co., Bartlesville, Okla. 856,821, pub. 7–2–68. Cl. 2.
Pieper Electric, Inc., Milwaukee, Wis. 857,241, pub. 7–2–68. Cl. 103.
Pierce National Life Insurance Co., d.b.a. Life Emergency Foundation, North Hollywood, Calif. 857,230, pub. 7–2–68. Cl. 101.
Pillsbury Co., The, d.b.a. Consumer Research Associates, Minneapolis, Minn. 735,449, canc. Cl. 46.
Pindyck, Charles, Inc., New York, N.Y. 857,084, pub. 7–2–68. Cl. 39.
Pine Forest Co., d.b.a. Pine Forest Co., Chicago, Ill. 857,124, pub. 6–7–66. Cl. 46.
Pingatore, Anthony F., d.b.a. Anthony Sales & Mfg., Hibbing, Minn. 856,985, pub. 7–2–68. Cl. 23.
Pinnacle Products Corp., Blauvelt, N.Y. 856,999, pub. 7–2–68. Cl. 24.
Pioneer-Gen-E-Motor Corp., Chicago, Ill. 439,741, ren. 9–17–68. Cl. 23.
Piper, Jaffray & Hopwood, Minneapolis, Minn. 857,252. Cl. 38.
Plain, John, & Co., Chicago, Ill. 857,079, pub. 7–2–68. Cl. 39.
Plastic Tops, Inc., Detroit, Mich. 735,355, canc. Cl. 32.
Platinum Records, Inc., Miami, Fla. 857,052, pub. 7–2–68. Cl. 36.
Playchem Co.: *See—*
Breen, Alvin L.
Plee-Zing, Inc.: *See—*
Simmons, George W., Corp.
Polarad Electronics Corp., Long Island City, N.Y. 735,309, canc. Cl. 26.
Pollack, Jacob E., Dundalk, Md. 439,605, ren. 9–17–68. Cl. 29.
Polychrome Corp., Yonkers, N.Y. 857,001, pub. 7–2–68. Cl. 26.
Polymer Corp., The, Reading, Pa. 856,873, pub. 7–2–68. Cl. 15.
Polypharma, Seine Saint-Denis, France. 856,832, pub. 7–2–68. Cl. 6.
Polytech Research, Inc., Winter Park, Fla. 735,341, canc. Cl. 26.
Popivalo, Andrew C., Sanger, Calif. 735,284, canc. Cl. 23.
Popper & Sons, Inc., New York, N.Y. 857,257. Cl. 44.
Porcelainfabriken Norden A/S (Porcelainfabrikerne Bing & Grondahl Og Norden A/S), Copenhagen, Denmark. 856,936, pub. 7–2–68. Cl. 21.
Premium Corp. of America, Inc., Minneapolis, Minn. 856,841, pub. 7–2–68. Cl. 8.
Prieur, Madeleine, Meursault, Cote D'Or, France. 857,149, pub. 7–2–68. Cl. 47.
Prime Plating Works, Inc., Brooklyn, N.Y. 735,480, canc. Cl. 106.
Printed Circuits, Inc., Minneapolis, Minn. 856,943, pub. 7–2–68. Cl. 21.
Procter & Gamble Co., The, Cincinnati, Ohio, from International Latex Corp., Dover, Del. 857,100, pub. 6–29–65. Cl. 44.
Purofied Down Products Corp., New York, N.Y. 857,033, pub. 7–2–68. Cl. 32.
Quality Park Envelope Co., St. Paul, Minn. 857,055, pub. 7–2–68. Cl. 37.
Quickee, Inc., Catasauqua, Pa. 857,199, pub. 7–2–68. Cl. 52.
Quick-Set, Inc., Skokie, Ill. 735,315, canc. Cl. 26.
R.C. Industries, Inc., Linden, N.J. 856,980, pub. 7–2–68. Cl. 23.
RHM, Inc.: *See—*
Richmond Hosiery Mills.
Racine Hydraulics & Machinery, Inc., Racine, Wis. 735,279, canc. Cl. 23.
Radiator Specialty Co., Charlotte, N.C. 856,979, pub. 5–7–68. Multiple Class (Classes 23 and 26).
Railton, B. A., Co., Northlake, Ill. 244,828, ren. 9–17–68. Cl. 46.
Ratcliff Industries, Inc., Juneau, Wis. 856,913, pub. 7–2–68. Cl. 19.
Rath Packing Co., The, Waterloo, Iowa. 735,148, canc. Cl. 6.
Raybestos-Manhattan, Inc., Passaic, N.J. 502,317, ren. 9–17–68. Cl. 35.
Raybestos-Manhattan, Inc., Passaic, N.J. 503,411, ren. 9–17–68. Cl. 1.
Raybestos-Manhattan, Inc., Passaic, N.J. 504,108, ren. 9–17–68. Cl. 34.
Raymond Corp., The, Greene, N.Y. 857,018, pub. 7–2–68. Cl. 26.
Record Club of America, Inc., York, Pa. 857,047, pub. 7–2–68. Cl. 36.
Regency Productions, Inc., Cleveland, Ohio. 857,070, pub. 7–2–68. Cl. 38.
Rembrandt Tobacco Corp. (Overseas) Ltd., Zurich, Switzerland. 856,879, pub. 7–2–68. Cl. 17.
Remco Industries, Inc., Harrison, N.J. 857,048, pub. 7–2–68. Cl. 36.
Republic-Transcon Industries, Inc., Beverly Hills, Calif. 735,361–3, canc. Cl. 34.
Rexall Drug & Chemical Co., d.b.a. Vanda Cosmetics Co., Los Angeles, Calif. 857,171, pub. 7–2–68. Cl. 51.
Reynolds, R. J., Foods, Inc., New York, N.Y., from Filler Products, Inc., Forest Park, Ga. 857,125, pub. 7–2–68. Cl. 46.
Richard-Allan Co., Inc., Evanston, Ill. 735,340, canc. Cl. 26.
Richards, Caryl, Inc., New York, N.Y. 857,184, pub. 7–2–68. Cl. 51.
Richardson-Merrell Inc., New York, N.Y. 856,903, pub. 7–2–68. Cl. 18.
Richardson-Merrell Inc., New York, N.Y. 857,244, pub. 7–2–68. Cl. 106.
Richmond Hosiery Mills, to RHM, Inc., Rossville, Ga. 501,556, ren. 9–17–68. Cl. 39.
Rock-Ola Mfg. Corp., Chicago, Ill. 735,233, canc. Cl. 21.
Rockwood Industries, New Windsor, N.Y. 857,255. Cl. 40.
Rohm & Haas Co., Philadelphia, Pa. 501,025, ren. 9–17–68. Cl. 6.
Rolls-Royce Ltd., Derby, England. 856,912, pub. 7–2–68. Cl. 19.
Rotko, Russell, from Modern Shoe Arch Corp., Danbury, Conn. 857,109, pub. 7–2–68. Cl. 44.
Roxane, Philips, Inc., New York, N.Y. 856,896, pub. 7–2–68. Cl. 18.
Royal Typewriter Co., Inc.: *See—*
Litton Business Systems, Inc.
Rucker Co., The, Oakland, Calif. 856,940–1, pub. 7–2–68. Cl. 21.
Rytex Co., The, Indianapolis, Ind. 735,369, canc. Cl. 37.
Safway Steel Scaffolds Co. of Georgia, Atlanta, Ga. 856,844, pub. 7–2–68. Multiple Class (Classes 12 and 50).
Salada Foods Ltd.: *See—*
Larkin, Peter C.
Salem Co., Inc., The, Winston-Salem, N.C. 502,956, ren. 9–17–68. Cl. 39.
Salem Co., Inc., The, Winston-Salem, N.C. 857,082, pub. 7–2–68. Cl. 39.
Sanitek Products, Inc., Los Angeles, Calif. 857,196, pub. 9–12–67. Cl. 52.
Sapolin Paints Inc.: *See—*
McQuade, John, & Co., Inc.
Sauerborn, L. J., d.b.a. Lubaid Co., to V. S. Hurst, d.b.a. Lubaid Co., Milwaukee, Wis. 438,576, ren. 9–17–68. Cl. 15.

Schaefer Equipment Co., Pittsburgh, Pa. 856,850, pub. 7-2-68. Cl. 13.

Scherer, R. P., Corp., Detroit, Mich. 505,071, ren. 9-17-68. Cl. 44.

Schering Corp., Bloomfield, N.J. 856,905, pub. 7-2-68. Cl. 18.

Schlitz, Jos., Brewing Co., Milwaukee, Wis. 857,152-3, pub. 7-2-68. Cl. 48.

Schloss Bros. & Co., Inc., Baltimore, Md. 344,021, canc. Cl. 39.

Scan-Data Corp., Norristown, Pa. 857,221, pub. 7-2-68. Cl. 100.

Scooper Dooper Ice Cream Shoppes, Inc., Pennsauken, N.J. 857,137, pub. 7-2-68. Cl. 46.

Scott Paper Co.: *See*—
Warren, S. D., Co.

Seamless Rubber Co., The, New Haven, Conn. 735,239, canc. Cl. 21.

Sears, Roebuck & Co., Chicago, Ill. 856,954, pub. 7-2-68. Cl. 22.

Sears, Roebuck & Co., Chicago, Ill. 857,099, pub. 7-2-68. Cl. 44.

Selchow & Righter Co., New York, N.Y. 504,138, ren. 9-17-68. Cl. 22.

Semtech Corp., Newbury Park, Calif. 856,945, pub. 7-2-68. Cl. 21.

Seward Luggage Mfg. Co., Inc.: *See*—
American Hardware Co., Inc.

Shaklee Products, Hayward, Calif. 857,187, pub. 9-12-67. Cl. 52.

Sherman, Robert M., d.b.a. Madeleine De Martel Cosmetics, New York, N.Y. 857,186, pub. 7-2-68. Cl. 51.

Sherri Cup, Inc., Kensington, Conn. 856,823, pub. 7-2-68. Cl. 2.

Shetland/Lewyt: *See*—
Lewyt Corp.

Shillman, M. & S., Brooklyn, N.Y. 856,955, pub. 10-25-66. Cl. 22.

Shirek, Alan, d.b.a. Harem Scarums, Pasadena, from S. Cohen, d.b.a. Whistle Stop Footwear, Pomona, Calif. 735,393, canc. Cl. 39.

Siegel, Jacob, Co., Inc., Philadelphia, Pa. 857,085, pub. 7-2-68. Cl. 39.

Siemens Aktiengesellschaft, Berlin, Germany. 856,927, pub. 7-2-68. Cl. 21.

Sigma Chemical Co., St. Louis, Mo. 856,830, pub. 7-2-68. Cl. 6.

Simmons, George W., Corp., New York, N.Y., to Plee-Zing, Inc., Evanston, Ill. 251,027, ren. 9-17-68. Cl. 6.

Simoniz Co., Chicago, Ill. 857,025, pub. 7-2-68. Cl. 29.

Skil Corp., Chicago, Ill. 856,916, pub. 3-1-66. Cl. 21.

Smith, J. Hungerford, Co., Rochester, N.Y., to United Fruit Co., Boston, Mass. 503,637, ren. 9-17-68. Cl. 45.

Smith & Solomon Trucking Co., New Brunswick, N.J. 857,242, pub. 7-2-68. Cl. 105.

Snap-Tite, Inc., Union City, Pa. 856,855, pub. 7-2-68. Cl. 13.

Societe Anonyme Etablissements Kuhlmann, Bruix, Paris, France. 856,803, pub. 7-2-68. Cl. 1.

Societe de la Viscose Suisse, Emmenbrucke, Switzerland. 735,409, canc. Cl. 42.

Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France. 856,917, pub. 7-2-68. Multiple Class (Classes 21 and 26).

Solite Corp.: *See*—
Southern Lightweight Aggregate Corp.

Sorenson Investment Co., Inc., Salt Lake City, Utah. 735,426, canc. Cl. 44.

Southern California Plastic Co., Glendale, Calif. 735,118, canc. Cl. 2.

Southern Lightweight Aggregate Corp., Norfolk, to Solite Corp., Richmond, Va. 501,508, ren. 9-17-68. Cl. 12.

Southland Corp., The, Dallas, Tex. 857,115-16, pub. 3-12-68. Cl. 45.

Spalding, A. G., & Bros., Inc., Chicopee, Mass. 735,258, canc. Cl. 22.

Spezialchemie Gesellschaft mit beschrankter Haftung & Co. Arzneimittelfabrik, d.b.a. Manufacturers of Pharmaceuticals, Munich, Germany. 856,890, pub. 7-2-68. Cl. 18.

Squibb, E. R., & Sons, Inc., New York, N.Y. 857,122, pub. 7-2-68. Cl. 45.

Sta Clean Chemical Co., Orchard Lake, Mich. 814,751, canc. Cl. 52.

Standard Oil Co., The, Cleveland, Ohio. 856,872, pub. 7-2-68. Cl. 15.

Stanford Seed Co., Inc., The, Buffalo, N.Y. 503,475, ren. 9-17-68. Cl. 1.

Stanford Seed Co., Inc., The, Buffalo, N.Y. 503,482, ren. 9-17-68. Cl. 1.

Staples, Russell B., d.b.a. Staples & Son Fruit Co., Richland, Wash. 857,138, pub. 7-2-68. Cl. 46.

Staples & Son Fruit Co.: *See*—
Staples, Russell B.

Stauffer Chemical Co., New York, N.Y. 500,312. Am. 7(d). Cl. 6.

Stauffer Chemical Co., New York, N.Y. 502,496. Am. 7(d). Cl. 6.

Stauffer Chemical Co., New York, N.Y. 502,499. Am. 7(d). Cl. 6.

Steelmaster Enterprises: *See*—
Young, Thomas E.

Stellad Products, Inc., Indianapolis, Ind. 857,207, pub. 7-2-68. Cl. 52.

Stephan Co., The, Fort Lauderdale, Fla. 856,981, pub. 7-2-68. Cl. 23.

Stevens, J. P., & Co., Inc., New York, N.Y. 735,415, canc. Cl. 42.

Stevens, J. P., & Co., Inc., New York, N.Y. 735,417, canc. Cl. 42.

Stow Laboratories, Inc., Stow, Mass. 856,921, pub. 7-2-68. Cl. 21.

Stromeyer, J., Co., Philadelphia, Pa. 503,580, ren. 9-17-68. Cl. 46.

Stur-Dee Health Products, Inc., Brooklyn, N.Y. 857,170, pub. 7-2-68. Cl. 51.

Success Motivation Institute, Inc., Waco, Tex. 857,072, pub. 7-2-68. Cl. 38.

Sunnyside Products, Inc., Chicago, Ill. 856,829, pub. 7-2-68. Multiple Class (Classes 6 and 15).

Superior Cable Corp.: *See*—
Superior Continental Corp.

Superior Continental Corp., from Superior Cable Corp., Hickory, N.C. 856,933-5, pub. 7-2-68. Cl. 21.

Superior Products Co.: *See*—
Mars, Ernest P.

Superior Products Laboratories, Inc.: *See*—
Mars, Ernest P.

Supreme Equipment & Systems Corp., from Supreme Steel Equipment Corp., Brooklyn, N.Y. 857,035, pub. 7-2-68. Cl. 32.

Supreme Steel Equipment Corp.: *See*—
Supreme Equipment & Systems Corp.

Sutliff, H., Pipe Shop: *See*—
Sutliff, Henry.

Sutliff, Henry, d.b.a. H. Sutliff Pipe Shop, San Francisco, Calif., to Sutliff Tobacco Co., Richmond, Va. 249,891, ren. 9-17-68. Cl. 17.

Sutliff Tobacco Co.: *See*—
Sutliff, Henry.

Sweany, John B., Calistoga, Calif. 857,008, pub. 7-2-68. Cl. 26.

Sweeney, W. R., Manufacturer, to W. R. Sweeney Manufacturer, Inc., Salisbury, Mo. 505,274, ren. 9-17-68. Cl. 6.

Sweeney, W. R., Manufacturer, Inc.: *See*—
Sweeney, W. R., Manufacturer.

Swett, James E., d.b.a. California Coatings Co., San Francisco, Calif. 857,193, pub. 7-2-68. Cl. 52.

Synchro-Mat Equipment Corp., Jackson, Mich. 735,304, canc. Cl. 26.

Tabacos El Credito & El Credito Cigars: *See*—
Carrillo, Ernesto P.

Tackmer Corp., Palo Alto, Calif. 857,027, pub. 7-2-68. Cl. 29.

Taco Grande, Inc., Wichita, Kans. 857,212-14, pub. 7-2-68. Cl. 100.

Tappan Co., The, Mansfield, Ohio. 857,042, pub. 7-2-68. Cl. 34.

Tasty Mates Co., Camden, N.J. 735,434-5, canc. Cl. 45.

Tasty-Mates Co., Camden, N.J. 857,123, pub. 7-2-68. Cl. 45.

Taylor, Thomas, & Sons, Inc., Hudson, Mass. 857,089, pub. 7-2-68. Cl. 40.

Technology Inc., Dayton, Ohio. 856,938, pub. 7-2-68. Cl. 21.

Teledyne Industries, Inc., d.b.a. Geotech—A Teledyne Co., Garland, Tex. 857,012, pub. 7-2-68. Cl. 26.

Telerad Mfg. Corp., New York, N.Y. 735,299, canc. Cl. 26.

Temptron, Inc., Reseda, Calif. 735,308, canc. Cl. 26.

Tennessee Products & Chemical Corp., Nashville, Tenn. 735,196, canc. Cl. 14.

Tension Envelope Corp., Kansas City, Mo. 857,059, pub. 7-2-68. Cl. 37.

Teton Peat, Inc., Lander, Wyo. 735,161, canc. Cl. 10.

Texas Instruments Inc., Dallas, Tex. 735,238, canc. Cl. 21.

Texize Chemicals, Inc., Greenville, S.C. 857,191, pub. 7-2-68. Cl. 52.

Thiokol Chemical Corp., Bristol, Pa. 857,101, pub. 7-2-68. Cl. 44.

Thiokol Chemical Corp., Trenton, N.J. 857,222, pub. 7-2-68. Cl. 100.

Thomas Paint Mfg. Co., Atlanta, Ga. 856,848, pub. 7-2-68. Cl. 12.

Tingue, Brown, & Co., Chicago, Ill. 856,817-8, pub. 7-2-68. Cl. 2.

Topps Chewing Gum, Inc., Brooklyn, N.Y. 857,132, pub. 7-2-68. Cl. 46.

Topton Rug Mfg. Co., Mertztown, Pa., and New York, N.Y. 562,688, canc. Cl. 42.

Trans-American Electronics International Co., Inc., Chicago, Ill. 856,930, pub. 7-2-68. Cl. 21.

Trenton Pipe Nipple Co., Trenton, N.J. 856,858, pub. 7-2-68. Cl. 13.

Trim Molded Products Corp., Manitowoc, Wis. 856,961, pub. 7-2-68. Cl. 22.

True-Tagg Paint Co., Memphis, Tenn. 504,639, ren. 9-17-68. Cl. 16.

Tru-Fit Screw Products Corp., Cleveland, Ohio. 857,036, pub. 7-2-68. Cl. 34.

Turmac Tobacco Co. N.V., Amsterdam, Netherlands. 856,878, pub. 7-2-68. Cl. 17.

UTD Corp., Athol, Mass. 856,988, pub. 7-2-68. Cl. 23.

Uneeda Doll Co., Inc., Brooklyn, N.Y. 856,964, pub. 7-2-68. Cl. 22.

Unichem Inc., Greenville, N.C. 856,836, pub. 7-2-68. Multiple Class (Classes 6 and 52).

Union Carbide Corp., New York, N.Y. 856,904, pub. 7-2-68. Cl. 18.

United Aircraft Corp., Sunnyvale, Calif. 857,211, pub. 7-2-68. Cl. 100.

United Artists Records, Inc., New York, N.Y. 857,050, pub. 7-2-68. Cl. 36.

United Breweries of America: *See*—
Cavanaugh Morris Advertising, Inc.

United Fruit Co.: *See*—
Smith, J. Hungerford, Co.

United Grocers, Ltd., Richmond, Calif. 857,069, pub. 7-2-68. Cl. 38.

United Merchants & Manufacturers, Inc., New York, N.Y. 735,411, canc. Cl. 42.

United Press International, Inc., New York, N.Y. 857,071, pub. 7-2-68. Cl. 38.

U.S. Box Crafts, Inc., Brooklyn, N.Y. 856,815, pub. 7-2-68. Cl. 2.

U.S. Industries, Inc., New York, N.Y., from Big Dutchman, Inc., Zeeland, Mich. 857,161, pub. 7-2-68. Cl. 50.

United States Tobacco Co.: *See*—
Fleming-Hall Tobacco Co., Inc.

U.S. Tobacco Co., New York, N.Y. 502,019, ren. 9-17-68. Cl. 17.

Unitek Corp., Monrovia, Calif. 857,111, pub. 7-2-68. Cl. 44.

Universal Duramatic Corp.: *See*—
Dennison Duramatic Corp.

University Shops, Inc., Columbus, Ohio. 857,074, pub. 7-2-68. Cl. 39.

Vacuum Can Co.: *See*—
Duro-Chrome of Chicago, Inc.

Van Schaack Premium Corp., Chicago, Ill. 735,273, canc. Cl. 23.

Vanda Cosmetics Co.: *See*—
Rexall Drug & Chemical Co.

Vanderbilt, R. T., Co., Inc., New York, N.Y. 856,811, pub. 7-2-68. Cl. 1.

Vegetable Oil Products Co., Inc., Wilmington, Calif. 857,134, pub. 7-2-68. Cl. 46.

Vericom, Inc., Amarillo, Tex. 857,005, pub. 7-2-68. Cl. 26.

Vess Beverage Co., St. Louis, Mo. 857,118, pub. 7-2-68. Cl. 45.

Victaulic Co. of America, Union, N.J. 857,045, pub. 7-2-68. Cl. 35.

Victor Co., The: *See*—
Grossman, Charles.

Villiger Sohne G.m.b.H., Tiengen, Oberrheim, Germany. 856,884, pub. 7-2-68. Cl. 17.

Villiger Sohne AG., Pfeffikon, Luzern, Switzerland. 856,887-8, pub. 7-2-68. Cl. 17.

Vornado, Inc., Garfield, N.J. 856,959, pub. 9-26-67. Cl. 22.

Wander Co., The, d.b.a. Ovaltine Food Products, Chicago, Ill. 735,439, canc. Cl. 46.

Waples-Platter Co., Fort Worth, Tex. 857,127, pub. 7-2-68. Cl. 46.

Warren, S. D., Co., to Scott Paper Co., Boston, Mass. 501,260, ren. 9-17-68. Cl. 37.

Watsco, Inc., from Winslow Mfg. Corp., Hialeah, Fla. 857,167, pub. 7-2-68. Multiple Class (Classes 51 and 52).

Weisbrod, Louis, Granada Hills, Calif. 857,023, pub. 7-2-68. Cl. 28.

Welcome Neighbor: *See*—
Midwest Publishing Co.

Welles Products Corp., Roscoe, Ill. 856,978, pub. 7-2-68. Cl. 23.

Weskem Corp., Borger, Tex. 856,871, pub. 10-11-66. Cl. 15.

West Chemical Products, Inc., Long Island City, N.Y. 856,857, pub. 7-2-68. Cl. 13.

West Chemical Products, Inc., Long Island City, N.Y. 857,192, pub. 7-2-68. Cl. 52.

West Chemical Products, Inc., Long Island City, N.Y. 857,195, pub. 7-2-68. Cl. 52.

Western Publishing Co., Inc., Racine, Wis. 857,064, pub. 7-2-68. Cl. 38.

Western Vacuum Bag. Mfg. Inc., Brooklyn, N.Y. 856,931, pub. 7-2-68. Cl. 21.

Westinghouse Electric Corp., Pittsburgh, Pa. 856,939, pub. 7-2-68. Cl. 21.

Weston, Roy F., Inc., West Chester, Pa. 857,215, pub. 7-2-68. Cl. 100.

Weyenberg Shoe Mfg. Co., Milwaukee, Wis. 857,253. Cl. 39.

Wheelabrator Corp., The, Mishawaka, Ind. 856,861, pub. 7-2-68. Cl. 13.

Whistle Stop Footwear: *See*—
Shirek, Alan.

Whitbread & Co. Ltd., London, England. 857,151, pub. 4-11-67. Cl. 48.

Williams, J. M., Jr., d.b.a. Champion Slot Racing Products, Chamblee, Ga., from Champion Slot Car Products, Inc., Los Angeles, Calif. 856,956-7, pub. 8-2-66. Cl. 22.

Wilmor Corp., Fort Wayne, Ind. 735,133, canc. Cl. 6.

Winegard Co., Burlington, Iowa. 856,924, pub. 7-2-68. Cl. 21.

Winpower Mfg. Co., Newton, Iowa. 505,213, ren. 9-17-68. Cl. 21.

Winslow Mfg. Corp.: *See*—
Watsco, Inc.

Winther, Ray, Co.: *See*—
Pet Inc.

Witco Chemical Co., Inc., New York, N.Y. 856,827, pub. 7-2-68. Cl. 6.

Wometco Blue Circle, Inc., Knoxville, Tenn. 857,220, pub. 7-2-68. Cl. 100.

Wonder Products Co., Collierville, Tenn. 735,121, canc. Cl. 2.

Wyandotte Chemicals Corp., Wyandotte, Mich. 501,297, ren. 9-17-68. Cl. 6.

Xterminator Products Corp., Jersey City, N.J. 505,099, ren. 9-17-68. Cl. 6.

Young, Thomas E., d.b.a. Steelmaster Enterprises, Findlay, Ohio. 735,179, canc. Cl. 13.

Zellerbach Paper Co., San Francisco, Calif. 857,054, pub. 7-2-68. Cl. 37.

Ziv Steel & Wire Co., Chicago, Ill. 504,422, ren. 9-17-68. Cl. 14.

U.S. GOVERNMENT PRINTING OFFICE: O—1968

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

September 24, 1968 Volume 854 Number 4

Patents	7961
Designs	427
Plant Patents	14
Reissues	50
Total	8452

Patents	1000—No.	3,402,406 to No.	3,403,405, incl.
Designs	44—No.	212,274 to No.	212,317, incl.
Reissues	5—No.	26,462 to No.	26,466, incl.
Total	1049		

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
September 24, 1968 Volume 854 Number 4

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of July 1968

Examiner affirmed	158
Examiner affirmed in part	23
Examiner reversed	37
Total	218

Termination of Daylight Saving Time

Attention is called to the Notice published in 849 O.G. 277, Apr. 9, 1968, as to the operation of the Patent Office on Daylight Saving Time. This operation will terminate on October 27, 1968.

Annual Index of Trademarks

The 1967 edition of the Annual Index of Trademarks has been published. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.

Price: Buckram bound, $2.75.

Annual Index of Patents

The 1967 edition of the Annual Index of Patents has been published. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.

Price: Buckram bound, Part I, $7.75; Part II, $3.50.

Dedications

3,280,820.—*Robert H. Miller,* Western Springs, Ill. CARD INDEX HOLDER. Patent dated Oct. 25, 1966. Dedication filed Aug. 20, 1968, by the assignee, *Major Plastics, Inc.*

Hereby dedicates to the Public the remaining term of said patent.

3,324,918.—*Robert H. Miller,* Western Springs, Ill. FOLDER WITH FILLER SHEETS FIXED THERETO AND METHOD FOR MAKING SAME. Patent dated June 13, 1967. Dedication filed Aug. 20, 1968, by the assignee, *Major Plastics, Inc.*

Hereby dedicates to the Public the remaining term of said patent.

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 3,095,457, C. H. Chang, METHOD FOR PREPARING BIS (2-ALKOXYETHYL) SULFONES, decided Apr. 22, 1968, Interference No. 95,183, claims 1, 3 and 5.

Patent No. 3,130,390, A. C. Moore and A. S. Young, MAGNETIC STORAGE DEVICES, decided July 16, 1968, Interference No. 95,223, claims 1, 3, 4 and 6.

Patent No. 3,163,492, W. W. Thomas, POLYPROPYLENE COMPOSITIONS OF IMPROVED DYEABILITY AND PROCESS OF DYEING, decided Apr. 25, 1968, Interference No. 95,391, claims 1–3, 7–9, and 13.

Patent No. 3,172,881, R. C. Farrar, Jr., and F. E. Naylor, TITANIUM HALIDE - ORGANOMETAL - ORGANOMETAL-IODIDE CATALYST FOR PRODUCTION OF CIS 1,4-POLYBUTADIENE, decided July 22, 1968, Interference No. 95,798, claim 1.

Patent No. 3,182,737, C. E. Monsees, GRAVITY SLIDE CHECKWEIGHER, decided Mar. 27, 1968, Interference No. 95,328, claims 1, 2 and 5.

Patent No. 3,187,577, J. F. Scherer, TEMPERATURE RESPONSIVE ACTUATOR, decided Apr. 26, 1968, Interference No. 95,228, claims 1, 2 and 3.

Patent No. 3,205,354, M. Glos and E. Lind, ELECTROTHERMOGRAPHIC REPRODUCTION PROCESS, decided Aug. 1, 1968, Interference No. 95,786, claims 1–7.

Patent No. 3,219,800, D. F. Alexander, ELECTRIC HEATING HOT PLATE, decided July 22, 1968, Interference No. 95,955, claims 1 and 2.

Patent No. 3,278,826, A. H. B. Walker, RECTIFIER ASSEMBLY, decided July 11, 1968, Interference No. 96,046, Claims 1, 2 and 3.

Patent No. 3,281,515, R. D. Schmitz, RESIN CURING, decided July 8, 1968, Interference No. 95,959, claims 1–3, 5, 6, 7 and 8.

Patent No. 3,330,848, H. Ulrich, ISOCYANATO-SUBSTITUTED SULFONYL ISOCYANATES, decided July 31, 1968, Interference No. 96,178, claims 2 and 3.

Patents Available for Licensing or Sale

3,322,387. SCAFFOLD BRACKET ANCHOR. J. A. Fortin, Jr., 48 Winter St., Fall River, Mass., 02721.

3,373,492. LIQUID EJECTOR DEVICE. Marvin L. Batch, 2106 Wilmington Drive, Midland, Mich., 48640.

3,383,397. 3-AMINO-2-HYDROXYPROPYL ESTERS AND METHOD FOR PREPARING THE SAME. Arizona Chemical Company, 1937 W. Main St., Stamford, Conn., 06904.

3,393,769. FLOATING SCAFFOLD. Vernice W. Springer, 6412 Willard, Shreveport, La., 71106.

3,387,561. ACTUATOR ARRANGEMENT FOR A FLYING OBJECT. Contraves A.G., Zurich, Switzerland. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,397,935. LIQUID CUP AND CONTAINER ASSEMBLY USABLE AS A BINOCULAR TELESCOPE. Michitoshi Natsume, Tokyo, Japan. Correspondence to: Sughrue, Rothwell, Mion, Zinn & Macpeak, Munsey Building, Washington, D.C., 20004.

New Applications Received During July 1968

Patents	7961
Designs	427
Plant Patents	14
Reissues	50
Total	8452

Issue—September 24, 1968

Patents	1000	—No. 3,402,406	to No. 3,403,405,	incl.
Designs	44	—No. 212,274	to No. 212,317,	incl.
Reissues	5	—No. 26,462	to No. 26,466,	incl.
Total	1049			

The following 3 patents are offered by: Magnetic Equipment Co., 745 5th Ave., New York, N.Y., 10022.

3,089,064. COMBINED PERMANENT MAGNET AND ELECTROMAGNET.
3,368,092. MAGNETIC POWER TRANSMISSION DEVICE.
3,383,141. MAGNETIC SERVO SYSTEM.

The following 4 patents are offered by: A. A. Saffitz, Munsey Building, Washington, D.C., 20004.

3,157,188. HYDRAULICALLY ACTUATED CRUTCH.
3,157,189. POWER ACTUATED CRUTCH.
3,174,522. NUT LOCKING DEVICE.
3,385,306. PORTABLE DISHWASHING MACHINES.

The following 7 patents are offered by: Clyde C. Johnson, 1824 Marcella St., Simi, Calif., 93065.

D.183,349. COMBINED HELICOPTER AND GLIDER.
D.196,677. WIRE STRIPPING TOOL.
D.205,961. DRAFTSMAN TRIANGLE.
2,784,520. STORAGE DEVICE.
2,996,943. CARPENTRY SCREW.
3,002,407. WIRE STRIPPING TOOL.
3,126,034. PERSONAL GROOMING TOOL.

General Electric Company is prepared to grant non-exclusive licenses under the following 6 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patent may be addressed to: Patent Counsel Contractor Equipment Division, General Electric Company, 1285 Boston Ave., Bldg. 21–ES, Bridgeport, Conn., 06062.

3,384,856. MULTI-PHASE ELECTRIC POWER DISTRIBUTION SYSTEM.

Applications for license under the following 5 patents may be addressed to: Patent Counsel, Appliance and Television, General Electric Company, Appliance Park, Louisville, Ky., 40225.

3,353,621. AIR CUSHION APPLIANCE SUPPORTING DEVICE.
3,359,053. REFRIGERATOR DOOR SEAL.
3,374,945. RESILIENT MOUNT FOR HERMETIC MOTOR COMPRESSOR UNITS.
3,388,562. REFRIGERATION SYSTEM INCLUDING COATED CONDENSER.
3,390,718. HOUSEHOLD REFRIGERATOR INCLUDING AUTOMATIC ICEMAKER AND CONTROL MEANS THEREFOR.

The Radio Corporation of America offers to grant non-exclusive licenses on reasonable terms and conditions under the following 29 patents.

Inquiries respecting licenses should be addressed to: Radio Corporation of America, Staff Vice President, Domestic Licensing, 30 Rockefeller Plaza, New York, N.Y., 10020.

3,390,450. METHOD OF FABRICATING SEMICONDUCTOR DEVICES.
3,391,262. MULTIPURPOSE ELECTRICAL CONNECTOR FOR USE WITH A.C. AND/OR D.C. RECEPTACLES.
3,391,446. ALUMINUM BRAZING.
3,392,233. MAGNETIC RECORDING OF SAMPLED FREQUENCY DIVIDED TELEVISION SIGNALS.
3,392,306. BLANKING CIRCUITS FOR TELEVISION RECEIVERS.
3,392,341. SELF-BIASED FIELD EFFECT TRANSISTOR AMPLIFIER.
3,392,734. CARD SYSTEM.
3,392,760. COIL WINDING APPARATUS.
3,392,927. TAPE TRANSPORTS.
3,393,343. ELECTRON BEAM CONVERGENCE APPARATUS.
3,393,345. FERROELECTRIC CONTROL CIRCUITS.
3,393,346. EXCITATION CIRCUITS FOR AN ARRAY OF ELECTRICAL ELEMENTS.
3,393,367. CIRCUIT FOR GENERATING TWO CONSECUTIVE SAME-DURATION PULSES, EACH ON SEPARATE OUTPUT TERMINALS, REGARDLESS OF TRIGGERING-PULSE DURATION.
3,393,379. FREQUENCY CONTROL CIRCUIT UTILIZING SWITCHING MEANS.
3,393,392. PRINTED CIRCUIT CONNECTOR.
3,393,526. CRYOGENIC HEAT PUMP INCLUDING MAGNETIC MEANS FOR MOVING A NORMAL ZONE ALONG A SUPERCONDUCTIVE ROD.
3,393,847. FILM THREADING ARRANGEMENT.
3,393,955. LIGHT FREQUENCY SHIFTER.
3,394,247. INFORMATION STORAGE AND RETRIEVAL.
3,394,266. DIRECT CURRENT ELECTRICAL NEURON CIRCUIT.
3,394,309. TRANSIENT SIGNAL ANALYZER CIRCUIT.
3,394,330. SUPERCONDUCTIVE MAGNET CONSTRUCTION.
3,394,346. FILTER CIRCUIT.
3,394,351. LOGIC CIRCUITS.
3,395,000. COMPOSITE METAL ARTICLES.
3,395,311. REGULATED POWER SUPPLY.
3,395,313. TELEVISION DEFLECTION POWER RECOVERY CIRCUIT.
3,395,398. MEANS FOR SERVICING A PLURALITY OF DATA BUFFERS.
3,395,403. MICROMAGNETIC GROOVED MEMORY MATRIX.

Disclaimer

3,313,032.—*George J. Malecki*, Chicago, Ill. FREEZE-DRYING PROCESS AND APPARATUS. Patent dated Apr. 11, 1967. Disclaimer filed Apr. 22, 1968, by the assignee, *United States of America as represented by the Secretary of Agriculture.*

Hereby enters this disclaimer to claims 1 and 2 of said patent.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF SEPTEMBER 9, 1968

PATENT EXAMINING OPERATIONS AND GROUPS * Denotes date of oldest application for each Operation.	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	5-05-66	1-16-64
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	5-03-66	*5-24-63
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	6-08-66	1-29-64
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*11-16-65	6-03-63
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	4-04-66	3-18-64
ELECTRICAL EXAMINING OPERATION		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S COLE, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	6-27-66	3-04-64
SECURITY, GROUP 220—S. BOYD, Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	4-26-67	3-26-65
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*8-10-65	*10-10-67
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	10-24-65	10-15-62
PHYSICS, GROUP 280—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	7-21-66	4-01-65
DESIGNS, GROUP 290—S. BOYD, Director Industrial Arts; Household, Personal and Fine Arts.	12-28-67	3-06-67
MECHANICAL EXAMINING OPERATION		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	3-06-67	9-21-65
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	11-02-66	1-06-65
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	9-30-66	5-25-64
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	8-02-67	7-27-66
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	5-01-67	1-18-65
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. B. BRONAUGH, Director Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	*5-31-66	*5-29-63

Total number of pending applications (excluding Designs)	189,725
Total number of Design applications pending	2,766

Expiration of patents: The patents within the range of numbers indicated below expire during September 1968, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions of 35 U.S.C. 253.

Patents	Numbers 2,566,295 to 2,569,435, inclusive
Plant Patents	Numbers 1,035 to 1,041, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

United States Court of Appeals
District of Columbia Circuit

National Distillers & Chemical Corporation
v.
Edward J. Brenner, Commissioner of Patents

No. 20,932. Decided December 14, 1967

[—U.S.App.D.C.—; — F.2d —; 156 USPQ 163]

1. Appeal to U.S. Court of Appeals for the District of Columbia Circuit—Presumption Regarding Decisions Below—Obviousness.

"In this case appellant must try to overturn not only the Patent Office, but the adverse findings of the District Court. 'Obviousness is the kind of question that usually turns on the District Court's view of the evidence and its findings will not be set aside unless clearly erroneous.' "

2. Same—Same.

"The cases outlining the presumption of correctness of the Patent Office are numerous. The trail-blazer was *Abbot* v. *Coe*, 71 App.D.C. 195, 109 F.2d 449 (1939)."

3. Same—Same.

"The doctrine requiring 'thorough conviction' to overturn the determination of the specialized Patent Office tribunal was approved in *Morgan* v. *Daniels*, 153 U.S. 120, 125 (1894), and has undeniable vitality. *Zenith Radio Corp.* v. *Ladd*, 114 U.S.App.D.C. 54, 57, 310 F.2d 859, 862 (1962); *Goodyear Tire and Rubber Co.* v. *Ladd*, 121 U.S.App.D.C. 275, 276, 349 F.2d 710, 711 (1965); *Stieg* v. *Commissioner*, 122 U.S.App.D.C. 361, 353 F.2d 899 (1965); *California Research Corp.* v. *Ladd*, 123 U.S.App.D.C. 60, 356 F.2d 813 (1960)."

4. Patentability—Obviousness—Selection of Species Within Prior Art Genus.

Where "the particular compound used by the inventors and specified in the claims is a species of a genus disclosed and described in the Mock patent," ***Held***, "the determination which species of that group is most suitable for the purposes which the inventors had in mind can well be deemed a product of mechanical skill rather than the product of the inventor faculty. They had to determine within the disclosure of the Mock patent what particular compound of the class there described was most fitting to accomplish the result which they intended to reach."

5. Same—Same—Presumption Applicable Although District Judge Rendering Judgment Did Not Hear the Witnesses.

In connection with the rule that "Obviousness is the kind of question that usually turns on the District Court's view of the evidence and its findings will not be set aside unless clearly erroneous," *Held*, that "The ability of a trial judge to evaluate demeanor evidence is a reason, but not the only reason for the rule, and the principle is applicable even though the District Judge rendering judgment did not hear the witnesses."

6. Patentability—Composition—Newly Detected Qualities in Old Product.

"Appellant seeks to avoid affirmance by noting that the Mock patent, relied on by both the Patent Office and the District Court, was concerned with polyethylene film generally, and did not address itself to the particular probelms focused on the application before the court—a suitable polyethylene for adhesion to coated sheet materials. That is not decisive. 'It is not invention to perceive that the product which others had discovered had qualities they failed to detect.' "

7. Same—Obviousness—Experimentation of an Obvious Nature.

"Even though the particular result or combination set forth in the application was not expressly set forth in the prior art, if the progress it represents is only such as follows upon experimentation that is of an obvious nature, taking into account the state of the art, the discovery is not patentable as one that was unobvious to a person of ordinary skill in the art. *Mandel Bros. Inc.* v. *Wallace*, 335 U.S. 291, 295 (1948); *In re Rees*, 290 F.2d 839, 844 (CCPA 1961)."

8. Same—Particular Subject Matter—Polyethylene Composition Suitable for Extrusion Coating.

"The judgment of the District Court, dismissing the complaint in a suit under 35 U.S.C. 145 to authorize the issuance of a patent for a polyethylene composition suitable for extrusion coating, is affirmed."

Appeal from the United States District Court for the District of Columbia.

AFFIRMED.

Mr. A. Yates Dowell, Jr. and *Messrs. A. Yates Dowell* and *Allen A. Meyer, Jr.* for appellant.

Mr. Joseph Schimmel, Solicitor (*Mr. Jack E. Armore*, of counsel) for appellee.

Before Edgerton, *Senior Circuit Judge*, Wright and Leventhal, *Circuit Judges*

Per Curiam:

Appellant brought an action under 35 U.S.C. § 145 to authorize the issuance of a patent for a certain polyethylene composition suitable for extrusion coating (as on milk cartons). The case was tried January 20, 1966, before Judge Jackson, who stated during trial that he was disposed to decide in favor of appellant but first wanted briefs directed to the law. Upon Judge Jackson's disability before decision, the parties "stipulated that another judge may decide this case based on the proceedings before Judge Jackson." The case was assigned to Judge Holtzoff, who heard arguments December 13 and 14, 1966, and rendered an oral opinion immediately after argument, concluding that judgment would be rendered in favor of defendant, appellee here. In due course proposed findings and conclusions were submitted by the Government. After argument Judge Holtzoff struck out certain proposed findings and conclusions, accepted others, and entered judgment dismissing the complaint.

We quote from the oral opinion of the District Court:

> The Court. This case was very ably and exhaustively tried and very ably argued on both sides. It comes down to one single issue, really, and that is whether in the light of the Mock patent, No. 2,938,879, issued on May 31st 1960, the step taken by the inventors was obvious to a person reasonably skilled in the art in which the inventors were working, or to put it another way, whether the step taken by them was the product of mechanical skill or the product of the inventive faculty. The Patent Office, both the Examiner and the Board of Appeals, determined this issue against the inventors. In other words, the Patent Office held that the step taken by the inventors was obvious to a person reasonably skilled in the art and it was a product of mechanical skill rather than the product of the inventive faculty, in the light of the disclosure of the Mock patent. The question before the court is whether this finding and conclusion of the Patent Office should be overruled.
>
> The recent cases in the Court of Appeals have been quite emphatic on the proposition that great weight must attach to the expertise of the Patent Office and its findings on the issue of obviousness. This is especially true in highly technical matters such as is presented here. [Citations omitted.] [U]nless new evidence is introduced that brings thorough conviction—and "thorough conviction" are the words used by the Court of Appeals—that the finding of the Patent Office was erroneous, the Court should accord to the decision of the Patent Office on the issue of obviousness a presumption of validity.
>
> This court has not been convinced that the conclusion of the Patent Office on this issue is erroneous. **[4]** The particular compound used by the inventors and specified in the claims is a species of a genus disclosed and described in the Mock patent. The determination which species of that group is most suitable for the purposes which the inventors had in mind can well be deemed a product of

> mechanical skill rather than the product of inventive faculty. They had to determine within the disclosure of the Mock patent what particular compound of the class there described was most fitting to accomplish the result which they intended to reach.
>
> In the light of these considerations the court is of the opinion that it should affirm the decision of the Patent Office.

Judge Holtzoff's opinion is a sound and felicitous expression of the applicable principles.[1]

[1] In this case appellant must try to overturn not only the Patent Office, but the adverse findings of the District Court. "Obviousness is the kind of question that usually turns on the District Court's view of the evidence and its findings will not be set aside unless clearly erroneous."[2]

[5] The ability of a trial judge to evaluate demeanor evidence is a reason, but not the only reason for the rule, and the principle is applicable even though the District Judge rendering judgment did not hear the witnesses.

[6] Appellant seeks to avoid affirmance by noting that the Mock patent, relied on by both the Patent Office and the District Court, was concerned with polyethylene film generally, and did not address itself to the particular problems focused on the application before the court—a suitable polyethylene for adhesion to coated sheet materials. That is not decisive. "It is not invention to perceive that the product which others had discovered had qualities they failed to detect."[3]

Appellant protests that the disclosure in the Mock patent was broad enough to cover over 300 compounds, and that testing and effort were required to establish which was responsive to the problem of major concern to appellant. Government counsel argued that the number is smaller than 300—say, 25. The District Court's findings do not speak expressly to this point. There is no need to resolve the matter, for even if the larger number be accurate, this does not undercut the determinations of the Patent Office,[4] and the District Court.

[8] AFFIRMED.

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[2] [1] The cases outlining the presumption of correctness of the Patent Office are numerous. The trail-blazer was *Abbot* v. *Coe,* 71 App.D.C. 195, 109 F.2d 449 (1939).

[3] The doctrine requiring "thorough conviction" to overturn the determination of the specialized Patent Office tribunal was approved in *Morgan* v. *Daniels*, 153 U.S. 120, 125 (1894), and has undeniable vitality. *Zenith Radio Corp.* v. *Ladd*, 114 U.S.App.D.C. 54, 57, 310 F.2d 859, 862 (1962) ; *Goodyear Tire and Rubber Co.* v. *Ladd*, 121 U.S.App.D.C. 275, 276, 349 F.2d 710, 711 (1965) ; *Stieg* v. *Commissioner*, 122 U.S.App.D.C. 361, 353 F.2d 899 (1965) ; *California Research Corp.* v. *Ladd*, 123 U.S.App.D.C. 60, 356 F.2d 813 (1966).

[2] *California Research Corp.* v. *Ladd*, supra note 1 ; 123 U.S.App.D.C. at 64, 356 F.2d at 813 ; *see* also *Stieg* v. *Commissioner*, supra note 1.

[3] *General Elec. Co.* v. *Jewel Incandescent Lamp Co.*, 326 U.S. 242, 249 (1945).

[4] The Board of Appeals held that there was a failure to establish unobviousness or unexpected results. It adopted the analysis of the Examiner who stated in his answer that "the determination of optimum operable proportions is mere routinism." **[7]** Even though the particular result or combination set forth in the application was not expressly set forth in the prior art, if the progress it represents is only such as follows upon experimentation that is of an obvious nature, taking into account the state of the art, the discovery is not patentable as one that was unobvious to a person of ordinary skill in the art. *Mandel Bros. Inc.* v. *Wallace*, 335 U.S. 291, 295 (1948) ; *In re Rees*, 290 F.2d 839, 844 (CCPA 1961).

U.S. Court of Customs and Patent Appeals

IN RE SIGURD I. LINDELL

No. 7847. Decided November 9, 1967

[55 CCPA —; 385 F.2d 453; 155 USPQ 521]

1. PATENTABILITY—OBVIOUSNESS—SUPERIOR RESULTS DO NOT PRECLUDE OBVIOUSNESS.

"Appellant also notes the superior performance of the circuit breakers of the invention compared with those of the references under certain conditions. He does not, wisely we think, argue that these data alone establish patentability. Superior results do not necessarily preclude a finding of obviousness, even when they are not precisely forecast by the relevant art. The statutory mandate is for an evaluation of the invention as a whole. *In re Schnell*, 54 CCPA 1266, 370 F.2d 596, 152 USPQ 228 (1967)."

2. SAME—SAME—"OBVIOUS TO TRY" TEST CRITICIZED.

"On the other hand, a refusal to consider superior results is no more warranted by the statute than a total preoccupation with them. Accordingly, we have criticized the 'obvious to try' test on several recent occasions. *In re Henderson*, 52 CCPA 1656, 348 F.2d 550, 146 USPQ 372 (1965) ; *In re Huellmantel*, 51 CCPA 845, 324 F.2d 998, 139 USPQ 496 (1963)."

3. SAME—SAME—SAME.

Furthermore, application of the "obvious to try" test would often deny patent protection to inventions growing out of well-planned research which is, of course, guided into those areas in which success is deemed most likely. Those are, perhaps, the obvious areas to try. But resulting inventions are not necessarily obvious. Serendipity is not a prerequisite to patentability. Our view is that "obvious to try" is not a sufficiently discriminatory test. *In re Tomlinson*, 53 CCPA 1421, 363 F.2d 928, 150 USPQ 623 (1966).

4. SAME—SAME—SUBSTITUTION OF MATERIALS—LACK OF EXPLICIT SUGGESTION IN PRIOR ART.

"The lack of explicit suggestion in the prior art to make the substitution of FEP in the conventional circuit breaker is, of course, not fatal to the finding of obviousness. *In re Rosselet*, 52 CCPA 1533, 347 F.2d 847, 146 USPQ 183 (1965). The art, in our view, fairly suggests the interchangeability of FEP with the material hitherto used. That is certainly enough in this case."

5. SAME—AFFIDAVIT—EXPRESSION OF OPINION—OBVIOUSNESS.

Appellant's opinion on the ultimate legal issue is not evidence in the case. *In re Chilowsky*, 50 CCPA 806, 306 F.2d 908, 134 USPQ 515 (1962). While we do feel that *some* weight ought to be given to a persuasively supported statement of one skilled in the art on what was not obvious to him, *In re Weber*, 52 CCPA 1015, 341 F.2d 143, 144 USPQ 495 (1965), here, we think, despite appellant's contrary assertions, that the legitimate inferences from the art of record are too strong to be affected by the weight to which the affidavit is entitled.

6. SAME—PARTICULAR SUBJECT MATTER—"CIRCUIT INTERRUPTER CONSTRUCTION."

"The refusal of certain claims in an application entitled 'Circuit Interrupter Construction,' as unpatentable over the prior art, is affirmed."

APPEAL from the Patent Office. Serial No. 174,777.

AFFIRMED.

Robert R. Lockwood (*Harris C. Lockwood*, of counsel) for appellant.

Joseph Schimmel (*S. Wm. Cochran*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, and ALMOND, *Associate Judges*, and WILLIAM H. KIRKPATRICK[1]

RICH, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals[2] affirming the final rejection of claims 1–8 in appellant's application Serial No. 174,777, filed February 21, 1962, entitled "Circuit Interrupter Construction." No claim has been allowed.

The invention is a circuit breaker in which an arc is formed when the circuit is interrupted and in which the arc-confining surfaces are made of fluorinated ethylene propylene (FEP). Except for the use of this material the claimed structure is old.

Claim 1 is illustrative (emphasis ours):

> 1. An electric circuit interrupter comprising, in combination, means between which an arc is formed on interruption of the circuit, and a structure adapted

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Consisting of Friedman and Keely, Examiners-in-Chief, and Reynolds, Acting Examiner-in-Chief, author of the opinion.

to confine said arc having its arc confining surface formed of *fluorinated ethylene propylene*.

The other claims describe the structure in greater detail. The issue in this case is solely the obviousness of making the arc-confining surface of FEP.

The Examiner cited the following patents:

Lindell, 2,591,950, Apr. 8, 1952.
Browne et al., 2,924,690, Feb. 9, 1960.
Gordon, 3,057,952, Oct. 9, 1962.

He also cited a sales bulletin of the Du Pont Company, entitled "Teflon 100 FEP,"[3] which was received in the Patent Office on September 6, 1961.

The Lindell[4] and Browne et al. patents show generally the structures of the claims. In the Lindell disclosure, however, the arc-confining surface is of fiber and methyl methacrylate; in Browne et al. it is of polytetrafluoroethylene (Teflon). The Gordon patent and the sales bulletin were cited to show the obviousness of substituting FEP in the arc-confining surface for the materials used in the Lindell and Browne et al. circuit breakers. Gordon teaches that FEP approaches Teflon in its desirable qualities and is more tractable and that each can be used as electrical insulation. The Du Pont sales bulletin reports essential equivalence in the "outstanding electrical properties" of FEP and Teflon. It discloses that FEP has high dielectric strength and that "like Teflon TFE resins, Teflon 100 has good arc resistance and will not carbon track."

The Examiner relied heavily on the sales bulletin in her rejection, stating in her Examiner's answer:

> Since the publication compares FEP with TFE, and indicates that these materials are alike, and have essentially the same properties, it would appear apparent that a practitioner in the art would be led to the use of "fluorinated ethylene propylene" in the locals in which polytetrafluoroethylene has found favor for many years, as for example the patent to Brown[e] Jr. et al.
>
> Further since TFE as utilized in the Brown[e] Jr. et al. patent has been demonstrated as having general utility in *circuit interrupter* structures which previously utilized other resinous materials, such as the methyl methacrylate resin of Lindell, it clearly follows that FEP could likewise be used in such locales.

Appellant focuses attention on the Examiner's immediately subsequent restatement of the rejection in which she said:

> Stated differently; as newer resins are developed and become known—together with their advantages, capabilities, and comparisons with prior resins—such as FEP as disclosed by Gordon patent and the publication, it would be logically expected that the persons skilled in the art would at least try their substitution for existing materials of the same usage; as for example, the polytetrafluoroethylene and methyl methacrylate materials of the Brown[e], Jr. et al. or Lindell patents. The fact that routine experimentation may be necessary to determine the exact capabilities of the newer resin does not detract from the obviousness of the use of the newer resin as a substitute for previously used resins.

The Board adopted the Examiner's position and added:

> It is our opinion that the disclosure in the Du Pont bulletin would at least suggest to one skilled in the art to try fluorinated ethylene propylene in circuit breakers of the type shown in Lindell and Browne et al.[5]

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[3] Fluorinated ethylene propylene (FEP) is apparently marketed as Teflon 100 or Teflon 100 FEP. Polytetrafluoroethylene is marketed as Teflon or Teflon TFE. To avoid confusion, FEP will be used for fluorinated ethylene propylene and Teflon will be used only for polytetrafluoroethylene.

[4] The same Lindell who is appellant in this case.

[5] This "obvious to try" language was repeated several times in the Board's opinion.

Appellant argues that the "obvious to try" test seemingly applied is not the test prescribed by the statute and that the unobviousness of his invention is shown not only by the failure of any of the references to suggest the utilization of FEP in the old circuit breakers but also by his own affidavit which affirmatively declares that the invention was, indeed, unobvious at the time it was made.

[1] Appellant also notes the superior performance of the circuit breakers of the invention compared with those of the references under certain conditions. He does not, wisely we think, argue that these data alone establish patentability. Superior results do not necessarily preclude a finding of obviousness, even when they are not precisely forecast by the relevant art. The statutory mandate is for an evaluation of the invention as a whole. *In re Schnell*, 54 CCPA 1266, 370 F.2d 596, 152 USPQ 228 (1967).

[2] On the other hand, a refusal to consider superior results is no more warranted by the statute than a total preoccupation with them. Accordingly, we have criticized the "obvious to try" test on several recent occasions. *In re Henderson*, 52 CCPA 1656, 348 F.2d 550, 146 USPQ 372 (1965); *In re Huellmantel*, 51 CCPA 845, 324 F.2d 998, 139 USPQ 496 (1963).

[3] Furthermore, application of the "obvious to try" test would often deny patent protection to inventions growing out of well-planned research which is, of course, guided into those areas in which success is deemed most likely. These are, perhaps the obvious areas to try. But resulting inventions are not necessarily obvious. Serendipity is not a prerequisite to patentability. Our view is that "obvious to try" is not a sufficiently discriminatory test. *In re Tomlinson*, 53 CCPA 1421, 363 F.2d 928, 150 USPQ 623 (1966).

However, the Solicitor argues that use of the phrase "obvious to try" is not *per se* error, since it may reflect no more than a prudent recognition of the possibility of failure. See *In re Pantzer*, 52 CCPA 1135, 341 F.2d 121, 144 USPQ 415 (1965); *In re Ruscetta*, 45 CCPA 968, 255 F.2d 687, 118 USPQ 101 (1958). Possibly the Board here used the phrase in this sense. We prefer to rest our decision, however, on the Board's formal adoption of the Examiner's straightforward finding of obviousness.

[4] The lack of explicit suggestion in the prior art to make the substitution of FEP in the conventional circuit breaker is, of course, not fatal to the finding of obviousness. *In re Rosselet*, 52 CCPA 1533, 347 F.2d 847, 146 USPQ 183 (1965). The art, in our view, fairly suggests the interchangeability of FEP with the material hitherto used. That is certainly enough in this case.

Finally, appellant relies on his own affidavit. He establishes, first, his competence in the field and acquaintanceship with the prior art and then avers:

> 6. That the test results so obtained and the information available in the prior art such as said Du Pont publication and said Gordon patent did not make it obvious to him that fluorinated ethylene propylene could be employed in a circuit interrupter having means between which an arc is formed on the interruption of the circuit with a structure for confining the arc having the arc confining surface formed of fluorinated ethylene propylene from which the material evolved due to the heat of the arc would have improved arc extinguishing properties and which, after circuit interruption, would still provide the required insulation between the energized terminals of the circuit such that the voltage then present therebetween would not cause the arc to be reestablished as the result of the arc confining surface having been subjected to the intense heat of the arc which was drawn within its confining surface and extinguished as the

result of an arc extinguishing gas derived therefrom and which would not be so eroded or altered that it could not be used for repeated circuit interruptions at various current levels.

The Board gave the affidavit little consideration:

> * * * appellant calls attention to the affidavit of appellant in this case in which it is pointed out that it would not be obvious from the references that FEP could be used for arc extinguishing purposes. It is our opinion that this affidavit amounts to nothing more than an expression of opinion as to the patentability of the device, and is entitled to no weight.

Appellant objects:

> It is submitted that appellant's affidavit is entitled to some weight and that the record should contain some basis for ignoring it so completely. Of course the question of obviousness must be decided by the Tribunal before whom the question is posed. However, this decision must rest on or find a basis in the facts and circumstances involved.

[5] Appellant's opinion on the ultimate legal issue is not evidence in the case. *In re Chilowsky*, 50 CCPA 806, 306 F.2d 908, 134 USPQ 515 (1962). While we do feel that *some* weight ought to given to a persuasively supported statement of one skilled in the art on what was not obvious to him, *In re Weber*, 52 CCPA 1015, 341 F.2d 143, 144 USPQ 495 (1965), here, we think, despite appellant's contrary assertions, that the legitimate inferences from the art of record are too strong to be affected by the weight to which the affidavit is entitled.

[6] The decision of the Board is affirmed.

AFFIRMED.

WORLEY, *Chief Judge*, concurs in the result.

United States Court of Appeals
District of Columbia Circuit

WALTER M. FREEMAN, APPELLANT

v.

EDWARD J. BRENNER, COMMISSIONER OF PATENTS, APPELLEE

No. 20,838. Decided May 7, 1968

[—U.S.App.D.C. —; — F.2d —; 157 USPQ 513]

1. PATENTABILITY—REFERENCE—APPLICANT CHARGED WITH KNOWLEDGE OF PRIOR PATENTS.

Held, that appellant "must be charged in law" with knowledge of prior patents.

2. APPEAL TO U.S. COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT—NEW EVIDENCE FAILING TO BRING THOROUGH CONVICTION OF ERROR IN THE PATENT OFFICE—OBVIOUSNESS—35 U.S.C. 103.

"The District Court * * * set forth in detail the reasons why it was unpersuaded of Patent Office irrationality requiring judicial correction. It referred in particular to the recent efforts of this court to delineate the standards by which the Patent Office's judgments on the issue of obviousness are to be appraised. *Stieg* v. *Commissioner of Patents*, 122 U.S.App.D.C. 361, 353 F.2d 899 (1965); and see *Zenith Radio Corp.* v. *Ladd*, 114 U.S.App.D.C. 54, 310 F.2d 859 (1962). Those standards do not appear to us to have been affected by the Supreme Court's subsequent consideration of the scope and meaning of Section 103 in *Graham* v. *John Decre Co.*, 383 U.S. 1 (1966), upon which appellant has chiefly relied. Applying those standards to the record before us, we cannot say the District Court erred in concluding, in the language of *Stieg*, that 'the new evidence taken on the trial de novo did not bring to [it] "thorough conviction" that the judgment of the Patent Office was invalid * * *' "

3. PATENTABILITY—PARTICULAR SUBJECT MATTER—PARABOLICALLY SHAPED BIFOCAL LENS.

The judgment of the District Court, dismissing the complaint in a suit under 35 U.S.C. 145 to authorize the issuance of a patent on appellant's application directed to a parabolically shaped bifocal lens, is affirmed.

AFFIRMED.

Mr. Keith Misegades for appellant.

Mr. George C. Roeming, Attorney, United States Patent Office, with whom *Mr. Joseph Schimmel*, Solicitor, United States Patent Office, was on the brief, for appellee.

Before WILBUR K. MILLER, *Senior Circuit Judge*, and BURGER and MCGOWAN, *Circuit Judges*

PER CURIAM:

Appellant, dissatisfied with appellee's disallowance of a patent application filed in 1963,[1] brought suit in the District Court under 35 U.S.C. § 145. After the trial *de novo* permitted by that statute, the District Court, stating its reasons at length upon the record, refused to interfere with the action of the Patent Office. We, in turn, leave the judgment of the District Court undisturbed.

The issue is the familiar one of whether, within the meaning of 35 U.S.C. § 103, " * * * the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art * * *." The claimed invention related to a parabolically shaped bifocal lens, designed to provide enlarged and improved peripheral vision to cataract patients. The Examiner and the Board of Appeals at the Patent Office concurred in believing that prior patents disclosed (1) lenses made of fused materials in such manner as to have a one-piece spherical surface embracing both near and distant vision, and (2) the enlargement of the plane of vision incident to a paraboloidal, as distinct from a spherical, lens surface. **[1]** It was concluded that knowledge of these patents, with which appellant must be charged in law,[2] rendered obvious the combination of their teachings effected in appellant's claims.

The trial *de novo* in the District Court consisted of the introduction of the Patent Office record, the testimony of appellant on direct examination, and the arguments of counsel. Appellant was afforded a full opportunity to explain why his claimed invention represented something more than a mere recognition of the potentialities in combination of the earlier discoveries, and why the Patent Office disallowance was insupportable. **[2]** The District Court pursued the intricacies of this effort with close and careful attention and, after due reflection, set forth in detail the reasons why it was unpersuaded of Patent Office irrationality requiring judicial correction. It referred in particular to the recent effort of this court to delineate the standards by which the Patent Office's judgments on the issue of obviousness are to be appraised. *Stieg* v. *Commissioner of Patents*, 122 U.S.App.D.C. 361, 353 F.2d 899 (1965); and see *Zenith Radio Corp.* v. *Ladd*, 114 U.S.App.D.C. 54, 310 F.2d 859 (1962). Those standards do not appear to us to have been affected by the Supreme Court's subsequent consideration of the scope and meaning of section 103 in *Graham* v. *John Deere Co.*, 383 U.S. 1 (1966), upon which appellant has chiefly relied. Applying those standards to the record before us, we cannot say the District Court erred in concluding, in the language of *Stieg*, that "the new evidence taken on the trial *de novo* did not bring to [it] 'thorough conviction' that the judgment of the Patent Office was invalid * * *".

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[1] This application purported to be a continuation of an application filed in 1957. The latter was rejected by the Patent Office as unpatentable because of obviousness. In the District Court the appellee raised the issue of *res judicata*, contending that the denial of the first application foreclosed the claims made in the second. The District Court did not find it necessary to reach this issue.

[2] See *Graham* v. *John Deere*, 383 U.S. 1, 36 (1966); *Walker* v. *General Motors Corp.*, 362 F.2d 56, 60 n.3 (9th Cir. 1966); *Griffith Rubber Mills* v. *Hoffar*, 313 F.2d 1, 3 (9th Cir. 1963).

In any event, the District Court was at pains to make clear that, even under a vastly broader scope of review than that heretofore contemplated by this court, it would still have reached the same result; and we cannot say that, upon the evidence adduced before it, this view of the merits was unfounded.

[3] The judgment of the District Court is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

ROY E. FERREE
v.
HARRY D. SHEPHARD, JR. AND PEARL THELMA GRIFFITHS,
ADMINISTRATRIX OF THE ESTATE OF NORMAN J. GRIFFITHS

No. 8217. Decided November 2, 1967

[55 CCPA —; 384 F.2d 1019; 155 USPQ 464]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—APPEAL FROM BOARD OF INTERFERENCES—ISSUE OF PATENTABILITY—35 U.S.C. 135 AND 141.

"The jurisdiction of the Board of Patent Interferences in this proceeding was limited to a determination of the question of priority of invention, 35 U.S.C. 135, and our jurisdiction is limited to a review of the decision of the Board of Patent Interferences on that issue, 35 U.S.C. 141. Thus, the issue of patentability of the counts is not and cannot be before us. *Glass* v. *De Roo*, 44 CCPA 723, 239 F.2d 402, 112 USPQ 62 (1956)."

2. SAME—SAME—SAME.

"Other decisions of this court have reiterated this view to such an extent it is now clearly established that our jurisdiction is limited to a review of the question of priority and matters ancillary to that issue. Cf. *Bac* v. *Loomis*, 45 CCPA 807, 252 F.2d 571, 117 USPQ 29 (1958); *Den Beste* v. *Martin*, 45 CCPA 798, 252 F.2d 302, 116 USPQ 584 (1958); *Wirkler* v. *Perkins*, 44 CCPA 1005, 245 F.2d 502, 114 USPQ 284 (1957); *Ray* v. *Kronmiller*, 35 CCPA 1085, 167 F.2d 518, 77 USPQ 389 (1948)."

3. SAME—REASONS OF APPEAL—NOTICE OF APPEAL—35 U.S.C. 141 TO 144.

"We think, however, that the distinction between a 'notice of appeal' and a 'reason of appeal,' as used in 35 U.S.C. 141–144, is quite clear. The former requirement is in the nature of an advisory communication to the Commissioner, setting forth the course of action that an appellant intends to take and further serves to bring the appeal within the jurisdiction of this court if all of the statutory requirements are met. The latter requirement, however, under 35 U.S.C. 142, determines the content of the material that the Commissioner must furnish the court in ex parte cases, 35 U.S.C. 143, and further determines the points to which the decision of this court shall be confined. 35 U.S.C. 144."

4. SAME—REMAND—INTERFERENCE—ISSUE OF PATENTABILITY—*Loshbough* v. *Allen* DISTINGUISHED.

This statement makes it quite clear that Ferree is not "dissatisfied" with the Board's decision on the issue of priority. He, instead, seeks a remand to secure further action in the Patent Office on the issue of patentability. Appellant's reliance on *Loshbough* v. *Allen*, 54 CCPA 1113, 373 F.2d 747, 152 USPQ 812 (1967), in support of this position, is misplaced. This case and *Loshbough* are clearly distinguishable on their facts. The issue in *Loshbough* involved a review of the determination of priority of invention where the winning junior party Allen had moved to "cancel" the counts, on which priority was awarded, and to substitute a new count based on Allen's expressed belief that the counts were not patentable to either party, over a certain reference. Moreover, the appellant Loshbough later *joined* in Allen's request, on the belief that the reference "may amount to a bar to the grant of a patent to either of the parties * * *." *Id.* 54 CCPA at 1114, 373 F.2d at 748, 152 USPQ at 813. Allen's motion had stated that "the party Allen and his attorneys were not advised of the disclosure of the Swedish patent until after the testimony of both parties had been completed." The party Loshbough was not aware of the patent prior to the filing of Allen's motion. Thus, in *Loshbough*, the matter of the patentability of the counts in interference over the particular reference apparently had not been considered. The lengthy record here indicates that the substance of Ferree's arguments relating to the patentability of the counts and the exercise of the discretion of the Board had previously been raised and decided adversely to Ferree's position.

APPEAL from the Patent Office. Interference No. 92,245.

[Motion by appellees to dismiss appeal is granted.]

William J. Ruano for appellant.

William A. Smith, Jr. for appellees.

Before WORLEY, *Chief Judge*, RICH, SMITH and ALMOND, *Associate Judges*

PER CURIAM.

Appellees' motion to dismiss this appeal turns on the single issue of whether appellant's reasons of appeal are sufficient under 35 U.S.C. 142 to raise an appealable issue within the limited statutory jurisdiction of this court. More specifically, the issue is whether appellant's reasons of appeal raise any issue other than the patentability of the counts. The issue arises in a contested interference action.[1]

[1] The jurisdiction of the Board of Patent Interferences in this proceeding was limited to a determination of the question of priority of invention, 35 U.S.C. 135, and our jurisdiction is limited to a review of the decision of the Board of Patent Interferences on that issue, 35 U.S.C. 141. Thus, the issue of patentability of the counts is not and cannot be before us. *Glass* v. *De Roo*, 44 CCPA 723, 239 F.2d 402, 112 USPQ 62 (1956).

In *Glass* v. *De Roo*, supra, the Board of Patent Interferences had awarded priority of invention to appellees. Appellees moved to dismiss the appeal on the ground that appellant's reasons of appeal failed to raise any question on which this court had jurisdiction to pass. At 44 CCPA 724, 239 F.2d 403, 112 USPQ 63, we stated:

> Appellant bases his appeal on twelve reasons of appeal which it is unnecessary for us to set forth. Appellees, in moving to dismiss, have analyzed these reasons, pointing out that they all relate, directly or indirectly, to the question of patentability and to no other question. Appellant does not deny this and his lengthy brief opposing the motion is merely an extended argument as to why this court should, for various reasons, undertake to review the question of patentability. The contention, in appellant's own words, is:
>
> > * * * that this court is qualified to hear and determine the instant appeal and to render a decision indicating the presence or absence of invention in the structure defined by the count of the interference.
>
> However qualified we may be, we are, unfortunately for the appellant, without jurisdiction to do so on an appeal in an interference case.

In there granting appellees' motion to dismiss the appeal, we added:

> Our jurisdiction in a patent interference is limited to a review of the decision of the Board of Patent Interferences, 35 U.S.C. 141. The jurisdiction of that board is limited to a determination of the question of priority of invention, 35 U.S.C. 135. As to both the board and this court, certain questions which are "ancillary" to priority may also be considered. Patentability is not one of those questions. ***Hess*** v. ***Dreyfuss***, 26 CCPA (Patents) 1407, 1410, 104 F.2d 801, 42 USPQ 142; ***Kleinman*** v. ***Steinbach***, 38 CCPA (Patents) 924, 932, 187 F.2d 743, 89 USPQ 151. See also Patent Office Rule 258. In reviewing a decision of the Board of Patent Interferences, we are obviously without jurisdiction to consider an issue which the board is not authorized to decide. Appellant availed himself of the procedures under the Patent Office Rules for attacking the patentability of the count without success. The statutes do not provide for any review by this

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[1] Interference No. 92,445.

court of rulings in the Patent Office that a claim is patentable. We consider patentability only in *ex parte* appeals from decisions holding claims unpatentable.

[2] Other decisions of this court have reiterated this view to such an extent it is now clearly established that our jurisdiction is limited to a review of the question of priority and matters ancillary to that issue. Cf. *Bac* v. *Loomis*, 45 CCPA 807, 252 F.2d 571, 117 USPQ 29 (1958); *Den Beste* v. *Martin*, 45 CCPA 798, 252 F.2d 302, 116 USPQ 584 (1958); *Wirkler* v. *Perkins*, 44 CCPA 1005, 245 F.2d 502, 114 USPQ 284 (1957); *Ray* v. *Kronmiller*, 35 CCPA 1085, 167 F.2d 518, 77 USPQ 389 (1948).

The appellant, Ferree, filed twenty-one reasons of appeal. Of these, twenty clearly raise no issue except as to the patentability of the counts or the exercise of discretion of the Board under Rule 259. The remaining reason of appeal is couched in language which on its face is broad enough to raise directly the issue of priority of invention. It reads:

> *** * * the Board of Patent Interferences erred as follows:**
>
> * * * * * * *
>
> **14. In awarding priority of the counts in interference to Shephard et al.**
>
> * * * * * * *

There is some question, however, as to what Ferree may have intended by the foregoing statement. Thus, Shephard contends that this is a "notice," not a "reason." **[3]** We think, however, that the distinction between a "notice of appeal" and a "reason of appeal," as used in 35 U.S.C. 141–144, is quite clear. The former requirement is in the nature of an advisory communication to the Commissioner, setting forth the course of action that an appellant intends to take and further serves to bring the appeal within the jurisdiction of this court if all of the statutory requirements are met. The latter requirement, however, under 35 U.S.C. 142, determines the content of the material that the Commissioner must furnish the court in ex parte cases, 35 U.S.C. 143,[2] and further determines the points to which the decision of this court shall be confined, 35 U.S.C. 144.

35 U.S.C. 141 enables a "party to an interference" who is "*dissatisfied with the decision* of the board of patent interferences *on the question of priority*" to appeal to this court. [Emphasis added.]

While a single adequate reason of appeal would be sufficient to bring this appeal within our jurisdiction, it becomes necessary to consider Shephard's remaining arguments in light of Ferree's reply, which largely fails to controvert them. In fact, irrespective of whether Ferree's reason of Appeal No. 14 is adequate under 35 U.S.C. 142 to raise an issue relating to the question of priority, Ferree's response to those arguments raises a question as to whether the purported reason of appeal is truly intended to raise an issue concerning the Board's *decision* on *priority*.

A basic consideration under 35 U.S.C. 141 is that an appellant must be "dissatisfied" with the appealed decision. Ferree, in opposing Shephard's motion to dismiss the appeal states:

> **The purpose of this appeal is not to seek a review of the merits of the Board's decision on priority, at this time, as suggested by appellee, since this question is not "ripe." Instead, it is to seek a remand of this case to the Patent Office for further proceedings on the question of patentability, which proceedings have been denied to appellant, Ferree, by the Patent Office. This court made such remand, very recently, in a very similar case of *Loshbough* v. *Allen* 152 USPQ 812 decided March 9, 1967.**

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[2] "* * * in an ex parte case the Commissioner shall furnish the court with the grounds of the decision of the Patent Office, in writing, touching all the points involved by the reasons of appeal."

[4] This statement makes it quite clear that Ferree is not "dissatisfied" with the Board's decision on the issue of priority. He, instead, seeks a remand to secure further action in the Patent Office on the issue of patentability. Appellant's reliance on *Loshbough* v. *Allen*, 54 CCPA 1113, F.2d 747, 152 USPQ 812 (1967), in support of this position, is misplaced. This case and *Loshbough* are clearly distinguishable on their facts. The issue in *Loshbough* involved a review of the determination of priority of invention where the winning junior party Allen had moved to "cancel" the counts, on which priority was awarded, and to substitute a new count based on Allen's expressed belief that the counts were not patentable to either party, over a certain reference.[3] Moreover, the appellant Loshbough later *joined* in Allen's request, on the belief that the reference "may amount to a bar to the grant of a patent to either of the parties * * *." *Id.* 54 CCPA at 1114, 373 F.2d at 748, 152 USPQ at 813. Allen's motion had stated that "the party Allen and his attorneys were not advised of the disclosure of the Swedish patent until after the testimony of both parties had been completed." The party Loshbough was not aware of the patent prior to the filing of Allen's motion. Thus, in *Loshbough*, the matter of the patentability of the counts in interference over the particular reference apparently had not been considered. The lengthy record here indicates that the substance of Ferree's arguments relating to the patentability of the counts and the exercise of the discretion of the Board had previously been raised and decided adversely to Ferree's position.

Ferree's reply to Shephard's motion to dismiss concentrates on the issue of patentability. As in *Glass* v. *De Roo*, supra, Ferree's argument raises an issue directed at the merits of the procedure before the Patent Office on the issue of patentability. In addition to Ferree's admission that the purpose of this appeal is not to seek a review of the merits of the Board's *decision at this time*, appellant further states that "* * * the issue in this case is simply and squarely as to whether the Board *should* exercise its discretion under Rule 259 to make recommendations on the question of patentability * * *." He added: "What this case boils down to is simply that there was considerable oral testimony taken, *but never even considered*, on the question of patentability."

Thus, as indicated by Ferree's argument, and, particularly by the quoted portions, supra, it seems quite clear to us that Ferree is no longer "dissatisfied" with the decision of the Board of Patent Interferences "on the question of priority" within the meaning of 35 U.S.C. 141. Appellant has extensively utilized the procedures available in the Patent Office for the repeated consideration of the patentability of the counts of the interference. Thus, under the statutes, nothing is left for us to here review. *Glass* v. *De Roo*, supra; *Den Beste* v. *Martin*, supra; and *Bac* v. *Loomis*, supra.

Appellees' motion to dismiss is granted and the appeal is dismissed.

DISMISSED.

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[3] See the earlier proceedings in *Loshbough* v. *Allen*, 53 CCPA 1214, 359 F.2d 910, 149 USPQ 633 (1966).

REISSUES

SEPTEMBER 24, 1968

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

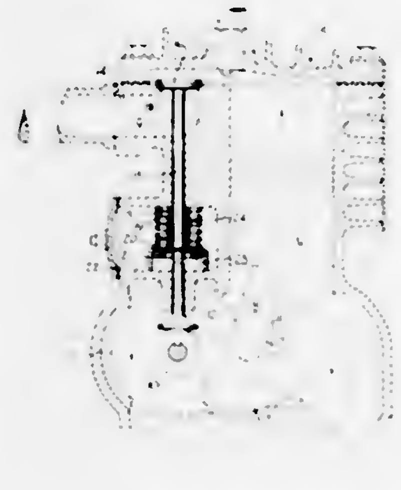
26,462

MEANS FOR REDUCING STARTING TORQUE IN FOUR-CYCLE ENGINES

Joseph R. Harkness, Germantown, Richard W. Seilenbinder, Milwaukee, and John D. Santi, West Allis, Wis., assignors to Briggs & Stratton Corporation, Milwaukee, Wis., a corporation of Delaware

Original No. 3,306,276, dated Feb. 28, 1967, Ser. No. 442,621, Mar. 25, 1965. Application for reissue May 12, 1967, Ser. No. 646,744

14 Claims. (Cl. 123—182)



To facilitate starting of a four-stroke cycle internal combustion engine without detrimentally affecting its normal operation: during the compression stroke one of the engine valves is held off its seat (either positively or yieldingly) by a predetermined small distance to relieve compression; and during the power stroke, that same valve or another one is left substantially free to move through a predetermined small distance toward and from its seat in response to differences in pressure thereacross for the relief of suction if the power stroke is unfired.

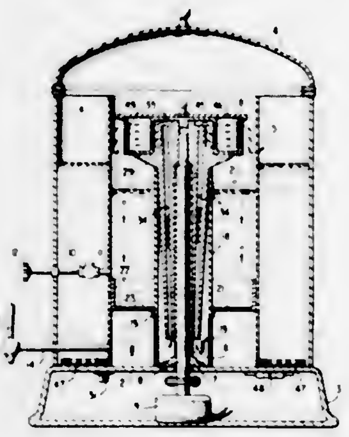
26,463

INFUSION MACHINE

Andres M. Carrillo, Miami, Fla., assignor to Rotat-Coffee, Inc., a corporation of Puerto Rico

Original No. 3,128,691, dated Apr. 14, 1964, Ser. No. 160,408, Dec. 13, 1961. Application for reissue Apr. 14, 1966, Ser. No. 554,918

9 Claims. (Cl. 99—293)



A machine particularly useful for brewing coffee which includes a brew tank, a centrifugal strainer in the brew tank and a centrifugal pump in open communication with the strainer for pumping liquid from the lower portion of the brew tank through the strainer and connected for rotation with the pump.

26,464

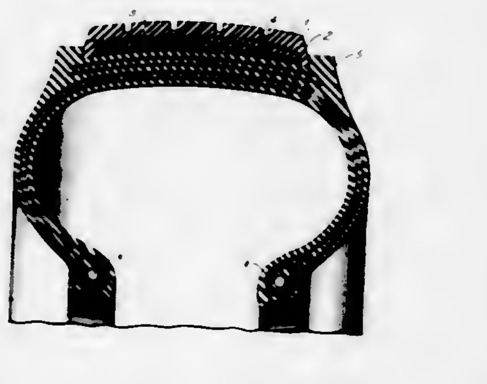
PNEUMATIC TIRE AND REMOVABLE TREAD THEREFOR

Giuseppe Lugli, Milan, Italy, assignor to Pirelli S.p.A., Milan, Italy

Original No. 3,240,249, dated Mar. 15, 1966, Ser. No. 326,169, Nov. 26, 1963. Application for reissue June 5, 1967, Ser. No. 646,761

Claims priority, application Italy, Dec. 5, 1962, 23,928/62

10 Claims. (Cl. 152—176)



A pneumatic tire and tread ring therefor, in which a helically wound metallic cord is disposed in the tread ring along with two layers of metallic cords extending parallel to one another in each layer and disposed along two directions crossed with respect to the mid-circumferential plane of the tire.

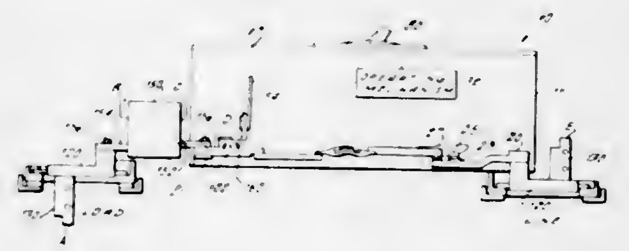
26,465

CIRCUIT BREAKER TRIP UNIT ASSEMBLY WITH IMPROVED THERMAL CHARACTERISTICS

Carl E. Gryctko, Haddon Heights, N.J., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Original No. 3,356,805, dated Dec. 5, 1967, Ser. No. 549,207, May 11, 1966. Application for reissue Jan. 23, 1968, Ser. No. 702,136

10 Claims. (Cl. 337—146)



A circuit breaker having a thermally responsive trip means in which the heat source is separately provided external to the main circuit breaker or trip unit housing. An illustrative embodiment utilizes a current limiting fuse means as the heat source for actuating the thermally responsive trip at overload current magnitudes within the interrupting capacity of the breaker.

26,466

OIL PRODUCTION METHOD UTILIZING IN SITU CHEMICAL HEATING OF HYDROCARBONS

Philip J. Closmann and Michael Prats, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Original No. 3,250,328, dated May 10, 1966, Ser. No. 324,843, Nov. 19, 1963. Application for reissue Feb. 20, 1967, Ser. No. 626,641

8 Claims. (Cl. 166—11)

A method of producing liquefiable hydrocarbons from an underground reservoir formation by forcing a liquid that reacts exothermically with hydrocarbons into the formation and into contact with hydrocarbons in selected portions of the reservoir formation and maintaining the liquid reactant within the reservoir formation until it reacts with the contacted hydrocarbons and selectively heats the portions of the reservoir formation that are adjacent to the hydrocarbons that are contacted.

PATENTS

GRANTED SEPTEMBER 24, 1968

GENERAL AND MECHANICAL

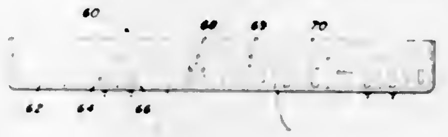
3,402,406

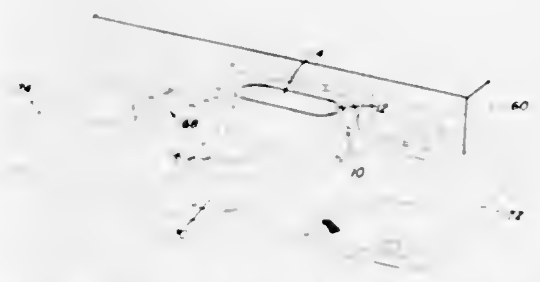
PLUMBING FIXTURE AND CONSOLE

Jack N. Kaiser, Louisville, Ky., assignor to American Standard Inc., a corporation of Delaware

Filed Mar. 30, 1966, Ser. No. 538,811

14 Claims. (Cl. 4—192)





This invention relates to a plumbing fixture, such as a kitchen sink, which has a sump section, a raised section and a console member. The sump section has walls which may define one or more bowls. The upper periphery of the walls is in the form of a ledge. The raised section includes other walls extending upwardly with respect to the ledge to form a hollow open structure. The console member is mounted over the open structure and is provided with a plurality of compartments each of which may house an accessory, or each compartment may be used for storage.

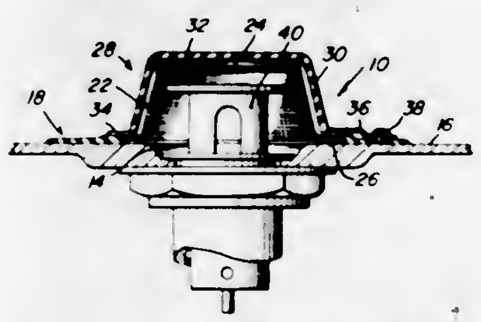
3,402,407

DRAIN COVER

Edythe D. Andrews, 3039 Grand Ave., Fort Myers, Fla. 33901

Filed Dec. 9, 1966, Ser. No. 600,422

10 Claims. (Cl. 4—293)



A drain cover which is self-sealing about a drain opening in a sink, tub or the like, and incorporates both a screening element and a closure cap for a selective retention or draining of the water, the screening element and cap having raised center portions.

3,402,408

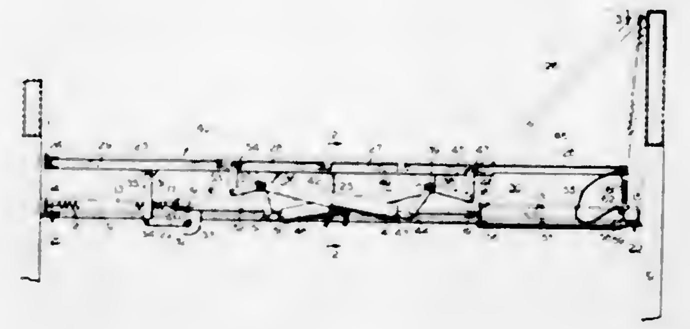
ADJUSTABLE HOSPITAL BED

Clyde B. Hutt, 601 E. 22nd, Vancouver, Wash. 98663

Filed July 24, 1967, Ser. No. 655,418

4 Claims. (Cl. 5—68)

A hospital bed which, in addition to the various adjustable features provided on modern hospital beds, is also provided with means for automatically shifting the mattress and spring portion of the bed toward the headboard, if so desired, when the head section of the mattress and spring portion are adjusted to support the patient in sitting-up position.



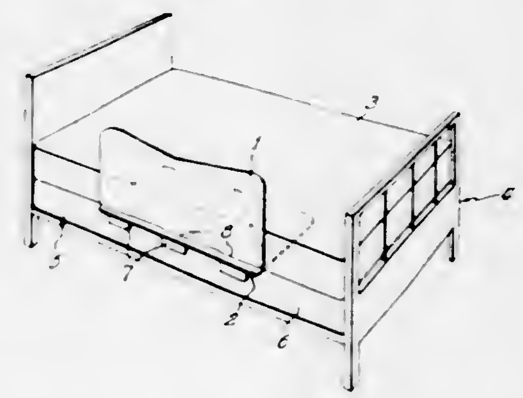
3,402,409

CHILD GUARD

Arthur F. Kain, 1927 Seminole Trail, Lakeland, Fla. 33803

Filed Nov. 25, 1966, Ser. No. 597,071

1 Claim. (Cl. 5—331)



A guard formed from a pair of thin, rigid panels. One panel has aligned slots along one edge. This panel is inserted horizontally between the mattress and the box spring member of a bed. The other panel is arranged upright at the side edge of the mattress and has integral prongs extending from its lower edge for insertion into the slots of the horizontal panel.

3,402,410

METHOD OF AND ARRANGEMENT FOR WASHING TEXTILES, ESPECIALLY ENDLESS TOWELS

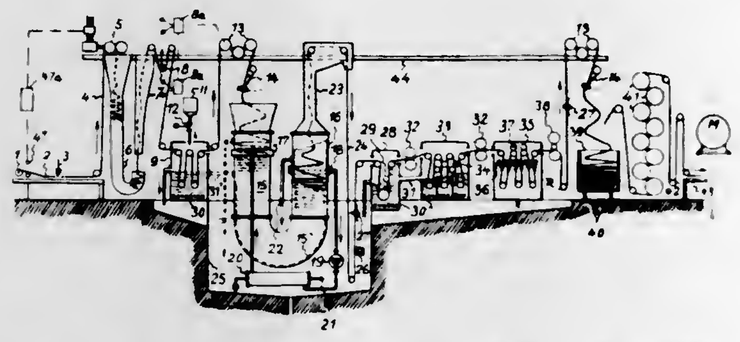
Erich Schumm, Murrhardt, Karl-Peter Lopata, Krefeld-Urdingen, and Günter Schiffer, Krefeld-Bockum, Germany, assignors to Joh. Kleinewefers Sohne, Krefeld, Germany

Filed Jan. 3, 1966, Ser. No. 518,422

Claims priority, application Germany, May 10, 1965, K 56,068

7 Claims. (Cl. 8—152)

The method of successively feeding endless hand towels to be washed in the form of wound-up rolls to a connecting station, firmly interconnecting the respective successive ends of the textile material pertaining to successive rolls, feeding the thus interconnected web material sections in unwound condition in a continuous manner through a washing liquor, plaiting the thus washing liquor impregnated web material in superimposed layers over a desired path while at the end of said path in a continuous manner withdrawing the respective adjacent plaits one after the other and in unfolded substantially straightened-out condition and subjecting said withdrawn material on opposite sides to a brushing action, at least once squeezing and hot and cold rinsing the respective brush web sections, drying the thus treated material, separating the dried material sections at their interconnected areas, and finally winding up the separated sections to form individual rolls.



3,402,411
PROCESS FOR MAKING BOOTS, SPORTS EQUIPMENT AND HATS

Alden Wade Hanson, 1605 W. St. Andrews,
Midland, Mich. 48640
No Drawing. Continuation-in-part of application Ser. No. 380,975, June 22, 1964. This application Jan. 12, 1966, Ser. No. 535,257
15 Claims. (Cl. 12—142)

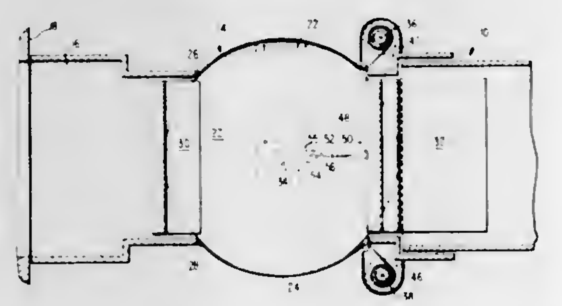
1. In a process of making a boot having a pressure compensating ankle support that covers the sides and back of the ankle of the wearer including the steps of providing a flexible protective ankle support shaped envelope, sealing a high viscosity material in said envelope and assembling said sealed envelope and boot, said high viscosity material not substantially changing in volume responsive to ambient temperature changes, having a nominal thickness of about 0.04 inch to about 0.6 inch, being resistant to flow in response to intantaneously applied pressure but responding to continuously applied pressure to provide pressure on those portions of the ankle that can best withstand it and to allow portions of the ankle momentarily to move away from pressure, and having

(a) a minimum yield point of at least 4 grams per square centimeter and

(b) a viscosity between about 100,000 and about 40,000,000 poises at 0° F. and 80° F.

3,402,412
CONVEYANCE LOADER

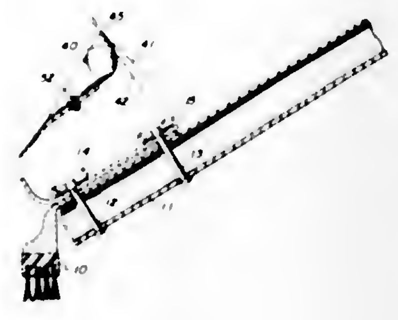
Andrew G. Seipos, Miami, Fla., assignor, by mesne assignments, to Wollard Aircraft Equipment, Inc., Miami, Fla., a corporation of Washington
Continuation of application Ser. No. 490,202, Sept. 27, 1965. This application July 27, 1967, Ser. No. 656,596
6 Claims. (Cl. 14—71)



Vestibule curtain reeling system for conveyance loaders in which swinging movement of the loader causes an unreeling of a curtain section from either one of two curtain reels, the two reels being interconnected so that the unreeling action of one reel is utilized to cause reeling action of the other reel, the means interconnecting the two reels comprising an inextensible cable and cable reeling and unreeling means, the latter forming spiral convolutions of the cable to cause the curtains to be reeled and unreeled at equal linear speeds and in which a deflecting force on the inextensible cable acts as a compensator for ironing out departures from exact complementary relationship in the reels and places the desired tension on the curtains.

3,402,413
SWIMMING POOL BRUSH GUIDE

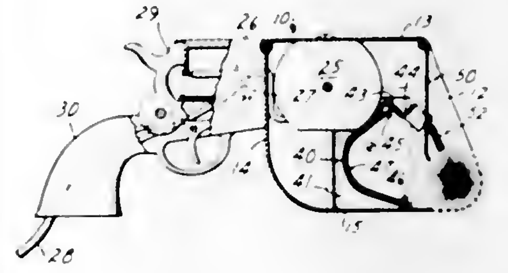
Michael C. Gibellina, 8350 E. Cheery Lynn,
Scottsdale, Ariz. 85251
Filed Dec. 11, 1967, Ser. No. 689,599
4 Claims. (Cl. 15—1.7)



A device for attachment to the handle of a swimming pool brush and incorporating a plurality of surfaces for guiding the brush and providing force to urge the brush against the walls of a swimming pool.

3,402,414
GRILL CLEANER

Willard J. Bell, 1355 W. Iowa Ave.,
St. Paul, Minn. 55113
Filed July 11, 1966, Ser. No. 564,260
3 Claims. (Cl. 15—23)



1. A grill cleaner comprising:

(a) a frame structure;

(b) a horizontally disposed generally cylindrical brush element journalled for rotation in said frame structure;

(c) a refuse collecting receptacle detachably securable in said frame radially outwardly of said brush element and having a bottom wall which terminates adjacent the peripheral limits of said brush element;

(d) power means carried by said frame structure for imparting rotation to said brush element in a direction to cause the lower limits thereof to move in a direction away from said receptacle;

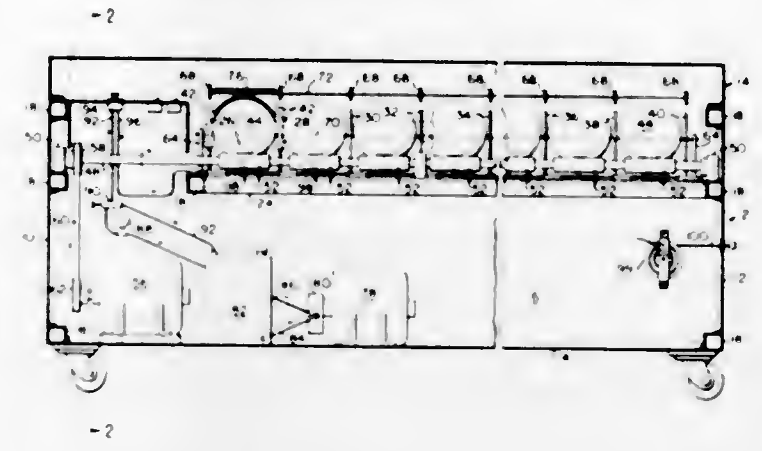
(e) a blade-like deflector tongue pivotally attached to said frame structure and cooperating with the bottom wall of said receptacle to define a mouth of a width equal at least to the longitudinal dimension of said brush element,

(f) said deflector tongue projecting downwardly from said frame structure and the lower edge thereof engageable with the peripheral portion of said brush element throughout its longitudinal dimension; and

(g) said deflector tongue being yieldingly biased toward said brush element.

3,402,415
BOWLING BALL CLEANER

Sidney S. Berlin, Hood's Pond Cabin,
Ipswich, Mass. 01938
Filed June 1, 1966, Ser. No. 554,500
10 Claims. (Cl. 15—97)



This invention is a machine for cleaning a plurality of bowling balls simultaneously, the bowling balls being inserted in the machine to rest against a pair of parallel, oppositely disposed rotating shafts, the shafts turning the balls. The balls are aligned longitudinally in the apparatus and are separated by means of upstanding partitions each of which is covered with a soft cleaning pad which may be removed for cleaning the pad itself once it gets dirty. Overlying the bowling balls is a hinged top which contains a loop of cleaning cloth for each ball, the loops and pads being so proportioned and disposed that when the balls are rotated, the loops of cleaning cloth and the pads thoroughly scrub and clean the balls.

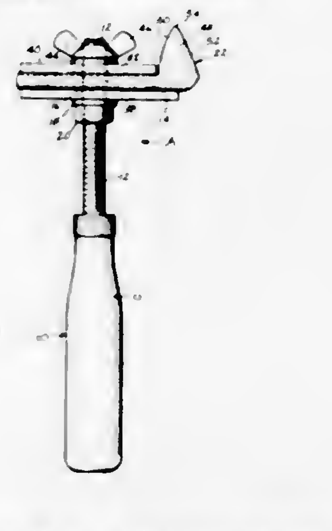
3,402,416
INTEGRALLY CONNECTED BRUSH FIBRES

Gilbert Shaw, P.O. Box 151, Middlebury, Vt. 05753, and John C. Lewis, Jr., Middlebury, Vt.; said Lewis assignor to said Shaw
Filed Nov. 23, 1966, Ser. No. 596,492
20 Claims. (Cl. 15—159)

This invention relates to thermoplastic brush fibres integrally connected by means of a thermoplastic support having improved characteristics, particularly improved wear resistance, i.e., abrasion resistance or resistance to wear. The invention also includes novel brush constructions employing the fibres of this invention.

3,402,417
PAINT APPLICATOR

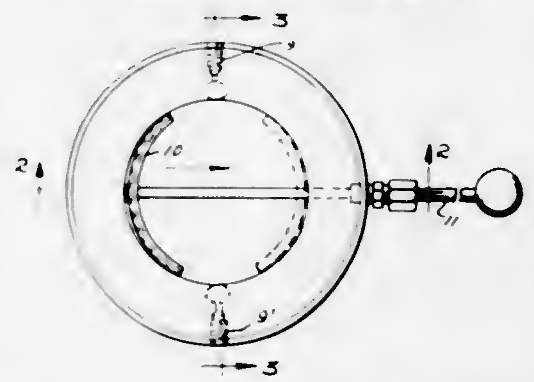
Ordell R. Lund, 1915 E. 9th St.,
Duluth, Minn. 55812
Filed Nov. 17, 1966, Ser. No. 595,063
1 Claim. (Cl. 15—244)



The disclosure relates to a hand-operated applicator for paint including a handle, a compressible absorbent member, an upper and a lower plate between which the absorbent member is positioned together with means for urging the plates together upon the absorbent member with a portion of the absorbent member extending beyond one edge of the plates.

3,402,418
WIPER ASSEMBLY FOR SIGHT GLASS

Gene Le Roy, Rte. 1, Box 510, Maplewood Estates,
Scott Depot, W. Va. 25560
Filed Apr. 25, 1966, Ser. No. 544,939
7 Claims. (Cl. 15—250.01)

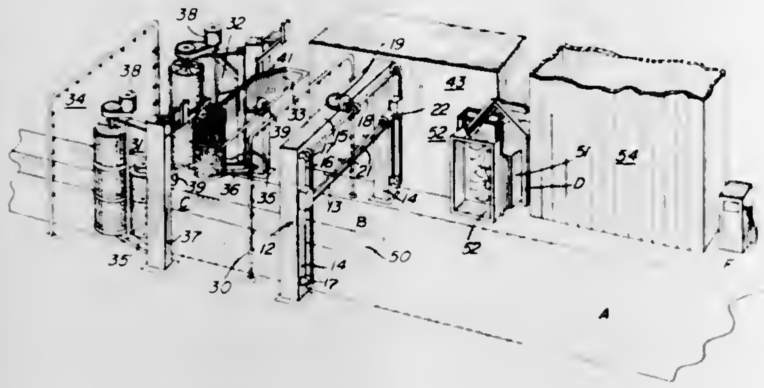


A wiper for cleaning the inner surface of the lens of a sight glass comprising an elongated wiper blade of a flexible material which can bend about an axis perpendicular to the lens surface to form a curved shape. The blade is within a tubular member whose axis is perpendicular to the lens and there is a rod through the tubular member fastened to the middle of the blade. Movement of the rod through the tubular member moves the middle of the blade back and forth across the lens and the flexible blade bends to conform to the tubular member so that the entire inner surface of the lens may be cleaned. The blade may be eccentrically mounted on the end of the rod so that rotation of the rod will cam the blade against the lens for use and away from the lens for storage. Washer means may include a tube through the rod with a nozzle at the tip of the rod or nozzles in the tubular member.

3,402,419
VEHICLE CLEANING SYSTEM

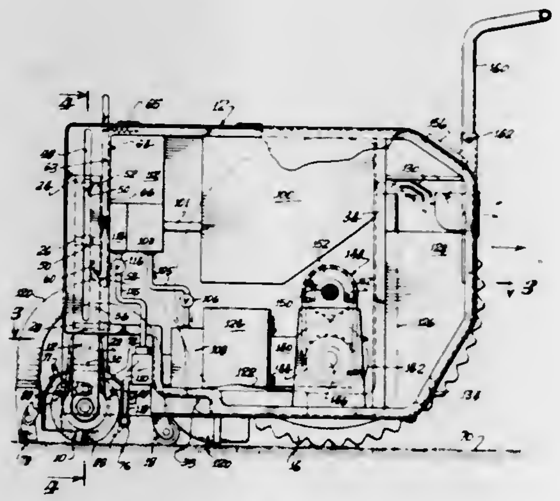
Carleton P. Ross, Wheeling, Ill., assignor to Ross and White Company, Wheeling, Ill., a corporation of Illinois
Filed Jan. 10, 1966, Ser. No. 519,666
7 Claims. (Cl. 15—302)

A system for washing buses including a service lane thru which the bus must travel between two stop "stations" for exposure to the synchronized exterior washing and interior vacuuming thereof by facilities and equipment arranged for seriatim work on the bus.



3,402,420
CARPET CLEANING DEVICE

Daniel D. Schaeffer, 3667 Overland Ave., Apt. 12, Los Angeles, Calif. 90034
Filed Oct. 15, 1965, Ser. No. 496,299
11 Claims. (Cl. 15—320)

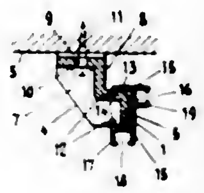


A carpet cleaning machine including nozzle means and a suction head on opposite sides of a horizontally disposed brush mounted for up and down movement in a main frame supported on a unique transport means.

3,402,421
SELF-SUPPORTING CURTAIN FITTING

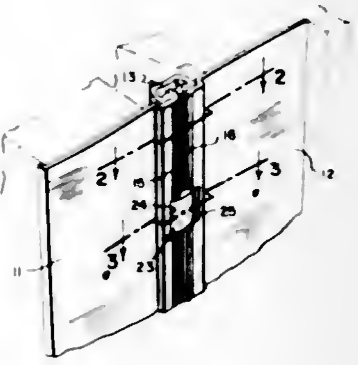
Alexander Weber, Zollikofen, near Bern, Switzerland, assignor to Dr. Hans Beer and Mrs. Emma Weber-Horisberger, trading as Awepa, Bern, Switzerland
Filed June 2, 1964, Ser. No. 372,043
Claims priority, application Switzerland, June 4, 1963, 6,927/63
1 Claim. (Cl. 16—94)

1. A curtain fitting, comprising a first and at least one similar second support each having a main body portion, a head portion and a neck portion of smaller thickness than said main body portion and head portion and defining with the same a groove, and a hollow curtain-supporting rail having a slot of a width less than the corresponding dimension of said head portions, at least a portion of said rail being elastically deformable to allow for widening of said slot so that said head portions may be introduced through the thus widened slot and into the interior of said rail, said second support being spaced from said first support in longitudinal direction of said rail and the grooves of the respective supports being aligned with one another, the dimension of said head portions as seen in direction normal to the respective grooves being substantially equal to the interior of said hollow rail as seen in direction normal to the elongation thereof and a portion of the material bounding said slot being received in each of said grooves when said rail is secured to said supports.



3,402,422
HINGE

Austin R. Baer, R.F.D. 2, Moscow, Pa. 18444
Filed Dec. 10, 1965, Ser. No. 513,004
7 Claims. (Cl. 16—163)

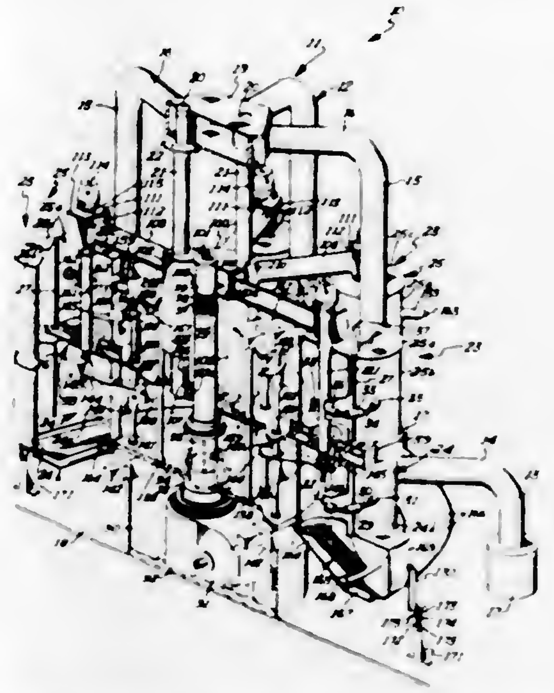


A pinless hinge structure having two longitudinal leaves or hinge members rotatably joined along their adjacent longitudinal edges is provided with longitudinal thrust bearing means engaging the adjacent longitudinal edges of said hinge members to prevent longitudinal movement thereof with respect to each other. The longitudinal thrust bearing means comprises an essentially solid bearing member disposed in longitudinally co-extensive lateral recesses formed in each rotatable hinge member.

3,402,423
APPARATUS FOR DEBONING MEAT

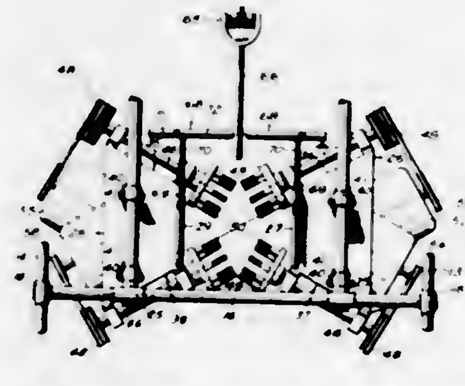
Gerald Loren Helgeson, Austin, Jesse A. Willcox, Excelsior, and Frank McGhinnis Brown, and Jean Arthur Burton, Austin, Minn., assignors to Geo. A. Hormel & Company, Austin, Minn., a corporation of Delaware
Application Jan. 5, 1967, Ser. No. 607,572, which is a continuation-in-part of application Ser. No. 493,362, Oct. 6, 1965. Divided and this application Aug. 14, 1967, Ser. No. 660,487
12 Claims. (Cl. 17—1)

A process and apparatus for removing a bone or core member from embedded relation with a chunk of meat or other material wherein the chunk of meat is positioned against a barrier having an adjustable opening therein through which the bone or core member projects. Forcing the bone or core member through the opening in the barrier and revolving the chunk of meat and bone while subjecting the periphery of the bone to the action of high velocity jets of water to cause progressive separation of the bone from the chunk of meat while maintaining the chunk of meat and bone in substantially intact condition.



3,402,424
CLOSED CHANNEL DEFEATHERING APPARATUS

George W. Brown, Chamblee, and Charles V. Corn, Gainesville, Ga., assignors to Gainesville Machine Company, Inc., Gainesville, Ga., a corporation of Georgia
Filed June 16, 1966, Ser. No. 557,981
4 Claims. (Cl. 17—11.1)

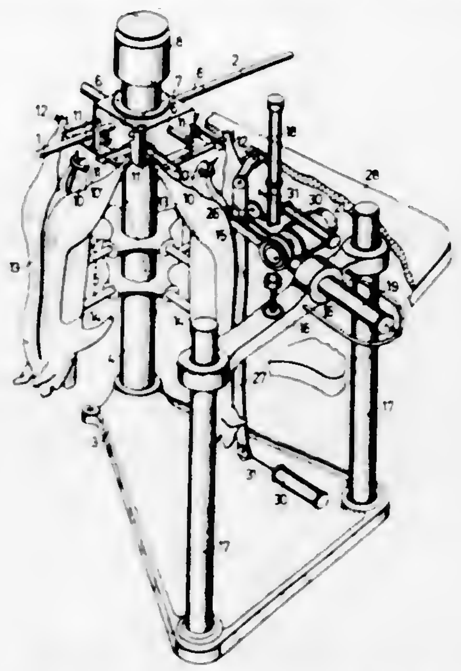


A poultry defeathering machine comprising a pair of rows of picking discs extending along each side of the path through which the fowl is conveyed, with one row of each pair of rows positioned generally above the path and the other row of each pair of rows positioned generally below the path. The discs are rotatable about axes extending generally through the center portion of the path, and elastic picking fingers extend from each disc toward the center portion of the path.

3,402,425
METHOD OF WHOLLY OR PARTIALLY CUTTING OUT THE BACKBONE OF OPEN CARCASSES, SUCH AS PIGS' CARCASSES, AND APPARATUS FOR CARRYING OUT THIS METHOD

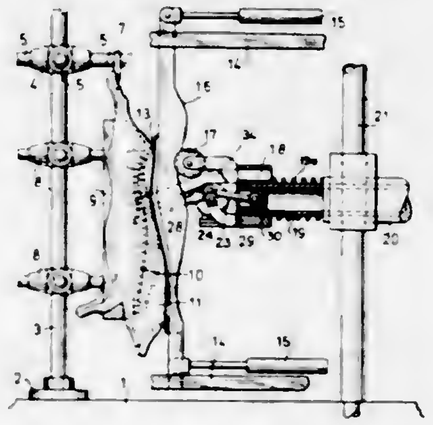
Svend A. H. Wexel, Skive, Denmark, assignor to Slagteriernes Forskningsinstitut, Roskilde, Denmark, a company of Denmark
Filed Oct. 7, 1965, Ser. No. 493,672
Claims priority, application Denmark, Oct. 15, 1964, 5,120/64
5 Claims. (Cl. 17—23)

An apparatus for partially removing the backbone of an animal carcass, including means for suspending the carcass by at least one leg, an abutment rail for supporting the vertical side of the backbone, a clamping rail for gripping the backbone and pressing same against the abutment rail, and a knife device for cutting to each side of the backbone.



3,402,426
APPARATUS FOR DIVIDING CARCASSES CUT OPEN VENTRALLY

Svend Anton Hansen Wexel, Skive, Denmark, assignor to Slagteriernes Forskiningsinstitut, Roskilde, Denmark, a corporation of Denmark
Filed June 24, 1966, Ser. No. 560,237
Claims priority, application Denmark, June 6, 1966, 2,902/66
9 Claims. (Cl. 17—23)

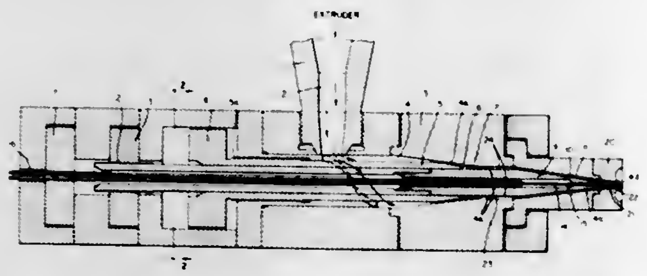


An apparatus for splitting the backbone of a carcass cut open ventrally, said apparatus comprising two external pressure rails disposed in a spaced relationship and engaging the carcass on one side thereof for maintaining the backbone clamped against an internal supporting rail, a tool means including a tool member disposed in the space between said pressure rails and adapted to engage the backbone, and drive means for driving the tool member against said backbone.

3,402,427
APPARATUS FOR EXTRUDING PLASTICS

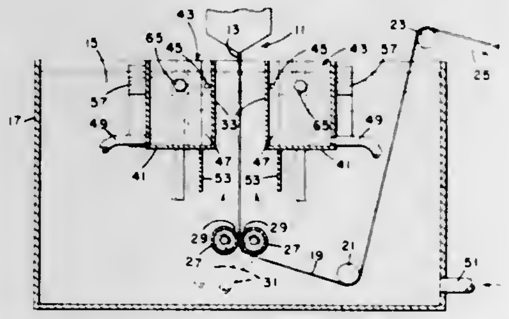
Alkis Christofas, Philadelphia, and Andrew A. Dukert, Ambler, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 30, 1964, Ser. No. 407,684
8 Claims. (Cl. 18—13)

A crosshead die body apparatus including a shaping die for extruding and shaping thermoplastic material, wherein the crosshead die body has at least two externally adjustable internally axially positioned frusto-conically shaped valving means and at least one annular orifice portion of fixed uniform annular width and of substantially fixed but adjustably variable length located axially between said valving means, the valving means and annular orifice each being located about the same axis and



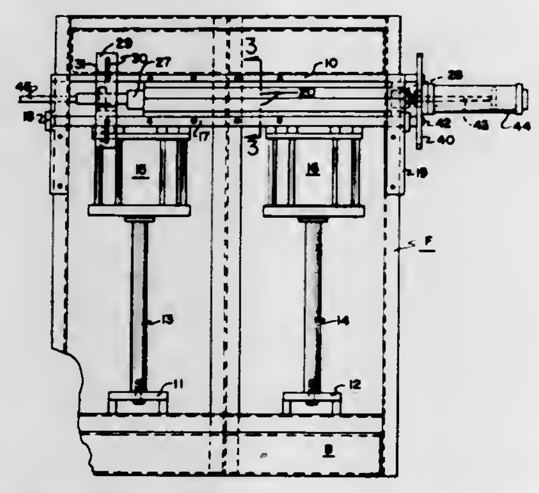
ahead of the fixed size shaping die inlet, whereby the pressure drop and shearing stress between the extruder outlet and the shaping die may be progressively and precisely controlled.

3,402,428
APPARATUS FOR MAKING CONTINUOUS FILMS
Anthony J. Schreiber, Philadelphia, Pa., assignor to Avisun Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Aug. 5, 1966, Ser. No. 570,529
4 Claims. (Cl. 18—15)



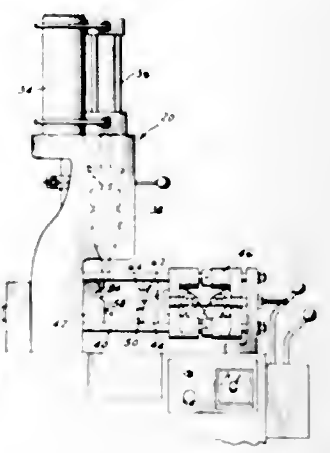
A cooling bath for a shaped stream of molten film-forming material includes a pair of vertical serrated, perforated baffles one on each of the opposite sides of the path of the stream. Non-turbulent streams of quenching liquid are made to flow along path of stream but in the opposite direction thereto, thence laterally away from path of stream and through the baffle openings.

3,402,429
FORMING CORRUGATED HOSE
James W. Davidson, Willoughby, and John L. Maurer, North Madison, Ohio, assignors to Eagle-Picher Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
Original application Nov. 27, 1962, Ser. No. 240,363, now Patent No. 3,333,036. Divided and this application June 7, 1967, Ser. No. 644,155
4 Claims. (Cl. 18—19)



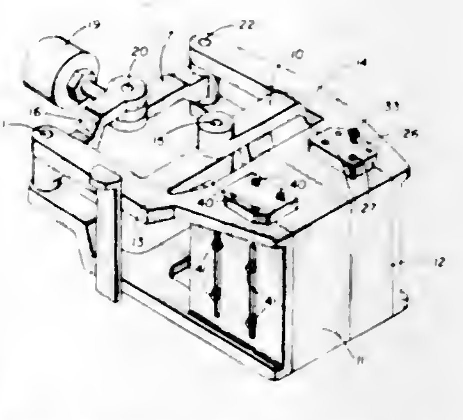
This application relates to a mandrel free method of making a corrugated hose wherein the hose blank is gripped at both ends, stretched and then molded. The apparatus for performing the process includes mold members, clamping members and means for operating said members.

3,402,430
MOLD APPARATUS FOR FORMING A SAFETY PIN WITH PLASTIC ENDS
Pierre F. Hill, York, Pa., assignor to Korbond Industries Pty. Limited, Peakhurst, New South Wales, Australia, a corporation of Australia
Filed July 19, 1965, Ser. No. 472,891
8 Claims. (Cl. 18—36)



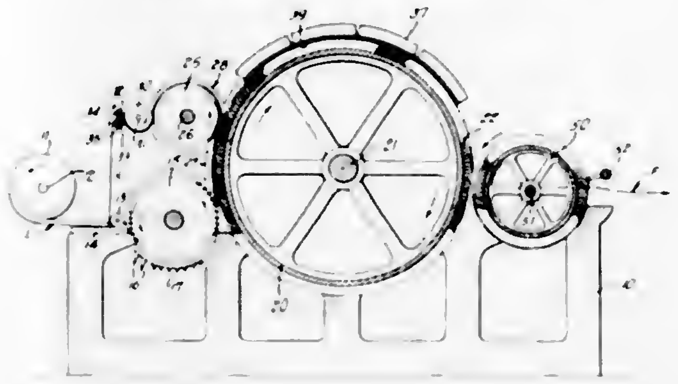
1. A mold apparatus for the locking head of a safety pin having a channel receiving the pointed end of the pin when the pin is in fully closed position, said mold comprising a pair of mold members having complementary mold cavities respectively to form the exterior surfaces of said locking head, means to support a U-shaped metallic pin unit comprising a pointed pin leg and a back leg with the outer ends exposed for reception within one end of said mold cavities, and a longitudinal mold insert member mounted for movement into the opposite end of each of said mold cavities and substantially to said one end thereof adjacent the pointed end of said pin unit to form said channel which receives the pointed end of said pin leg when said pin is closed.

3,402,431
SECTIONAL MOLD MOUNTS
Clement V. Fogelberg, Boulder, and William D. Hough, Arvada, Colo., assignors to Ball Brothers Company Incorporated, Muncie, Ind., a corporation of Indiana
Filed Sept. 12, 1966, Ser. No. 578,813
6 Claims. (Cl. 18—43)



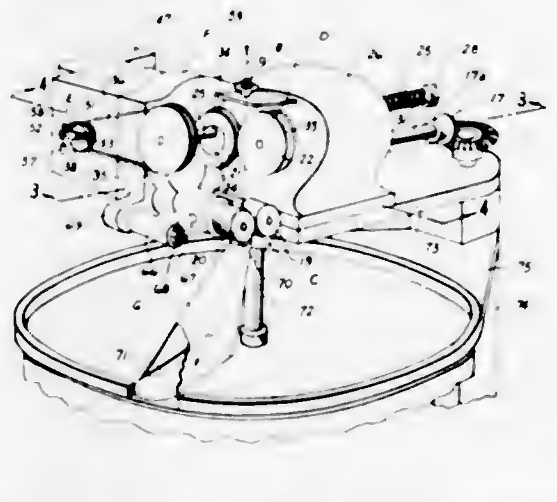
Apparatus for mounting and aligning a sectional mold wherein at least one mold section is fixedly mounted and the remaining mold sections are resiliently mounted upon opening and closing mechanism, including alignment means to urge the resiliently mounted sections into proper alignment with the fixedly attached mold section upon closing.

3,402,432
CARDING APPARATUS
Frank Kalwaites, Somerville, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed May 13, 1966, Ser. No. 549,896
4 Claims. (Cl. 19—104)



A carding apparatus comprising feed means, a rotatable cleaning surface, a rotatable carding surface and a stationary resilient carding surface comprising a pile fabric in contact with a portion of the circumference of the rotatable carding surface for carrying out the carding operation.

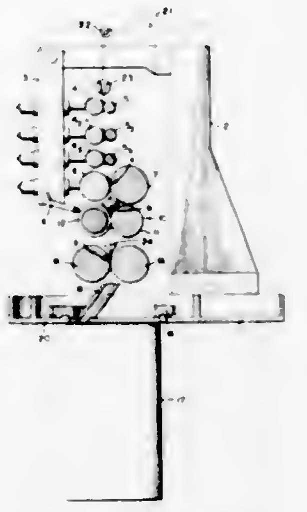
3,402,433
METHOD AND APPARATUS FOR DRAFTING AND COILING SLIVER
Clair W. Schwalm, Greenville, S.C., assignor to Benjamin Booth Company, Greenville, S.C.
Filed Sept. 22, 1965, Ser. No. 489,309
7 Claims. (Cl. 19—159)



The invention relates to sliver drafting and coiling wherein the former occurs between sensing means driven at constant speed for detecting variations in sliver thickness and drafting means driven at variable speeds in accordance therewith, such means located above a coiler or tube gear and a sliver can which are driven at constant speed. The coiler or tube gear is provided with a tube having a progresssively larger diameter towards the can thereby permitting the deposition of sliver within the can in a plurality of multiradius configurations.

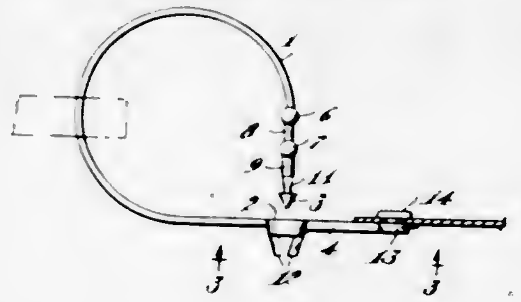
3,402,434
DRAWING FRAME FOR HIGH SPEED OPERATION
Hiroshi Kajimura and Tatsuo Ota, Yatsuka-gun, Shimane-ken, and Hiromi Nakashima, Yonago-shi, Shimane-ken, Japan, assignors to O-M Ltd., Osaka-shi, Japan
Filed Dec. 22, 1965, Ser. No. 515,583
1 Claim. (Cl. 19—286)

A drafting apparatus having a condenser and a pair of magnetic condensing rollers between the delivery rollers and the calender rollers wherein the top condensing roller is of a magnetized material and has larger diameter portions at the opposed ends and a smaller diameter portion between the larger diameter portions. The larger diameter portions are in contact with the bottom roller



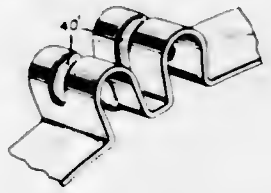
thereby forming a slight clearance between the small diameter portion of the top roller and the bottom roller whereby the material is condensed as it passes therethrough.

3,402,435
TAG ATTACHING OR BUNDLE FASTENING DEVICE
Francis G. Merser, Framingham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Apr. 26, 1967, Ser. No. 633,782
3 Claims. (Cl. 24—16)



A fastening device for attaching, bundling, affixing or other holding of one or more articles, the device comprising a filament, a socket on the filament and a head on one end of the filament adapted to snap into the socket.

3,402,436
CLAMP CONSTRUCTION
Hans Oetiker, 21 Oberdorfstrasse, Postfach 93, Horgen, Zurich, Switzerland
Filed Oct. 23, 1965, Ser. No. 502,929
Claims priority, application Switzerland, Nov. 24, 1964, 15,166/64; June 3, 1965, 8,067/65
27 Claims. (Cl. 24—20)

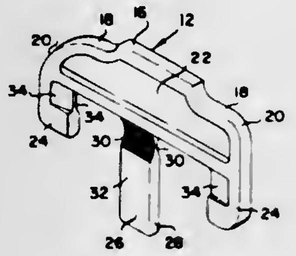


A clamp structure for fastening, for example, hoses to nipples, in which the contraction of the ring or band is realized by a unitary multihump fold structure of approximately undulatory shape and including at least two-bent out fold portions which can be contracted to form either a crown ear or double ear.

To prevent collapsing of an ear or fold, whether with a multi-hump structure or a single-fold or ear structure, reinforcing means are provided in the form of at least one indentation extending in the circumferential direction of the clamp and located in that portion of the fold or ear which faces radially outwardly of the clamp structure.

3,402,437
CLOTHES CLAMPING DEVICE AND THE LIKE

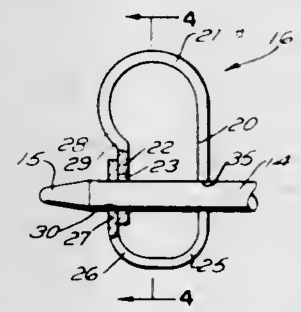
**Adolph Meletti, 6817 Lawnton St.,
Philadelphia, Pa. 19128
Filed May 31, 1966, Ser. No. 553,809
2 Claims. (Cl. 24—137)**



The present invention relates to a clothes pin for securing clothes to a clothes line by use of an elongated flat straight crosspiece member of plastic material with two spaced end legs and a middle leg that is approximately twice as long as the end legs and with recess means for threading a clothes line through the crosspiece so that it may be quickly secured to a clothes line no matter which way it is picked up by the user.

3,402,438
PIN STEM CLASP

**John O. Battistello, Chartley, Mass., assignor to General Findings, Inc., a corporation of Massachusetts
Filed June 24, 1966, Ser. No. 560,338
2 Claims. (Cl. 24—155)**

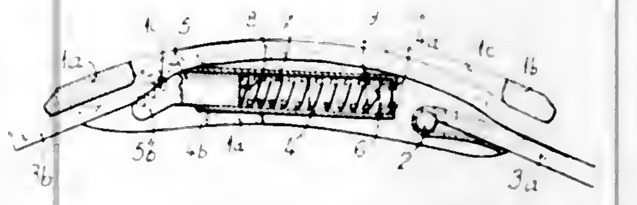


A pin stem clasp formed of a single piece of metal bent upon itself into a closed loop with the overlapping ends contiguous and provided with openings through which the pin stem may be passed, said openings being normally out of line but movable into alignment when the clasp is under spring pressure there being a stop to limit the movement of the overlapping ends toward each other.

3,402,439
BUCKLE FOR A STRAP

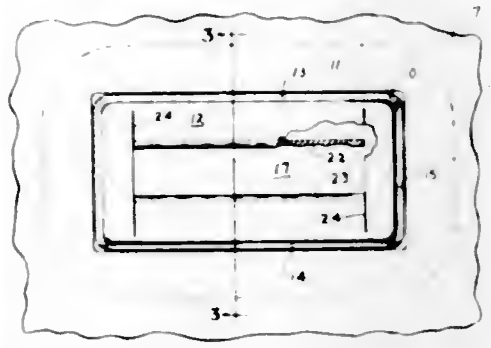
**Emile Currat, Geneva, Switzerland, assignor to F. Baumgartner S.A., Geneva, Switzerland, a firm
Filed June 29, 1966, Ser. No. 561,531
Claims priority, application Switzerland, July 5, 1965, 9,393/65
7 Claims. (Cl. 24—194)**

A buckle for securing a nonperforated strap by wedging the strap between a spring-loaded locking device pivotably mounted in a frame member and a first end portion of the frame member. The locking device is free to swing into and out of the plane of the frame member in one direction, but is prevented from swinging in the other direction by means of a stopping device within the frame member. In securing a strap, the free end of the strap presses under the first end portion of the frame member, over the spring-loaded locking device, and under a second end portion of the frame member. The locking device is provided with a friction-producing terminal portion which is positioned beneath the first end portion, and the strap is thereby wedged between the locking device and the first end portion.



3,402,440
ADJUSTABLE SNAP FASTENER

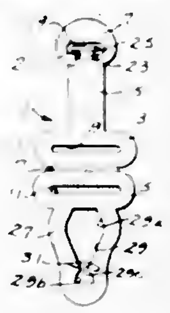
**Richard Woodacre, Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Aug. 18, 1966, Ser. No. 573,282
1 Claim. (Cl. 24—206)**



An adjustable snap fastener has an elongated resilient socket member to cooperate with a rigid stud. The socket has a front wall spaced outwardly from a base, the front wall having a slot-like opening with depending flanges having recesses for holding the stud at various points, and slits in the front wall extend from the slot for added flexibility.

3,402,441
CLASP AND APPARATUS FOR MOLDING SAME

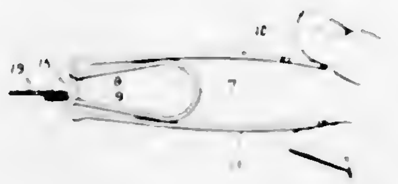
**Irvin S. De Woskin, St. Louis, Mo., assignor to Beltx Corporation, St. Louis, Mo., a corporation of Missouri
Filed Nov. 2, 1967, Ser. No. 680,171
8 Claims. (Cl. 24—245)**



A clasp of plastic material has a hinge line intermediate its ends so that body and tongue portions thereof may be placed in face-to-face relation by folding along the hinge line. The body has an opening therein with a first portion towards one end of the body, a second and smaller portion towards the other end of the body and a constricted neck between the portions. The tongue has transverse and longitudinal slots at one end thereof, and a stem integrally hinged to the tongue adjacent the end of the longitudinal slot. A button is provided on the end of the stem. The length of the stem corresponds to the length of the longitudinal slot and the width and thickness of the button are less than the length and width of the transverse slot. The first portion of the body opening is larger than the button, the second portion is smaller than the button but wider than the stem, and the neck is narrower than the stem. Apparatus for molding the clasp includes a pair of dies having flat mating faces, one of the dies having a cavity shaped for molding the body and tongue portions and the other die having a cavity shaped for molding the body portion. An island extends up from the bottom of the tongue cavity at one end thereof, the island extending transversely with respect to the tongue cavity and having a cavity therein for molding half of the button. A channel extends between the tongue and button cavities for molding the stem. The other die has a cavity in its mating face registering with the button cavity for molding the other half of the button.

3,402,442
SPRING CLAMP

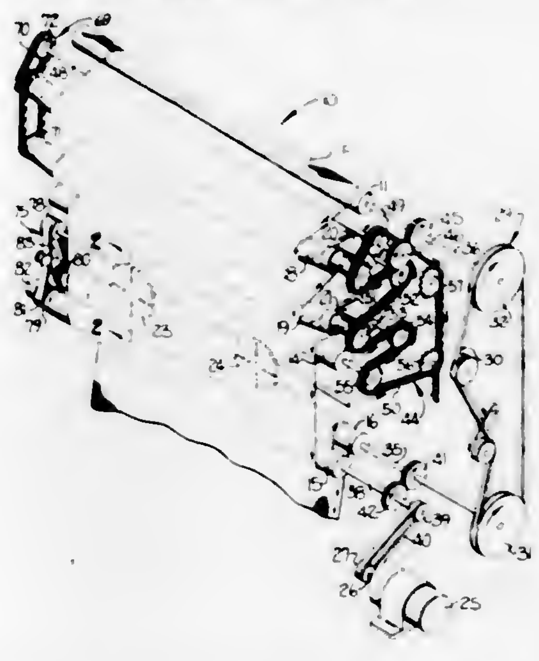
**James B. Kruger, Oxford, Douglas E. Sweeney, Middlebury, and Louis W. Le Page, Woodbury, Conn., assignors to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed May 11, 1967, Ser. No. 637,708
2 Claims. (Cl. 24—255)**



A one-piece spring clamp is made of a single ribbon-like strip of metal having a central spring loop, gripping jaws at the end of the loop and handles extending back from the jaws over and beyond the loop. The handles connect to the jaws with hollow reverse bends and a tongue is struck out of the strip at one of the bends to extend into a hole pierced through the strip at the other bend.

3,402,443
CLOTH STRAIGHTENING APPARATUS

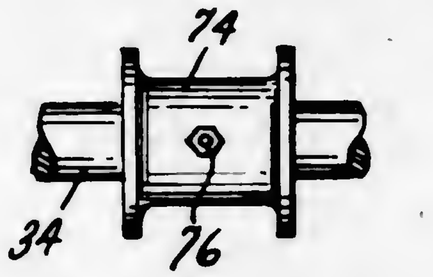
**Frank W. Leitner and William T. Griffin, Charlotte, N.C., assignors to Coltron Industries, Inc., Matthews, N.C., a corporation of North Carolina
Filed May 9, 1966, Ser. No. 548,552
9 Claims. (Cl. 26—51.5)**



Apparatus for correcting fabric distortions, such as bow, skew, or combinations thereof, including correction means defining a correction zone, feeding means for positively feeding distorted fabric to the correction means for correction of the distortions therein and serving to delineate the input side of the correction zone, and advancing means for positively advancing the corrected fabric from the correction means and for delineating the output side of the correction zone, the feeding means and advancing means operating at substantially equal lineal surface speeds so that elongation or stretching of the fabric during correction is avoided.

3,402,444
TUBULAR FABRIC SPREADER FRAME

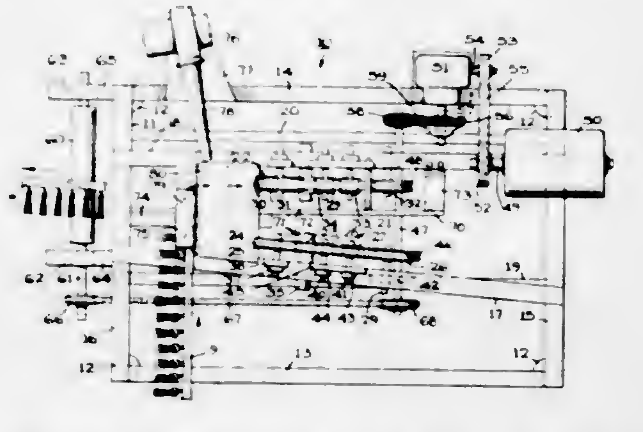
**Edward M. Merrill, Sayville, N.Y., assignor to Cutting Room Appliances Corp., New York, N.Y., a corporation of New York
Original application Aug. 5, 1965, Ser. No. 477,372, now Patent No. 3,345,062, dated Oct. 3, 1967. Divided and this application Apr. 17, 1967, Ser. No. 631,350
1 Claim. (Cl. 26—55)**



A tubular fabric spreader frame having first, second, and third frame members disposed in substantially coplanar relationship with the first and second frame members provided for adjustable mutual engagement and each including a side member and a lower horizontal member. The third frame member includes a side member slidably mounted and resiliently biased on the first or second frame member.

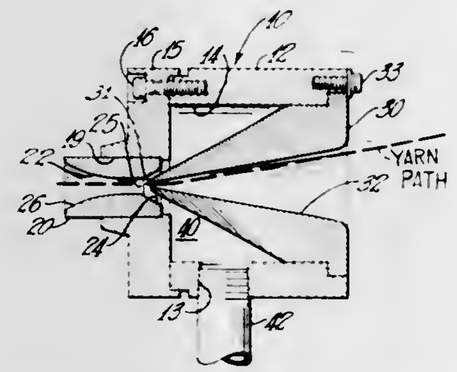
3,402,445
APPARATUS FOR TIGHTENING KNOTS IN A FRINGE MATERIAL

**John D. Brock, Resaca, Ga., assignor to Brock Machine Co., Inc., Dalton, Ga., a corporation of Georgia
Filed Mar. 16, 1966, Ser. No. 534,871
15 Claims. (Cl. 28—1)**



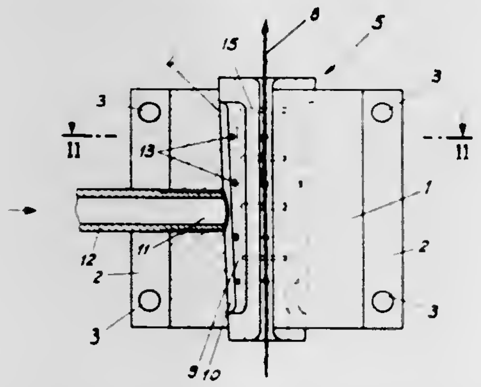
A machine for tightening knots in a loosely knotted material is provided having spaced gripping devices for holding the material at opposite ends as it is advanced through the machine. One of the gripping devices is disposed at an oblique angle with respect to the other device so that the spacing between the gripping devices gradually increases in the direction of travel of the material. As the material advances through the machine the lateral tension force applied at the ends of the material increases and causes the knots to be tightened. A guide plate disposed between the gripping devices causes the knots to be uniformly tightened and spaced from the ends.

3,402,446
APPARATUS FOR BULKING YARN
Gustav E. Benson, Greenville, R.I., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Aug. 3, 1966, Ser. No. 570,005
9 Claims. (Cl. 28—1)



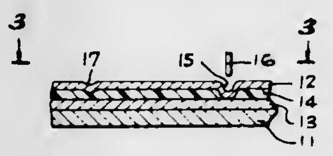
Apparatus for fluid treatment of yarn that includes a body with a chamber and a nipple extending therethrough to a chamber outlet. The nipple has a passageway running therethrough from end to end with a larger entrance at the outer end than the exit at the inner end terminating in the outlet.

3,402,447
GAS BURNER FOR SINGEING THREADS
Hermann Mettler, Arth, Switzerland, assignor to Aktiengesellschaft Fr. Mettler's Sohne Maschinenfabrik, Arth, Switzerland
Filed Apr. 19, 1967, Ser. No. 631,952
Claims priority, application Switzerland, May 11, 1966, 6,833/66
5 Claims. (Cl. 28—63)



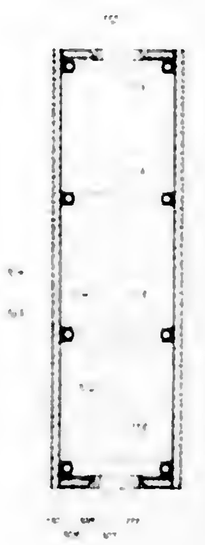
A gas burner for singeing thread in which the flames are directed inwardly toward the thread and in which the thread slides along transverse stripping rods which scrape off the singed residue.

3,402,448
THIN FILM CAPACITOR AND METHOD OF ADJUSTING THE CAPACITANCE THEREOF
Herbert E. Heath, Canoga Park, Calif., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed May 4, 1966, Ser. No. 552,471
6 Claims. (Cl. 29—25.42)



Highly precise thin-film capacitors and method of adjusting their capacitance to close tolerances. The capacitors comprise a substrate, a first metal film, a dielectric and a second metal film. One or both capacitor plate(s) is deformed to reduce their spacing. The plate(s) surface is depressed with the point or edge of a sharp instrument to provide point or line bridging. A section may also be isolated by drawing the instrument to separate the section from the remainder of the capacitor. An electric potential above the capacitor peak voltage rating applied between the electrodes breaks down the dielectric at the deformed portion and concomitantly produces sufficient heat to vaporize a minute section of at least one electrode. The process is repeated to desired capacitance value.

3,402,449
PRINTING CYLINDER AND PROCESS OF MANUFACTURING THE SAME
Hans Schröder, Lengerich, Germany, assignor to Windmoller & Holscher, Lengerich, Nordrhein-Westfalen, Germany
Filed May 3, 1965, Ser. No. 452,555
Claims priority, application Germany, May 8, 1964, W 36,749; Nov. 16, 1964, W 37,967
12 Claims. (Cl. 29—123)

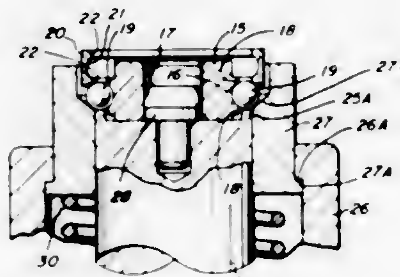


A self-contained hollow printing cylinder for printing machines including at least three superimposed layers of material. The inner layer includes a thin glass fiber cylinder carrier; the middle layer is deposited on said carrier and includes a mixture of thermosetting plastic material and glass strands; and the third or outer layer includes a pure thermosetting plastic material. The peripheral surface of the outer layer is smooth.

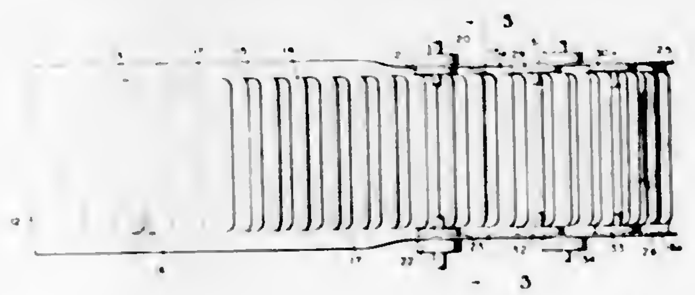
3,402,450
PROCESS FOR ASSEMBLING BALL BEARING DEVICES
Walter S. Sutowski, 6976 Crestview Drive, Brecksville, Ohio 44141
Original application Feb. 11, 1965, Ser. No. 431,852, now Patent No. 3,337,937, dated Aug. 29, 1967. Divided and this application Mar. 13, 1967, Ser. No. 622,732
5 Claims. (Cl. 29—148.4)

Process for assembling race members together with ball bearings positioned therebetween, one of the race members being split, in which one of the race members and the ball bearings are supported in concentric arrangement and the other race member is forced in an axial direction into the plane of the balls to cause the circle of the ball bearings to be disposed concentrically of and between the race members.

The inner race member is supported in a horizontal plane on a support, a movable collar concentrically mounted about the support is resiliently urged upwardly relative to the support, the collar has an inclined annular shoulder forming a funnel for guiding a circle of balls placed on the shoulder around the inner race member inwardly into the groove in the outer wall of the inner race member, a split resilient outer race member is positioned over the circle of balls in engagement with the locations on the surface of the balls located outwardly of a reference cylinder through the centers of the balls and above a horizontal plane through the centers of the balls, a punch is pressed downwardly on the top surface of the outer race member but not upon the collar so as to press the outer race member down upon the balls to be cammingly expanded by the balls and thus around the circle of balls, and consecutively to press the upper race member down upon the said inclined shoulder of said collar to be cammingly contracted by the shoulder about the circle of balls thus to position the circle of balls in the opposed grooves of inner and outer race members.

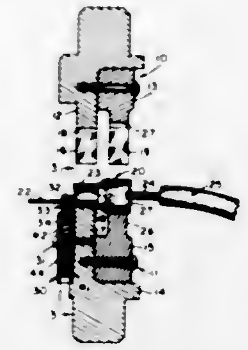


3,402,451
METHOD OF MAKING BLOWER WHEELS
Robert A. Beesley, Westport, and John T. Thompson, Columbus, Ind., assignors to Vernco Corporation, Columbus, Ind.
Filed June 14, 1966, Ser. No. 557,418
5 Claims. (Cl. 29—156.8)



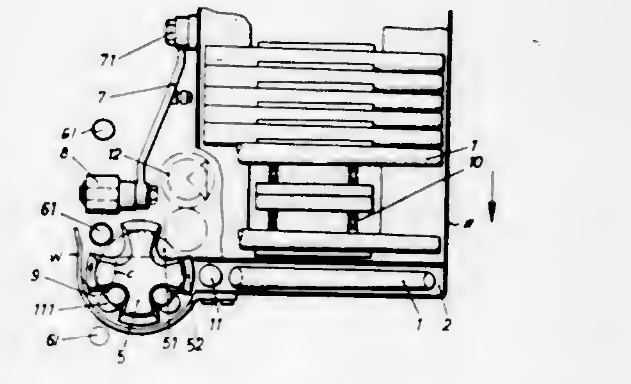
1. That method of forming a blower wheel which comprises:
- forming a strip of metal into blades thereacross and leaving a land integrally attached along each of the opposing ends of the blades;
- turning a flange at approximately right angles along each of the outer edge portions of said lands and spacing that flange from blade ends by an intervening land portion;
- forming the strip of metal into approximately cylindrical shape with said flanges extending radially;
- forming each of the two lengths of molding into a cross-sectional shape having a transverse web from which a leg extends from each edge portion of the web;
- spinning a first length of molding over one of said flanges to carry those molding legs into compressive engagement about said one flange;
- forming a circular back plate to have a peripheral up and outwardly turned flange;
- placing said plate across the end of said strip opposite said molding carried strip end and positioning said outwardly turned plate flange on the strip flange; and
- spinning the second length of said molding over and around the two flanges, one of the strip and the other of the plate while the flanges overlie and are in contact one with the other.

3,402,452
MEANS FOR LOCATING AND RETAINING FERRULE PORTIONS OF TERMINALS AND CONNECTORS IN CRIMPING DIES
Frank J. Mraz, Euclid, Ohio, assignor to ETC Incorporated, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 25, 1966, Ser. No. 544,768
3 Claims. (Cl. 29—203)



A clamp for locating and positioning the ferrule portion of electrical terminals and connectors within a crimping die prior to a crimping operation. The clamp includes a pair of opposed clamping members, each of which has its own biasing means for urging a clamping surface into engagement with a portion of the terminal and connector which projects axially from the die surfaces. The clamps permit axial and non-axial movement of the connector during the crimping operation.

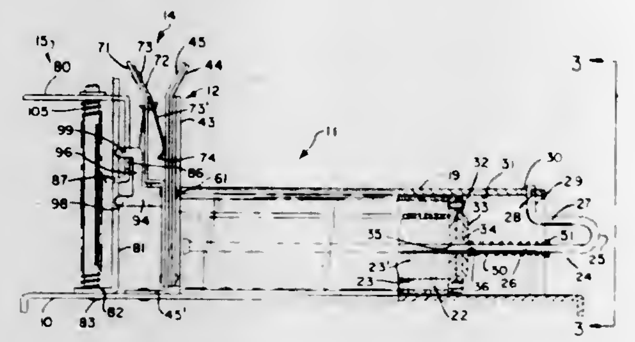
3,402,453
TUBE ASSEMBLING MEANS
Eberhard Grimm, Ingolstadt, Germany, assignor to Deutscher Spinnereimaschinenbau Ingolstadt, Ingolstadt (Danube), Germany, a corporation of Germany
Filed Nov. 29, 1965, Ser. No. 510,283
Claims priority, application Germany, Dec. 1, 1964, D 45,958
10 Claims. (Cl. 29—208)



Apparatus for assembling tubes, including sprocket-carrying means, adapted to transport a tube along a curved path and gravity discharge means whereby the tube is deposited on a spindle after having traveled about the curved path. The tube referred to is an elongated, tapered tube.

3,402,454
PAPER CLIP APPLICATORS

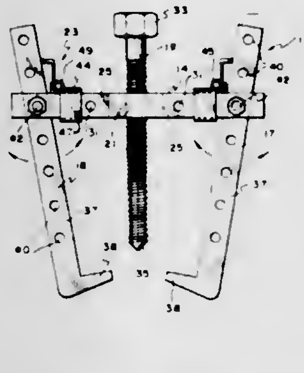
Herbert L. Hartman, % The General Industries Co., and Robert R. Harrison, 713 La Grange Road, both of Elyria, Ohio 44035
Filed Feb. 21, 1966, Ser. No. 528,913
9 Claims. (Cl. 29—212)



There is disclosed herein a device for applying paper clips to sheets of paper comprising a magazine for feeding a stack of adhesively connected clips to a dispensing position, means for separating the endmost clip, means for spreading the loops of the clip for receiving the paper, and means for releasing the clip to engage the paper.

3,402,455
WHEEL PULLER

Keith C. Converse, Pawnee Rock, Kans. 67567
Filed Apr. 17, 1967, Ser. No. 631,246
4 Claims. (Cl. 29—261)

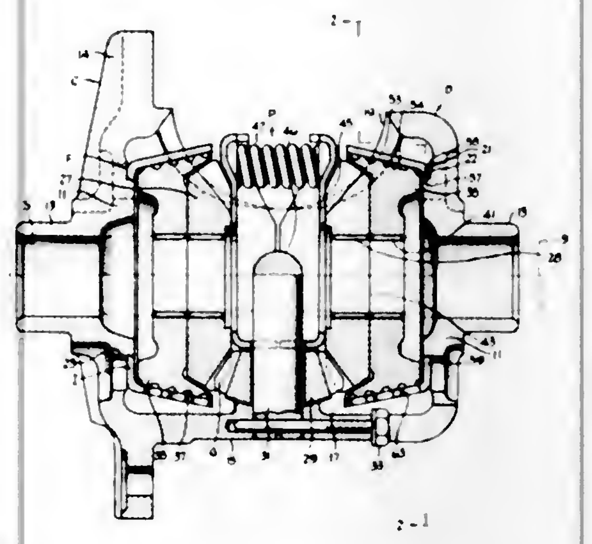


This invention relates to an improved wheel puller structure and, more particularly, to a wheel puller having a biasing means to urge the attachment jaws thereon to a working position for ease of connecting to a wheel member to be removed. Still more specifically, this invention relates to biasing means attachable to conventional wheel pullers to urge the attachment jaws to a working position without restricting the vertical and lateral adjustability thereof.

3,402,456
METHOD OF ASSEMBLY FOR A DIFFERENTIAL MECHANISM

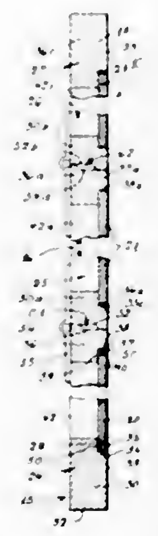
Spencer H. Mieras, Fort Wayne, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original application July 29, 1965, Ser. No. 475,808, now Patent No. 3,327,557, dated June 27, 1967. Divided and this application May 10, 1967, Ser. No. 655,689
3 Claims. (Cl. 29—436)

A method of assembly for a differential mechanism which includes a conically shaped insert defining a clutch contacting member associated with the differential mechanism case. The insert is placed in overlying relation with a clutch member and the insert and the clutch member are disposed interiorly of the differential mechanism case through a side port opening. The insert includes means for radially and axially positioning the insert as well as means for providing a driving engagement with the case.



3,402,457
METHOD OF MAKING A FLUSH TYPE OVERHEAD DOOR

Charles D. Landow and Jeanette Landow, both of 735 Kappock St., Bronx, N.Y. 10463
Filed June 23, 1966, Ser. No. 559,758
4 Claims. (Cl. 29—428)

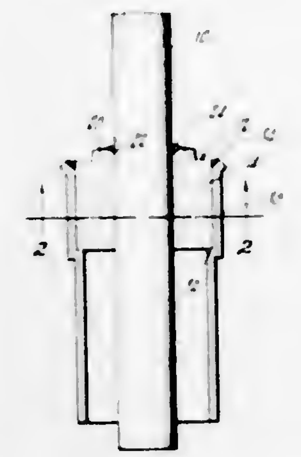


1. A method of manufacturing a door section for an articulated sectional door construction consisting of the steps of positioning long side rail wooden frame members underneath the long edges of a rectangular shaped wooden panel, the side frame members being rabbeted, fastening the long edges of the panel to the rabbeted portions of the side frame members, inverting the attached panel and side frame members and while inverted fitting and fastening bars between the side frame members.

3,402,458
METHOD OF SEALING ALUMINUM OXIDE BODIES TO METALS

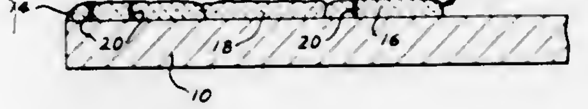
Annis G. Asaff, Auburndale, Mass., assignor to Diamond Tool Engineering Company, Boston, Mass., a partnership
Filed Sept. 29, 1964, Ser. No. 400,052
9 Claims. (Cl. 29—470.5)

1. The method of securing an aluminum oxide body of electrical quality to a metal element which comprises the steps of providing a hollow aluminum oxide body with an inner diameter, providing a metal element with an outer diameter at least as large as said inner diameter of said aluminum oxide body, providing on said body and said element a pair of cooperating brazing surfaces which adjacent the end of said body form a funnel-like zone when said element is inserted into said body, metal coating said surface of said body, pressing said metal element and said body into slide-fitting relationship by inserting said metal element into said body, placing brazing material above said zone, imposing on the whole a vacuum of at least one micron, melting said brazing material to cause the same to flow into a configuration extending from within said funnel-like zone to and between said slide-fittably mating surface portion, and cooling said whole to freeze said brazing material in that configuration.



3,402,459
METHOD OF MAKING ABRASION RESISTANT PLATE

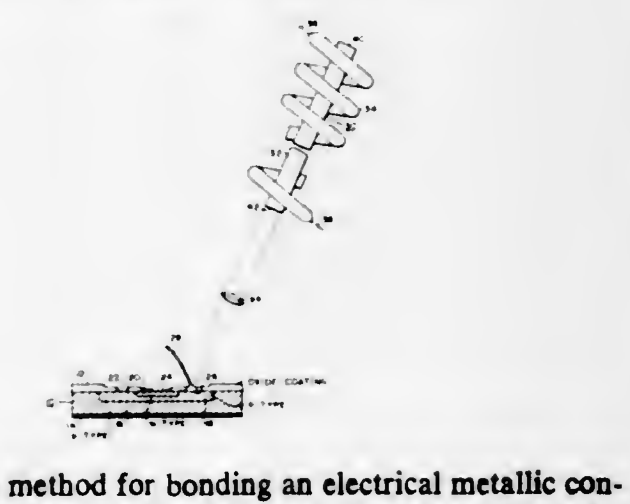
Roman F. Arnoldy, Box 19527, Houston, Tex. 77055
Continuation-in-part of application Ser. No. 600,572, Dec. 9, 1966. This application Aug. 2, 1967, Ser. No. 660,560
12 Claims. (Cl. 29—528)



The abrasion resistant plate is a composite having a very high abrasion resistant layer on a malleable base plate, the high abrasion resistant layer having a desired pattern of random, generally nonlinear cracks extending to and generally normal to the base surface with a crack frequency of not less than about one in each three inches and preferably of from about ⅝ inch to about ¾ inch. One method of making it comprises applying to the base a first and second bead spaced apart the width of the bead and then a third bead in the space between them, the composition of the beads being such that shrinkage stress from welding causes pulling apart of the beads at intervals within the range of cracking. Another method comprises laying down a weld bead of such a composition, permitting the weld bead to solidify and thereby form cracks within the frequency range, and then repeating the process adjacent the weld bead in the uncovered areas of the base plate until the base plate is substantially covered with the abrasion resistant material. These methods avoid the cracks from being oriented and forms the desired random crack pattern. Other methods of making the composite plate are mechanical. The desired pattern is formed by subjecting the base and an abrasion resistant layer to a punch and die, which causes mainly radial cracking within the desired crack pattern. The desired crack pattern is also formed by providing the desired pattern on the base surface which causes cracks to form in the layer of abrasion material in generally the same pattern when applied to the base.

3,402,460
ATTACHMENT OF LEADS TO SEMICONDUCTORS

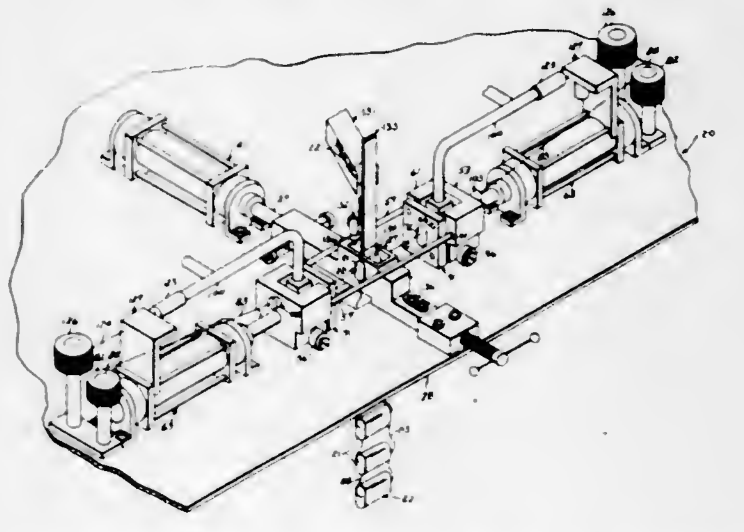
James F. Smith, Poughkeepsie, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 26, 1965, Ser. No. 458,867
2 Claims. (Cl. 29—589)



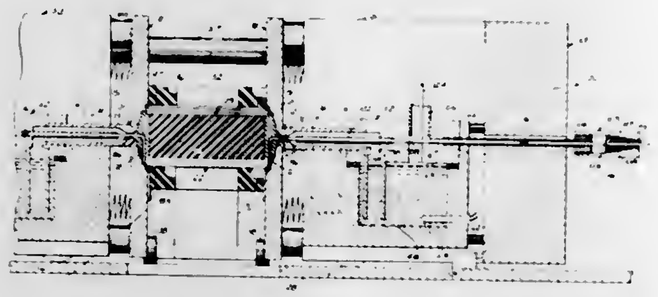
1. In the method for bonding an electrical metallic conductor directly to an exposed area of a surface of a wafer of semiconductive silicon, the steps of positioning the electrical conductor over said exposed area and in direct contact therewith, generating a beam of coherent light having a wavelength above 1.0 micron, and focusing said beam of coherent light onto the exposed area of the wafer surface with the electrical conductor in direct contact with the wafer surface to thereby fuse the conductor directly to the silicon without creating excessive heat at the surface of the wafer.

3,402,461
CAPACITOR TERMINATION

Robert H. Cushman, Princeton Junction, and James A. Hosford, Rocky Hill, N.J., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 25, 1963, Ser. No. 267,471
19 Claims. (Cl. 29—592)

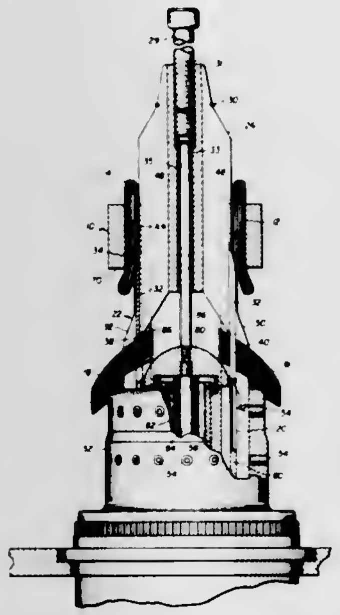


Capacitors formed of interleaved layers of conductive and dielectric materials are terminated by forcing or extruding molten solder into the interstitial spaces between the interleaved layers of conductive and dielectric materials. The depth of penetration of the extruded molten solder into the interstitial spaces is controlled to prevent capacitor shorting, and the extruded molten solder is rapidly cooled to prevent thermal degradation of the capacitor materials.



3,402,462
PROCESS AND APPARATUS FOR ASSEMBLING COILS

Robert G. Walker and Donald E. Hill, Fort Wayne, Ind., assignors to Industra Products, Inc., Fort Wayne, Ind., a corporation of Indiana
Filed Oct. 23, 1965, Ser. No. 502,893
9 Claims. (Cl. 29—596)

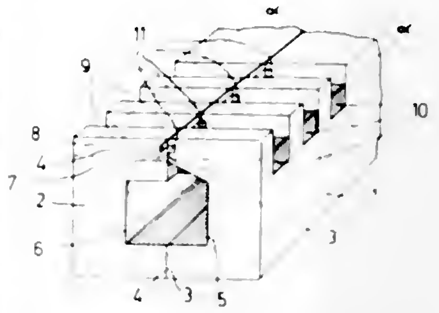


Auxiliary coils are placed over previously inserted main coils in stator slots by apparatus which compresses the main coils, inserts the auxiliary coils while the main coils are under compression, and inserts a wedge over the inserted auxiliary coils.

3,402,463
METHOD OF MANUFACTURING POLE-PIECE UNITS FOR MAGNETIC HEADS

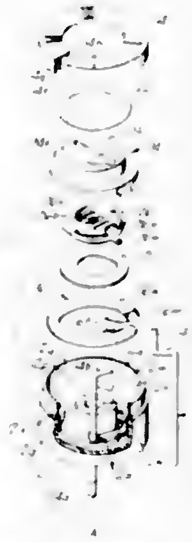
Jules Bos, Jacobus Pieter Beun, Jacob Koorneef, and George Ludwig Walther, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 14, 1966, Ser. No. 520,789
Claims priority, application Netherlands, Jan. 14, 1965, 6500402
5 Claims. (Cl. 29—603)

A method of manufacturing a pole piece for a multiple magnetic head including the steps of forming mating surfaces between two blocks of ferromagnetic material, forming a profile within each of the mating surfaces, placing the blocks together along the mating surfaces, forming a plurality of grooves at right angles to the mating surfaces, partially filling the grooves with non-magnetic material, bonding the mating surfaces and groove material together with a glass or enamel material, and removing material from the top of the assembled blocks with the upper portion of the profiled edge as a reference surface until the desired gap height is reached.



3,402,464
METHOD OF MAKING A POTENTIOMETER

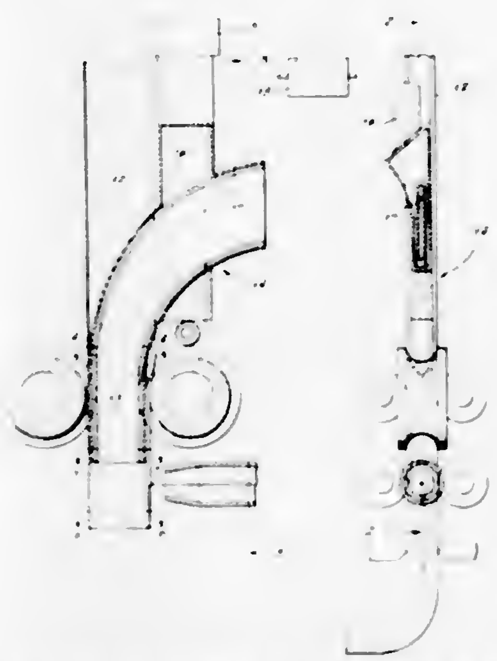
Howard H. Hatch, Riverside, Calif., assignor to Bourns Inc., a corporation of California
Filed July 14, 1966, Ser. No. 565,156
2 Claims. (Cl. 29—610)



The invention herein disclosed relates to a novel construction in potentiometers having metal-core elements or wire-wound elements, and to a method of producing the same, wherein the resistance element comprising metal element-core or a resistive wire and a core or mandrel on which the wire is wound, is precisely affixed in accurately-determined position to a part or parts of the potentiometer such as a part or parts forming the base portion of the housing, by first disposing the resistance element in contact with the part or parts, heating the element as by inductive heating to a temperature sufficient to permit it to plastically deform the part or parts when pressure is applied, and pressing the hot element into the part or parts by controlled press means which force the element into the plastic material and bring the active or contact-brushing zone or surface of the element into a plane and into accurately determined position relative to a reference surface of the part or parts. During the pressing operation the wire-wound element becomes embedded in the material, which is thermoplastic, and is very firmly bonded thereto upon solidification of the thermoplastic material. As will be made evident, an entire base member, for example, may be formed of thermoplastic material for use in the process; or only a part or portion of such base member or structure may be thermoplastic. The thermoplastic material will, in either case, be deformed and serve to integrate the resistive element with the base or the like.

3,402,465
METHOD FOR CONTINUOUSLY MAKING SHEATHED HEATING ELEMENTS

George B. Desloge and Robert M. Frayne, St. Louis, Mo., assignors to Watlow Electric Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Filed July 15, 1963, Ser. No. 294,879
14 Claims. (Cl. 29—615)



8. A process of making a resistance heater including the steps of:

(A) continuously supplying sheath metal to a forming station,

(B) continuously supplying an electrically insulating granular filler material and a resistance heating element to a filling station comprising two members, one for conveying the insulating material and one for guiding the resistance heating element,

(C) simultaneously and continuously forming the sheath metal at the forming station into a circumferentially closed sheath around the discharge portion of said filling station, positioning the resistance heating element inside of said filling station, filling the sheath with the resistance heating element and electrical insulating granular filler material;

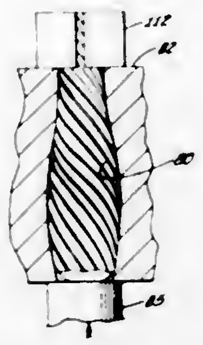
(D) partially compacting the insulating material within the circumferentially closed sheath to fix the resistance heating element inside the sheath spaced from the inside wall surfaces thereof,

(E) and thereafter reducing the sheath in cross-sectional area to further compact the filler within the sheath to its final density.

3,402,466
METHOD OF FABRICATING SPIRALLY WOUND PIN CONNECTORS

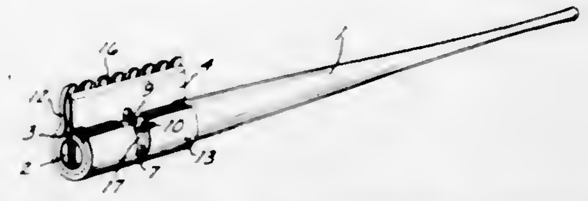
Delbert L. Phillips, Malibu, Calif., assignor to New Twist Connector Corporation, Santa Monica, Calif., a corporation of California
Continuation-in-part of application Ser. No. 161,198, Dec. 21, 1961. This application Dec. 7, 1964, Ser. No. 416,528
27 Claims. (Cl. 29—629)

The steps to fabricate a pin element to cooperate with a socket element for an electrical connection include: (1) winding a plurality of wires helically around a core wire to form a twisted wire cable; (2) severing a short portion of the cable; (3) applying electric arcs to the opposite ends of the short portions to fuse the helical wires to the core and thereby forming a pin element with rounded noses on its opposite ends; (4) subjecting the axial core of the pin element to axial force to permanently bow the helical wires outward; and (5) abrading or burnishing the outwardly bowed wires to give their outer surface the inside curvature of the socket element.



3,402,467
COMBINATION HAIR TRIMMER AND BLADE HOLDER

Harry S. Manahan, 454 Magnolia Ave., Long Beach, Calif. 90812
Filed Mar. 17, 1967, Ser. No. 624,058
2 Claims. (Cl. 30—30)



To provide an effective hair trimmer and blade holder it is important that the blade, as well as its toothed guard, must be held against accidental removal or displacement. To accomplish this a rotatable latching ring is provided which engages both the toothed guard and the blade. Thus a single latching ring will effect both the latching and the unlatching of the blade.

3,402,468
POLYTETRAFLUOROETHYLENE COATED RAZOR BLADE

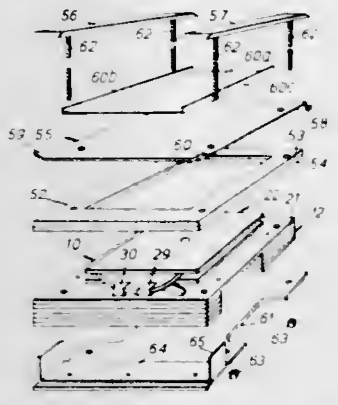
Marie S. Kiss, Fairfield, Richard C. Hess, Stratford, and Edward G. Tajkowski, Orange, Conn., assignors to Eversharp, Inc., Milford, Conn., a corporation of Delaware
No Drawing. Original application June 10, 1963, Ser. No. 286,490, now Patent No. 3,345,202, dated Oct. 3, 1967. Divided and this application Sept. 29, 1967, Ser. No. 680,287
5 Claims. (Cl. 30—346.53)

1. A razor blade composed of a ferrous alloy base metal and having at least one cutting edge which is chromium-plated and the chromium plate coated with a thin adhering coating of polytetrafluoroethylene.

3,402,469
WAX FORMING APPARATUS

Karol Belter, 80 Bingley Road, Saltaire, Shipley, Yorkshire, England
Filed Oct. 7, 1965, Ser. No. 493,750
Claims priority, application Great Britain, Oct. 8, 1964, 41,013/64
6 Claims. (Cl. 32—70)

A dentist's bite block preparing apparatus comprises a hollow body of electrical and thermal insulating material on the top of which is a flat electrially heated surface, a thermostatic control switch being enclosed within the body and a bottom cover on the body extending beyond one edge to mount a trough toward which melted wax or the like is directed from the heated surface.

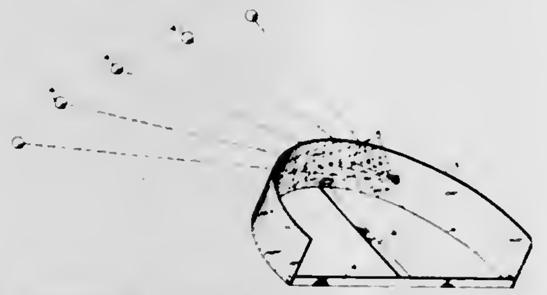


3,402,470
METHOD OF DETERMINING AN OBSERVER'S POSITION BY USE OF A SATELLITE

William E. Hart, Berkshire, and William A. Allen, Clinton, Md., and Leslie L. Cunningham, Columbus, Ohio, assignors to the United States of America as represented by the Secretary of the Navy

Filed Oct. 22, 1965, Ser. No. 502,723

3 Claims. (Cl. 33—61)



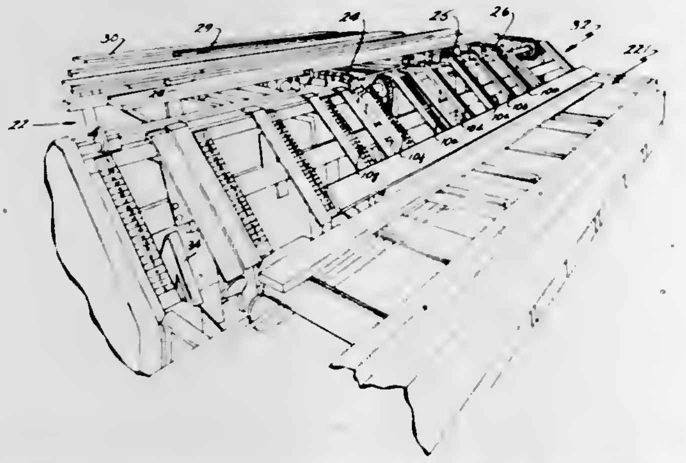
A satellite is viewed through a transparent star-coordinate grid on which tracking reference stars are plotted. Observed satellite positions are plotted on the grid, and their times are recorded. From these data and the published coordinates of the satellite, the observer's position on earth is computed. The satellite path may be recorded photographically and projected onto the grid. A correctional vector may be obtained by comparing the results of the method as applied at land stations of accurately known position.

3,402,471
APPARATUS FOR MEASURING BOARD FOOTAGE OF LUMBER

Edward M. Conway, Grand Rapids, Mich., assignor to Conway Lumber Rule Company, Grand Rapids, Mich., a corporation of Michigan

Original application Oct. 21, 1965, Ser. No. 500,141. Divided and this application July 14, 1967, Ser. No. 662,243

6 Claims. (Cl. 33—76)



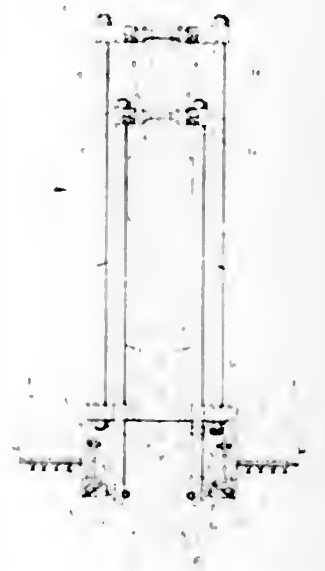
Conveyor apparatus for moving pieces of lumber sideways over a plurality of measurement scales disposed transversely across the conveyor in mutually spaced parallel alignment, such that the lengths of each piece of lumber may be determined by the number of scales present between its ends and the widths of each such piece may be read from one of the scales which it moves over.

3,402,472
EXTENSOMETERS

Aubrey Ellis Riley, Harrogate, England, assignor to Samuel Denison & Son Limited, York County, England, a British company

Filed Aug. 8, 1966, Ser. No. 570,895

13 Claims. (Cl. 33—147)



An extensometer comprises first and second pairs of parallel legs, each leg incorporating a respective abutment so that the pairs of abutments can be clamped in knife edge engagement on opposite sides of the specimen with a given gauge length between the first and second pairs of abutments, the legs of each pair being interconnected by tie rod assemblies which bear upon coaxially convex cylindrical surfaces one on each leg to preserve an approximately constant gap between the abutments in each pair during relative parallel movement in each pair of legs, separate transducers each responsive to relative movement between adjacent first and second legs to provide a measure of the movement and strain present on each side of the specimen which is substantially independent of the movement and strain present on the opposite side of the specimen.

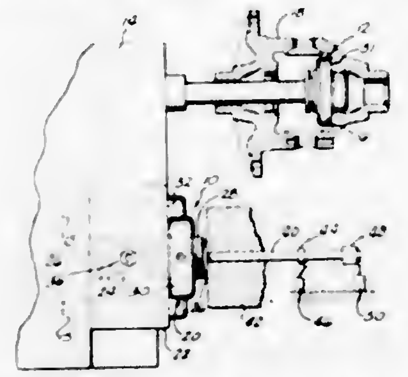
3,402,473
PRESET TOOL APPARATUS

Robert I. Sattler, St. Clair Shores, Mich., assignor to La Salle Machine Tool, Inc., Warren, Mich., a corporation of Michigan

Original application Apr. 2, 1964, Ser. No. 356,794. Divided and this application June 27, 1966, Ser. No. 560,616

1 Claim. (Cl. 33—185)

Machine tool apparatus in which a cutting tool is mounted on a movable support for movement in one direction toward the work to be machined. A stop assembly capable of determining the work position of the tool is also mounted on the movable support for adjustable movement back and forth in the direction of cutting tool travel. This enables adjustment of the stop assembly to a desired position in which the cutting tool and replacements therefor are maintained in a pre-established position relative to the work.

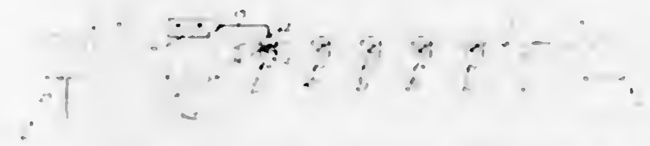


3,402,474
WAIST MEASUREMENT GAUGE

Americo R. Janeiro, 12 Horse Pond Road, Madison, Conn. 06443

Filed Jan. 4, 1967, Ser. No. 607,871

4 Claims. (Cl. 33—189)



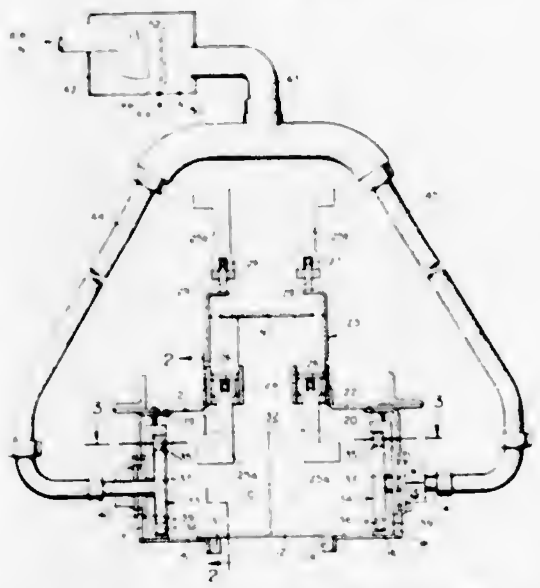
This invention relates to a gauging apparatus for measuring the length of cloth required to make the waist bands for wearing apparel such as slacks. In particular, the gauge of this invention comprises in combination, a bar having a slot therein, a scriber assembly supported by and movable on said bar, mounting means for supporting the bar on a surface, spring detent means supported by said scriber assembly, a pin supported by said mounting means, selector assembly means having notch means therein, said selector assembly means supported by said bar and movable within the slot formed in the bar, said notch and said spring detent means cooperating to position the scriber assembly.

3,402,475
WRAPPER TIGHTENING

John H. Johansen and Walter H. Herman, Wallingford, Pa., assignors to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed July 7, 1965, Ser. No. 469,998

5 Claims. (Cl. 34—23)



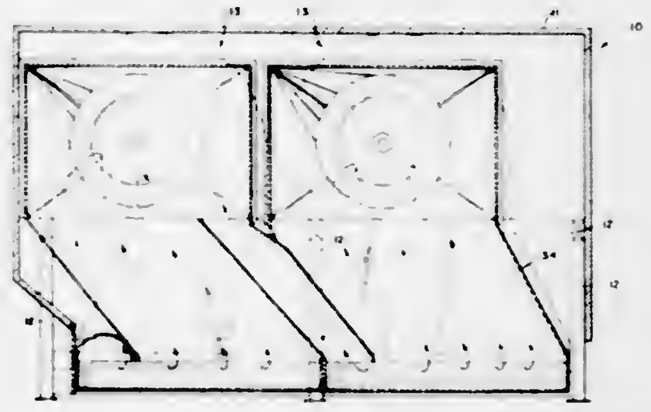
A method and apparatus are disclosed for tightening the wrapper on a previously wrapped package, being especially suited for the tightening of an overwrap about geometrically shaped objects such as a pair of cylindrical rolls of paper which are difficult to initially wrap tautly. By the method and apparatus disclosed, gas heated to a suitable temperature is applied to the wrapped package in a manner such that it shrinks only localized areas of the shrinkable wrapper on the ends of the package, such as spaced-apart and relatively narrow elongated bands, so as to tighten substantially the entire overwrap upon the package. This insures that the wrapper on the sides of the package will be free from distortion and wrinkles, thus presenting a neat appearance, and undistorted and clearly distinct art work on the overwrap. The disclosure is also directed to the package resulting from treatment by the method and apparatus of the invention.

3,402,476
CROP-DRYING METHOD

James Donald Brock, Chattanooga, Tenn., assignor to Industrial Boiler Company, Inc., Chattanooga, Tenn., a corporation of Tennessee

Original application Aug. 23, 1965, Ser. No. 481,731. Divided and this application Aug. 18, 1967, Ser. No. 661,573

2 Claims. (Cl. 34—28)



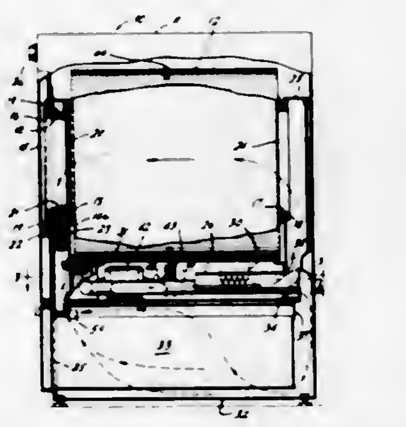
A method and apparatus for drying hay, or other similar farm crops, wherein the hay is placed on a moving conveyor belt, heated air is blown through the hay and the conveyor belt, and as the hay progresses through the area of heated air, the air becomes dryer and cooler so that the crop will not be scorched and so the air will have its maximum drying effect at the end of the travel of the conveyor belt.

3,402,477
DUAL COMPARTMENT LAUNDRY APPARATUS

James R. Hubbard, Moorestown, N.J., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Nov. 7, 1966, Ser. No. 592,427

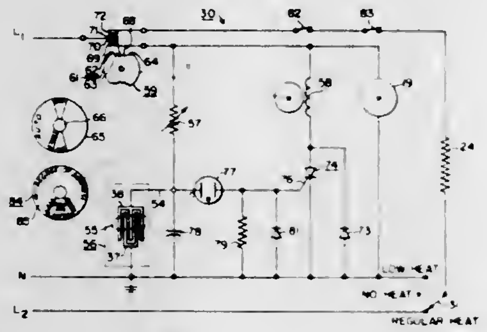
10 Claims. (Cl. 34—44)



A laundry dryer includes a pair of compartments for fabrics to be dried, a source of heat, means for moving air in heat exchange with the source of heat to the compartments, and air flow control means selectively operable either to effect air flow through one of the compartments while preventing air flow through the other compartment or to cause air to flow through both compartments simultaneously. One compartment comprises a vented rotatable drum for tumbling fabrics to be dried, and the other compartment is disposed adjacent the one compartment and comprises a stationary region within which fabrics and articles may be placed to dry. The one compartment is embodied in a conventional laundry dryer and the other compartment is embodied in separately handleable cabinet structure adapted to serve as a base for the dryer.

3,402,478
DRYER CONTROL

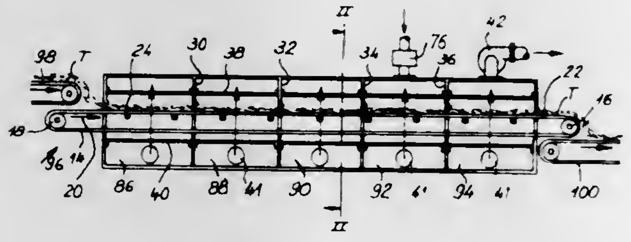
George L. Hetrick, Washington Township, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 20, 1966, Ser. No. 558,951
8 Claims. (Cl. 34—53)



An automatic timer for a clothes dryer which includes a sensing portion which generates signals representative of moisture content in the clothes as a function of electrical conductivity therethrough. The timer is characterized in that the signals generated are manifested as a mechanical displacement of a conventional cam rotated by a conventional timer motor, accordingly, there is an electromechanical integration of the electrical signals generated.

3,402,479
METHOD AND APPARATUS FOR TREATING TOBACCO

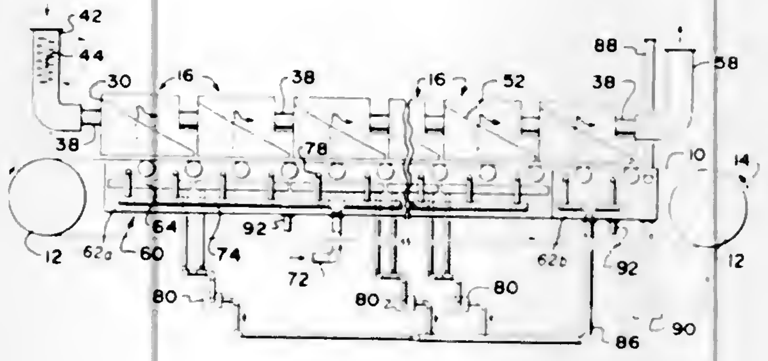
Reinhard Hohm, Hamburg-Bahrenfeld, Guenther Kuehn, Hamburg-Bramfeld, and Waldemar Wochnowski, Hamburg, Germany, assignors to Hauni-Werke Körber & Co., K.G., Hamburg-Bergedorf, Germany
Filed Nov. 17, 1966, Ser. No. 595,171
Claims priority, application Luxembourg, Nov. 17, 1965, 49,860
9 Claims. (Cl. 34—66)



1. Apparatus for treating nitrogen-rich tobacco by contact with conditioned air, comprising a heating chamber; conveyor means for transporting tobacco through said chamber; circulating means for maintaining tobacco in said chamber in intimate contact with a current of air; first conditioning means for maintaining the moisture content of said current of air within a range at which a condition of substantial hygroscopic equilibrium is established between air and tobacco in said chamber; and second conditioning means for maintaining said current of air at a temperature at which air and tobacco exchange sufficient heat to raise the temperature of tobacco to a value at which the tobacco is relieved of nitrogen.

3,402,480
DRYING APPARATUS AND METHOD FOR SHEET TOBACCO OR THE LIKE

Robert C. Geitz, 7 Hoplea Road, Simsbury, Conn. 06070
Filed Oct. 20, 1965, Ser. No. 498,223
15 Claims. (Cl. 34—151)

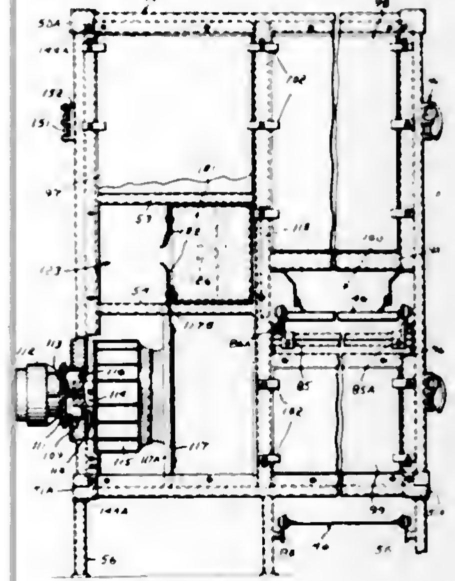


A drying method and system for said material disposed upon a conveyor belt for drying purposes wherein the lower portion of the belt at a drying region is heated by steam while heated air is passed over the upper region of the belt.

A subatmospheric pressure is maintained below the belt at the heating region while atmospheric pressure is provided on the belt upper surface. The distribution system for conveying air over the belt provides a relatively uniform drying action.

3,402,481
DRIERS AND COMPONENTS THEREOF

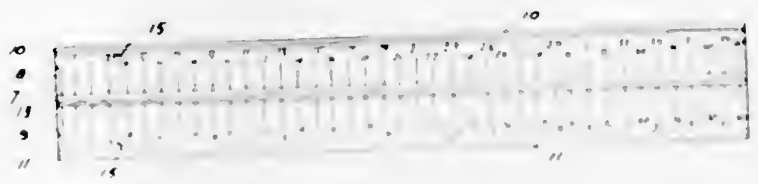
Raymond D. La Pan, Graniteville, Mass., assignor to C. G. Sargent's Sons Corp., Graniteville, Mass., a corporation of Massachusetts
Filed Sept. 24, 1965, Ser. No. 489,818
23 Claims. (Cl. 34—216)



Driers consisting of a chamber that may be formed by sections with a lengthwise partition dividing the chamber into first and second sides interconnected by top and bottom passages, one side having a conveyor extending therethrough and the other side having blowers and a vertical passage for a port of each blower, the chamber having fan-carrying panels that may be reversed, end-for-end, to shift the rotation of the fan ports to passages, the chamber also having an air passage lengthwise of the second sides and of a frame and panel construction adapted to insure modular, thermally insulated construction.

3,402,482
MATHEMATICS TEACHING DEVICE

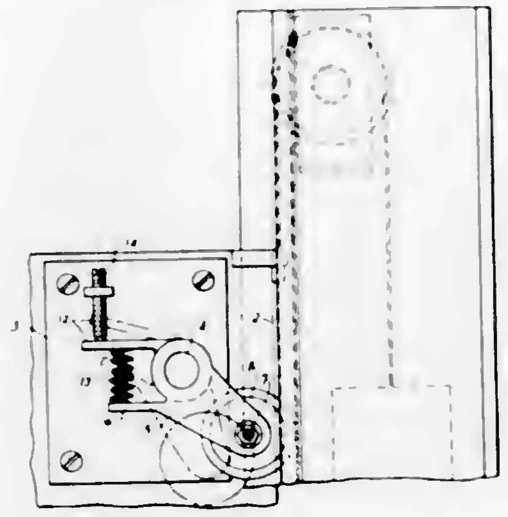
Joanne S. Rankin, 2057 Rose St., Carleton, Mich. 48117
Filed Dec. 8, 1966, Ser. No. 600,126
5 Claims. (Cl. 35—31)



This application discloses a slide rule type of device for teaching fundamental mathematics to children. The invention resides in the particular combination and arrangement of the elements disclosed, particularly in the provision of a fixed panel, having a matched pair of smaller panels slidable on its face and supported, so that the smaller panels may be removed edgewise from the fixed panel and reversed. The removable panels are provided with whole numerals on one side and fractions on the reverse side. The device can teach addition, subtraction, multiplication and division in the areas of both whole numbers and fractions.

3,402,483
ROLLER GUIDES FOR BLACKBOARDS HAVING ADJUSTABLE PANEL BODIES

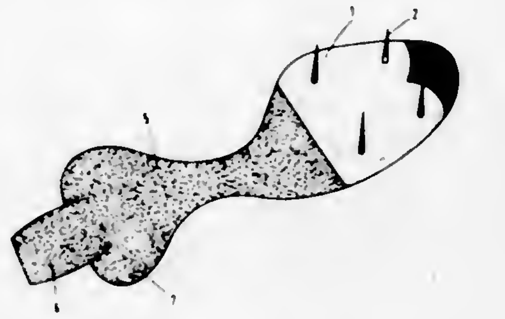
Hans Jenny, Niederurnen, and Max Altmann, Niederweningen, Switzerland, assignors to Palor AG, Niederurnen, St. Gall, Switzerland
Filed July 15, 1965, Ser. No. 472,132
1 Claim. (Cl. 35—63)



Roller guides for the adjustment of blackboard panels, suitable particularly for large boards. The guide rollers are pivotably supported at the carrier arm of an angle lever whose resistant arm has a pivotably supported auxiliary lever. The space therebetween holds a spring which presses the auxiliary lever against an adjusting screw, and the pressure exerted is communicated to the guide roller through the carrier arm and the resistant arm of the angle lever. The guide roller thus is urged elastically into a groove in one of the supports which, together with the opposite support, takes up the horizontal pressure of the roller guide.

3,402,484
SPORT SHOE

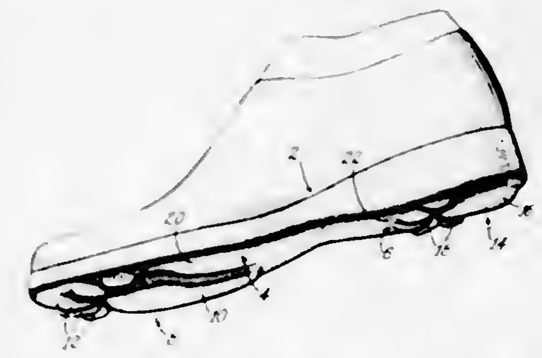
Eugen Brütting, Henfenfelder Strasse 17, Nurnberg-Schwaig, Germany
Filed Oct. 24, 1966, Ser. No. 589,067
Claims priority, application Germany, Oct. 22, 1965, B 84,211; Apr. 28, 1966, B 86,855
4 Claims. (Cl. 36—2.5)



A track shoe having an outer sole formed of relatively stiff material in the front part serving as a support on which cleats are secured, and relatively flexible parts in the toe and/or heel areas secured to the stiff part by gluing or welding. The stiff part is made of nylon and the flexible part consists of crepe rubber.

3,402,485
ANIMAL TRACK FOOTWEAR SOLES

Philip E. McMorrow, Beverly, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed May 13, 1966, Ser. No. 550,011
1 Claim. (Cl. 36—25)



1. A molded footwear sole for laying of simulated tracks of an animal,
said sole comprising
a forepart portion having a normal tread surface,
a heel portion having a normal tread surface,
projecting sole portions integral with the forepart portion and extending beyond the normal tread surface of the forepart portion, said projecting forepart portions being of a configuration and arrangement simulating the configuration and arrangement of bottom portions of a selected side first foot of a selected animal, and
projecting sole portions integral with the heel portions and extending beyond the normal tread surface of the heel portion, said last named projecting sole portions being of a configuration and arrangement simulating the configuration and arrangement of bottom portions of a second foot of the same selected side of said selected animal,
said projecting sole portions comprising a tread surface which, when said sole is resting on a plane, separates the entire normal tread surface

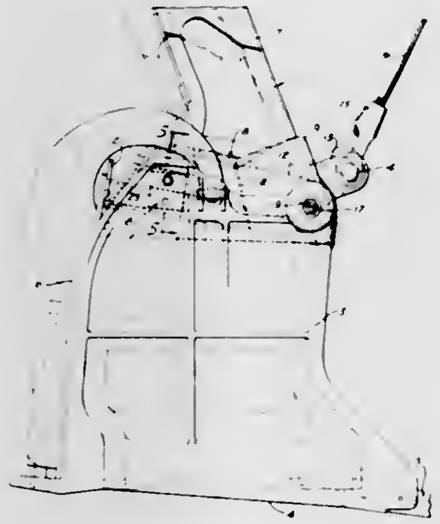
of the sole from the plane, whereby upon pressing said sole into soil, as by walking, said sole imparts an imprint simulating that made by said animal.

3,402,486
DIPPER

David T. Branson, Green Bay, Wis., assignor to Northwest Engineering Corporation, Green Bay, Wis., a corporation of Wisconsin

Filed Sept. 21, 1965, Ser. No. 488,845

5 Claims. (Cl. 37—118)



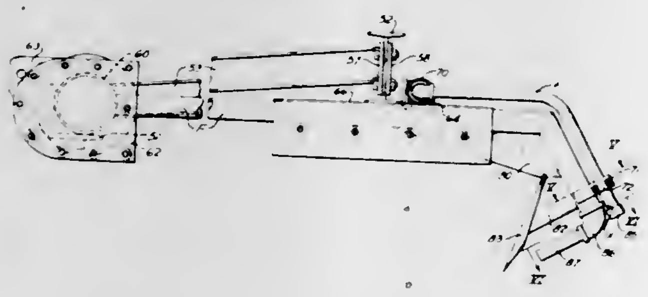
An excavator dipper having a stick with an end forming a dipper back which is disposed between the dipper sides and pivotally connected thereto near the upper back edge. A reversible wedge block rigidly secures the back to each corresponding side near the lower back edge.

3,402,487
HYDROPNEUMATIC RIVER RAKE

Allan H. Vaughan, Marietta, Ohio, Gordon E. Christman, New Martinsville, W. Va., and Leon W. Davis, Marietta, Ohio, assignors to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

Filed Sept. 11, 1964, Ser. No. 395,734

3 Claims. (Cl. 37—78)



A rake having in combination a dispersion means adapted to direct a stream of air in the vicinity of a mechanical plowing means and an hydraulic plowing means adapted to deliver a stream of water in the vicinity of the mechanical plowing means.

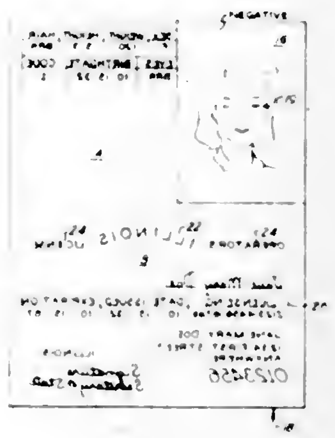
3,402,488
IDENTIFICATION CARD

Ralph G. Leavitt, 2150 Lincoln Park W., Chicago, Ill. 60614

Filed Oct. 11, 1965, Ser. No. 494,679

11 Claims. (Cl. 40—2.2)

1. An identification card comprising a laminate of at least two sheets adhesively secured together and having visible indicia disposed on both exposed surfaces, said sheets formed of a heat sealable thermoplastic having a hydrophilic coating thereon and a light-sensitive gelation coating on said hydrophilic coating, most of said indicia being photographically reproduced and comprising both a photograph of an individual being identified, and data relevant to the identification of the same individual, said card having an outer transparent film layer protectively secured as an additional layer upon said laminate bearing said photographic material on both exposed surfaces.

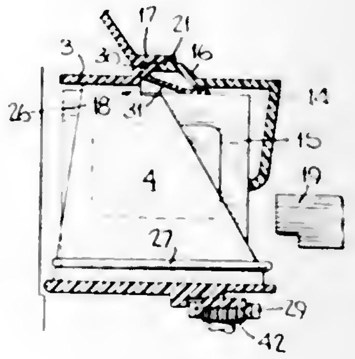


3,402,489
MAGAZINE WITH SLIDE RETENTION MEANS

Joseph H. Schlessel, 7A Sycamore Road, Great Neck, N.Y. 11021

Filed June 24, 1966, Ser. No. 560,263

8 Claims. (Cl. 40—79)



A circular slide magazine having a circular plastic slide retaining member with a flange portion fitting into a groove in one of the magazine walls and flexible slide retention fingers extending from the flange into each of the slide compartments. The slide retaining fingers are curved and of progressively decreasing thickness from their juncture with the flange to their tips so that when the fingers are engaged by the inserted slides the deformation of the springs is distributed along their lengths thereby avoiding localized yielding and uneven bending and spring action.

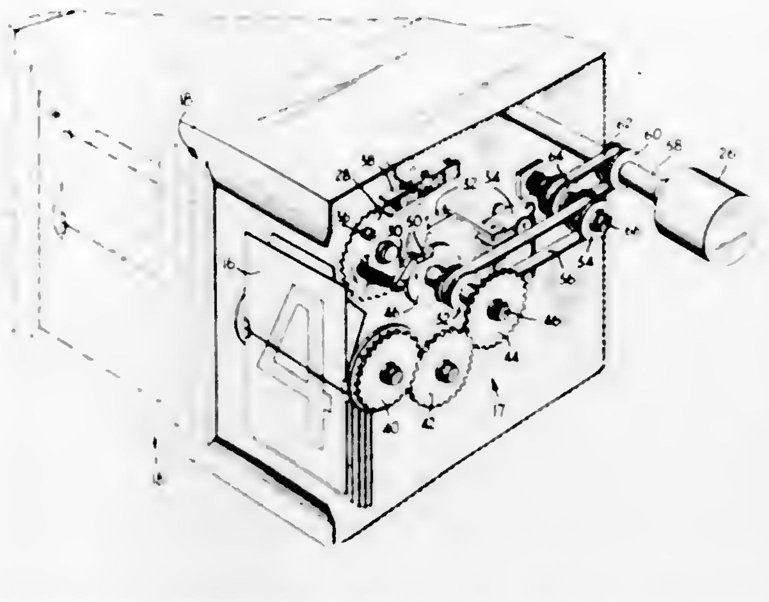
3,402,490
STORAGE DISPLAY SYSTEM

Jerome Goldman, Noah's Lane, Norwalk, Conn. 06851, and Peter C. Goldmark, Rockrimmon Road, Stamford, Conn. 06903

Filed Dec. 22, 1966, Ser. No. 603,812

11 Claims. (Cl. 40—35)

Apparatus which upon command displays preset multicharacter information by the rotation of indicia bearing elements, one for each character, to angular positions such that a preselected indicium on each of the elements is viewed through a viewing frame. Means for stopping the rotation of each of the indicia bearing elements, at preselected angular positions, are set prior to the occurrence of the display command.

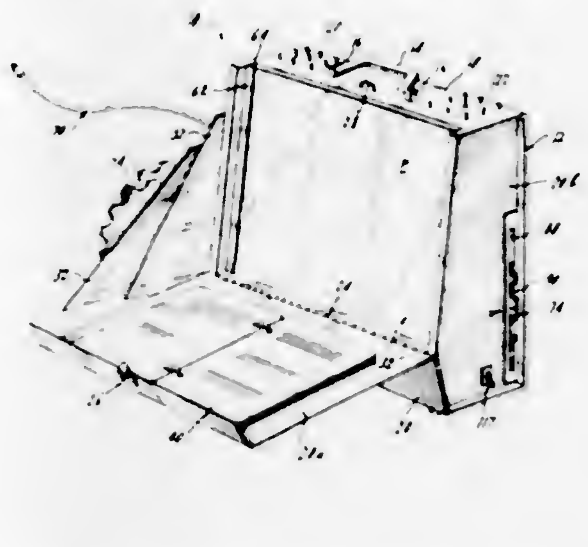


3,402,491
PORTABLE VISUAL DISPLAY DEVICE

Arthur M. Wagner, New York, N.Y., assignor to Xicom Inc., Tuxedo, N.Y., a corporation of Delaware

Continuation of application Ser. No. 468,881, July 1, 1965. This application Feb. 9, 1968, Ser. No. 704,491

3 Claims. (Cl. 40—106.1)



The type of portable visual display device having plural lights to selectively illuminate slides or the like but with an improved, easily replaceable rotary switch controlling the sequence of energizing the lights. The switch, for ease of replacement, is held in rotating position by a spring rather than being mounted on a supporting shaft from which it would have to be connected and disconnected. Each switch gives a different lighting sequence and thus, by proper switch selection, any desired lighting sequence is possible.

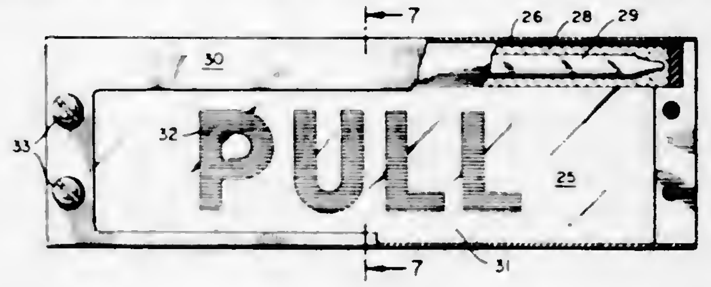
3,402,492
ENCAPSULATED RADIOACTIVE LIGHT SOURCES

Charles H. Clapham, Jr., Berwick, Pa., assignor to United States Radium Corporation, Morristown, N.J., a corporation of Delaware

Filed May 12, 1965, Ser. No. 455,153

6 Claims. (Cl. 40—130)

A combination of a device, such as a sign or dial, having a transparent body adapted to be illuminated and an encapsulated radioactive light source having a rigid housing forming a seat for carrying a transparent potting material in which there is imbedded a hollow glass element containing a phosphor and a radioactive beta-ray emitting gas.

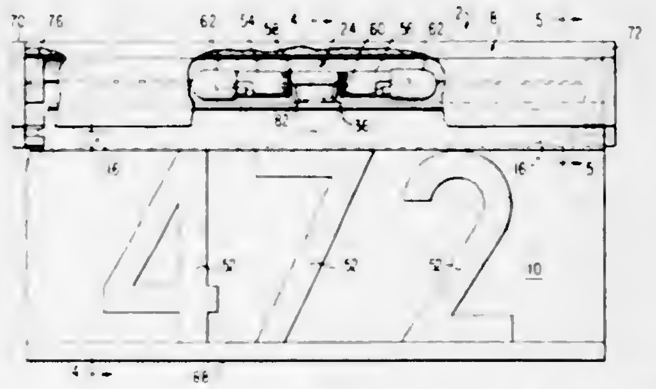


3,402,493
LUMINOUS DISPLAY DEVICE

Lawrence P. Mellyn, Glocester, and Earl W. Roberts, Jr., East Greenwich, R.I., assignors to General Electric Company, a corporation of New York

Filed Sept. 13, 1965, Ser. No. 486,978

3 Claims. (Cl. 40—130)



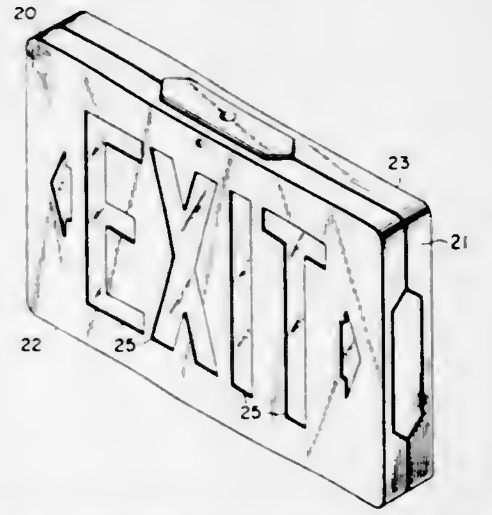
A luminous display device for outdoor use is provided having an inverted U-shaped channel in which is mounted a light source and from which depends a light transmitting panel adapted to be illuminated by the light housed in the inverted channel. A message is displayed against an illuminated field of the panel by mounting characters on the panel surface.

3,402,494
INTERNALLY ILLUMINATED SIGN

Raymond L. Gray, Lithonia, Ga., assignor to Lithonia Lighting, Inc., Conyers, Ga., a corporation of Georgia

Filed Oct. 22, 1965, Ser. No. 508,416

16 Claims. (Cl. 40—130)

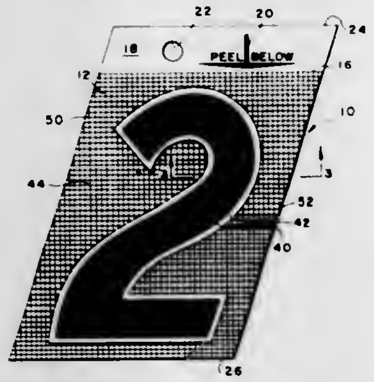


An internally illuminated sign having a direction indicator. Two oppositely directed arrowheads and a removable cover for one of the arrowheads constitute the direction indicator. The cover may have the shape of the feather portion of an arrow. The sign case is made from two identical halves and has break-away portions for mounting from either of the sides, the top, the bottom, or the rear face. Light from several lamps spaced along the lower inside edge of the sign case is directed through a lens onto a vertical translucent face mounted within the sign case.

3,402,495

LETTERING AND NUMBERING MEANS

David D. Fishback, 223 S. St. Francis,
Wichita, Kans. 67202
Filed Mar. 14, 1966, Ser. No. 533,941
1 Claim. (Cl. 40—135)

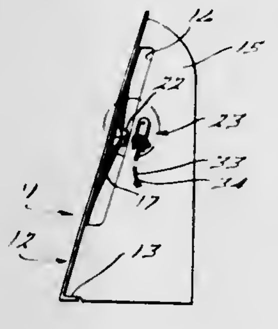


Letters and numerals formed from laminated flexible strips with pressure-sensitive adhesive backings protected by treated release paper. An inner ply of metallized plastic is covered by a face ply of transparent plastic and carries the printed letters and numerals. The metallized plastic is embossed to provide a contrasting background. A detachable tab with mounting opening facilitates supporting for display and removing the release paper.

3,402,496

ANIMATION FOR ADVERTISING DISPLAYS

Robert J. Byrnes, 9298 Niver, Allen Park, Mich. 48101
Filed Jan. 13, 1966, Ser. No. 520,491
4 Claims. (Cl. 40—139)



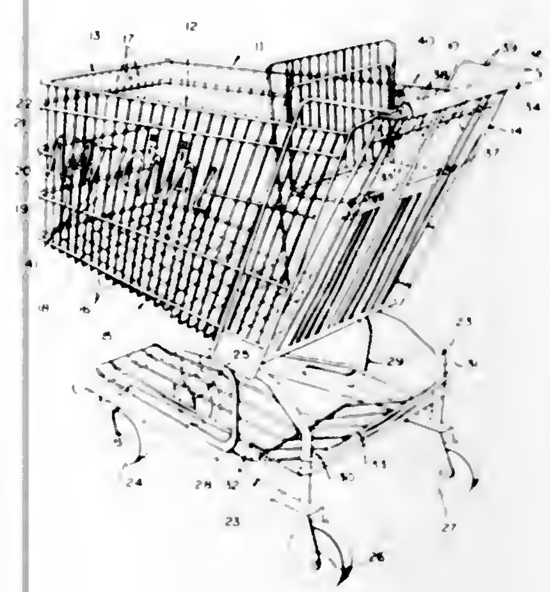
An animated advertising display embodying a face plate having an opening across which a flexible sheet is positioned. The flexible sheet is formed with an uninterrupted section from which slits extend to form a plurality of separate strips connected together at the central portion. A permanent magnet is affixed to the central portion and an electric coil is carried by the face plate in spaced relation to the permanent magnet. The passing of an alternating electric current through the electric coil causes vibration of the permanent magnet and oscillation of the flexible strips resulting in an attractive display.

3,402,497

OWNER-IDENTIFYING INDICIA FOR WIRE PORTABLE CARRIERS AND METHOD OF APPLYING

Robert E. Swain, Des Plaines, Ill., assignor to National Tea Co., Chicago, Ill., a corporation of Illinois
Filed Mar. 7, 1966, Ser. No. 532,405
7 Claims. (Cl. 40—308)

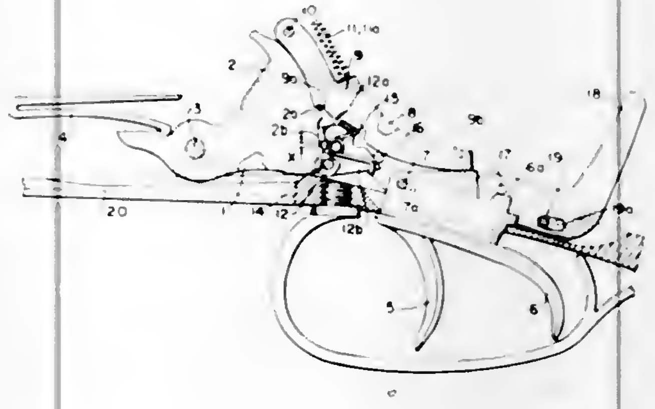
The invention involves a portable wire strand or mesh receptacle body such as but not limited to a shopping cart which is highly mobile and subject to theft, misuse, and unauthorized removal from the owner's premises. The teachings thereof embody the concept of articulating owner identifying indicia of wire similar in type to the strands of the wire body, and applying these in juxtaposition therewith for contact with multiple body wires to enable permanent attachment by spot welding or similar expedients thereto with sufficient connections that require substantial mutilation of the receptacle body for removal, thereby rendering it undesirable to remove the identification thereon and thus discourage theft and unauthorized use.



3,402,498

MULTIPLE BARREL FIREARM WITH AUTOMATIC HAMMER SAFETY MECHANISM

Günther Freitag, Zella-Mehlis, and Dieter Schübel, Vesser, Germany, assignors to VEB Ernst-Thälmann-Werk Suhl, Suhl, Thuringia, Germany
Filed June 22, 1967, Ser. No. 648,092
5 Claims. (Cl. 42—41)

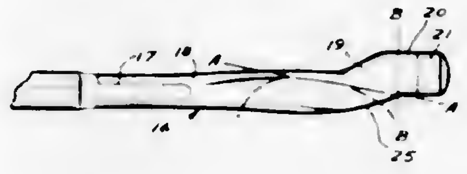


A multiple barrel firearm such as a rifle suitable for hunting or sporting purposes. The firearm includes a pair of hammers and a pair of triggers. A longitudinally shiftable safety member extends between the pair of triggers and has a pair of control pins which respectively coact with cam portions of a pair of safety pawls which respectively coact with catch projections of the hammers to maintain the latter against operation. In addition the hammers have catch projections with which a pair of sears coact, these sears being actuated by the triggers, and the same longitudinal safety member which carries the control pins which control the safety pawls also carries trigger safety pins which coact with the triggers to prevent operation thereof when the longitudinally shiftable safety member is in a safety position.

3,402,499

GUNSTOCK WITH ITS BUTT PORTION LATERALLY OFFSET FROM THE BARREL AXIS

Louis A. Florek, 1054 23rd Ave. SE.,
Minneapolis, Minn. 55414
Filed June 14, 1967, Ser. No. 646,044
1 Claim. (Cl. 42—71)

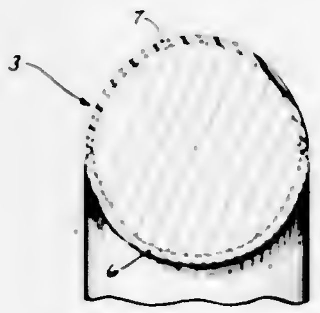


A stock for a shoulder-piece firearm which has its butt portion laterally offset from the barrel axis and which is provided with a recessed cheek rest on the side opposite the offset to enable the shooter to position his head against the stock with the eye opposite his shooting arm in sighting alignment with the barrel.

3,402,500

GUIDE RING FOR A FISHING ROD

Forrest W. Nelson, Pewaukee, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed June 10, 1966, Ser. No. 556,599
7 Claims. (Cl. 43—24)

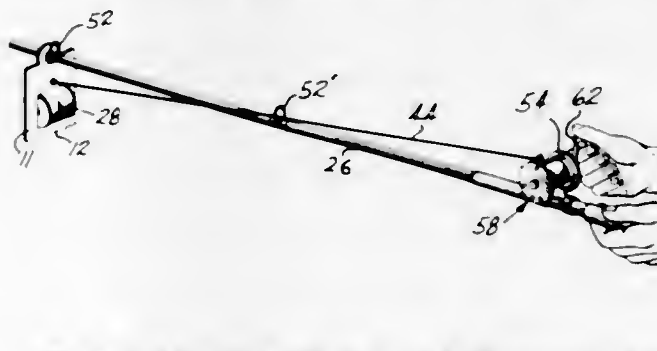


1. A guide line assembly for a fishing rod, comprising a ring having an inner annular guide surface, means for attaching the ring to a fishing rod, and a coating of vitreous enamel bonded to said guide surface and extending through an arc of 60° to 100° on each side of a plane extending through the midpoint of the ring and extending perpendicular to the axis of the opening defined by said ring.

3,402,501

FISHING LINE DISPLAY AND DISPENSER

Lester M. Davis, Gig Harbor, Wash., assignor to Les Davis Fishing Tackle Co., Tacoma, Wash., a corporation of Washington
Filed June 28, 1966, Ser. No. 561,225
9 Claims. (Cl. 43—25.2)

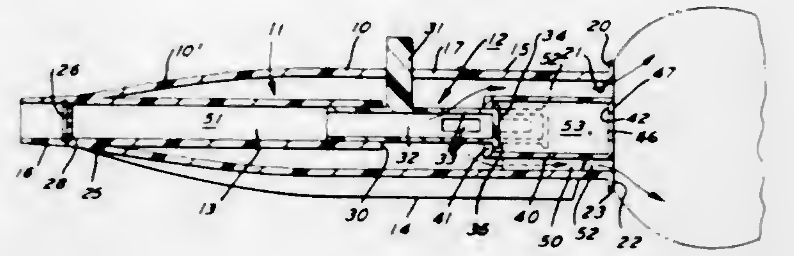


1. A fishing line display and dispenser comprising a flat sheet having supporting means disposed at an upper end portion thereof for suspendedly supporting the same from a fishing rod and in a substantially vertical plane and having a rectangular opening in a lower end portion thereof; a cross shaft extending crosswise of said rectangular opening and secured to said flat sheet; a fishing line supply spool carrying fishing line thereon mounted for rotary motion on said cross shaft; and a tension member carried by said flat sheet and having an opening therein to snugly receive said fishing line leaving said supply spool and passing through said opening in said tension member.

3,402,502

MULTIPLE BUBBLE BLOWING DEVICE

Raymond Kaysen, 1341 N. Mascher St.,
Philadelphia, Pa. 19122
Filed Sept. 17, 1965, Ser. No. 488,189
2 Claims. (Cl. 46—6)

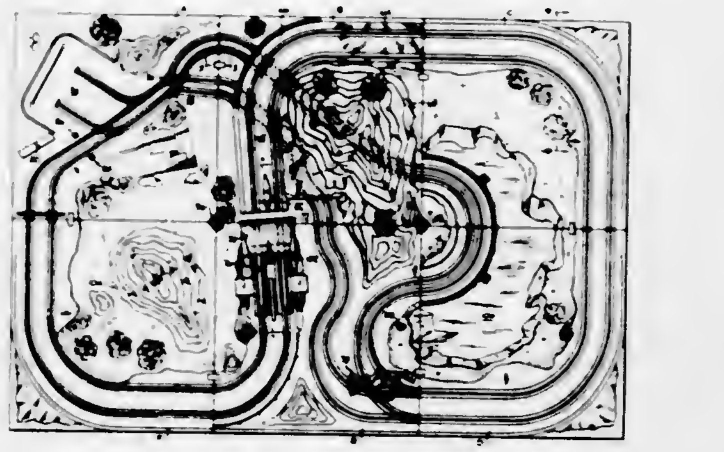


A multiple bubble blowing device with inner and outer shells providing passageways having terminal rims for bubble formation, and an interiorly disposed slide valve movable with respect to valve guiding portions for cutting off the flow to either rim supplying passageway and determining the distribution of air to the rim passageways.

3,402,503

MODEL VEHICLE TILE TRACK SYSTEM WITH ACCESSORIES

Marvin I. Glass and Gordon A. Barlow, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Sept. 24, 1965, Ser. No. 489,862
2 Claims. (Cl. 46—17)

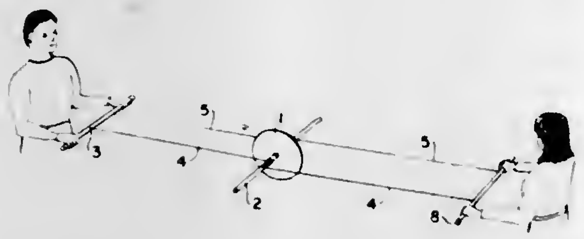


A prefabricated miniature road racing layout including a plurality of square sections each having scenic components and electrically conductive tracks, whereby the positioning of the sections in a predetermined manner provides a continuous path of roadway for the cars and means for supplying electrical power to the cars through the roadways. The road race layout includes changes in elevation, turns and a bi-level cross-over. There is also provided a switch means which is operable to automatically alternately direct a vehicle from one of the two track sections onto the other track section, and a movable bridge section which is operative to provide a gap of adjustable length for jumping by the vehicle.

3,402,504

COMBINATION EXERCISE AND AMUSEMENT DEVICE

William G. Steube, 513 Heather Circle, Highland Springs, Va. 23075
Filed Apr. 20, 1966, Ser. No. 543,938
9 Claims. (Cl. 46—59)

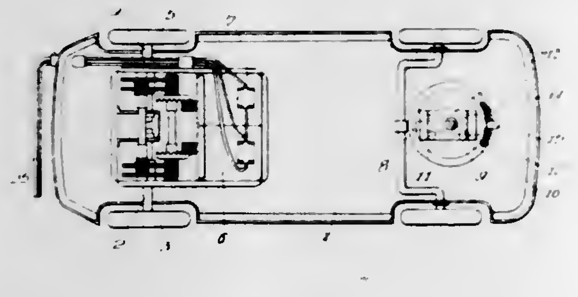


Amusement and therapeutic device comprising a shaft having a spinner fixed centrally thereto. Two bars are attached to the shaft, each by a pair of cords connected with the bars in spaced relation therealong, and with the shaft, at respective sides of the spinner. In one use two operators each grasp a respective bar and by coordinated pulls thereon, cause the spinner to rotate rapidly so that the cords are alternately unwound from, and rewound upon the shaft. The invention is useful in many ways as a toy and also for therapeutic purposes. Various forms of spinners are contemplated, including those making a sound in response to spin.

3,402,505

REMOTELY CONTROLLABLE ELECTRICALLY DRIVEN TOY CAR SET

Takeshi Nakamura, 112 Honden-cho, Katsusbika-ku, Tokyo, Japan
Filed Sept. 13, 1965, Ser. No. 486,825
5 Claims. (Cl. 46—244)



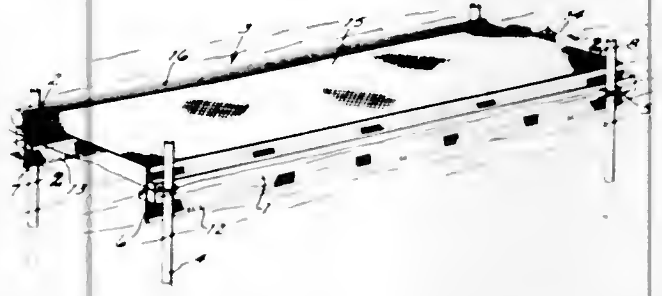
A remotely controllable electrically driven toy car set comprising a car and a controlling device. The two rear wheels of the car are individually driven by separate electric motors. The electric power for the motors is supplied by cells contained within the remote controlling unit. The remote controlling unit also houses a pair of rheostats serially connected to each other for the purpose of permitting variation of the speed of the two motors, either equally or at different speeds, to thereby control steering of the toy.

3,402,506

APPARATUS FOR GROWING WATER PLANTS COMMERCIALLY

John C. Renfro, 48 Doheny Park Village, 34202 Del Obispo, Dana Point, Calif. 92629
Filed Sept. 19, 1966, Ser. No. 580,497
9 Claims. (Cl. 47—1.2)

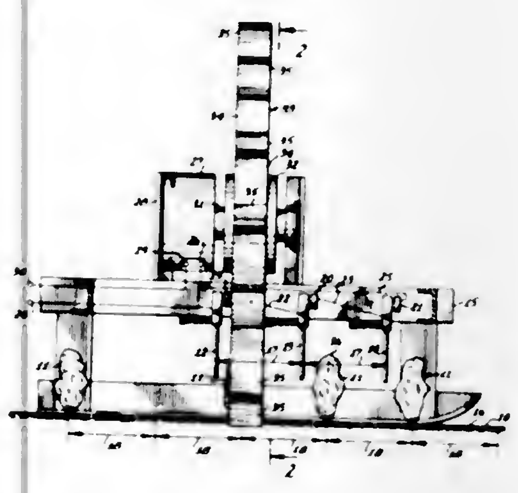
In order to grow water plants effectively and rapidly they are confined to a limited area by means of an enclosure which is mounted on piling driven into the soil below the water, and where this enclosure may rise or fall with the level of the water in which the enclosure is placed. Also, the water plants within the enclosure can be effectively harvested with a minimum of effort from a walkway which is constructed on the enclosure.



3,402,507

PLANT THINNING APPARATUS

Jay Tschudy, Jr., Shawnee Mission, Kans., assignor to Precision Agricultural Machinery Company, Phoenix, Ariz., a corporation of Arizona
Continuation-in part of application Ser. No. 518,131, Jan. 3, 1966. This application May 4, 1967, Ser. No. 636,068
10 Claims. (Cl. 47—1.43)

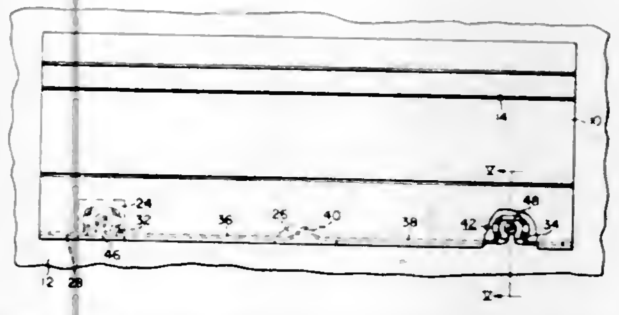


A plant thinning apparatus particularly directed to mechanism for selectively and automatically thinning and removing certain longitudinally spaced plants along a plant row to give desired growth room between the plants operated by sensing elements contacting the plants in the row.

3,402,508

DOOR AND HINGE ARRANGEMENT

Michael H. Kessler, Grove City, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 23, 1966, Ser. No. 581,588
6 Claims. (Cl. 49—386)

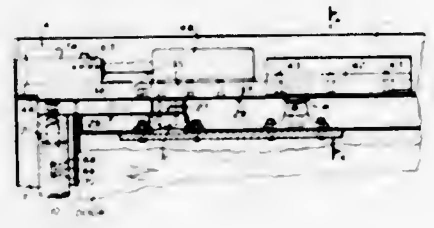


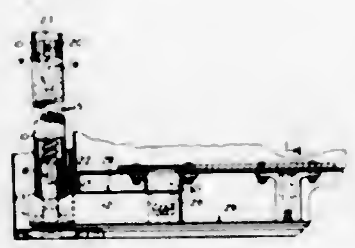
A door and torsion hinge arrangement in which a door panel includes a split longitudinal edge to receive a torsion wire member, the wire member including one loop portion held within the plane of the door for movement with the door, and a pair of other loop portions, angularly displaced from the one loop portion, both of the other loop portions being rigidly fastened to the compartment which the door closes, and providing the sole support and hinge connection between the door and the compartment.

3,402,509

SEPARABLE CHECK MEANS FOR A BALANCED DOOR

Ernest O. Haglund, Jamestown, N.Y., assignor to Ellison Bronze Co., Inc., Jamestown, N.Y., a corporation of New York
Filed Oct. 28, 1966, Ser. No. 590,368
11 Claims. (Cl. 49—386)



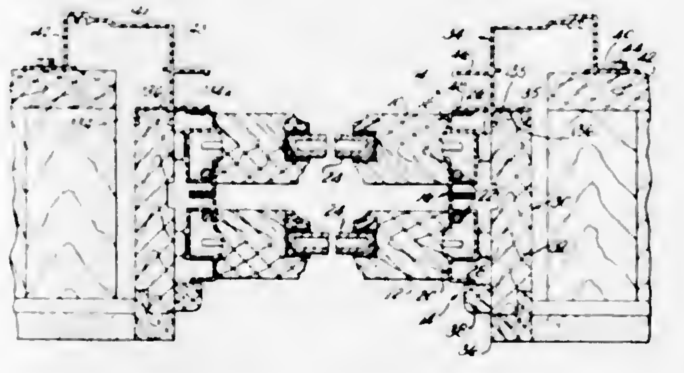


A mounting frame for the closer mechanism in a balanced-type door assembly including an inner section which supports the hinge bearing and a separately removable outer section which supports the closer mechanism.

3,402,510

COMBINED METAL AND WOOD SIDE JAMBS FOR A WINDOW AND SASH ASSEMBLY

Waldo O. Johnson, Wooster, Ohio, assignor to Weather-Seal, Inc., Barberton, Ohio, a corporation of Ohio
Filed Apr. 22, 1966, Ser. No. 544,479
7 Claims. (Cl. 49—414)

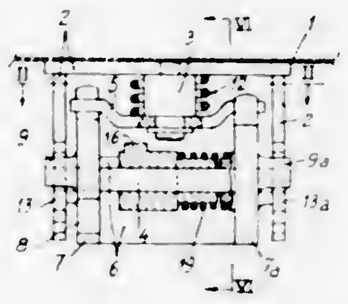


A window sash assembly is disclosed and it includes a pair of vertically extending jamb liners and an upper and lower sash engaging the jamb liners. A pair of side jambs mount the jamb liners with each side jamb being formed from a wooden member and a metal member which is on the outside portion of the side jamb. The metal members in the side jambs each have a pair of axially inwardly extending parallel sections formed thereon and with edge ribs on such sections so that the wooden member, which is contoured complementary at one end thereof to the axially inner portion of the metal member, can have interlocked engagement with such metal members.

3,402,511

SUN ROOF CONTROL HANDLE

Alexandre Lecomte, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, Hauts-de-Seine, France
Filed Mar. 22, 1967, Ser. No. 625,220
Claims priority, application France, Apr. 4, 1966, 56,286
5 Claims. (Cl. 49—449)

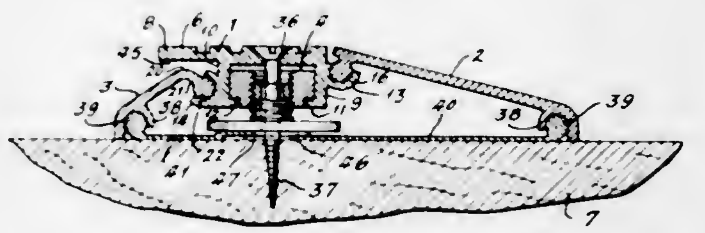


Device for controlling the members locking a sun roof or sliding panel of a vehicle, this device, which comprises a bracket secured to the panel, a pivoting lever formed with an integral handle, a bracket formed with two integral similar cams disposed in opposite directions, and a rocker responsive to said cams, so as to release the sliding panel from the aforesaid locking members, being characterised in that the pivoting lever can be moved either to an operative position in which it is operatively connected to said strap, thus permitting the release of said panel locking members and the sliding movement of said panel, or to an inoperative position in which the pivoting lever disconnected from said strap is recessed against the inner surface of the roof of the vehicle.

3,402,512

ADJUSTABLE THRESHOLD

Francis C. Peterson, 1403 Wells Ave., Webster Groves, Mo. 63119
Filed May 31, 1966, Ser. No. 553,955
5 Claims. (Cl. 49—468)



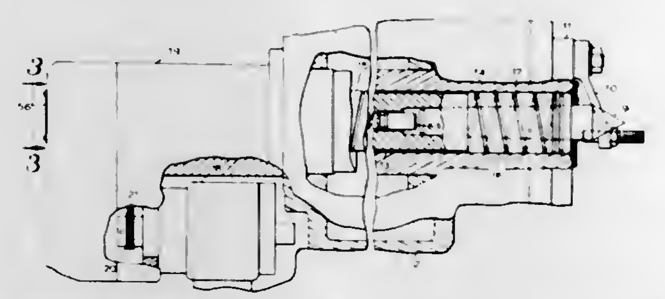
An adjustable threshold having side plates pivotally connected thereto and inwardly turned flanges therebelow for slidably receiving a nut-pedestal for adjusting the height of the threshold above the floor, said adjustment being made by inserting a wrench through a hole in the threshold through which a vertical screw is later inserted to anchor the threshold to the floor after the wrench has been removed from the hole.

3,402,513

HEADSTOCK QUILL FOR CYLINDRICAL GRINDER

Horst Maack, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed May 20, 1966, Ser. No. 551,582
6 Claims. (Cl. 51—165)

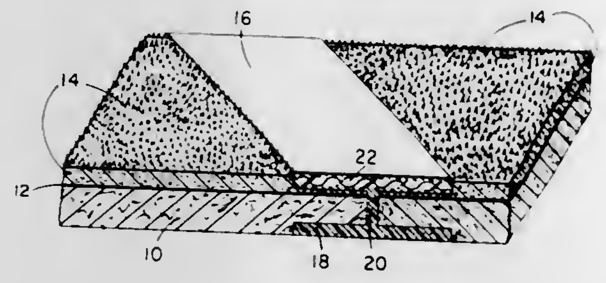
A precision cylindrical grinding machine headstock mechanism is disclosed and described herein. The mechanism includes an axially positioned center member to shift a workpiece to a proper position for grinding and to rotatably support the workpiece during a grinding



operation. Shifting of the center member is produced by a rotary power input to drive an orbiting gear mechanism that in turn rotates a cam that determines the axial position of the center member in the headstock.

3,402,514
BUTT JOINT FOR FLEXIBLE ABRASIVE SHEET MATERIAL

William L. Johnson, Hanover, Mass., assignor to Abrasive Products, Inc., South Braintree, Mass., a corporation of Massachusetts
Filed Nov. 30, 1966, Ser. No. 597,904
3 Claims. (Cl. 51—399)



1. A butt joint for flexible abrasive grit-coated sheet material comprising:

two abutting straight end edges of a composite structure, including a fibrous backing bearing a layer of abrasive grit adhesively adherent to at least the upper face thereof,

portions of said composite, marginally adjoining said straight edges on said abrasive grit upper face, being recessed to a depth short of said fibrous backing, and

a pliable substantially thermostable matrix, H-shaped in cross-section, of synthetic polymeric bonding material embracing said composite end edges with one of its pair of parallel elements seated in said upper face recess, and the other of its parallel elements adhered on its inner side to the other under face of said backing,

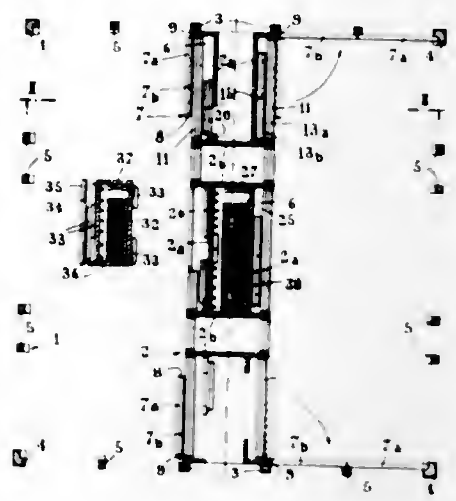
said matrix having its upper surface substantially flush with the cutting plane of said abrasive grit layer on each side of said joint,

and a layer of woven glass roving compressed and encapsulated within, and being substantially co-extensive with, the upper parallel element of said matrix.

3,402,515
FOLDING MULTI-STOREYED BUILDINGS

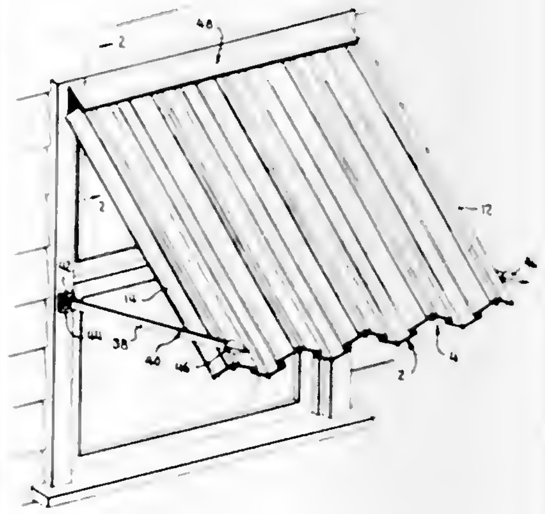
Marc Pierre Rainaut, 55 Ave. Victor Hugo, Paris 16°, France
Filed Oct. 4, 1966, Ser. No. 584,248
Claims priority, application France, Oct. 7, 1965, 34,063
6 Claims. (Cl. 52—64)

This multi-storey building comprises a framework consisting of vertical metal posts having superposed post sections each the height of one storey and prefabricated dwelling units supported by the framework and superposed, with at least one dwelling unit per storey. Each dwelling unit has a rigid central core and elements constituting a frontage, with the floor and ceiling of the unit hingedly mounted on the central core and unfolded and supported by framework posts when the building is erected. The various central cores of superposed dwelling units are assembled in a stacked relationship.



3,402,516
AWNING

George W. Kanarr, 304 Market St., Kingston, Pa. 18704
Filed May 20, 1966, Ser. No. 551,672
15 Claims. (Cl. 52—75)

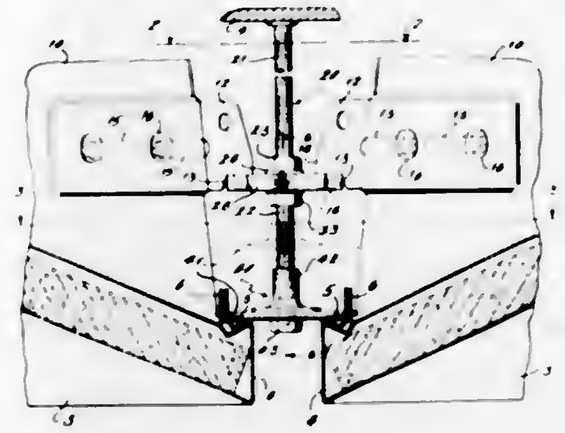


1. An awning comprising alternate panels of opaque and transparent material secured together and means for mounting the panels at a preselected angle on a building, side portions of the opaque panels overlapping and the transparent panels are removably secured to and between the overlapped portions.

3,402,517
CEILING AND SUSPENSION AND LEVELING MEANS THEREFOR

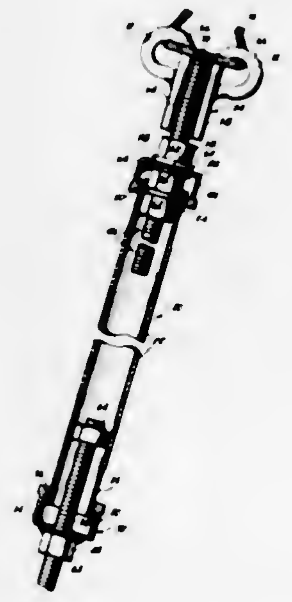
Thomas C. Halfaker, St. Louis County, Mo., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Oct. 3, 1967, Ser. No. 672,510
5 Claims. (Cl. 52—126)

In a ceiling made up of a multiplicity of ceiling modules each with hook shaped mounting brackets above a shoulder, the hook shaped brackets being slidably mounted on the module, a threaded hanger rod supported at its upper end on a permanent structure has mounted on it a mounting bracket of cruciform shape with a seat in each of four arms and a clearance hole at its center, a hook of each of four modules seating in the bracket seats, the bracket serving to space the four modules from one another. A plate threadedly mounted on the hanger rod by means of a long internally threaded hub below the bracket and adapted to be screwed down to the level of the modules' shoulders, a part of the internally threaded plate hub extending below the lower end of the threaded rod to provide a downwardly opening threaded socket. Closure strips bridging between shoulders of adjacent modules, the bridging web of closure strips between different pairs of modules projecting beneath and being engaged by the plate.



3,402,518
GUY CABLE WITH MEANS FOR ADJUSTING TENSION

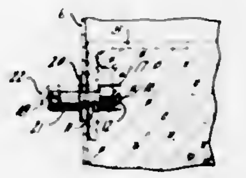
Peter B. Lettunich, 13 Longview Drive, Watsonville, Calif. 95076
Filed Mar. 10, 1966, Ser. No. 533,317
7 Claims. (Cl. 52—149)



A safety pull for placing a guy cable or the like under tension, comprising a tubular body fitted with closures at its upper and lower ends. A threaded rod extends through a threaded bore in the lower closure, and is adapted for connection to an anchor block. The inner, threaded end of a shaft extends through a bore in the upper closure, the outer end of the shaft having means thereon for connecting a cable thereto. Means defining a stop shoulder is carried on the threaded shaft portion interiorly of the tubular body, and a nut is carried on said shaft exteriorly of the upper closure and is cooperable with the stop shoulder to clamp the shaft to the closure.

3,402,519
FOUNDATION SEALING SYSTEM FOR A SEALED STORAGE STRUCTURE

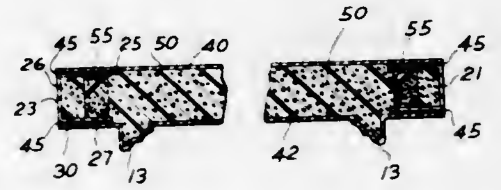
William J. Evers, Des Plaines, Ill., assignor to A. O. Smith Harvestore Products, Inc., Arlington Heights, Ill., a corporation of Delaware
Filed Dec. 27, 1966, Ser. No. 604,860
3 Claims. (Cl. 52—295)



A foundation sealing system for a gas-tight storage structure used to store perishable materials, such as animal foods, which are preserved by protecting them from the atmosphere and method of assembly. The sealing system comprises a mastic sealer disposed between the concrete foundation of a sealed storage structure and the anchoring element for the structure. The mastic sealer extends through central passages in the anchor bolts which secure the structure to the anchoring element and completely fills all voids between the anchoring element and the concrete foundation to provide a gas-tight seal therebetween. In assembly of the storage structure, the anchoring element is first assembled on a suitable footing with the lowest tier portion of the storage structure bolted thereto. Mastic sealer is then extruded in a continuous fillet on the inside surface of the anchoring element completely around the periphery thereof, with the sealer covering each bolt and bolt opening in the anchoring element. Concrete is then poured into the assembled base portion of the structure to form a floor. The concrete extends up to the top level of the anchoring element and is in contact with the inner surface thereof. The fillet of sealer displaces the concrete in the portion thereof which it occupies, and the presence of sealer over the inner ends of the anchor bolts prevents closure of the central passages therein. Additional sealer is then added from the outside through the anchor bolt passages after the structure assembly has been completed.

3,402,520
PANEL WITH FOAMED-IN-PLACE CORE

Albert M. Lee and Herbert S. Hinrichs, Peoria, Ill., assignors to Home Comfort Products Co., Princeville, Ill., a corporation of Illinois
Filed Dec. 23, 1966, Ser. No. 604,246
18 Claims. (Cl. 52—309)



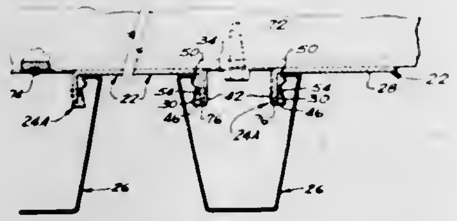
A lightweight panel having relatively thin surface skins adhered on opposite sides of a stiff frame outline, thereby enclosing the panel interior which is filled with a foamed-in-place core of a low density and relatively rigid plastic foam. A strip of pervious and flexible material lines an inside length of the frame and communicates with vents through the frame. During the formation of the core, excess gas may escape along the strip and through the vents to allow an even, uniform expansion of the core. A portion of the strip and core unite to form a high density stratum therealong, which reinforces the panel and interlocks the core thereto. Preferably, during the formation of the core, the panel is confined between mold plates which are transversely canted at approximately a 10° angle, the raw foam core having been previously applied in a longitudinal row below the longitudinal centerline of the panel. Thus, expansion of the core is mainly in an upward direction, and below the excess gases, which are free to escape upwardly through the strip and out the vents.

3,402,521
PLURAL U-SHAPED PAN METAL SHEATH CONSTRUCTION SECURED BY FRICTION CLIP WITH TRIM CAP

Walter Tischuk, Richmond, Ind., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 19, 1966, Ser. No. 580,415

3 Claims. (Cl. 52—460)



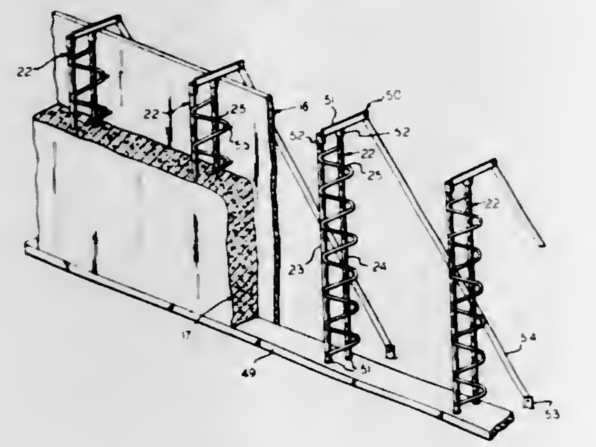
An exposed metal sheath having U-shaped plans erected side-by-side in spaced-apart relation to a building structural framework including vertical columns and horizontal girts. Adjacent pans present spaced-apart outturned flanges. Clip members are fitted over each pair of outturned flanges and are provided with tangs projecting into frictional engagement with the outturned flanges. Certain of the clip members engage the building structural framework and are secured thereto. A trim cap is snapped over and encloses each pair of outturned flanges and the clip members fitted thereto.

3,402,522
METHOD OF MAKING A CAST IN PLACE WALL

Karl Guddal, Peger Road, Fairbanks, Alaska 99701

Continuation-in-part of application Ser. No. 381,318, July 9, 1964. This application May 21, 1965, Ser. No. 457,611

2 Claims. (Cl. 52—741)



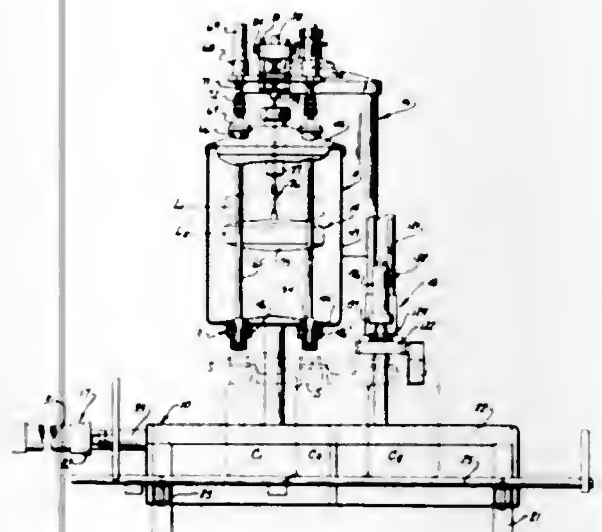
1. The method of making an upstanding reinforced concrete panel including a plurality of building studs some of which include a pair of parallel reinforcing bars interconnected by a sinuous chord member having portions extending from one of the bars to guide construction of the panel and placement of the studs therein, said method comprising the steps of erecting a plurality of said building studs into upright coplanar and horizontally spaced relationship with the plane of the studs extending normal to the long axis of the panel, applying means to the lower ends of said studs to hold same against movement, applying removable means to the upper ends of said studs to hold same in position and against displacement, securing a sheet of imperforate rigid material to the sinuous chord member portions in spaced relation to the reinforcing bars along one side of the studs, and pneumatically applying concrete against the studs and sheet of material until the parallel reinforcing bars of the studs are completely embedded in the concrete.

3,402,523
FILLING MACHINE

Albert B. Mojonnier, Chicago, Ill., assignor to Albert Mojonnier, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Mar. 18, 1966, Ser. No. 535,592

4 Claims. (Cl. 53—55)



A filling machine in which liquid is supplied to a measuring tank under the control of an inlet valve and is discharged from the measuring tank under the control of a discharge valve and the quantity of liquid dispensed is controlled by an upper and lower liquid level sensing mechanism that controls operation of the inlet and discharge valves to close the inlet valve when the liquid reaches a preselected upper level and to maintain the inlet valve closed during dispensing until the liquid reaches a preselected lower level. Operation of a pusher-type transfer mechanism for advancing containers to the filling machine is controlled by the liquid level sensing apparatus to prevent advancement of a succeeding container during dispensing until the liquid has dropped to a preselected lower level and an empty container is fed to the container advancing mechanism.

3,402,524
APPARATUS FOR PACKAGING ARTICLES

Arthur J. Griner, Westfield, N.J., assignor to National Biscuit Company, New York, N.Y., a corporation of New Jersey

Original application Sept. 19, 1952, Ser. No. 310,532. Divided and this application Jan. 5, 1962, Ser. No. 169,164

18 Claims. (Cl. 53—159)

1. In apparatus for packaging articles, conveyor means for continuously advancing a column of articles to be packaged, means for automatically dividing said articles into spaced packageable units in said continuously advancing column, and means for progressively folding a web of flexible material around said continuously advancing units to form a continuous tubular wrapper around said spaced units, said conveyor means including a constant speed endless belt type conveyor and said means for automatically dividing said articles into spaced packageable units including means for periodically retarding a trailing portion of said column on said conveyor.

ERRATUM

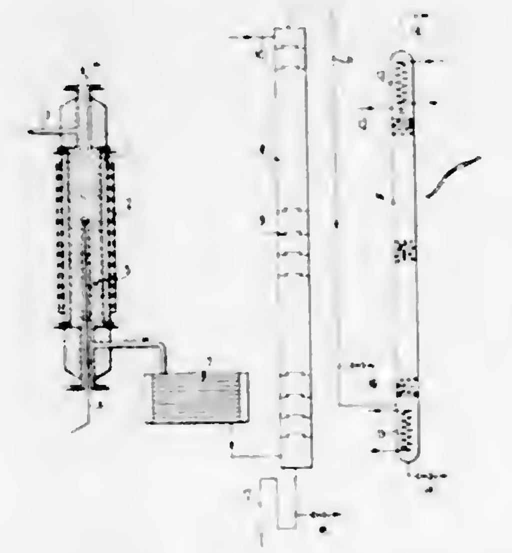
For Class 53—230 see:
Patent No. 3,402,528

3,402,525
SEPARATION OF HYDROGEN FLUORIDE FROM GAS MIXTURES CONTAINING HYDROGEN CHLORIDE AND HYDROGEN FLUORIDE

Peter Frisch, Frankfurt am Main, and Jürgen Korinth, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

Continuation of application Ser. No. 592,885, Nov. 8, 1966. This application Oct. 27, 1967, Ser. No. 678,763

39 Claims. (Cl. 55—71)



There is disclosed herein a process for separating hydrogen fluoride from a crude gas mixture, originating from the fluorination with hydrogen fluoride of a chlorine-containing aliphatic compound, by scrubbing the crude gas with concentrated aqueous hydrogen chloride wherein, prior to scrubbing, the crude gas and water are passed together at elevated temperature over active carbon.

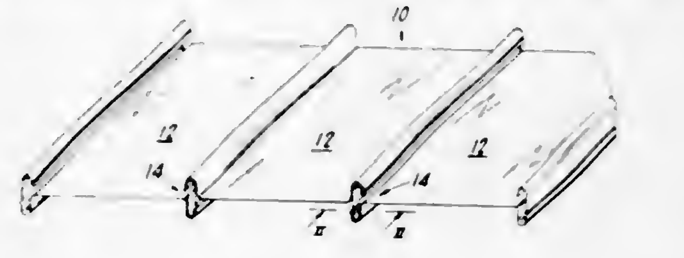
3,402,526
MODULAR COLLECTOR ELECTRODE FOR ELECTROSTATIC PRECIPITATORS

Walter A. Baxter, Ellicott City, Md., assignor to Koppers Company, Inc., a corporation of Delaware

Filed June 26, 1967, Ser. No. 648,578

2 Claims. (Cl. 55—156)

A modular collector electrode for electrostatic precipitators having integral connections formed therein for joining the modules along their lateral edges comprising substantially identical interlocking connection of which one half is formed in the lateral edges of each module which can be snapped into place to form a continuous collector electrode, the interlocking connections preferably having a first flange portion extending perpendicularly from one side of the module, a second perpendicular flange portion extending in the opposite direction from the first flange portion and spaced therefrom to the other side of the module, and a third return flange extending toward the module from the second flange portion and spaced therefrom so as to be substantially perpendicularly aligned with the first flange portion, the third flange portion terminating in a male detent portion cooperating with a female detent bead in the second flange portion of the adjacent module, with the modules being interdigitally reversed to align the half connections to form a complete interlocking connection.

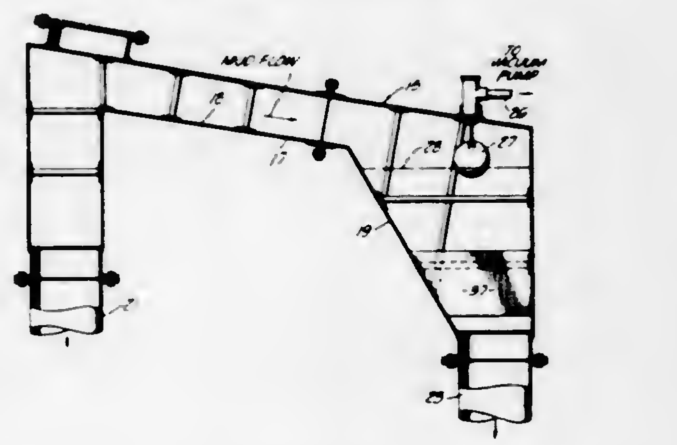


3,402,527
MUD DEGASIFIER

Pernell J. Moore, Houston, Tex., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey

Filed May 9, 1967, Ser. No. 637,205

3 Claims. (Cl. 55—170)



A mud degasser having at least one vacuum chamber containing a downwardly sloping sluice between the tops of a mud riser and a mud downflow pipe. The mud is simultaneously drawn upwardly to the chamber and moved through the downwardly sloping sluice to the downflow pipe under reduced pressure. A vertical septum is positioned within the mud downflow pipe below the liquid level to prevent vortex formation within the mud downflow pipe.

3,402,528
MACHINES FOR WRAPPING BLOCK-LIKE ARTICLES

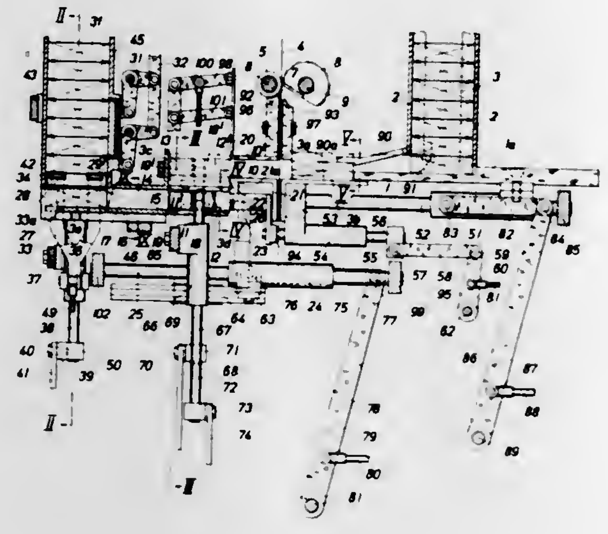
Alfred Schmermund, 62 Kornerstrasse, Gevelsberg, Westphalia, Germany

Filed Sept. 29, 1965, Ser. No. 491,124

Claims priority, application Germany, Oct. 21, 1964, Sch 35,991

7 Claims. (Cl. 53—230)

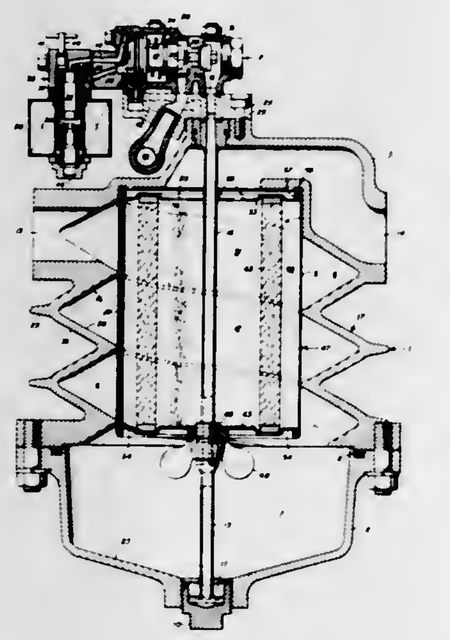
A machine is described for wrapping block-like articles, for example blocks of cigarettes. The machine comprises a first push-member for feeding a block-like member past a feed path for wrapping material into a cell with the wrapping material partly wrapped around the block-like member, the cell having a top wall and a bottom wall, means for moving the cell with the block-like member therein downwards, a second push-member for removing the block-like member from the cell and means for moving the top wall and the bottom wall separately upwards, the top wall being moved first and the bottom wall being moved subsequently. Thereby, the wrapping process is



accelerated since feeding of a next block-like member into the cell can begin as soon as the top wall has reached its uppermost position and before the bottom wall has reached its uppermost position. Folding members are provided for completing the wrapping during the movement of the block-like member.

3,402,529
AIR FILTER ASSEMBLY

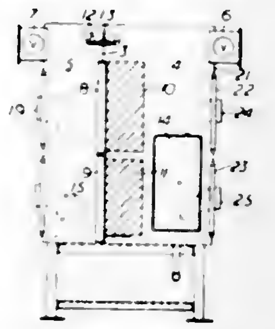
Virgil L. Frantz, Salem, Va., assignor to Graham-White Sales Corporation, Salem, Va., a corporation of Virginia
Filed Oct. 6, 1965, Ser. No. 493,376
8 Claims. (Cl. 55—267)



4. An assembly for filtering forced air comprising a filter having a housing, a vertical bore in said housing, a sleeve inserted into and seated in said bore, a sump in a lower part of said housing below said bore, a vertically directed helical groove in an externally finned helically convoluted portion of the side wall of said housing about said bore and closed inwardly by said sleeve thereby defining a helical passage, said passage fluidly communicating at its upper end with an inlet port in said housing and at its lower end with said sump and directing forced air introduced through said port downwardly in a fixed helical path for centrifugally separating contaminants from and cooling said air and discharging said separated contaminants and filtered air into said sump, a tube extending upwardly through said sleeve from a contaminant cavity in a bottom of said sump and having a passage therethrough for passing contaminants upwardly from said cavity, a filtered air passage in said sleeve between said sleeve and said tube for passing filtered air upwardly to an outlet port in said housing from said sump, and drain valve means surmounting said housing and connected to said contaminant passage for draining contaminants from said sump under pressure of said air.

3,402,530
AIR FILTER INSTALLATIONS

Shmuel E. Agnon, Haifa, Israel, assignor to The State of Israel Ministry of Defence, Hakiria, Tel Aviv, Israel
Filed Aug. 15, 1963, Ser. No. 302,302
Claims priority, application Israel, Aug. 21, 1962, 17,831
1 Claim. (Cl. 55—350)

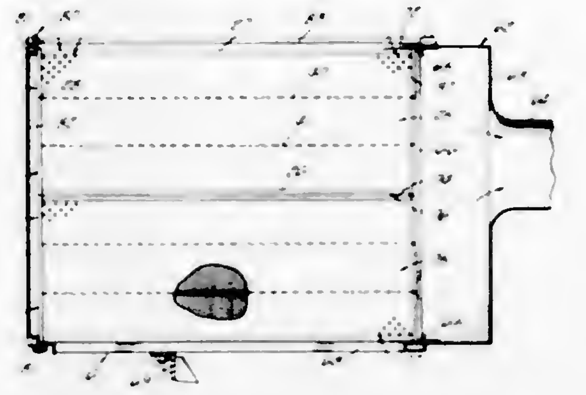


1. An air filter installation comprising at least two component units, a wall in each unit defining inlet and outlet chambers in each unit, an aperture in each said wall, an air filter element releasably mounted in each said aperture, a bypass conduit extending through each said wall and fluidly communicating the inlet chamber with the outlet chamber of each respective unit, a valve in each said bypass conduit operatively associated therewith for opening and closing its associated bypass conduit, each of said inlet chambers having an inlet duct operatively associated therewith for conducting air to be filtered thereinto, a valve in each said inlet duct operatively associated therewith for opening and closing the inlet duct with which it is associated, each of said outlet chambers having an outlet duct operatively associated therewith for conducting filtered air out of said outlet chambers, a valve in each said outlet duct operatively associated therewith for opening and closing the outlet duct with which it is associated, a further duct fluidly communicating the inlet chambers of each unit with the inlet chamber of each other unit, valve means in said further duct for selectively opening and closing said further duct, an air filter posting port in each inlet chamber and operatively associated therewith for posting a filter into and out of said inlet chamber with which the posting port is associated, and each inlet and each outlet chamber having at least one glove port operatively associated therewith for carrying out manual operations within the chamber with which a respective one of said glove ports is associated.

3,402,531
PAPER FILTER FOR LOCOMOTIVES AND METHOD OF ASSEMBLY

Richard S. Farr, Los Angeles, Calif., assignor to Farr Company, Los Angeles, Calif., a corporation of California
Filed Aug. 4, 1966, Ser. No. 570,203
10 Claims. (Cl. 55—350)

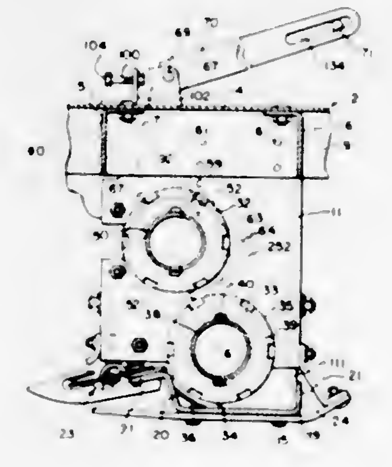
A compact filter assembly for providing a large filter area in a relatively small and inaccessible space, the assembly comprising individual filter elements each including pleated paper filter panels mounted in a zig-zag configuration in a housing. A plurality of the elements may



be mounted in a side-by-side and stacked relationship to provide the assembly which is particularly useful for filtering the intake air of a locomotive engine or the like.

3,402,532
APPARATUS FOR HARVESTING CROPS

Edward J. Johnston, La Grange Park, and Peter J. Peacock, Lisle, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 15, 1965, Ser. No. 439,588
12 Claims. (Cl. 56—1)

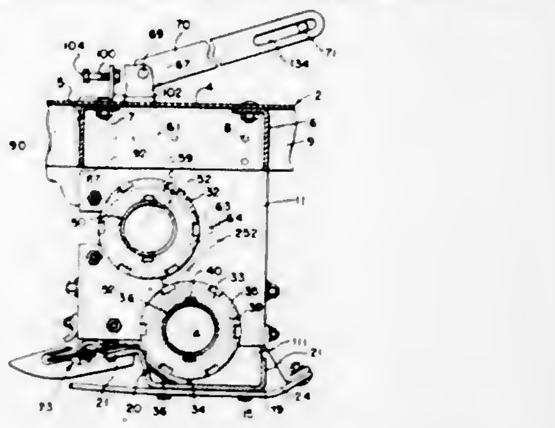


A crop mowing and processing machine that bends the crop forward such that the upper portion of the crop approaches a horizontal attitude while being supported on other forwardly located crops. The crops are severed at their butt ends thus releasing the tension in the bent crop causing the severed ends to snap upwardly and away from the unsevered crops. The crop processing means are located above the sickle such that they are in position to grasp the severed ends when they snap up.

3,402,533
HAY HARVESTING AND CONDITIONING DEVICE

Edward J. Johnston, La Grange Park, and Peter J. Peacock, Western Springs, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Original application Mar. 15, 1965, Ser. No. 439,588. Divided and this application June 9, 1967, Ser. No. 644,895
1 Claim. (Cl. 56—23)

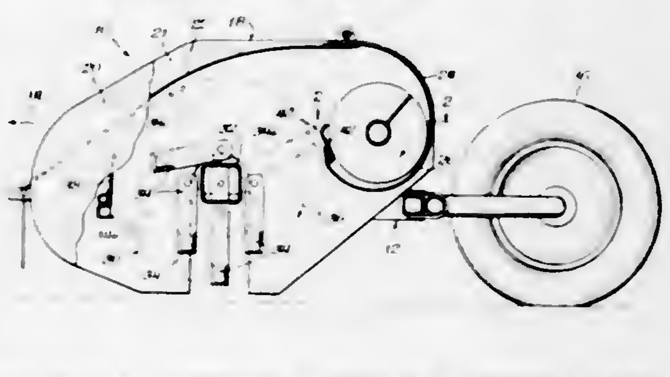
A hay conditioner having side members and upper and lower rollers therebetween, a channel bottom member interconnecting the side members and cupping the lower



roller therein and having a forwardly directed mower supporting flange.

3,402,534
FORAGE CROP HARVESTER

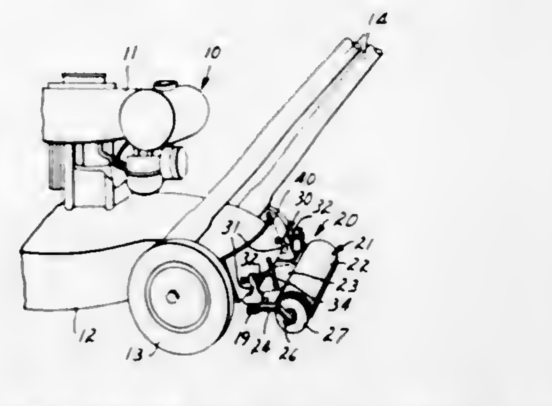
Richard E. Phillips, Storrs, Conn., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed June 28, 1965, Ser. No. 467,379
8 Claims. (Cl. 56—24)



A chopper-auger conveyor combination within a housing defining a transfer area therebetween, a stripper in the transfer area for facilitating delivery of the crops from the chopper to the conveyor having an upper edge portion inclined upwardly and rearwardly from the chopper to the auger and having a lower stripper portion beneath the upper leading edge of the auger trough and intersecting the auger.

3,402,535
PROTECTIVE DEVICE FOR ROTARY LAWN MOWERS

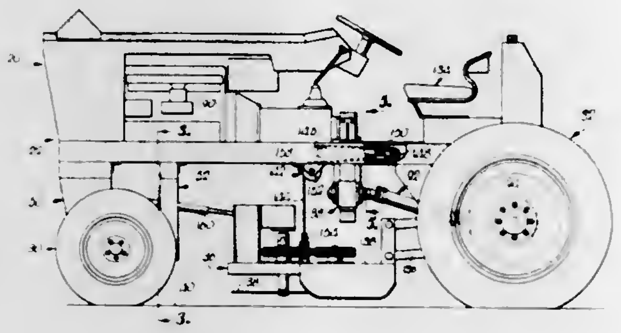
William F. Nelson, 1507 1st Ave. SE., Minot, N. Dak. 58701
Filed June 2, 1965, Ser. No. 460,790
4 Claims. (Cl. 56—25.4)



A fender adapted to be clamped onto the rear portion of the body of a rotary lawn mower in a fixed position, having an arcuate portion with a horizontally disposed roller mounted therein by springs so as to allow limited vertical movement to maintain the roller engaged with the ground during normal mowing operations.

3,402,536
SLOPE MOWER VEHICLE

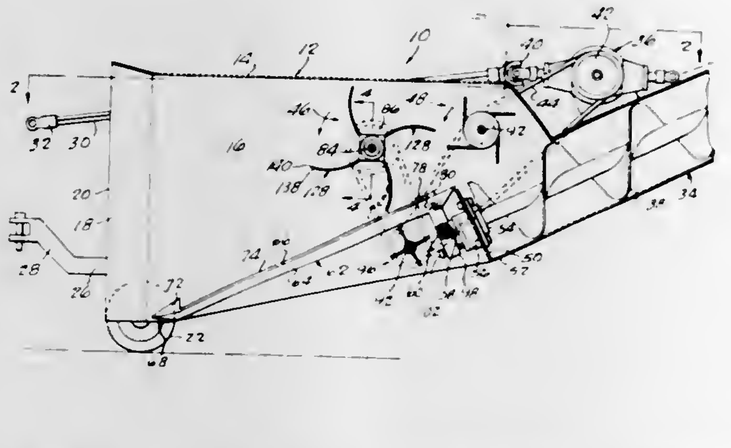
Ralph D. Hale, Carthage, Mo., and Roy S. Lowrey, Argonia, Robert I. Denny, Harper, and John R. Wedman, Argonia, Kans., assignors to Slope Tractor, Inc., Harper, Kans., a corporation of Kansas
Filed Aug. 10, 1967, Ser. No. 659,674
10 Claims. (Cl. 56—25.4)



A vehicle in the nature of a tractor having a mower unit carried thereby, the tractor having the longitudinally disposed body thereof pivotally mounted upon axle members disposed transversely of the body, there being piston and cylinder assemblies coupling the body with one axle member so that when the tractor is utilized to mow a slope, the body may be maintained in a vertical position notwithstanding the fact that the axles are in parallel relationship to the inclined surface upon which the tractor is working. The mower unit is carried beneath the body of the tractor and connected thereto by adjustable suspension apparatus to permit shifting of the mower unit in a vertical path. Linkage means couple the mower unit to one axle member of the tractor so that when a slope is being mowed, the mower unit shifts with said axle member and is maintained in a position parallel to the slope.

3,402,537
FLEXIBLE FEED REEL FOR COTTON STRIPPERS

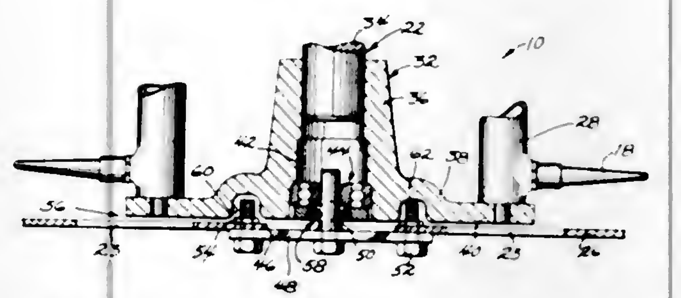
Louis F. Jezek, Jr., Rte. 3, Box 204,
Temple, Tex. 76501
Filed July 23, 1965, Ser. No. 474,372
1 Claim. (Cl. 56—34)



A flexible feed reel for a cotton stripper. The reel consists of a hub made up of four angle irons arranged with their corners inward and their flanges extending outwardly to define four pairs of spaced opposing flanges, the angle bars being rigidly-secured by transverse end plates with aligned shaft elements fixed thereto. Flexible prongs are clamped between the pairs of opposing flanges, the prongs being spaced longitudinally on the hub, and diametrically-opposed sets of prongs being staggered relative to each other. The prongs have arcuate end portions curved in a direction opposite to the direction of rotation of the reel.

3,402,538
ANTIWRAP DEVICE

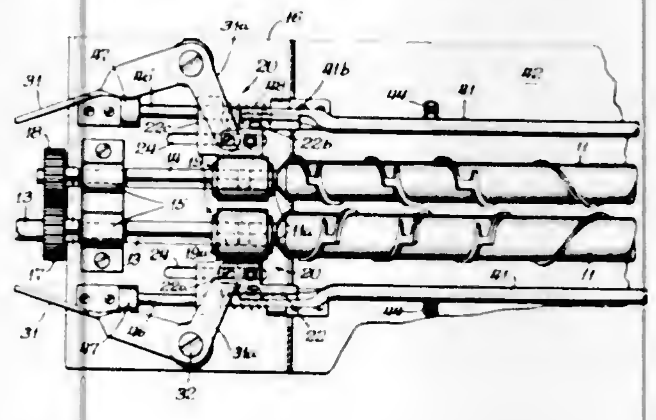
William D. Lester, Memphis, Tenn., assignor to International Harvester Company, a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,796
6 Claims. (Cl. 56—44)



1. Antiwrap structure for use in conjunction with a pair of members, namely, a shaft journalled on a fixed member, and axial pivot means on one of the members extending into the other, there being a space between the members surrounding the pivot means, said antiwrap structure comprising a plurality of projections on one of the members distributed around the pivot means in radially spaced relation thereto and extending across such space in direction axially of the shaft and into an annular recess in the other member.

3,402,539
CORNPICKER SAFETY DEVICE

John Selzer, Fort Wayne, Ind., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,930
4 Claims. (Cl. 56—104)



1. A safety device for a power operated cornpicker having a corn-picking assembly comprising a frame carrying

a pair of cooperative snapping rolls arranged for opposed downwardly converging rotation about axes extending forwardly of the implement in generally parallel spaced relation with the longitudinal axis thereof and with one another,

power operated means carried on said frame for so rotating said rolls,

clutch assemblies arranged on said frame for operatively connecting said power operated means and said rolls so to rotate the latter, and disconnecting the same, under operator control, and respectively including a clutch member, shiftable for the purpose,

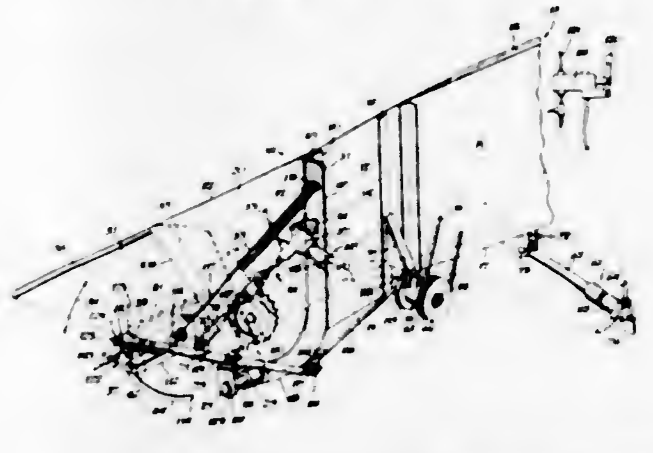
said device comprising other means on said frame operatively connected with said clutch assemblies for disconnecting said power operated means and said rolls,

said other means respectively including a latch assembly comprising spring means biasing said shiftable clutch member to position disconnecting the roll and the power operated means associated therewith, detent means operatively associated with said clutch member releasably to latch said clutch member in position of operation connecting said associated roll and said power operated means against the bias of said spring means,

a safety control member operatively associated with said detent means and operable upon touch to release said detent means thereby to trigger said spring means to shift said clutch member and disconnect the roll and power operated means associated therewith.

3,402,540
ADJUSTABLE HEAD CONSTRUCTION FOR COMBINES AND THE LIKE

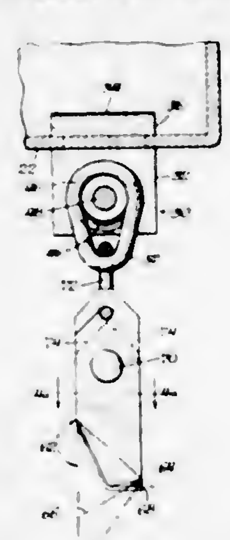
Elof K. Karlsson, East Moline, and Walter A. Watts, Rock Island, Ill., assignors to International Harvester Company, a corporation of Delaware
Filed Aug. 6, 1965, Ser. No. 477,704
7 Claims. (Cl. 56—208)



A header control for a combine having a cutter bar assembly that is pivotally mounted on the header about a horizontal axis arranged transverse to the direction of travel. A hydraulic valve is mounted on the header. The valve is linked to the cutter bar assembly and connected by a fluid conduit to the header hydraulic lift cylinders. When the cutter bar assembly is rocked to an extreme up or down position, the linkage causes the valve to direct fluid to the hydraulic ram and thus elevate the entire header.

3,402,541
FLAIL KNIFE ASSEMBLY

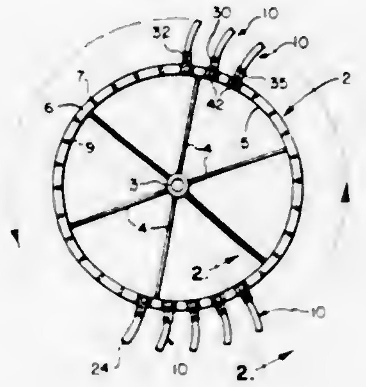
Bruno J. Panek, Chicago, and Robert W. Woodring, La Grange, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed July 21, 1965, Ser. No. 473,661
9 Claims. (Cl. 56—294)



A flail knife assembly having clips secured to the rotor shaft and knife centering and positioning structure for holding the knives in free swinging position.

3,402,542
RAKE TOOTH METHOD OF MAKING SAME

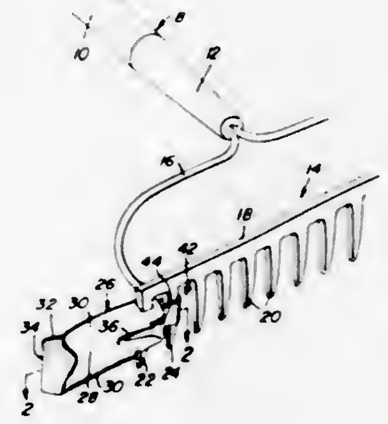
Edward J. Johnston, La Grange, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 582,127
10 Claims. (Cl. 56—400)



A rake tooth made from a tire bead having a thick concave trailing portion and a thinner convex leading portion.

3,402,543
RAKE ATTACHMENT

William F. Staggers, ℅ Leo C. Saxe, R.F.D. 1, Box 1566,
Mitchellville, Md. 21109
Filed Apr. 9, 1965, Ser. No. 446,940
2 Claims. (Cl. 56—400.05)

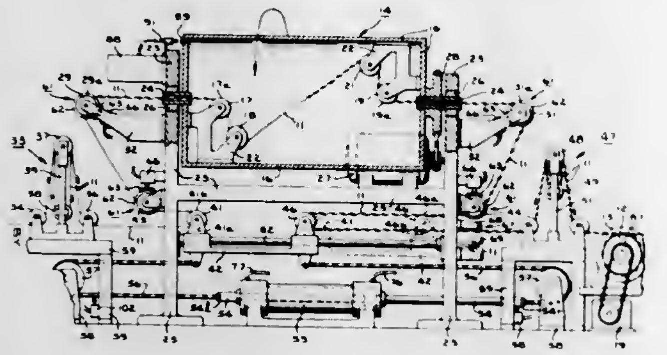


The inventive concept has to do with an attachment which, specifically speaking, comprises four embodiments. Generically the invention enables the user to dig out weeds and then rake them up. A one-piece body is provided with a sharpened hoe-like weeder. The inner end is reduced in cross-section and provides an attaching and retaining shank. The shank is constructed in similar but varying ways to facilitate attaching the same to two or more prongs of the head of the rake.

3,402,544
METHOD AND APPARATUS FOR FORMING ALTERNATE REVERSE TWISTS IN A STRAND

William R. Michael, Millard, and Orvin H. Olson and Donald E. Reser, Omaha, Nebr., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed June 26, 1967, Ser. No. 648,672
10 Claims. (Cl. 57—34)

The forming of reverse twists in a strand involves alternately advancing the strand longitudinally relative to a pair of spaced strand engaging mechanisms and a continuously rotating intermediate strand engaging mechanism, and alternately precluding strand advancement relative to the several strand engaging mechanisms while the rotating intermediate strand engaging mechanism imparts reverse twists to the portions of the strand extending between the intermediate strand engaging mechanism and the spaced strand engaging mechanisms.



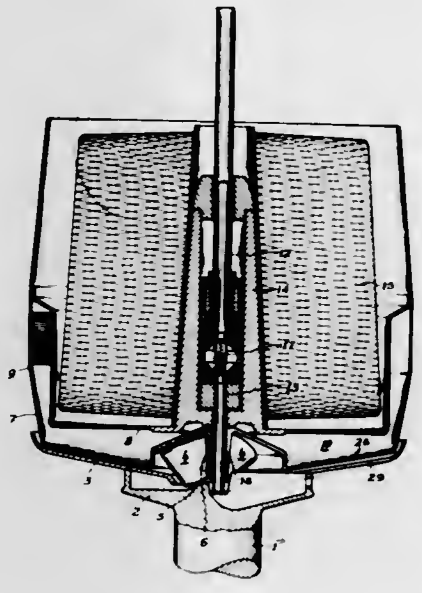
3,402,545
MULTIPLE TWIST SPINDLES

Klaus Nimtz, Krefeld, and Gustav Franzen, Neersen, near Krefeld, Germany, assignors to Palitex Project-Company G.m.b.H., Krefeld, Germany

Filed Apr. 3, 1967, Ser. No. 628,008

Claims priority, application Germany, Apr. 7, 1966, P 39,164; Mar. 15, 1967, P 41,643

6 Claims. (Cl. 57—58.49)



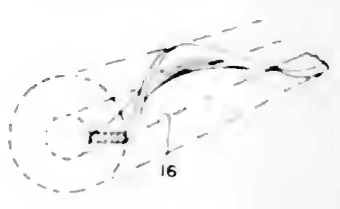
The present invention relates to a multiple twist spindle, especially a two-for-one twisting spindle, which comprises a spindle rotor, a bobbin carrier supported by said spindle rotor and adapted to be held stationary relative thereto and in which said bobbin carrier is composed of a lower section and an upper section adapted to be withdrawn from said lower section. The invention is characterized primarily in that the lower bobbin carrier section is provided with a hollow central bearing stud adapted detachably to receive a plug sleeve on the upper bobbin carrier section while the said hollow stud is rotatably supported by conical roller means which are upwardly and radially outwardly covered by the bobbin carrier lower section, so that the bearing means of the lower bobbin carrier section remain covered when the bobbin carrier upper section is withdrawn.

3,402,546
TWISTED FLAT WIRES AND METHOD OF MAKING SAID WIRES

Guido Peene, Zwevegem, Belgium, assignor to Trefileries Leon Bekaert, P.V.B.A., Zwevegem, Belgium

Filed Jan. 10, 1966, Ser. No. 519,600

4 Claims. (Cl. 57—139)



A wire rope for reinforcing flexible articles comprised of at least two flat, rectangular elements twisted together.

3,402,547
ROPES AND CORDAGE

Michael Richard Parsey, Harrogate, England, assignor to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain

No Drawing. Filed Jan. 24, 1966, Ser. No. 522,407

Claims priority, application Great Britain, Feb. 2, 1965, 4,526/65; Jan. 11, 1966, 1,138/66

7 Claims. (Cl. 57—140)

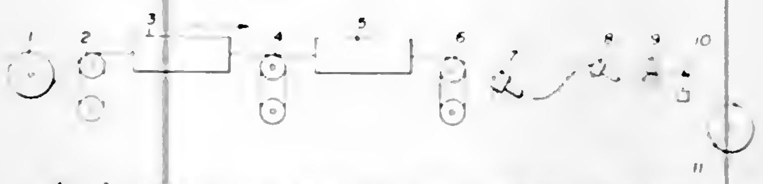
Multi-strand laid rope and the like having a combination of desirable properties is made of films, ribbons, filaments or fibres of steroregular polypropylene.

3,402,548
PROCESS FOR FRACTURING FLAT RIBBONS AND THE PRODUCT THEREOF

John M. Wininger, Jr., and Richard F. Dyer, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Continuation-in-part of applications Ser. No. 257,386, Feb. 11, 1963, and Ser. No. 432,178, Feb. 12, 1965. This application Mar. 25, 1965, Ser. No. 442,690

8 Claims. (Cl. 57—140)



An improved process for producing an improved fractured film product having low boiling water and hot oven shrinkage including the steps of subjecting a film of a polymeric material to longitudinal drafting to produce orientation thereof, and fracturing the film by subjecting it to forces sufficient to cause discontinuous, longitudinally extending slits to be formed therein producing a plurality of elongated, interconnected, flat ribbons. The improved result is accomplished by drafting the film in a zone of elevated temperature over a total distance at least five times the distance from the point where the film enters the zone of elevated temperature to the point where the draw neck of the film occurs.

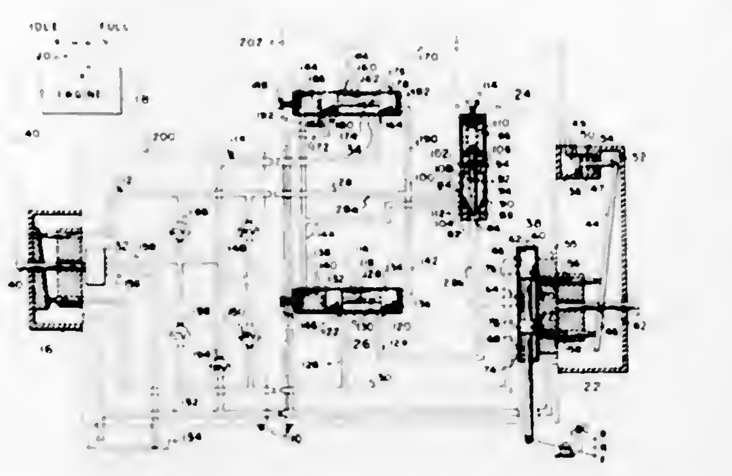
3,402,549
HYDROSTATIC TRANSMISSION

Donald C. Connett, Rochester, Mich., and Robert W. McJones, Palos Verdes Estates, Calif., assignors to Sperry Rand Corporation, Troy, Mich., a corporation of Delaware

Filed Jan. 13, 1967, Ser. No. 609,158

21 Claims. (Cl. 60—19)

A control arrangement for a hydrostatic transmission having an engine driven pump and a variable displacement fluid motor for automatically engaging or disengaging the transmission and for automatically varying the transmission ratio of output speed and torque at various engine speeds as a function of engine throttle position. A sensing valve controls a by-pass valve and a compensator valve which in turn, respectively, regulates the flow of fluid to the motor and the displacement of the motor as a function of throttle position.

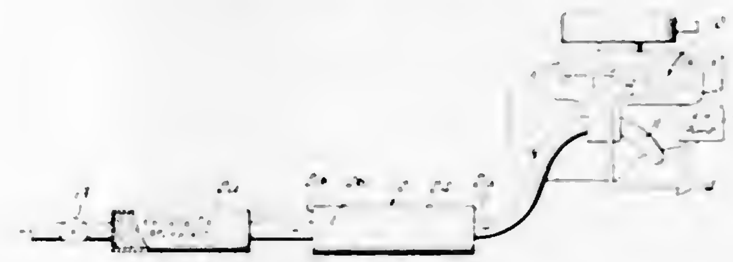


3,402,550
OVER TEMPERATURE PROTECTION DEVICE FOR A CATALYTIC MUFFLER FOR EXHAUST EMISSIONS CONTROL IN AN INTERNAL COMBUSTION ENGINE SYSTEM

Milton D. Behrens, Hopewell Junction, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed May 14, 1964, Ser. No. 367,336

15 Claims. (Cl. 60—30)



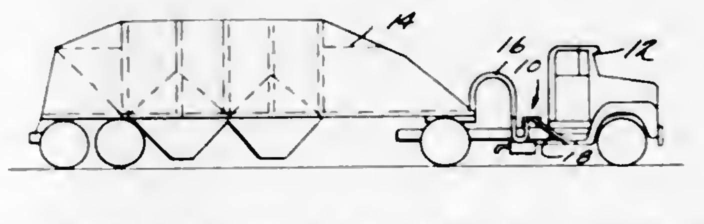
An apparatus for high temperature protection of a catalytic muffler in combination with the introduction of additional air into the exhaust gases of an internal combustion engine to further promote reaction with the exhaust products of combustion in the annular chamber of the over temperature protection apparatus positioned upstream of the catalytic muffler.

3,402,551
HEAT EXCHANGER AND CLEANING APPARATUS FOR TREATING EXHAUST GASES FROM INTERNAL COMBUSTION ENGINES

Charles E. Mendez, Tampa, Fla., assignor to Redwing Carriers, Inc., Tampa, Fla., a corporation of Florida

Filed Dec. 15, 1966, Ser. No. 601,904

2 Claims. (Cl. 60—31)



The invention relates to apparatus for cooling and cleaning hot exhaust gas from an internal combustion engine so that the exhaust gas may be utilized to dispense or fluidize pulverulent material from a hopper.

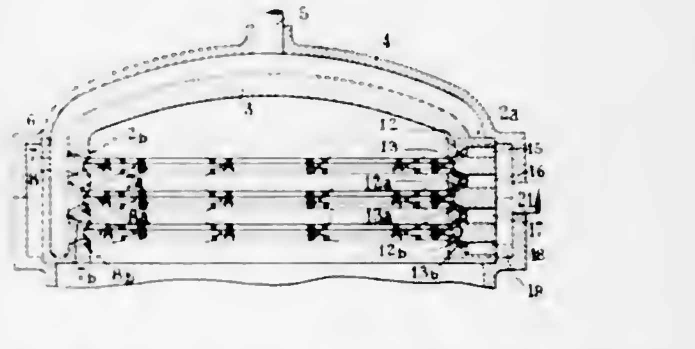
3,402,552
LIQUID INJECTION DEVICE

Heinz Bringer, Vernon, France, assignor to Etat Francais (French State) represented by the Minister of Armed Forces, Ministerial Delegation for Armament, Direction of Researches and Manufacture of Armament, Laboratory of Ballistic and Aerodynamic Researches, Vernon, France

Filed Nov. 5, 1964, Ser. No. 409,251

Claims priority, application France, Jan. 29, 1964, 961,921

1 Claim. (Cl. 60—39.74)



1. Liquid injection device, notably for liquid rocket-type power units utilizing an oxidizer and a fuel, which comprises fuel and oxidizer supply means, a combustion chamber having a longitudinal axis, a cylindrical lateral wall and a domed bottom wall defining said combustion chamber, injection orifices formed through said cylindrical lateral wall and opening into said combustion chamber, said injection orifices being grouped by pairs regularly spaced about the longitudinal axis and inclined with respect to the surface of the combustion chamber, each pair of injection orifices communicating with either the fuel supply means or the oxidizer supply means only, the axes of the two injection orifices of any pair being located in the same meridian plane and converging to an atomizing point where the two jets of the same liquid propellant, whether oxidizer or fuel, issuing from said two convergent orifices, are caused to meet, whereby producing the atomization of said liquid at the point of convergence of the two jets, the points of intersection of the axes of the pairs of orifices which effect the atomization on the one hand of the liquid fuel and on the other hand of the liquid oxidizer alternating in a same plane transverse to the longitudinal axis of said combustion chamber in order properly to homogenize the thus atomized two liquid propellants, and said atomizing points of one propellant alternate with the atomizing points of the other propellant in the longitudinal direction.

3,402,553
MANUALLY ACTUATED POSITIONING CONTROL SYSTEM

Jean Mercier, 501 Bloomfield Ave.,
Caldwell, N.J. 07006

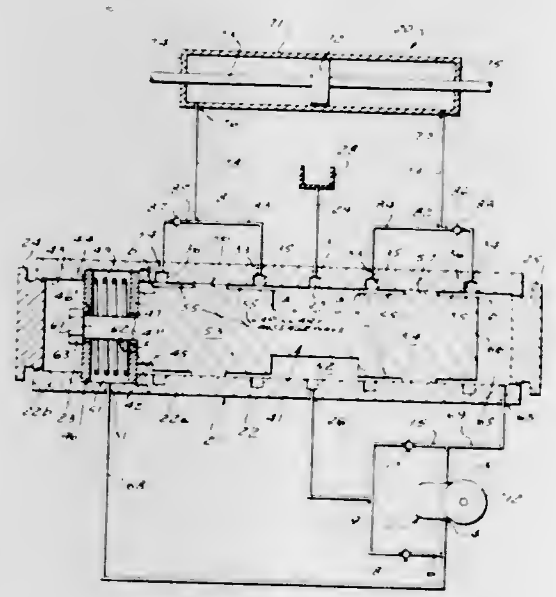
Filed Aug. 2, 1966, Ser. No. 569,651

Claims priority, application France, Aug. 6, 1965, 27,527; Nov. 29, 1965, 40,084; Mar. 4, 1966, 52,052

4 Claims. (Cl. 60—52)

1. A position control system comprising a reversible hydraulic actuator having a pair of control ports, a source of fluid under pressure comprising a reversible pump having two fluid ports, a distributor valve interposed between said control ports of said actuator and said source of fluid under pressure, said distributor valve comprising a casing having a bore therethrough, a valve

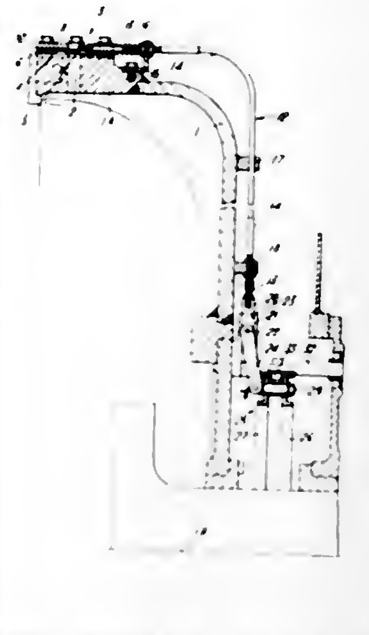
member slidably mounted in said bore, said valve member comprising a substantially cylindrical spool having a substantially central annular groove defining two end portions, each end portion having a reduced diameter annular portion at each of its ends defining a central rib therebetween, each of said reduced diameter portions defining a capillary passage, said distributor casing having two pairs of longitudinally positioned control ports, said reduced diameter portions on each end portion of said spool being aligned with the respective pairs of control ports when the valve member is in neutral position to close said ports, means normally retaining said valve member in neutral position to cut off flow of fluid into and out of the control ports of said valve member, said casing having a pair of control chambers operatively connected respectively to the fluid ports of said pump and in communication with opposed ends of said valve member to effect movement of the latter when the pressure in one of said chambers exceeds a predetermined amount, means connecting the control ports of each pair to an associated actuator control port, means connecting the pair of capillary passages on each of the end portions of said spool, whereby when pressure is applied from said source of fluid to said chambers, the capillary passages, when in alignment with the control ports, will prevent flow of fluid through said control ports, but provide equal pressure on both sides of the associated rib thereby to balance the ends of the spool to minimize friction between the ribs and the bore of the casing, said valve member being conformed to connect said source of fluid under pressure applied to one of said chambers to one of said control ports of said actuator when the pressure in such chamber exceeds a first predetermined amount to effect a corresponding movement of said valve member, while restraining flow of fluid under pressure from the other control port of said actuator until the pressure in such chamber has exceeded a second predetermined amount to effect further movement of said valve member.



3,402,554
HYDRAULIC COUPLINGS

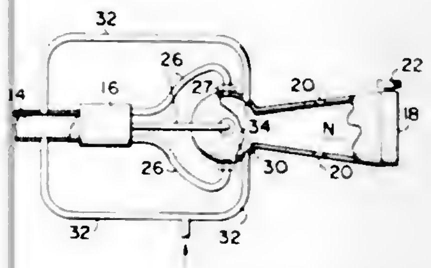
Finlay M. Thomson, Dumbarton, and James D. Paul, Alexandria, England, assignors to Barclay, Curle & Co. Ltd., Glasgow, Scotland, a British company
Filed Aug. 22, 1966, Ser. No. 574,003
Claims priority, application Great Britain, Sept. 1, 1965, 37,276/65
7 Claims. (Cl. 60—54)

In a hydraulic coupling having a number of peripherally spaced oil discharge ports, oil discharge through said ports is controlled by a corresponding number of valves of the sliding-plate type, the valves being manufactured each as a complete unit and being detachably mounted one at each discharge port. The slide plates of the valves are connected one to each of a corresponding number of flexible cable drives which extend radially inwards of the coupling to a control mechanism which includes a corresponding number of "change-motion" linkage devices the outputs of which move radially and are connected respectively to the flexible cables and the inputs of which move axially and are engaged by a common axially movable pressure plate mounted on the coupling for rotation therewith about the axis of the coupling.



3,402,555
STEAM-JET NOZZLE FOR PROPELLING MARINE VESSELS

Jack N. Piper, Conshohocken, Pa.
(3 S. Derby Ave., Ventnor, N.J. 08406)
Filed Apr. 19, 1967, Ser. No. 631,929
4 Claims. (Cl. 60—227)



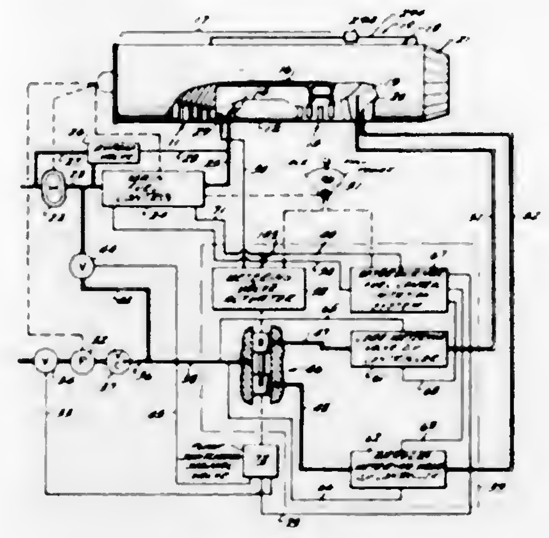
An apparatus for optimizing the steam-jet exhaust in a marine propulsion system. Nozzle-like expansion chambers are employed to increase the exhaust velocity and density of raw water fed into them in the form of steam.

This invention relates to marine propulsion devices. In particular, it is concerned with means for obtaining optimum propulsive thrust for marine vessels upon generating steam from sea water or fresh water maintained in a closed system.

3,402,556
FUEL CONTROL SYSTEMS FOR GAS TURBINE ENGINES

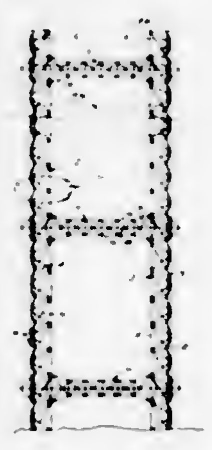
John P. Lavash, Raymond L. Williams, Dana D. Freberg, and William R. Spencer, Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York
Filed Feb. 24, 1967, Ser. No. 618,429
20 Claims. (Cl. 60—241)

The disclosure shows an improved fuel control system for a gas turbine engine **10** having a main gas generator **17** and an afterburner **18**. The fuel control system comprises main and afterburner fuel pumps **22, 32** to pressurize fuel for delivery to respective fuel scheduling units **24, 39** which control the flow of fuel to the main gas generator **17** and afterburner **18** as a function of operator demand and air flow through the engine. During high operator demand and high air flow through the engine **10**, the main pump **22** supplies fuel to the main gas generator **17** and the afterburner fuel pump **32** supplies fuel to the afterburner **18**. When the operator demand is high and the air flow through the engine is relatively low, flow from the afterburner pump **32** is terminated and the output of the main pump **22** is connected to the afterburner fuel scheduling unit **39** by a valve switching assembly **34, 44, 72**. Therefore, the amount of fuel pressurized to supply the flow requirements of the engine during this condition is minimized.



3,402,557
SUPPORTING STRUCTURE FOR OFFSHORE DRILLING RIGS

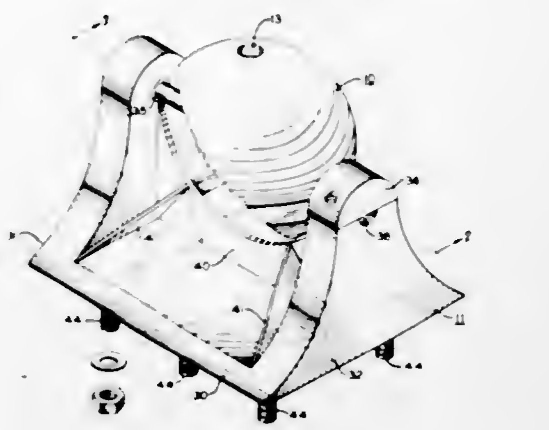
Clayton R. Steele, 10421 8th Ave., Inglewood, Calif. 90303
Filed Aug. 24, 1966, Ser. No. 574,677
11 Claims. (Cl. 61—46.5)



A supporting structure for offshore drilling rigs in which a column structure of polygonal end aspect, having a column member at each apex joined by braces defining the sides of the column structure define the corners of the supporting structure. The column structures are joined at intervals by beam structures, each being polygonal in end aspect and having a beam member at each apex joined by braces defining the sides of the beam structure. The column structures are provided with vertical tracks which support a drilling platform within the space defined by the column and beam structures.

3,402,558
BOAT BUMPER

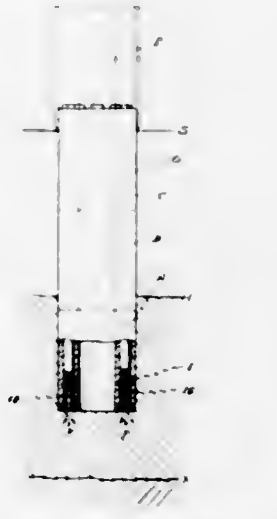
Robert H. Hellinger, Moeller Road, Rte. 7, Fort Wayne, Ind. 46806
Filed July 5, 1967, Ser. No. 651,313
2 Claims. (Cl. 61—48)



A spherical boat bumper is formed of two hemispheres of resilient material that are mounted for rotation about respective shafts. The two shafts are fastened to a main shaft so that they extend in opposite directions from the main shaft along a straight line that is perpendicular to the main shaft. The main shaft is mounted for rotation in bearings so that the spherical bumper can freely rotate in any direction.

3,402,559
PROCESS OF FORMING A LARGE-DIAMETER TUBULAR PILE FOUNDATION

Yoshikiyo Fukushima, Tokyo, Japan, assignor to Nippon Concrete Kogyo Kabushiki Kaisha, Tokyo, Japan
Filed June 14, 1967, Ser. No. 646,116
Claims priority, application Japan, Sept. 26, 1966, 41/62,991
4 Claims. (Cl. 61—52)

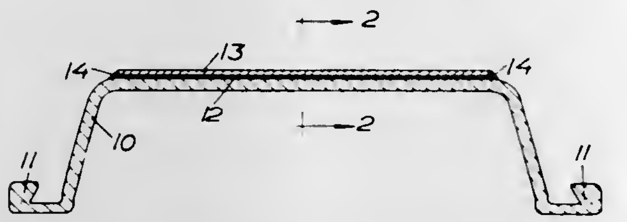


A number of tubular concrete sections are formed at the work site one on another in vertically aligned relation to form an integral tubular concrete pile structure, which is let down vertically through the water to reach the bottom ground. Each of the tubular sections has a reinforcement including a set of vertical pipe piles, of concrete or steel, arranged in a circle. Such pipe piles in the sections are securely joined together to form multiple-length pipe piles extending from top to bottom of the pile structure. The tubular sections may be precast.

This invention relates to the forming of pile foundation and has for its object to provide a novel foundation process by which foundations required to withstand heavy loads, for example, bridge piers set in a sea or a river, can be formed easily in short periods of time.

3,402,560
ACOUSTICALLY DEADENED PILING

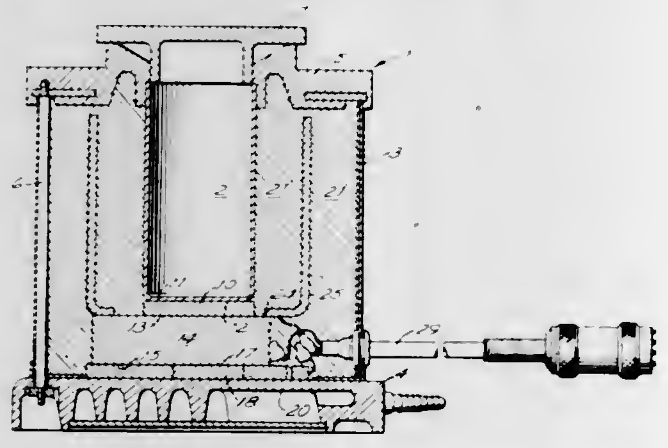
Karl Staffan Alm, Nacka, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed July 6, 1966, Ser. No. 563,222
Claims priority, application Sweden, July 13, 1965, 9,207/65
7 Claims. (Cl. 61—53)



Acoustically deadened piling is provided and including a substantially elongated solid steel pile body capable of withstanding longitudinally directed impacts and having disposed substantially over the surface of one and/or both sides thereof a coating of visco-elastic material, a thin metallic shell disposed over said coating in sandwich fashion and covering said coating, and welded points between said shell and said pile body for holding the entire structure together while still providing a spaced apart relationship between said body and said shell for accommodating said coating. Also included within the concept of said welded points is a welded seam extending along one end edge of said piling body and said shell which provides a firm driving edge for said piling body as it is driven into the ground.

3,402,561
REFRIGERATING APPARATUS

John R. Mahoney, Norwood, N.J., assignor to Hoke Incorporated, Cresskill, N.J., a corporation of New Jersey
Filed Mar. 21, 1967, Ser. No. 624,809
14 Claims. (Cl. 62—3)

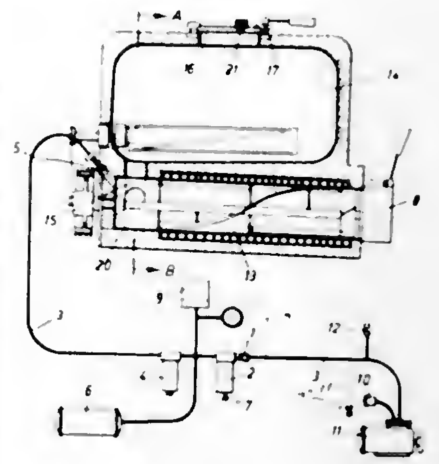


A cooler including a thermoelectric cooling means for reducing the temperature of a refrigeration chamber and having a thermally conductive barrier or shield included in the outer insulating layer for the cooling chamber with the barrier thermally coupled to portions of the thermoelectric cooling elements for providing improved cooling and more efficient operation.

3,402,562
METHOD AND APPARATUS FOR OPERATING SOFT ICE FREEZERS

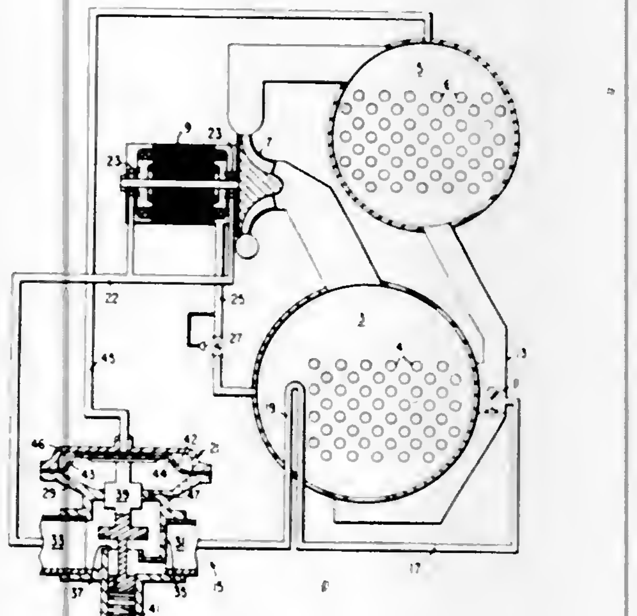
Waldemar Menzel, Burgheig, near Kulmbach, Germany, assignor to Firma Lumen GmbH Nahrmittel- und Maschinenfabrik, Kulmbach, Germany
Filed May 26, 1967, Ser. No. 641,589
Claims priority, application Germany, May 28, 1966, G 47,011
10 Claims. (Cl. 62—69)

A method and apparatus for operating freezers, particularly soft ice freezers, where the ice mix is continually supplied from a container to the freezing kettle and is maintained under excess pressure with air supplied from a compressor by means of control valves and a sensor which periodically interrupt the pressure at short intervals determined by the drop in pressure in the freezer.



3,402,563
APPARATUS FOR AND METHOD OF MOTOR COOLING

James W. Endress, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Feb. 2, 1967, Ser. No. 613,604
4 Claims. (Cl. 62—117)

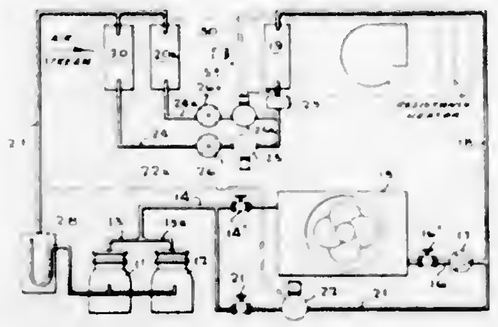


A refrigeration compressor motor cooling circuit having a metering valve with a fixed orifice therein to restrict refrigerant flow to the motor when there is a large pressure drop across the machine and a variable orifice in parallel with the fixed orifice operable in response to the pressure variations in the machine to supplement the refrigerant flow through the motor cooling circuit when there is a small pressure drop across the machine.

3,402,564
AIR CONDITIONING SYSTEM HAVING REHEATING WITH COMPRESSOR DISCHARGE GAS

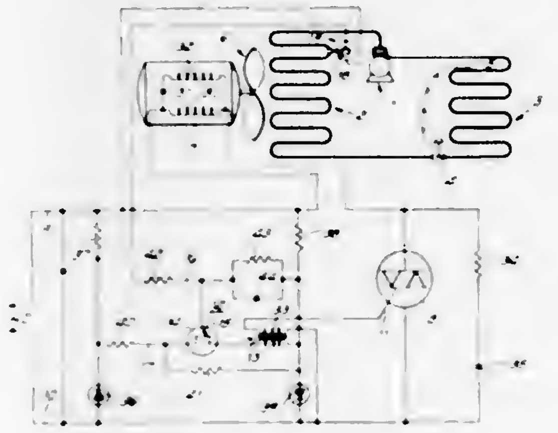
Otto J. Nussbaum, Atlanta, Ga., assignor to Larkin Coils, Inc., Atlanta, Ga., a corporation of Georgia
Filed Mar. 6, 1967, Ser. No. 620,853
15 Claims. (Cl. 62—173)

An air conditioning system involving reheating by controlled quantities of refrigerant condensing in thermal exchange relation with the conditioned air, including a compressor, a condenser, an evaporator in the air flow path of air to be conditioned, a reheat coil in the air flow path, and controlled refrigerant conduits for delivering refrigerant from the compressor through the condenser, to the reheat coil and thence through an expansion device to the evaporator and for selectively diverting gaseous refrigerant from the compressor in bypassing relation around the condenser to the reheat coil in intermixed relation to refrigerant conveyed from the condenser to the evaporator. A suction line having an accumulator therein returns refrigerant from the evaporator to the compressor. Additional capacity control can be provided by using two interconnected compressors and two interconnected evaporators controlled by thermostat means operative to selectively terminate operation of one of the compressors and one of the evaporators under selected reduced load conditions.



3,402,565
PRESSURE RESPONSIVE REFRIGERATION MOTOR CONTROL

John T. Maynard, New Berlin, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed July 26, 1966, Ser. No. 567,904
5 Claims. (Cl. 62—183)



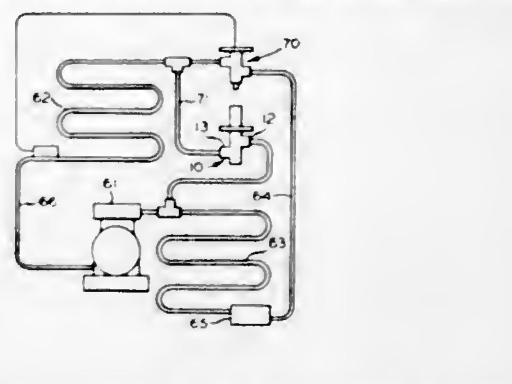
The present disclosure relates to controlling the connection of a condenser motor to a power supply by selectively firing of a controlled rectifier means. A pulse forming circuit includes a resistor having a movable tap, the setting of which controls the pulse repetition rate.

A Bourdon tube is connected directly to the condenser coil and to the movable tap by an insulating coupling member. The Bourdon tube is a pressure transducer which provides immediate response in the pulse forming circuit.

3,402,566
REGULATING VALVE FOR REFRIGERATION SYSTEMS

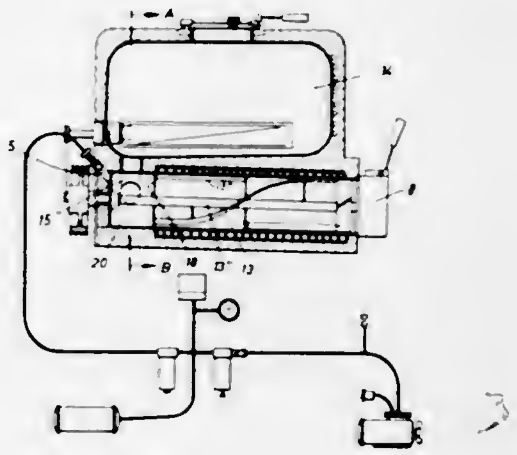
John George Leimbach, Crestwood, Mo., assignor to Sporlan Valve Company, St. Louis, Mo., a corporation of Missouri
Filed Apr. 4, 1966, Ser. No. 539,842
2 Claims. (Cl. 62—197)

A regulating valve for a refrigeration system interconnecting the condenser inlet and evaporator inlet including a flexible motor element subjected to one side to a predetermined pressure and subjected on the other side to the pressure at the evaporator so as to maintain a minimum evaporator pressure regardless of variations of refrigerating load.



3,402,567
FREEZING KETTLE FOR SOFT ICE FREEZER

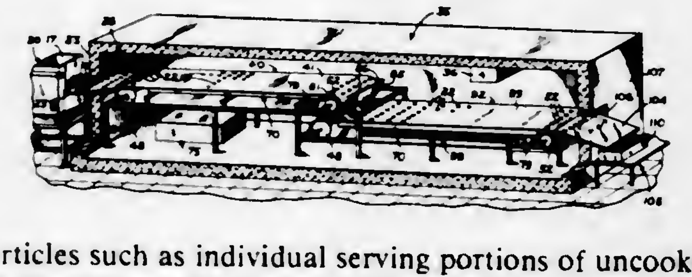
Waldemar Menzel, Burgheig, near Kulmbach, Germany, assignor to Firma Lumen G.m.b.H., Nahrmittel- und Maschinenfabrik, Kulmbach, Germany
Filed May 26, 1967, Ser. No. 641,590
Claims priority, application Germany, May 28, 1966, G 34,771
3 Claims. (Cl. 62—306)



A freezing kettle which is divided into a freezing compartment and a receiving compartment for the ice mix by a disk which is circumferentially spaced from the walls of the kettle to permit the passage of air, thereby balancing the pressure in both compartments, and where a special compressed air supply is connected to the receiving compartment and in which the ice mix can pass in both directions through slots in the separating disk.

3,402,568
QUICK FREEZING OF FOOD PRODUCTS

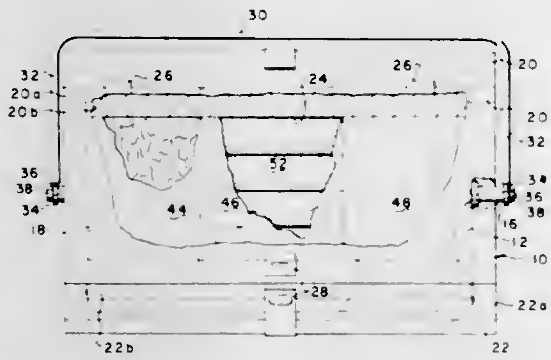
Hal B. Kamin and Milton Rosenthaler, Dayton, Ohio, assignors to The Sucher Packing Co., Dayton, Ohio, a corporation of Ohio
Filed June 25, 1965, Ser. No. 467,009
7 Claims. (Cl. 62—380)



Articles such as individual serving portions of uncooked meat are frozen with unusual rapidity by placing one side of each article on an endless belt conveying surface which is refrigerated to transfer heat quickly from one side of each article and inverting the articles on a similarly refrigerated endless belt conveying surface to transfer heat quickly from the other side of the article. The conveying surfaces are enclosed within a refrigerated chamber to minimize both heat transfer from the conveying surfaces to the atmosphere and circulation of air adjacent the articles.

3,402,569
REFRIGERATED BAIT CONTAINER

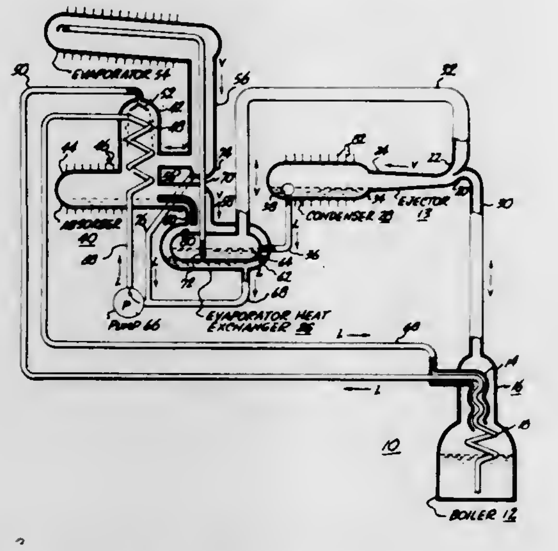
Harold E. Myers, Bowen, Ill.; Bernice I. Myers, administrator of the estate of Harold E. Myers, deceased
Filed June 29, 1967, Ser. No. 649,913
6 Claims. (Cl. 62—457)



A portable container assembly for worms and other types of live fish bait comprising an exterior container made of lightweight thermal insulating material and plural interior containers removably disposed inside the exterior container in side-to-side relation to one another. The exterior and interior containers have top and bottom closure members which are openable to expose the bait contents of the interior containers; the bottom closure members being accessible for opening upon inverting the container assembly about a carrying handle pivotally attached to opposite end walls of the exterior container. One or more of the interior containers may be supplied with a cooling agent for maintaining the live bait contents of adjacent interior containers at an optimum preserving temperature below ambient temperature.

3,402,570
REFRIGERATION SYSTEMS AND REFRIGERANTS USED THEREWITH

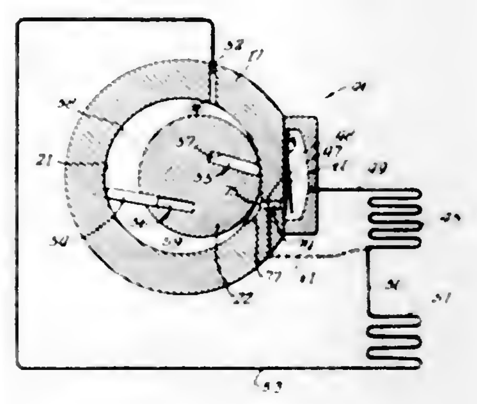
Ralph C. Schlichtig, 11212 3rd S., Seattle, Wash. 98168
Continuation-in-part of application Ser. No. 452,648, May 3, 1965. This application Dec. 23, 1966, Ser. No. 604,214
8 Claims. (Cl. 62—483)



In each of the two disclosed embodiments of a thermally powered refrigeration system an ejector is so interrelated with an evaporation heat exchanger, which receives a solution of refrigerant and absorbent material from an absorber, that the ejector pumps refrigerant vapor from the evaporation heat exchanger to a refrigerant condenser for condensing, to thereby minimize the cost of the refrigeration system while still maintaining a high coefficient of performance for the system. The ejector in each embodiment also cooperates with associated apparatus in the particular embodiment to effect a precooling of the refrigerant before it enters a refrigerant evaporator for evaporation. Several two component refrigerants are disclosed which can be effectively used in each of the two embodiments to further improve their coefficient of performance.

3,402,571
LIQUID INJECTION COOLING FOR COMPRESSOR

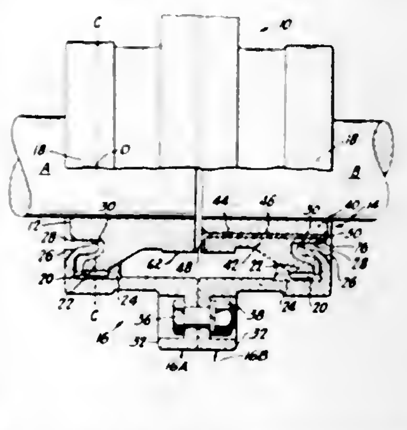
Milton Y. Warner, Evansville, Ind., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Oct. 20, 1966, Ser. No. 588,196
11 Claims. (Cl. 62—505)



A rotary compressor refrigeration apparatus provided with a flow passage for conducting liquid refrigerant from a condenser into the compression chamber of the compressor for cooling the compressor. The refrigerant is delivered from the condenser to the compressor at the discharge outlet in such a manner as to cause the compressed refrigerant passing outwardly through the outlet to aspirate the flow passage from the condenser to effectively preclude back flow of the compressed fluid through the passage to the condenser. The flow passage from the condenser is open to the compressor at the discharge outlet at substantially all times.

3,402,572
ELECTRICALLY INSULATED MECHANICAL CONNECTOR

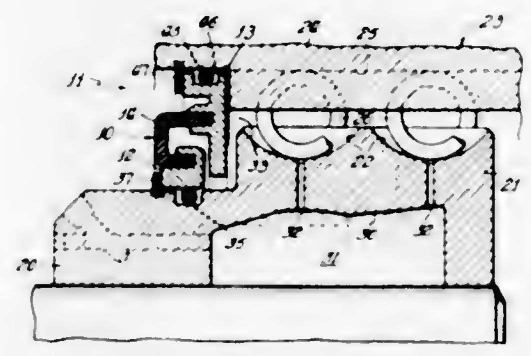
Theodore W. Chase and Frank L. Ptak, Baltimore, Md., assignors to Koppers Company, Inc., a corporation of Delaware
Filed Dec. 22, 1966, Ser. No. 603,809
4 Claims. (Cl. 64—6)



A mechanical connector for transmitting power from a driving to a driven member, for example, a gear-type flexible shaft coupling, having an electrical insulating and adhesive material in the connection between the driving and driven members to connect these members yet to prevent the flow of electricity between these members.

3,402,573
SEAL FOR FLEXIBLE COUPLING

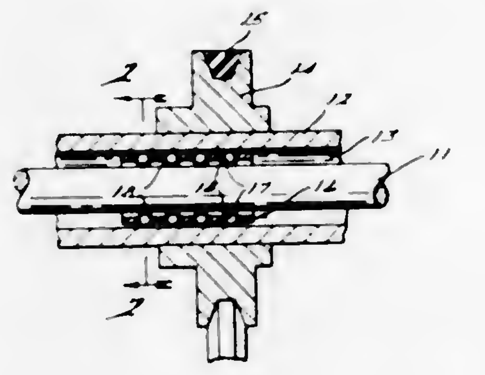
Stanley L. Eide, Ithaca, N.Y., assignor, by mesne assignments, to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed June 23, 1966, Ser. No. 559,920
3 Claims. (Cl. 64—11)



A flexible coupling is disclosed herein wherein the drive and driven members are flexibly interconnected in a manner which will allow these members to have several types of relative motion therebetween such as radial as well as axial, and the drive and driven members are provided with a lubricant seal structure.

3,402,574
SLIDING DRIVE MECHANISM

Murray L. Hauptman, 24501 Harding, Oak Park, Mich. 48237
Filed Mar. 16, 1966, Ser. No. 534,818
2 Claims. (Cl. 64—30)

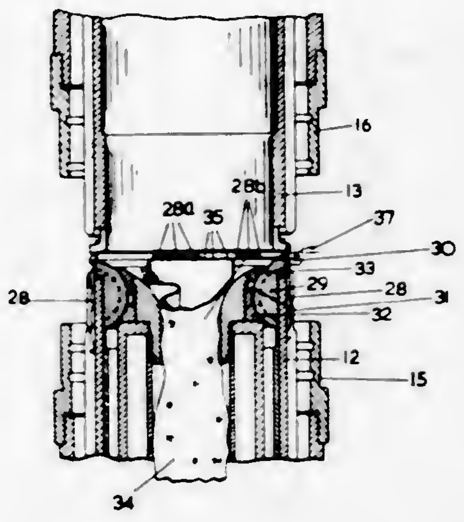


A shaft, a sleeve, a cage between them, and circumferentially extending helical spring rollers carried by the cage and pressed between the shaft and sleeve to transmit rotary driving forces but permit axial shifting.

3,402,575
KNITTING OF TUBULAR ARTICLES ON CIRCULAR KNITTING MACHINES

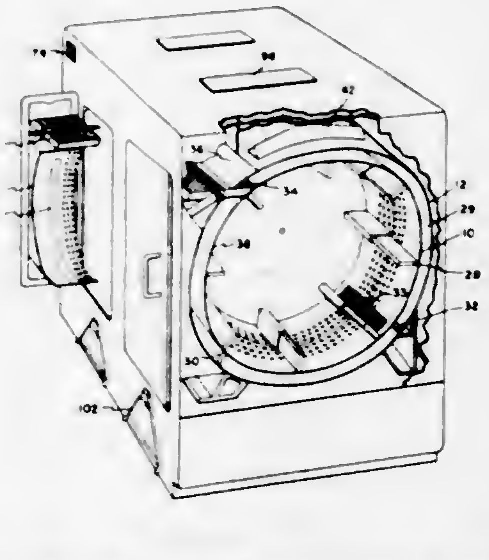
Roland Peberdy, Leicester, England, assignor to The Bentley Engineering Company Limited, Leicester, England, a British company
Filed Oct. 14, 1965, Ser. No. 496,007
Claims priority, application Great Britain, Oct. 16, 1964, 42,246/64
10 Claims. (Cl. 66—107)

A procedure and means for knitting a succession of tubular articles on a circular knitting machine by which each article is pressed off from the needles on its completion and a fresh course to start a succeeding article is commenced during the pressing off of a preceding article while a portion of yarn temporarily joins the articles, such joining portion of yarn being severed before pressing off of the preceding article has been completed. The means provided operates needle actuating cam means for the pressing off of each article and feeds yarn extending fom the end of a complete article into the hooks of the needles from which the preceding article has been pressed off, and also operates to sever the yarn in a length thereof extending across a small group of needles between the substantially completed and newly commenced articles.



3,402,576
COMBINATION CLOTHES WASHER, DRYER, DISHWASHER, DRYCLEANER, AND GARMENT APPEARANCE-FINISHING MACHINE

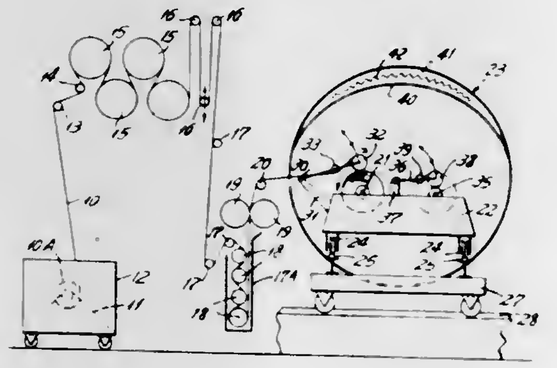
Michael R. Krupsky, 10 Washington St., East Orange, N.J. 07017
Filed Feb. 28, 1966, Ser. No. 530,695
31 Claims. (Cl. 68—4)



A clothes and dish cleaning and garment appearance-finishing apparatus having a rotatable container with apertures, baffles, and filtering devices positioned and connected thereon to form, in cooperation with a stationary chamber surrounding the rotatable container, a separate enclosure to carry and alternately transfer soiled solution and/or air from the rotatable container to the separate enclosure in order to regenerate the soiled solution and/or air prior to the solution and/or air being transferred back into the rotatable container. Also a mechanically adjustable garment support apparatus and a dish holder device both having nonrotatable catch mechanisms connectable to nonrotatable mechanisms fixed to a rotatable container and a stationary chamber to rigidly fix the garment support apparatus and/or a dish holder device in free space inside the rotatable container while the garments or dishes are cleaned and/or appearance finished with solutions, steam, and heated dry air.

3,402,577
APPARATUS FOR HIGH-TEMPERATURE DYEING OR FINISHING OF A FABRIC MATERIAL

Charles Blount, Jr., Westport, Conn., and Arno Niepraschk, Edenton, N.C., assignors to United Piece Dye Works, Lodi, N.J., a corporation of New Jersey
Filed Sept. 7, 1966, Ser. No. 577,634
8 Claims. (Cl. 68—9)



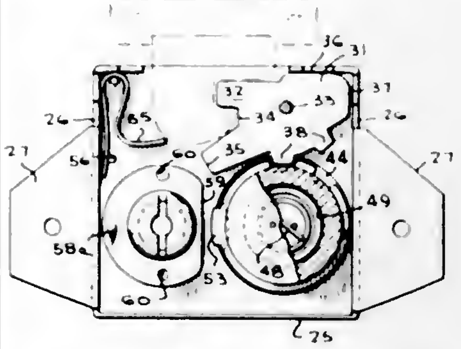
This disclosure is directed to an apparatus for dyeing and/or finishing a fabric material wherein the fixation of the dyestuffs or finishing chemicals in the fabric is conducted at elevated temperatures above 212° Fahrenheit and at pressures above atmospheric. The apparatus comprises a pressure vessel which is sized so as to permit a roll stand to be readily moved into and out of the vessel. The means for effecting the dyeing of the fabric material is located exteriorly of the tank and that a plurality of heated cans are provided over which the material to be treated is first threaded to effect a preheating thereof. The preheated material is then directed through a padder and thereafter loaded upon the roll stand. Cooperatively associated with the loading roller of the roll stand is a takeup roller. The arrangement is such that the fixation of the dyestuffs or chemicals to the material is effected by rolling the material from the loading roller to the takeup roller under conditions of elevated pressures and temperatures within the pressure vessel. During the fixation operation the takeup roller is actuated by a suitable drive means to effect the unwinding of the material in full open width from the loading roller to the takeup roller. As soon as the material has passed from the loading roller to the takeup roller, the roll stand is then removed from the pressure vessel.

While the fixation operation is being carried out a second or auxiliary roll stand may be arranged exteriorly of the pressure vessel for receiving the material to be subsequently dyed.

3,402,578
PUSHBUTTON LATCH AND LOCK MECHANISM

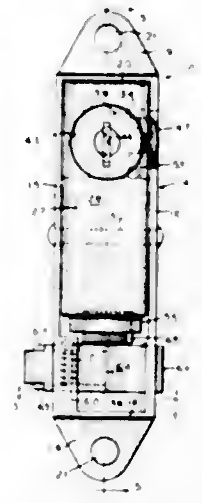
Wallace E. Atkinson, Petersburg, Va., assignor to Long Manufacturing Company, Inc., Petersburg, Va., a corporation of Virginia
Filed Feb. 6, 1967, Ser. No. 614,137
10 Claims. (Cl. 70—70)

A combined latch and lock for containers such as luggage and the like having a hook shaped keeper on one of the container parts and a pushbutton latch and lock mechanism on the other container part, the latch and lock mechanism including a rotatable and axially movable pushbutton having a radial flange provided with gear teeth formations and a tongue formation, a casing having a spherical lip portion outwardly bounding the pushbutton flange apertured at one angular position to receive the tongue and hold the pushbutton against rotation, a spring to bias the pushbutton outwardly to dispose the flange against the lip and to bias the pushbutton to rotate about its axis, a pivoted bolt member having gear teeth in driven engagement with the gear teeth formations of the pushbutton flange and having a latch formation to interlock with the keeper hook, and a key barrel and locking disk operable by a key to lock the pushbutton against inward movement which would release the tongue from the locking aperture of the casing lip portion, the spring being operative to drive the pushbutton in an angular direction to rotate the bolt so as to release the keeper when the locking disk is disposed in a selected position permitting inward axial movement of the pushbutton.



3,402,579
FLUSH MOUNTED LOCK ASSEMBLY

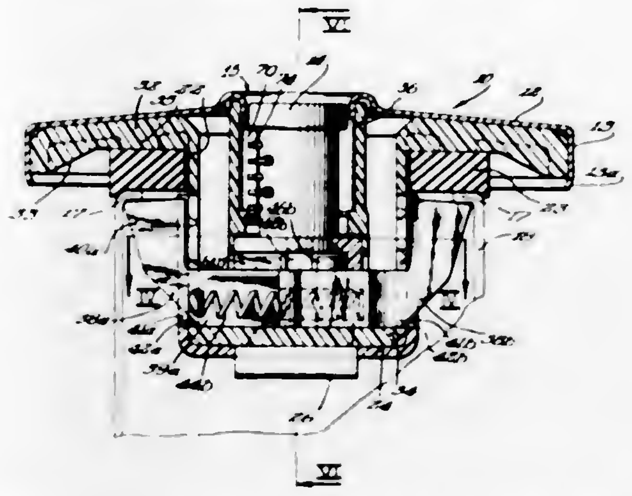
Charles G. Hallgren, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Jan. 12, 1966, Ser. No. 520,243
9 Claims. (Cl. 70—146)



A flush mounted lock assembly utilized on switch boxes and similar structures having a lock housing secured within a closure and aligned with an opening in the closure for a push plate pivotally mounted in the housing on a pivot pin extending transversely between the side walls of the housing. The housing includes an integral lock cylinder for a tumbler lock having a lock bolt mounted for arcuate movement between an unlocked position and locked position with the end of the bolt extending through a slot in the edge wall of the push plate to prevent rocking movement thereof. The lower inwardly moving end of the push plate engages and rocks an actuating arm of a pivotally mounted retractor which is operatively connected to and reciprocates a latch bolt cooperating with a strike on the enclosure for the closure carrying the lock assembly.

3,402,580
LOCKING GAS CAP

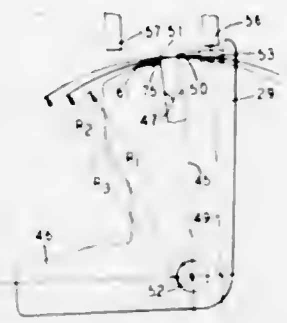
Raymond Speck, Riverside, Ill., assignor to Badger Manufacturing Corporation, Alsip, Ill., a corporation of Illinois
Filed June 2, 1967, Ser. No. 643,130
10 Claims. (Cl. 70—169)



A locking cap for a vehicle fuel tank having a cylindrical lock in a cup permanently connected to the cap, a camming member operatively connected to the cylindrical lock and a pair of spring loaded locking members, each having an ear projecting from the cup for adjustable engagement of different sized filler necks.

3,402,581
KEY OPERATED LOCK

Paul E. Schweizer and Richard K. Thompson, Jr., Indianapolis, Ind., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Sept. 20, 1966, Ser. No. 580,707
13 Claims. (Cl. 70—355)

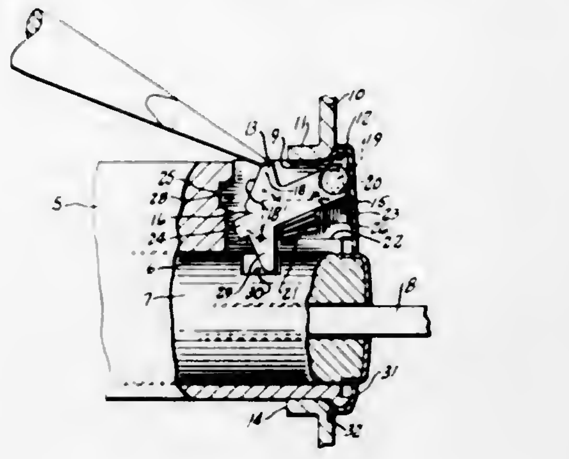


1. In a key operated lock, in combination, a bolt including a fence portion, a plurality of pivotally mounted levers each having a gate for accommodating said fence portion when said bolt is in its unlocked position, the pivot of each lever being spaced from the extended axis of said fence portion, each of said levers having a substantially circularly curved edge portion adjacent to said gate, the center of curvature of said circularly curved portion for at least one of said levers being on the extended axis of said fence portion and differing from the center of curvature of said circularly curved portions of others of said levers.

3,402,582
CYLINDER LOCK WITH IMPROVED RETAINER

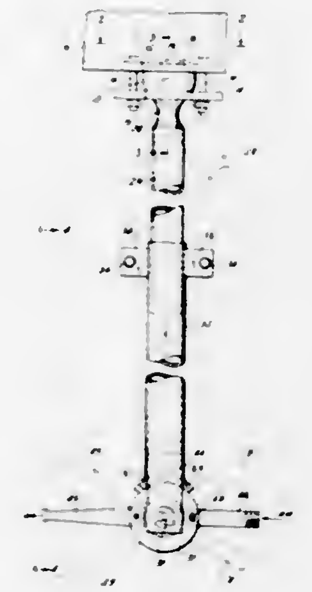
Edward N. Jacobi, Milwaukee, Wis., assignor to Briggs & Stratton Corporation, Milwaukee, Wis., a corporation of Delaware
Filed Feb. 7, 1966, Ser. No. 525,397
7 Claims. (Cl. 70—371)

The flanged casing of a tumbler lock received in a hole in a mounting panel with its flange bearing against the front face of the panel, is removably held in place by a T-shaped lever arm pivotally mounted in the lock casing. A spring under this arm yieldingly maintains the arm in a position at which one end of its head protrudes from the side of the casing to engage behind the edge of a cylindrical flange that projects rearwardly from the edge of the hole in the panel. Except in an unlocked position of rotation, the side of the rotatable cylinder of the lock blocks entry of the other end of the head on the T-shaped lever arm into the casing bore to normally prevent retraction of the arm.



3,402,583
UNIVERSALLY ADJUSTABLE PEENING STRUCTURE

Harold W. Burney, Hackensack, N.J., assignor to Metal Improvement Company, Carlstadt, N.J., a corporation of New Jersey
Filed June 22, 1966, Ser. No. 559,485
9 Claims. (Cl. 72—53)



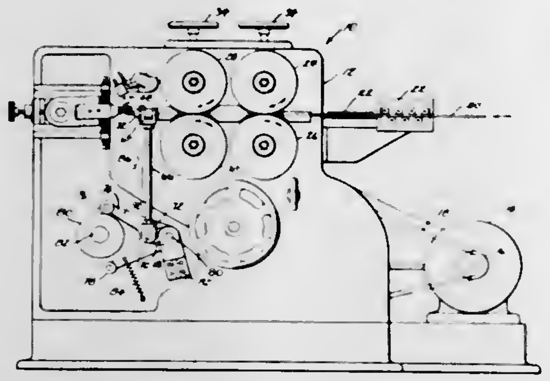
1. A substantially universally adjustable peening apparatus for projecting shot withdrawn from a supply hopper having a substantially circular outlet port comprising
  a hollow ball-element adapted to be supported adjacent to the outlet port to receive shot from the hopper,
  means for adjusting and clamping the ball-element in substantially universal selectable positions relative to the hopper outlet port,
  a shot-mixing chamber having a shot-inlet port and a fluid-inlet port and a fluid and shot outlet port substantially opposite the fluid inlet port,
  tubular means connecting the shot-inlet port and the hollow ball-element to supply shot therethrough from the hopper to the mixing chamber,

a jet projection nozzle having a feed channel leading to the mixing chamber and substantially aligned with the fluid-inlet port for ejecting shot from the mixing chamber and the nozzle, and

means for supporting the mixing chamber for rotation about an axis normal to the axis of the tubular means through a selected angular range whereby shot directed into the mixing chamber through the tubular means may be ejected from the nozzle at a selected level above or below the entrance port into the mixing chamber under the pressure of the fluid directed into the chamber.

3,402,584
SPRING COILING MACHINE

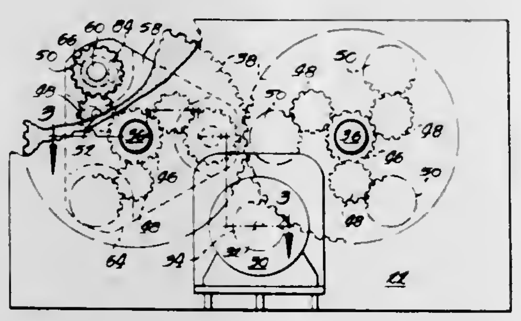
Erman V. Cavagnero, Torrington, Conn., assignor to The Torrington Manufacturing Company, Torrington, Conn., a corporation of Connecticut
Filed July 29, 1965, Ser. No. 475,721
24 Claims. (Cl. 72—137)



Spring coiling machines with separate and independent coiling and pitching tools for "non-twist" spring coiling, the coiling tool having a relatively flat wire engaging surface which does not influence pitch and first and second pitch tools provided respectively on opposite sides of the coiling tool; or, a pitch tool on one side of the coiling tool and a recoil tool on an opposite side.

3,402,585
ROTARY FORGING APPARATUS

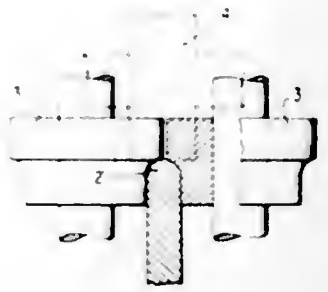
Lawrence D. Holum, Box 203, N. Main Road, Rockford, Ill. 61105
Filed Sept. 15, 1966, Ser. No. 579,762
7 Claims. (Cl. 72—198)



1. A rotary forging apparatus comprising:
(a) a frame;
(b) a pair of spaced-apart stationary shafts fixedly supported by said frame;
(c) each of said shafts rotatably supporting a driven gear;
(d) a die carrier housing rotatably supported on each of said stationary shafts, each housing connected to one of said driven gears;
(e) at least one die carrier rotatably supported by each of said die carrier housings;
(f) said die carriers on each of said die carrier housings fixedly supporting complementary forging dies, said complementary forging dies being radially spaced from said stationary shafts so as to revolve with respect to said stationary shafts on tangential arcuate paths;
(g) gear means connected to each of said stationary shafts for rotation of said die carriers with respect to said die carrier housings so as to maintain said complementary forging dies in continuous parallel relation whereby said forging dies close linearly; and
(h) means for driving said driven gears in synchronism.

3,402,586
METHOD OF MACHINING METAL PARTS

Alfred H. Müller, Walblingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Dec. 18, 1964, Ser. No. 419,515
Claims priority, application Germany, Dec. 18, 1963, D 43,195
7 Claims. (Cl. 72—225)



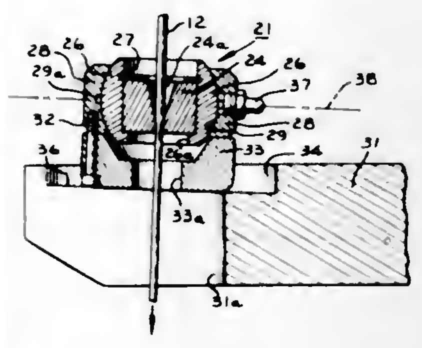
1. A method of manufacturing a metal part comprising the steps of:

cutting flat sheet metal to form a sheet metal part having opposite parallel side faces terminating at one common end in parallel cut edges, and further having an end face between the cut edges that is generally perpendicular to the side faces;

simultaneously rolling each cut edge inwardly along a line generally bisecting the angle between the respective side face and end face, forming a rounded end face.

3,402,587
WIRE DRAWING APPARATUS

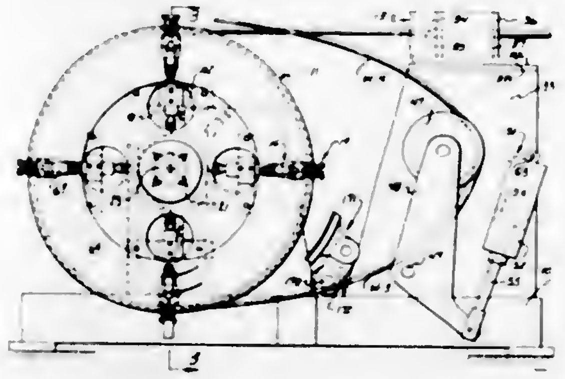
Philip E. Lawler, Papillion, Nebr., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 5, 1966, Ser. No. 540,286
4 Claims. (Cl. 72—285)



Wire drawing apparatus includes a die support slidable laterally with respect to an advancing wire and a wire drawing die mounted in a spherically shaped seat of the die support and universally movable in response to lateral forces exerted on it by the wire as the wire passes through a bore in the die. The universal mounting of the die in the spherically shaped seat is such that the initial point of contact of the advancing wire with the die is below a plane defined by transverse swivel axes of the die. Thus, the wire continually passes through the die coincident with the longitudinal axis of the bore and in a smooth and uniform manner.

3,402,588
WIRE DRAWING APPARATUS

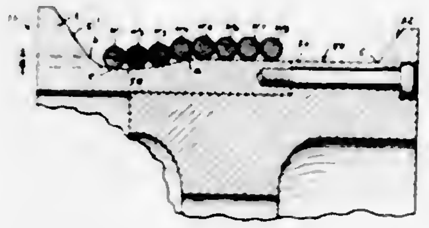
Robert M. Guthrie, Rockford, Ill., assignor to Fastener Engineers, Inc., a corporation of Illinois
Filed Jan. 17, 1966, Ser. No. 521,115
15 Claims. (Cl. 72—289)



A wire drawing apparatus in which an intermediate section of a continuous length of wire is coiled around a rotary drum for pulling the wire through a wire drawing die, and clamp mechanism is provided on the drum for clamping the wrap of wire at the outlet end of the coil to the surface of the drum. The clamps are sequentially disengaged from the wire as the clamps rotate through a preselected sector of each revolution to allow unwrapping of the wire at the outlet end of the coil from the drum as the drum rotates.

3,402,589
WIRE DRAWING APPARATUS

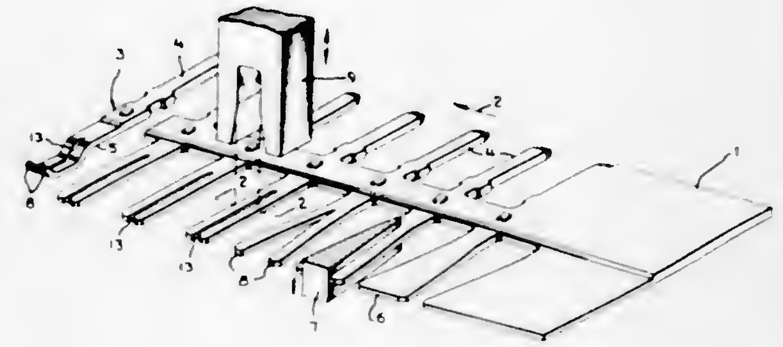
Paul R. Lathom, Rockford, Ill., assignor to Fastener Engineers, Inc., Rockford, Ill., a corporation of Illinois
Filed Mar. 17, 1966, Ser. No. 535,120
12 Claims. (Cl. 72—289)



A wire drawing apparatus in which an intermediate section of a continuous length of wire is coiled around a rotary wire drawing drum for pulling the wire through a wire drawing die. The drum has an annular wire engaging surface to receive the coil of wire and which wire engaging surface has an inlet portion at the inlet end of the coil with a diameter smaller than the outlet portion of the wire engaging surface, the inlet portion of the wire engaging surface flaring outwardly and merging with the relatively larger diameter outlet portion of the wire engaging surface to progressively enlarge the diameter of the wraps of wire as they move axially along the wire engaging surface from the reduced diameter inlet portion onto the outlet portion.

3,402,590
PRODUCING SLOTTED MATERIAL

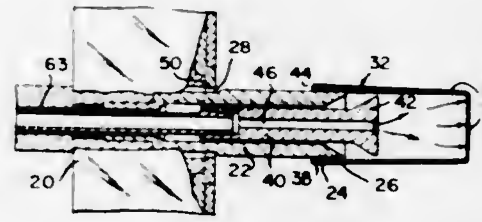
Robert John Kinkaid, New Cumberland, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Aug. 11, 1965, Ser. No. 478,811
10 Claims. (Cl. 72—330)



Slotted material is produced with a section of material being formed by the use of a blanking die to form a substantially triangular or diamond-shaped area, legs are blanked from the triangular or diamond-shaped area by a triangular or diamond-shaped blanking die with the legs extending outwardly from each other from one end in the case of the triangular-shaped area and from both ends in the case of the diamond-shaped area, and the legs are forced toward each until they are substantially parallel thereby forming a slot less than or equal to the thickness of the material.

3,402,591
APPARATUS FOR MAKING DRAWN AND IRONED CANS OR CONTAINERS

Edward G. Maeder, Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 28, 1964, Ser. No. 407,194
5 Claims. (Cl. 72—345)

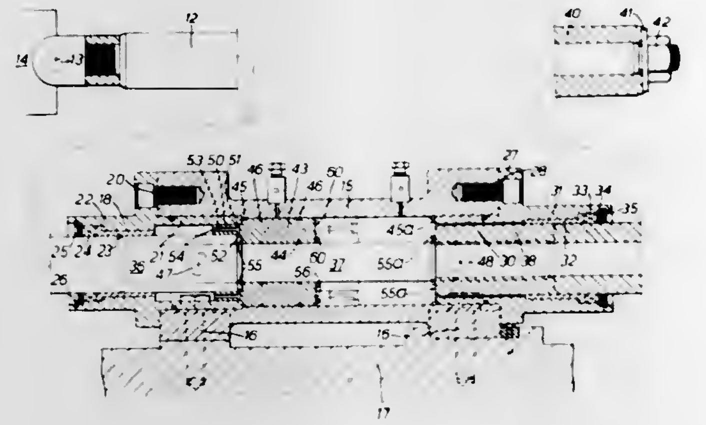


The disclosed apparatus comprises a reciprocating punch head, a set of die rings around the punch head for drawing the sidewall of the can body, and stripping means for removing the can body at the end of the drawing operation. The punch head is relieved adjacent the open end of the can body for the purpose of trickening the sidewall of the can body adjacent its open end.

3,402,592
MANIPULATORS

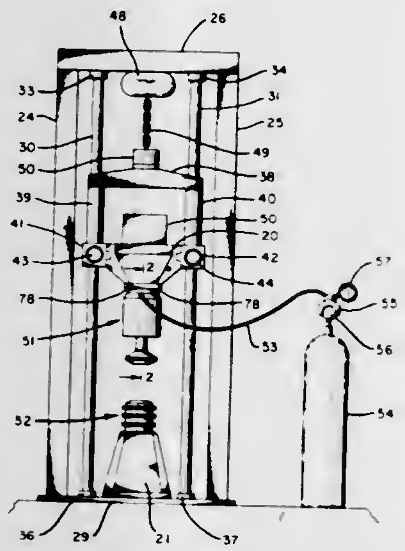
Edward Machon, Sheffield, and Bela Istvan Bathory, Wales, near Sheffield, England, assignors to Davy and United Engineering Company Limited, Sheffield, England
Filed Feb. 28, 1966, Ser. No. 530,420
Claims priority, application Great Britain, Mar. 2, 1965, 8,901/65
2 Claims. (Cl. 72—421)

This invention relates to a single acting annular piston and cylinder assembly with cushioning means connected between a peel and manipulator carriage. One side of the assembly is connected to exhaust and the other side is connected permanently to a pressure source. The assembly serves to return the peel to a datum position relative to the carriage after relative movement; in either direction of forging.



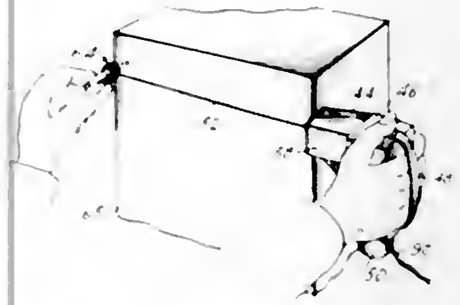
Alternatively said other side of the assembly can be connected through a valve to a pressure source or to exhaust alternately.

3,402,593
APPARATUS AND METHODS FOR SELECTIVELY PROGRAMMING DIFFERENT TYPES OF SHOCK TESTS
Frank C. Bresk, Carmel Valley, Robert P. Gray, Monterey, and John O. Beal, Carmel Valley, Calif., assignors to Monterey Research Laboratory, Inc., Monterey, Calif., a corporation of California
Filed May 24, 1966, Ser. No. 552,511
19 Claims. (Cl. 73—12)



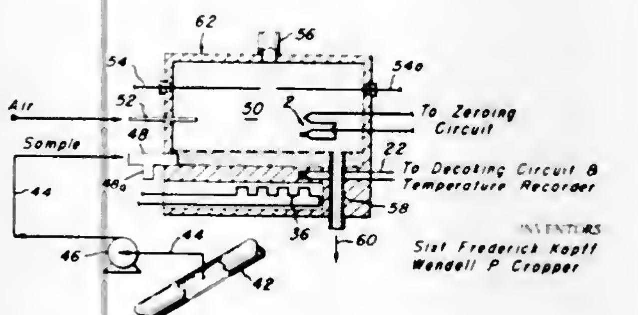
The shock testing apparatus of the present invention comprises a movable table and means for moving the table toward a reaction mass. The programmer construction comprises both a gas filled cylinder and piston unit, an an elastomer unit. The two programmer units are positioned in series between the movable table and the reaction mass so that both of the units can contribute to the formation of a shock pulse. The gas filled cylinder and piston unit controls the type of pulse shape. The cylinder for obtaining all of the various shock pulses has different inside diameter portions, and means are provided for adjusting the position of the piston in the cylinder prior to performing a desired shock test. In addition thereto, means are provided for adjusting the precharge pressure in the cylinder. These adjustments provide the means for obtaining a desired pulse shape. The elastomer unit cooperates with the cylinder and piston unit, and is further adjustable as to thickness and hardness. The adjustment of the elastomer unit is primarily to vary the duration of the shock pulse and does not vary the basic type of pulse.

3,402,594
VOLUME MEASURING DEVICE
Pierre P. Berthiaume, 3440 Toupin, St. Laurent, Quebec, Canada; William Bowler, 4371 Acadie, Pierrefonds, Quebec, Canada; and Raymond E. Kallta, 5340 Dudemaine, Apt. 22, Montreal, Quebec, Canada
Filed Sept. 21, 1966, Ser. No. 580,967
10 Claims. (Cl. 73—32)



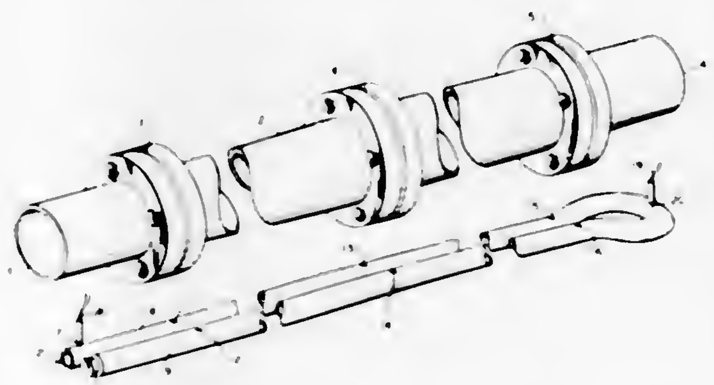
1. A device for measuring the volume of packages including a mounted bracket, a shaft rotatably mounted on said bracket, a spool mounted on said shaft to rotate therewith, a length of measuring line wound around said spool and adapted to be extended outwardly therefrom across the width, height, or depth of said package, spring means for returning said spool to a first position with said line substantially wound around said spool, a rotary electrical potentiometer mounted on said bracket and having the input shaft thereof operatively connected to be rotated by said first mentioned shaft in accordance with the extension of said line, a voltage supply connected to said potentiometer such that said potentiometer will emit a voltage output proportional to the rotation applied thereto by said first mentioned shaft, electrical circuit means connected to said potentiometer for converting three separate electrical outputs from said potentiometer into a volume reading, and switch means for applying said three separate electrical outputs into said converting means.

3,402,595
FLASH TESTING APPARATUS
Sixt Frederick Kapff, Homewood, and Wendell P. Cropper, Olympia Fields, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed May 2, 1966, Ser. No. 546,671
5 Claims. (Cl. 73—36)



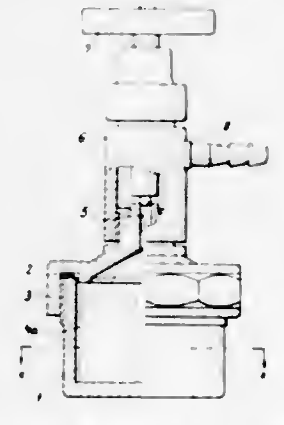
1. A closed-cup flash testing apparatus having a flash chamber, means adapted to supply test liquid to said flash chamber in communication with the flash chamber, heating means adjacent said chamber adapted to heat said test liquid, means adapted to supply combustion air to said flash chamber communicating with the chamber, spark ignition means within said flash chamber, differential thermocouple means within said flash chamber adapted to sense the occurrence of a flash, temperature recording means electrically connected to the thermocouple means in said chamber and adapted to continuously indicate the temperature of said test liquid, means actuated by said detection means after the occurrence of said flash adapted to drive said temperature recorder downscale, the peak temperature recorded being an indication of the flash point of said liquid, said means having servosystem means connected to said differential thermocouple means adapted to continually maintain the output of said differential thermocouple at zero until the occurrence of said flash.

3,402,596
LEAK DETECTION SYSTEM
George N. Woodruff, Merritt Island, Fla., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Jan. 31, 1967, Ser. No. 613,000
5 Claims. (Cl. 73—40.7)



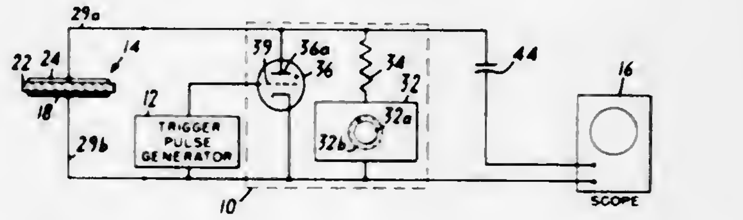
To determine the location and magnitude of a gas leak, parallel conduits are provided which extend throughout the area to be monitored or along the pipeline. The conduits are arranged in the form of a closed loop and maintained at a pressure below ambient by a vacuum pump connected to one end of the loop. At intervals along the conduits, leaks are provided in each leg of the loop which serve to introduce air and the gas to be detected into the loop. One or more detectors, sensitive to the gas or vapor to be monitored are provided, and the location of a leak which introduces gas into the loop is determined by measuring the time intervals between detector activity. The magnitude of the leak is determined by the activity of the detector.

3,402,597
METHOD AND APPARATUS FOR THE DETERMINATION OF THE MOLECULAR WEIGHT OF ORGANIC CHEMICAL COMPOUNDS
János Szilágyi and Sándor Nagy, Budapest, Hungary, assignors to Metrimpex Magyar Muszeripari Kuldereskedelmi Vallalat, Budapest, Hungary
Filed Oct. 18, 1965, Ser. No. 497,487
Claims priority, application Hungary, Oct. 26, 1964, SE–1,225
2 Claims. (Cl. 73—53)



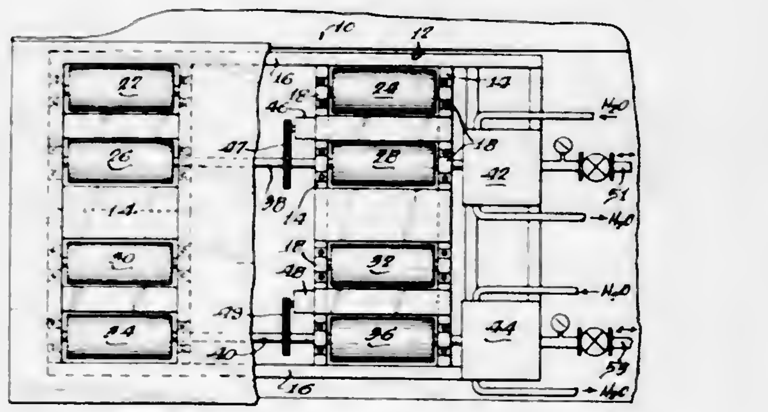
Three vessels are disposed in a closed and evacuated chamber. The tops of the vessels are open to communicate with each other within the chamber. Two vessels contain solutions of different but known molarities and known molecular weight. The third vessel contains a known weight of a substance of unknown molecular weight, in solution in the same solvent as in the other two vessels. The three vessels are maintained in vapor communication with each other until there has been substantial progress toward equilibrium, that is, until the mol concentrations move toward equality with each other with the remaining differences in mol concentrations moving themselves toward equality with each other. A comparison of the weight of the three vessels before and after provides data for the calculation of the unknown molecular weight.

3,402,598
NONDESTRUCTIVE MEASUREMENT OF MATERIAL STRENGTH
Stirling A. Colgate, Socorro, N. Mex., assignor to Colgate Research & Development Co., Princeton, N.J., a limited partnership of New Jersey
Filed Aug. 11, 1965, Ser. No. 478,882
10 Claims. (Cl. 73—67.8)



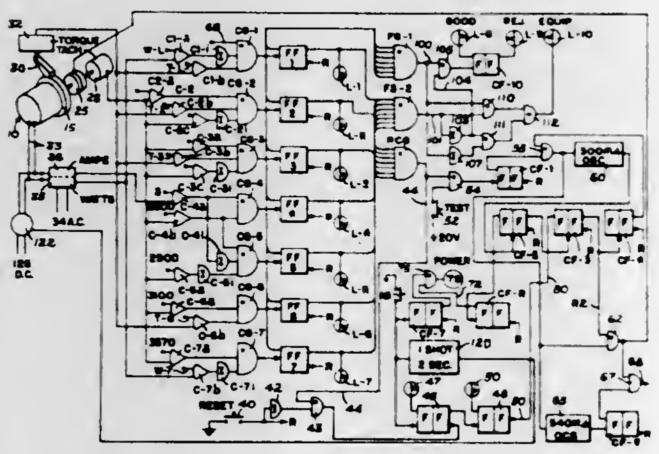
Method and apparatus for the determination of the strength and interior characteristics of a material, in which pulses of ultrasonic pressure waves of controlled intensity are focused by a convex lens and transducer array at a small region, generally on the order of one cubic wavelength of the ultrasonic pressure wave, within the material whose properties are to be determined. The intensity of the generated pressure waves is gradually increased while the reflections of the pressure waves from the focal region are monitored. When the focused pressure waves are of an intensity sufficient to cause localized deterioration in the small region, an ultrasonic reflection is received by the transducers to generate a signal for display on a suitable instrument. At that instant, the known intensity of the pressure waves can be correlated to the strength of the material under test.

3,402,599
VEHICLE TESTING UNIT
Charles W. MacMillan, Rock Island, Ill., assignor to Bear Manufacturing Company, Rock Island, Ill., a corporation of Delaware
Filed Apr. 5, 1966, Ser. No. 540,297
6 Claims. (Cl. 73—117)



A vehicle chassis dynamometer having means for determining both wheel speed and torque, thereby to provide a direct indication of vehicle horsepower output, is herein characterized, first, by improved means for field calibration of the device of such simple character that calibration can be checked and corrected by a regular operator, without necessity for calling in a factory representative or other specialist; and second, by a twin-axle chassis dynamometer utilizing only one set of instruments and including individual calibration means and a switchover structure whereby the output of each axle may be selectively and substantially instantaneously indicated for purposes of independent test and rapid comparison of the output of the two axles.

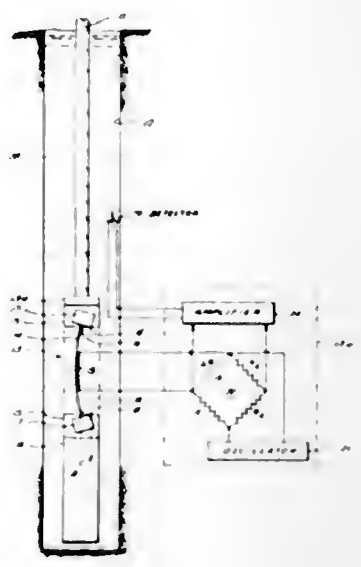
3,402,600
ELECTRIC MOTOR TESTING APPARATUS
Stuart E. Athey, Troy, Ohio, assignor to The Hobart Manufacturing Company, Troy, Ohio, a corporation of Ohio
Filed June 24, 1966, Ser. No. 560,308
12 Claims. (Cl. 73—133)



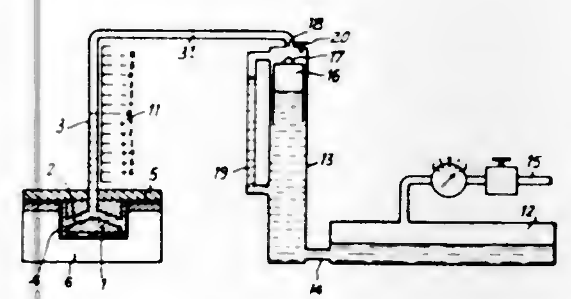
The application discloses a novel testing apparatus capable of rapid dynamic testing of electric motors, including performance of a locked rotor torque test if desired. The motor under test is driven through a complete excusion of its torque speed curve under inertial loading, permitting quick testing, since an electric motor will accelerate to its rated speed along this same curve under any inertial load. In some cases the rotor mass itself may be sufficient inertial load. The load required for the test need be only sufficient to cause the motor to transverse its acceleration curve slowly enough to accommodate the response time of the transducers used. The testing procedure is a go-no go logic arrangement, incorporating readily available items and commercially available transducers. At the end of each test the motor is dynamically braked, thereby removing the energy created during the test as heat energy in the motor.

3,402,601
TENSION MEASURING DEVICE
Kurt W. Heineman, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Oct. 28, 1965, Ser. No. 505,550
3 Claims. (Cl. 73—143)

In accordance with an illustrative embodiment of the invention, tension measuring apparatus is shown which provides two separate degrees of resolution for measured loads. This is especially desirable for measuring the tension between a cable and a tool supported on the end of the cable. To accomplish this, a curved load bar having a fiber expansion element attached thereto is held at both ends thereof by a pair of load transmitting means which are pivoted on a pair of rigid members attached to the cable and tool. By so doing, a combination of tensile and bending stresses act on the curved load bar until it straightens out, at which time the bending stress becomes nonexistent leaving only the tensile stress.



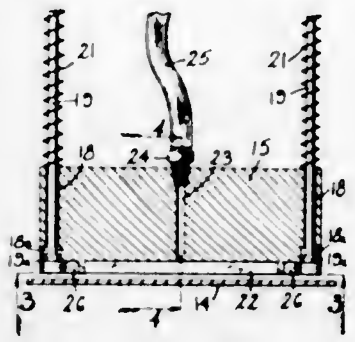
3,402,602
HYDROPNEUMATIC APPARATUS FOR MEASURING VOLUME VARIATIONS OF A CAVITY FROM A STANDARD
Gaetan de Coye de Castelet, Billancourt, Hauts-de-Seine, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed June 28, 1965, Ser. No. 467,274
Claims priority, application France, Aug. 19, 1964, 985,592
2 Claims. (Cl. 73—149)



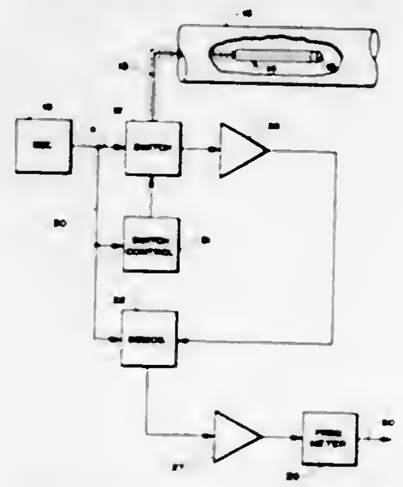
A hydropneumatic apparatus for measuring volume variations of a cavity relative to a standard includes a mass having a flexible membrane mounted thereon. The mass and membrane are introduced into the cavity to be measured and the membrane is inflated by pressurized fluid to substantially fill said cavity. The fluid required to fully inflate the membrane is measured to determine the exact volume of the cavity.

3,402,603
DETECTION SYSTEM
Allen R. Hollister, East Hartford, and William J. Blaiklock, Collinsville, Conn., assignors to Pratt & Whitney Inc., West Hartford, Conn.
Filed Mar. 24, 1966, Ser. No. 537,203
7 Claims. (Cl. 73—159)

This disclosure relates to a detecting system of a pinhole type wherein a detecting head is formed with a first orifice in the underside thereof and a second orifice surrounding said first orifice. Air under pressure is provided to the second orifice to establish a curtain of isolating air around the first orifice and to cushion the head above the test material. Air under pressure is also applied to the first orifice and any change in the pressure of the air supplied to the first orifice is detected.

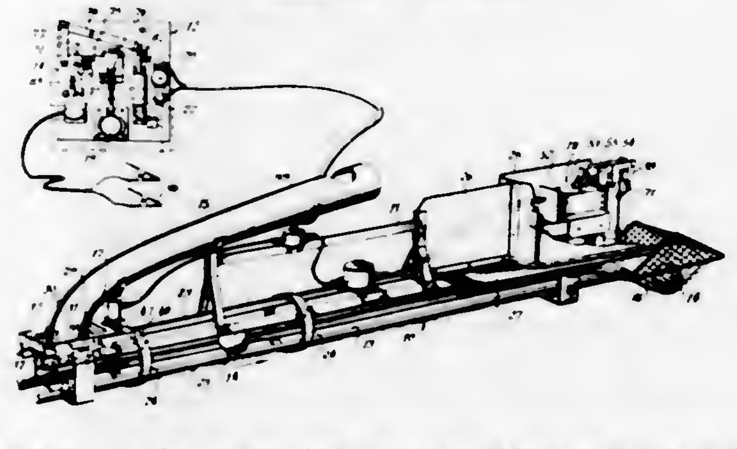


3,402,604
FLOWMETER
Alan R. Kahn, Fullerton, and Max D. Liston, La Habra, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed June 28, 1965, Ser. No. 467,554
5 Claims. (Cl. 73—194)



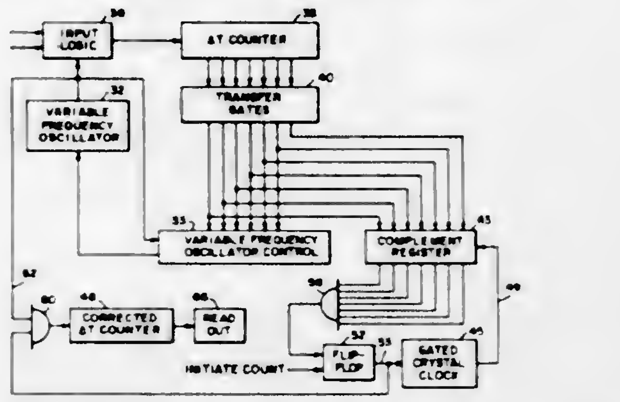
A pulsed ultrasonic flowmeter for measuring flow of fluids using a single crystal transducer to which a train of pulses is applied for a predetermined period of time after which the transistor is switched to an amplifier through a switch control synchronized by the oscillator. The signal received through the amplifier is then compared with the original signal and the difference applied to a discriminator which provides an output signal that is a linear function of fluid velocity.

3,402,605
MEASUREMENT OF CURRENTS IN LIQUIDS
Randolph H. Baker, Efford Lodge, Plymouth Road, Crabtree, Plymouth, Devonshire, England
Filed Dec. 9, 1965, Ser. No. 522,999
9 Claims. (Cl. 73—194)



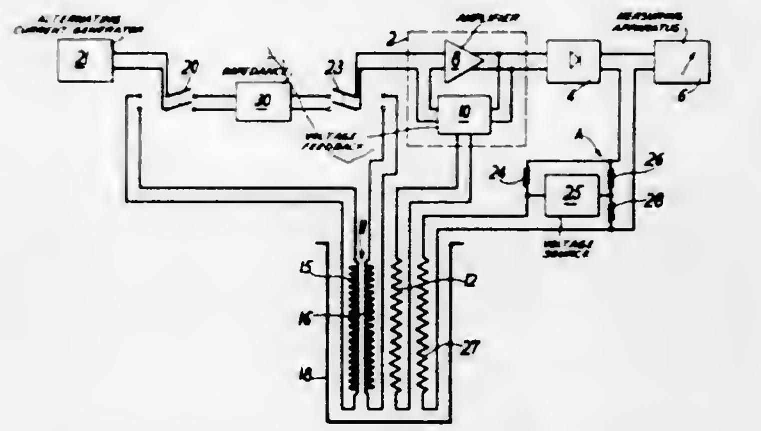
Apparatus for measuring the rate of flow of liquid by releasing movable bodies one-by-one at the upstream end of a straight guide path held horizontal and aligned with the direction of liquid flow and measuring the time taken by them to traverse the guide path.

3,402,606
FLUID VELOCITY MEASURING SYSTEM
Peter Joseph Bruha, Severna Park, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 3, 1966, Ser. No. 569,996
6 Claims. (Cl. 73—194)



Opposed transducer stations in a fluid medium simultaneously project an acoustic signal towards one another and thereafter produce respective first and second received signals, the time occurrence of which is dependent upon the velocity of the fluid medium. A primary digital counter counts up the output of a variable frequency oscillator for a time period commencing with the first received signal and ending with the second received signal. The complement of the count in the primary digital counter is transferred to a complement register which thereafter counts up the output of a stable crystal oscillator until the complement register is full, at which time the crystal oscillator is turned off. The time period beginning with the turning on of the crystal oscillator and ending with the turning off of the crystal oscillator is used to gate the output of the variable frequency oscillator to a secondary digital counter. After the time interval the secondary digital counter has a count which is indicative of fluid velocity and which count is totally dependent of the speed of sound in the fluid under test.

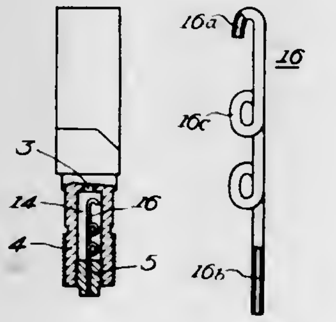
3,402,607
COUPLED INDUCTANCE LEVEL INDICATOR FOR LIQUID METALS
Etienne Cambillard, Fontenay-aux-Roses, Jean-Paul Le Frere, L'Hay-les-Roses, Jacques Lelong, Antony, and Roger Morisset, Villiers-le-Bel, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Oct. 19, 1966, Ser. No. 587,797
Claims priority, application France, Nov. 4, 1965, 37,333
5 Claims. (Cl. 73—304)



A level indicator for liquid metals avoids temperature effects by using coupled inductances in which the output coil of the inductances is connected to a positive reaction amplifier or to a negative reaction amplifier so that the derivative dU_s/dN of the voltage U_s as supplied by the output coil of the inductances with respect to the measured height N of the liquid metal increases or decreases algebraically when the temperature rises. Compensation is provided for variation in voltage in respect to a zero level when a temperature variation occurs.

3,402,608
DAMPING DEVICE OF A POINTER FOR A PRESSURE GAUGE

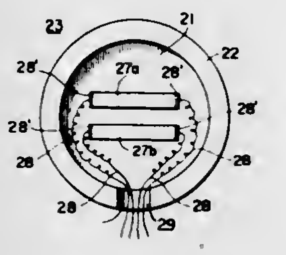
Seiji Nishigori, 2570 5-chome, Kamimeguro, Meguro-ku, Tokyo, Japan
Filed Sept. 17, 1965, Ser. No. 488,119
Claims priority, application Japan, Sept. 18, 1964, 39/53,044
1 Claim. (Cl. 73—392)



This damping device for a pressure gauge includes a coiled elastic capillary tube connected in the gauge for flow of the pressure fluid therethrough. The coiled tube elongates by its resistance to the flow of pressure fluid therethrough which is discharged from the free open end of the capillary tube to flow to the pressure gauge.

3,402,609
SEMICONDUCTOR MECHANICAL-TO-ELECTRICAL TRANSDUCER

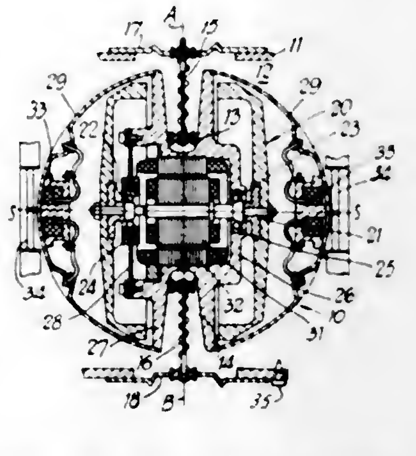
Takewo Chiku, Nishikamo-gun, and Isemi Igarashi, Nagoya, Japan, assignors to Kabushiki Kaisha Tokota Chuo Kenkyusho, Aichi Prefecture, Japan
Filed Sept. 16, 1965, Ser. No. 487,693
Claims priority, application Japan, Sept. 29, 1964, 39/55,526; Oct. 29, 1964, 39/61,411
10 Claims. (Cl. 73—398)



A mechanical to electric transducer comprising a pair of resilient diaphragms having different thickness and in opposed, closely spaced relationship, and at least one strain sensing element of semiconductive material attached on the inner surface of each diaphragm. The strain sensing elements are equal in properties to each other and electrically connected to provide a difference between outputs from the elements on the two diaphragms due to surface strains in the diaphragms caused by a pressure to be measured. The diaphragms have nearly free-edge mounting characteristics so that the conversion sensitivity is increased.

3,402,610
GYROSCOPES

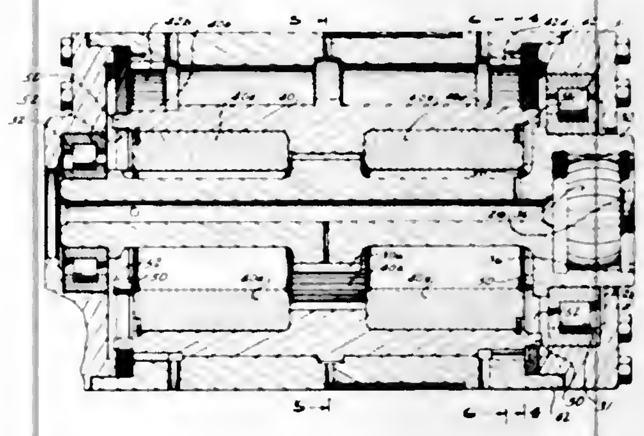
Douglas Barnett, Watford, England, assignor of one-half to S. G. Brown Limited, Watford, England, a British company
Filed Mar. 23, 1966, Ser. No. 536,694
Claims priority, application Great Britain, Mar. 24, 1965, 12,474/65; Apr. 22, 1965, 16,976/65
10 Claims. (Cl. 74—5)



In a flotation type gyroscope wherein the rotor is located in a sealed casing in liquid suspension in a tank, the movement of the centre of gravity of the casing caused by a variation in temperature is compensated by spacing the centre of gravity and also the centre of buoyancy of the casing at such horizontal distances from an axis about which the casing can tilt that a change in the gravity torque about the axis due to the movement of the centre of gravity caused by the temperature variation is equaled or approximately equaled by a change in the buoyancy torque due to the change in the density of the liquid caused by the temperature variation.

3,402,611
GEAR ENGAGEMENT GUIDE MECHANISM FOR GEAR-TYPE ORBITING-MASS OSCILLATOR

Otto K. Schwenzfeler, Chula Vista, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Oct. 6, 1966, Ser. No. 584,859
7 Claims. (Cl. 74—61)



1. An orbiting-mass oscillator for generating sonic vibrational energy, comprising:

a housing member having a circular bearing race formed in the inner walls thereof, a gear ring, said gear ring being mounted in said bearing race;

a rotor member contained in said housing, said rotor forming a substantially cylindrical roller adapted to roll around on said bearing race, the diameter of said cylindrical roller being substantially less than the diameter of said bearing race, a circular gear ring running around the periphery of said roller, said gear ring being adapted to matingly engage the gear ring mounted in said bearing race;

drive means for causing said rotor to roll around on said race; and

guide means for holding the gear teeth of said gear rings in engagement with each other, said guide means comprising:

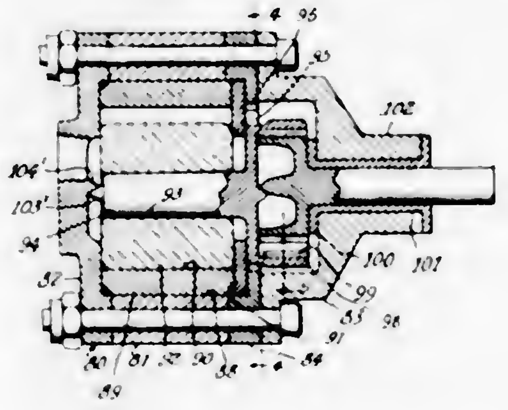
a plurality of spaced pin elements extending from one of said members along axes substantially parallel to the rotation axis of said rotor member, said pin elements being arranged in a circle; and

an annular structure having a plurality of scalloped segments formed therein attached to the other of said members, said segments forming a ring and being positioned to engage said pin elements, there being one less of said pin elements than of said segments,

whereby said pin elements slidably engage said segments as said rotor is rotated to hold said rotor with the gear teeth of said gear rings in engagement with each other at all times.

3,402,612
GEARED OSCILLATOR FOR RESONANT SYSTEMS

Albert G. Bodine, Los Angeles, Calif.
(7877 Woodley Ave., Van Nuys, Calif. 91406)
Continuation-in-part of application Ser. No. 370,217, May 26, 1964. Division of application Ser. No. 402,474, Oct. 8, 1964, now Patent No. 3,299,722, dated Jan. 24, 1967. This application Dec. 6, 1966, Ser. No. 599,612
8 Claims. (Cl. 74—87)



The output of a vibration generator is coupled to a resonant member in a region thereof having significant resonant pattern motion. The vibration generator comprises a rotor member which is driven orbitally around a raceway bearing formed in the generator body. The rotor has a planetary gear thereon which meshes with a mating internal gear on the vibration generator body. Rotational input for the rotor is provided through an input gear which meshes with a drive gear attached to the rotor.

3,402,613
DIFFERENTIAL SCREW WITH VARIABLE ADJUSTMENTS

Robert H. Neusel, Palos Verdes, and Gordon J. Hunt, Redondo Beach, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Aug. 1, 1966, Ser. No. 569,365
3 Claims. (Cl. 74—89.15)

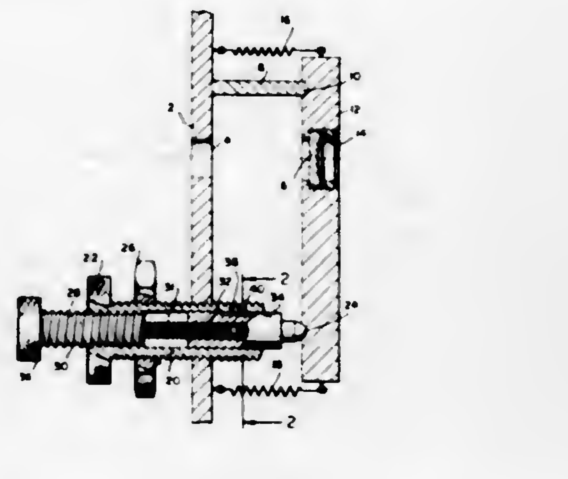
1. A differential screw with variable adjustments which comprises;

a first longitudinal member, said member having threads on the exterior thereof and a longitudinal bore therethrough, said bore being threaded on a portion thereof whereby to receive an exteriorly threaded member,

a second longitudinal member, said second member having a first portion with exterior threads thereon received by the threaded bore of said first member, said second member having a second portion with exterior threads thereon, said threads having a pitch different from that of the threads on said first portion,

a third longitudinal member having interior threads thereon corresponding to the threads on said second portion of said second member and slidable axially within said first member when said second member is rotated relative to said first member, and

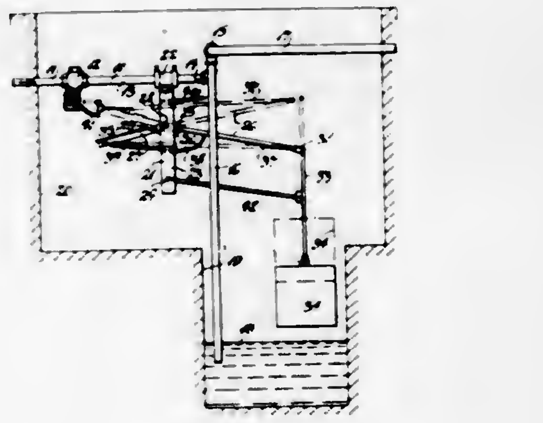
means to prevent rotation of said third member relative to said first member,



whereby rotation of said first member within a correspondingly threaded structure will move said first member, second member and third member a predetermined axial distance for each revolution of said first member and rotation of said second member relative to said first member will move said third member a second predetermined distance for each revolution of said second member.

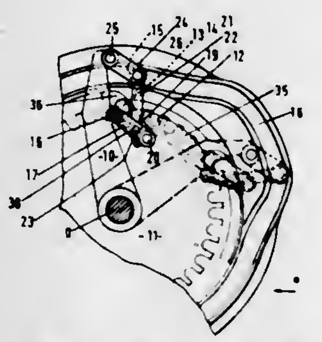
3,402,614
SNAP ACTION TOGGLE ASSEMBLIES

Richard E. Malette, Scarborough, Ontario, Canada, assignor to Rem Insulating Systems Limited, Etobicoke, Ontario, Canada
Continuation of application Ser. No. 499,227, Oct. 21, 1965. This application Aug. 4, 1967, Ser. No. 658,578
1 Claim. (Cl. 74—100)



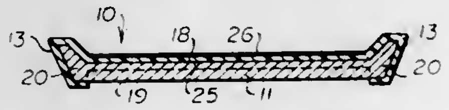
Mounted at their co-incident inner ends for limited rotation above and below the horizontal, and about a common pivotal point, upon an elongated vertical support are two oppositely projecting arms. A spring, held in tension extends between the outer ends of said arms. Stop means projecting from the support limit the rotation of the arms under the bias of the spring. A stabilizing link also projects pivotally from one side of the support parallel with and spaced from the arm on the same side. The outer ends of the bar and arm are connected by a rod, and together with the support form a parallelogram.

3,402,615
INTERMITTENT DRIVING MECHANISM
Matthew Parker, Leeds, England, assignor to Formmaster Limited, Petersborough, England, a British company
Filed Apr. 4, 1966, Ser. No. 539,759
Claims priority, application Great Britain, Apr. 12, 1965, 15,532/65
12 Claims. (Cl. 74—125.5)



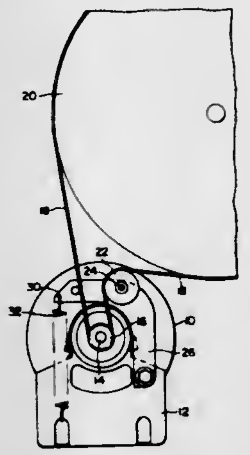
An intermittent driving mechanism comprises a continuously rotating driving member selectively periodically connected to rotate a coaxial driven member having a slotted periphery by a cam controlled system of pivoted links, and a cam operated lock for the driven member is provided for insuring proper registration of the driven member and the linkage at each drive period.

3,402,616
MANUFACTURE OF VARIABLE SPEED BELTS
William C. Prior, Chagrin Falls, Ohio, assignor to Speed Selector, Inc.
Filed Dec. 2, 1965, Ser. No. 511,073
17 Claims. (Cl. 74—233)



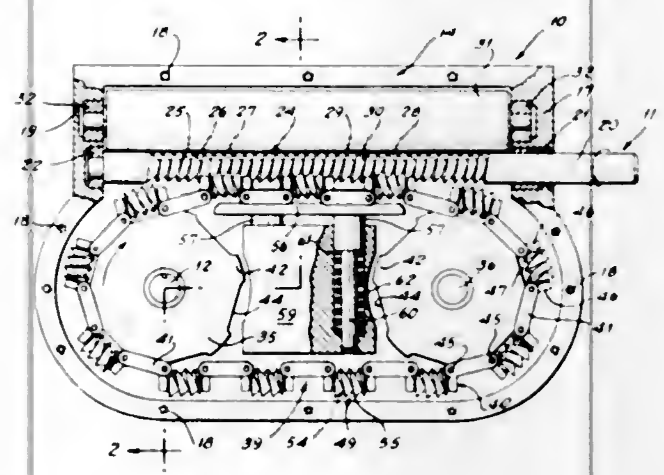
A drive belt and method of construction including a plurality of rigid, transversely extending stiffening elements spaced throughout the extent of the belt, a flexible web formed of a molded elastomer extending between and connecting the elements together, and a non-extensible, load-carrying belt portion overlying the web and preferably exposed on the outer surface of the belt.

3,402,617
CLOTHES DRYER DRIVE ARRANGEMENT
Clyde C. Fox, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 12, 1966, Ser. No. 520,107
3 Claims. (Cl. 74—227)



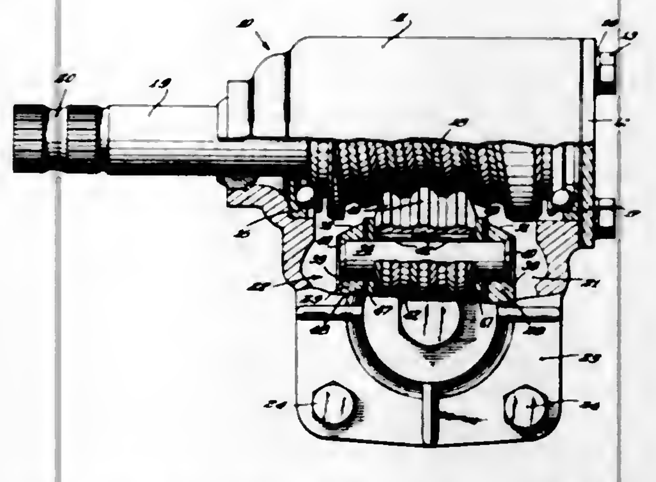
Belt-tensioning, idler pulley arrangement, for a tumbler type clothes dryer, the idler pulley being mounted on an angular outline, substantially planar arm having one end pivotally mounted to the motor base end at one side of the drive motor pulley, the other end of the arm being connected to the motor base end by a tension spring secured to the motor base end at the other side of the drive motor pulley.

3,402,618
VARIABLE GEARING MECHANISM
William J. Roantree, Port Washington, N.Y., assignor to Roantree Electro-Mech Corporation, Port Washington, N.Y., a corporation of New York
Filed Apr. 24, 1967, Ser. No. 633,064
9 Claims. (Cl. 74—424.7)



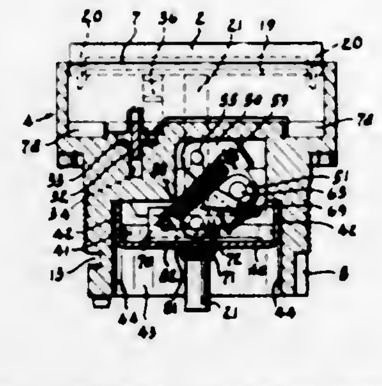
A variable speed rotary gearing mechanism of the differential type. The mechanism includes a rotatably driven axially fixed lead screw. A member having one or more screw threaded parts rotatable about their axes which mesh with and drivingly engage the thread on the lead screw moves along the lead screw at a speed which is a function of the ratio of the diameters of the zones of driving engagement of the lead screw and the screw threaded part or parts of the member. Means is provided for converting the linear movement of the part or parts of the member longitudinally of the lead screw to rotary movement of an output shaft. The speed of the output shaft is varied either automatically or manually by varying the ratio of the diameters of the lead screw and the screw threaded part or parts at their zone of driving engagement.

3,402,619
SIDE WASHER FOR WORM AND ROLLER STEERING GEARS
Douglas P. Thurley, Lebanon, and Ronnie H. Smith, Old Hickory, Tenn., assignors to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed Apr. 3, 1967, Ser. No. 627,947
13 Claims. (Cl. 74—425)



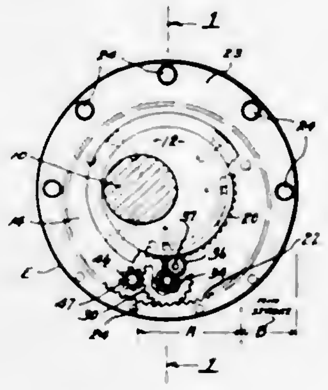
A roller tooth for use in a worm and roller type gear assembly wherein a flat thrust washer having a radial antifriction surface is inserted between the roller tooth and the side walls of the cross shaft pocket and wherein antirotation means are provided to prevent rotation of the thrust washer with respect to the shaft ear, thereby to cause all relative rotation to occur at the radial antifriction face of the thrust washer.

3,402,620
PUSHBUTTON ELECTRIC SWITCH OPERATOR WITH MAINTAINING MECHANISM
Roy A. Mukai, Milwaukee, Allan P. Charbonneau, Wauwatosa, Joseph F. Waldorf, New Berlin, and Robert Pearson, Milwaukee, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Feb. 4, 1966, Ser. No. 525,162
9 Claims. (Cl. 74—483)



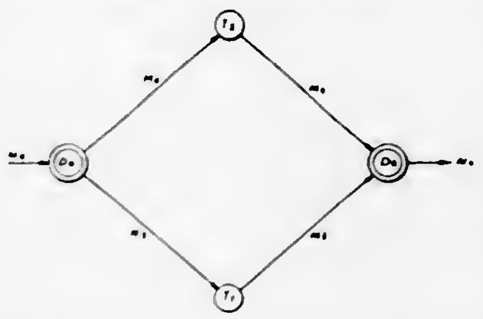
A two-button, one-hole mounting assembly having switch units attached to the rear thereof for reciprocable actuation by one of the buttons. Depression of the actuating button extends a foldable over-center linkage which is biased to travel beyond the center position to abut against a stop to lock the linkage in the extended position and maintain the actuator button depressed. Depression of the second button cams the linkage back to the other side of the center position to allow the linkage to collapse and the actuator button to return.

3,402,621
ADJUSTABLE ECCENTRIC
Robert C. Johnson, Chagrin Falls, and Robert E. Requarth, Fairview Park, Ohio, assignors to Standard Pressed Steel Co., Jenkentown, Pa., a corporation of Pennsylvania
Filed Jan. 5, 1966, Ser. No. 518,814
8 Claims. (Cl. 74—571)



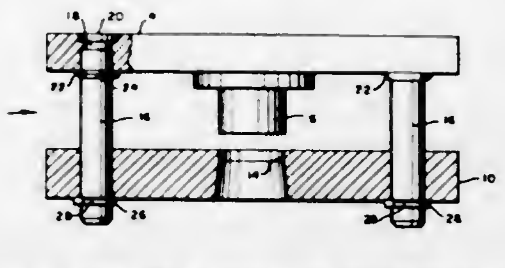
A variably adjustable eccentric mechanism including a rotary shaft, a first eccentric secured to the shaft, a second eccentric rotatably mounted on the first eccentric, and a third eccentric rotatably mounted on the second eccentric. The rotatable eccentrics may be locked in any preselected rotative position by adjustable locking gears including a spur gear on the first eccentric, an internal gear on the third eccentric, and a locking ring gear on the second eccentric having external teeth meshable with the internal gear and having internal teeth meshable with the spur gear. The ring gear is movable axially into meshing engagement with the spur gear and the internal gear to lock the rotatable eccentrics in selective rotative positions. Rotation of the second and third eccentrics to selective rotative positions is effected with a coacting gear train suitably connected to the first eccentric and to the second and third eccentrics, such gear train being manually operable.

3,402,622
AUTOMATIC AND CONTROLLABLE MECHANICAL CONTINUOUS TRANSMISSION SYSTEM
José Luis Matut Archanco, Avenida de Nazaret 6, Madrid, Spain
Filed May 16, 1966, Ser. No. 550,468
Claims priority, application Spain, Jan. 28, 1966, 322,388
7 Claims. (Cl. 74—801)



A mechanical system of automatic, continuous and controllable transmission comprising a driving shaft having the sun gear of a first epicyclic differential. A driven shaft having the sun gear of a second epicyclic differential. Two corresponding sets of planet gears and a component into which are set all the planet-carrier axles of both said sets. An orbit gear has two internal coaxial rows of teeth. The two casings mounted on the orbit gear enclose and operate the sun gears and the corresponding driving and driven planet gears thereby forming a transmission wherein the elements are mobile with the trajectories of every part of every one of the components running in parallel planes and perpendicular to all the axes and the driving sun gear meshes with its corresponding planet gears, which in turn, mesh with the corresponding ring of teeth in the orbit gear, and then rotate about their fixed planet-carrier axles so that due to the "rotation" and "translation" of said planet gears, the revolutions of said driving sun gear causes said orbit gear and planet carrier to rotate, and due to said driven planet gears, the revolutions of said orbit gear and said planet-carrier produce the movement of said driven sun gear.

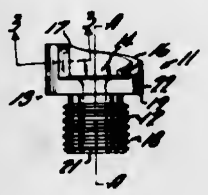
3,402,623
METHOD OF MAKING A DIE SET
Edward D. Bennett, 1053 Coolidge Ave., Union, N.J. 07083
Filed July 18, 1966, Ser. No. 565,995
4 Claims. (Cl. 76—107)



A method of making a punching apparatus is provided in which a parallel plate die set is formed in which the assembled die is capable of having the cutting section formed in a prehardened steel one-piece die plate after the die set alignment is determined.

3,402,624
CHAMFERING TOOLS

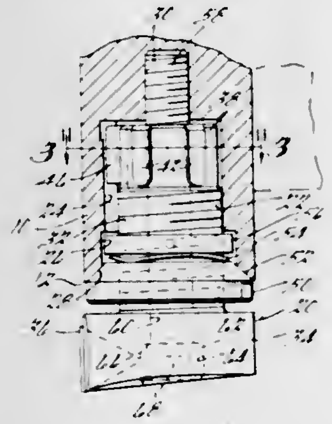
Jack Bollito, Oak Lawn, Joseph Heinlein, Oak Forest, and Charles R. Demmett, Lyle, Ill., assignors to J & J Tool Co., Chamfering Division, a partnership
Filed Sept. 11, 1967, Ser. No. 666,847
8 Claims. (Cl. 77—73)



A deburring tool having three cutting edges integrally combined for simultaneously reaming, finish cutting, and deburring pipe, tube or conduit stock.

3,402,625
ADJUSTABLE CUTTING TOOL

Allen N. Sweeny, Grosse Pointe Farms, Mich., assignor to De Vlieg Machine Company, Royal Oak, Mich., a corporation of Michigan
Filed Oct. 12, 1966, Ser. No. 586,263
6 Claims. (Cl. 82—36)

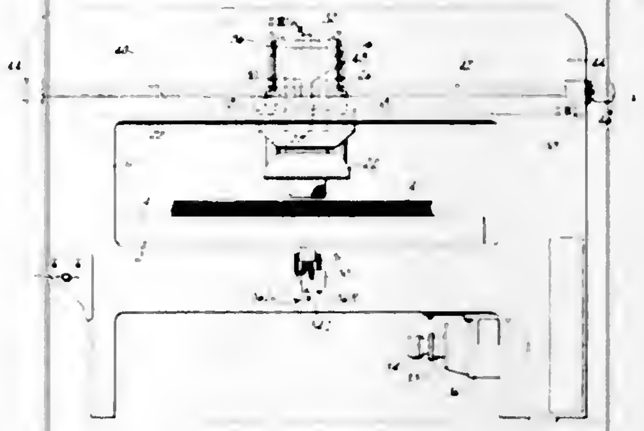


1. An adjustable cutting tool assembly including a mounting member having a bore and a seat located at one end of said bore, a threaded tool supporting body received in said bore and projecting from said bore at the forward end thereof, interengaging means on said member and said body nonrotatably supporting said body for axially sliding movement in said bore, an adjusting collar threaded on said body and engageable with said seat to position said body axially of said bore, said body having an opeing extending axially therethrough and a locking screw extending through said opening and threadably engageable with means carried by said member, said screw having a head exposed to the forward end of said body and being operable to bias said body inwardly of said bore and hold said collar against said seat.

3,402,626
CONTROLS FOR CUTTING PRESSES

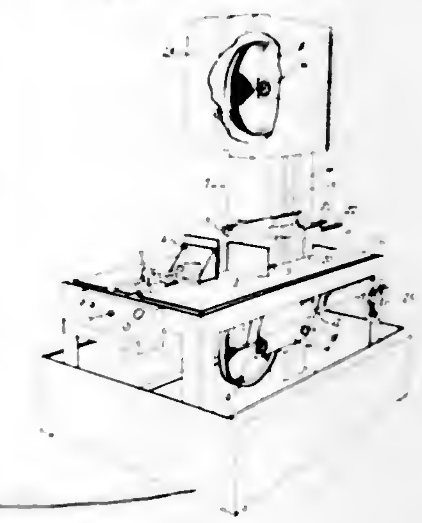
David E. Banks, Hamilton, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed Oct. 20, 1966, Ser. No. 588,062
6 Claims. (Cl. 83—57)

1. In a cutting press of the traveling head type having a relatively wide cutting bed and a presser member movable in traverse across the bed and toward and away from said bed in cutting strokes for pressing a die carried thereby through a work piece in various locations widthwise of said bed and power means for moving said presser member in traverse and toward and away from said bed, in combination therewith, control means for regulating the movements of said presser member, said control means including program means and a controller, said controller having manually actuatable signal means communicating with said control means and being movable independent of said presser member along said cutting bed for operation by an operator in the normal course of attending the cutting operation at various locations on said bed, said control means being operable in response to actuation of said signal means to effect and interrupt movement of traverse of said presser member selectively in one or the other direction, to initiate a sequence of movements under the control of said program means, said sequence comprising movement of said presser member toward and away from said bed in a cutting stroke followed by movement of traverse of said presser member in a preselected direction, and to interrupt said movement of traverse.



3,402,627
BAND SAW WITH IMPROVED BAND WHEELS

LaRoy E. Robinson, Hopkins, and Albert D. Mills, Minnetonka, Minn., assignors to Continental Machines, Inc., Savage, Minn., a corporation of Minnesota
Filed Aug. 8, 1966, Ser. No. 571,067
1 Claim. (Cl. 83—201.14)

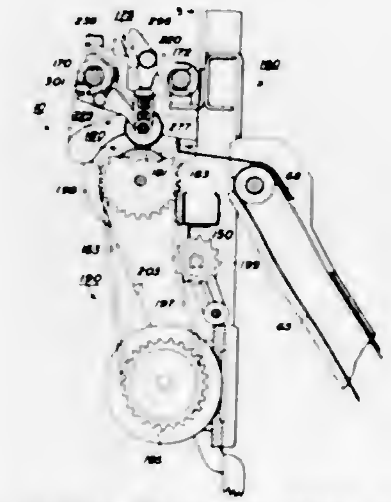


A tilting band saw having improved band wheels is disclosed. The band wheels are provided with circumferential backup and retainer flanges encircling the rim of each wheel and spaced apart a distance greater than the width of the saw band.

3,402,628
CUTTING APPARATUS

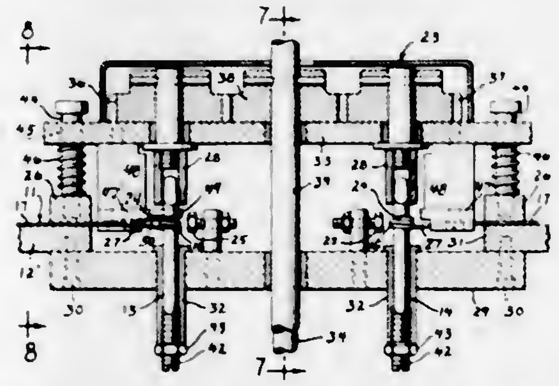
Thomas P. Redding, Penfield, and Donald W. Tates, Fairport, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 11, 1966, Ser. No. 585,885
3 Claims. (Cl. 83—434)

1. Apparatus for cutting sheet material moving rapidly along a path of travel comprising
- a frame,
- support means mounted on said frame and adapted for movement transverse to the path of the sheet material,
- a backing roller having a resilient covering therearound rotatably supported on said frame and adapted to advance a sheet of material urged into pressure contact therewith,
- cutting means pivotally mounted on said support means to move from a first position abutting against said backing roller with a predetermined pressure to a second position spaced therefrom,
- said cutting means including an arm portion having a coil spring mounted thereon and a pin member coaxially received by said coil spring and operative to exert a compression force thereon,
- said arm portion having a raised shoulder portion formed therein adjacent said coil spring,
- cam means pivotally mounted on said support means and movable from a first position in abutting relation with said pin member to compress said coil spring to urge said cutting means into predetermined pressure contact with said backing roller to a second position releasing said coil spring from compression and engaging said shoulder portion on said arm portion to retract said cutting means out of contact with said backing roller.



3,402,629
PREASSEMBLED PIANO STRINGS WITH TUNING PIN OR PINS ATTACHED AND METHOD OF MANUFACTURE

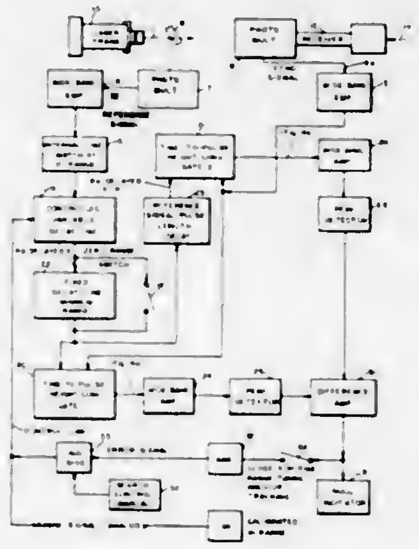
Joseph S. Gebbia, 809 Seminary St., Rockford, Ill. 61108
Filed Apr. 29, 1964, Ser. No. 363,396
19 Claims. (Cl. 84—197)



To save time and expense, and at the same time improve the resulting piano by eliminating the twist in the strings that resulted inevitably with the old hand wound method, this invention provides for precutting of all strings to required lengths, and preassembling of strings on pins by the machine winding of closely and uniformly coiled ends of each string on the tuning pins. Base strings requiring only one tuning pin are made otherwise the same way. All of the strings are cut to the correct lengths and with the coils uniformly wound in tight abutment on the tuning pins, with the strings in relaxed untwisted condition during the coiling, accurate tuning is possible and a big saving in time and money is realized, and workmen don't suffer cuts and scratches, which were always a hazard with the old method due to the cut ends of the wire being so sharp. The resulting piano is also improved due to the fact that the tuner never need compromise and settle for some vibration period as close to what is correct as might be possible, where the note is not too far off on the flat side or on the sharp side.

3,402,630
OPTICAL RADAR RANGING SYSTEM

Donald Z. Blau, Mount Vernon, and Robert A. Flower, White Plains, N.Y., assignors to General Precision Systems Inc., a corporation of Delaware
Filed Feb. 5, 1965, Ser. No. 430,573
3 Claims. (Cl. 350—5)



A train of pulsed light signals are produced by a laser and trained on a remote target whose range is to be measured and are reflected back to a receiver. A beam splitter derives a portion of the transmitted pulses and these are converted to a reference signal. The reference signal is first delayed for a period of time equal to the excursion period less one-half the pulse time producing a first delayed reference pulse. The first delayed reference pulse is further delayed for a period of time equal to the pulse time producing a second delayed reference pulse. A first converter converts a signal derived from the receiver and the first delayed reference pulse to produce a first comparison signal proportional to the overlap between the received signal and the first de'ayed reference signal. Additionally, a second converter converts the signal derived from the receiver and the second delayed reference pulse to produce a second comparison signal proportional to the overlap between these latter signals. The comparison signals are subtracted to provide a null signal and also to provide an error signal which is used to control the amount of the first delay.

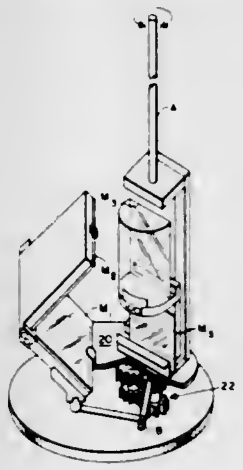
3,402,631
POLARIZED LIGHT REFLECTOMETER

Roy F. Potter, Riverside, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 16, 1964, Ser. No. 411,648
9 Claims. (Cl. 356—118)

1. A reflectometer for measuring the ratio of reflectances of beams of radiant energy from optical specular surfaces linearly polarized parallel and perpendicular to the plane of incidence, comprising:

(a) a fixed source of radiant energy for providing a collimated beam of light,

(b) a fixed polarizing means,
(c) a fixed detector means,
(d) first and second rotating means whose axes of rotation are parallel to each other,
(e) first, second and third mirrors,
(f) said first and second mirrors mounted on said first rotating means each at an angle of 45 degrees with the axis of rotation of said first rotating means and at 90 degrees to each other,
(g) a sample material whose optical constant is to be determined and said third mirror being mounted in the same plane on said second rotating means for rotation about the axis of rotation.
(h) means linking said first and second rotating means for simultaneously rotating said first and second mirrors on said first rotating means at twice the angular rate as said sample and third mirror are rotated on said second rotating means,
(i) said sample being set at an angle of incidence with respect to a beam of radiant energy from said fixed source such that the radiant energy beam reflected from the sample at an angle equal to said angle of incidence strikes said first mirror at an angle of 45 degrees measured in a plane perpendicular to the plane of incidence to and reflectance from said sample, is in turn reflected to said second mirror and reflected therefrom at 45 degrees to a plane parallel to the plane of incidence to and reflectance from said sample to strike said third mirror at an angle equal to said angle of incidence, and then reflected from said third mirror to said fixed detector means,



(j) said first and second mirrors always being normal to the plane defined by the beam reflected from said sample and the beam reflected to said third mirror,
(k) at an angle of incidence of $\pi/4$ the mirror system formed by said first and second mirrors being perpendicular to the incident beam, and at an angle of incidence of $\pi/2$ the mirror system formed by said first and second mirrors being parallel to the beam,

wherein the pseudo-Brewster angle of incidence is determined with great accuracy and the ratio, of the reflection coefficient when the electric vector of the radiant energy is parallel to the plane of incidence to the reflection coefficient when the electric vector of the radiant energy is perpendicular to the plane of incidence, is determined at the minimum value.

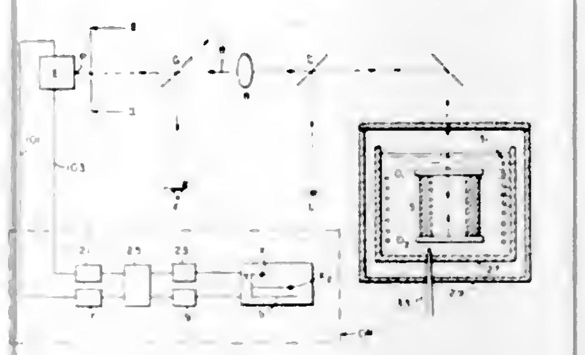
3,402,632
METROLOGY METHOD FOR CRYSTAL DEFECT DETECTION

Ralph Feder, Croton-on-Hudson, Ken W. Asai, Mahopac, Harold P. Charbnau, Putnam Valley, and Rudy Mannheimer, Thornwood, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Mar. 18, 1965, Ser. No. 440,963

2 Claims. (Cl. 356—30)

Method for studying the equilibrium concentration of defects in crystals by determining the macroscopic and lattice expansions in large, high purity, ionic crystals, wherein the sample is heated and cooled to equilibrium in a transparent liquid in a heat sink in a cycle between —50° and +100° C. while means having a laser of large coherence length and low spectral half width reversibly productes two sets of light interference fringe lines whose movement reversely corresponds to the temperature change and expansion and contracton history of the specimen during the entire heating and cooling cycle, and the two sets of fringe lines are visually, remotely and automatically recorded easily and accurately in ambient room light with a high signal to-noise ratio whereby the difference between the respective sets of fringe lines is compared for reaching and maintaining different equilibrium temperatures in the crystal without overshoot and undershoot for the simple, accurate, remote and automatic determination of the defects in the crystalls.

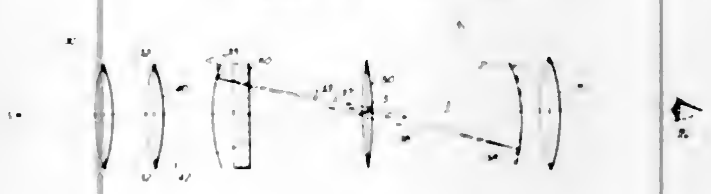


3,402,633
LONG PATH MULTIPLE BEAM INTERFEROMETER

Donald R. Herriott, Morris Township, Morris County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 30, 1965, Ser. No. 443,837

7 Claims. (Cl. 356—106)



1. An interferometer comprising two transreflective spherical concave mirrors of common curvature spaced apart a distance substantially equal to the sum of their radii of curvature, a lens internal to the cavity formed by said mirrors positioned with respect to each mirror to permit the lens to image the surface of each mirror onto the surface of the other mirror, one mirror being tilted with respect to the other in order to produce an interference pattern whereby the multiple reflections of the light rays pass through different parts of the lens and are respectively imaged to the same points on the two mirrors, and illumination means external to said cavity to irradiate one of the mirror surfaces with monochromatic light rays perpendicular to its inner surface.

3,402,634
INSTRUMENT FOR MEASURING ABSOLUTE REFLECTANCE AND TRANSMITTANCE AT CRYOGENIC TEMPERATURES

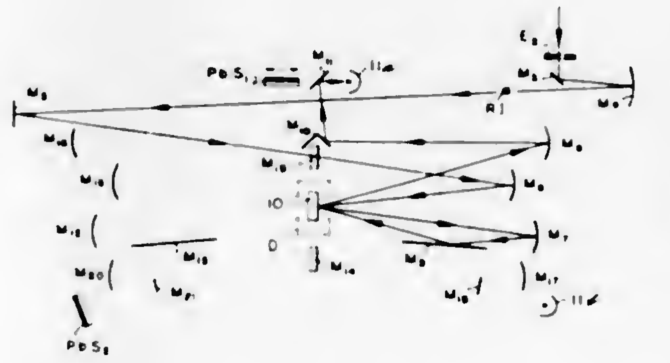
Harold E. Bennett, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Mar. 30, 1965, Ser. No. 444,090

5 Claims. (Cl. 356—36)

1. An optical system adapted for use in measuring absolute reflectance and transmittance of electropolished single crystal samples comprising in combination:

a horizontally rotatable liquid helium Dewar including means defining therein a sealed and evacuated chamber having at least one pair of opposed cavities comprising transparent plane-surfaced windows adapted to transmit an externally generated beam of light transversely through said chamber;
crystal support means arranged within said chamber for supporting a single crystal sample having a polished surface in a beam interrupting position within said chamber and between said windows so that said polished surface is in a substantially parallel relationship with respect to the plane surfaces of said windows and extends along the vertical axis of rotation of said Dewar;
a source of light;
a double-monochromator optic system, including an exit pupil, for producing from said source a monochromatic beam of light;



a first plurality of mirrors to intercept the beam and to reflect the beam along a folded path extending through one of said windows into said Dewar and to image the exit pupil on the polished surface of a crystal sample supported by said support means;
a second plurality of mirrors to intercept the beam as the polished surface reflects the beam along a second folded path extending through said one window and to reimage the exit pupil on the sample surface a second time in a manner such that the two images are aligned in a coinciding and superimposed relationship;
a third plurality of mirrors to intercept the beam as it is reflected a second time from the polished surface of said crystal sample along a path extending through said one window to direct the beam along a third folded path; and
light responsive detector means disposed in the third folded path for detecting the beam and providing an output signal indicative of the surface reflectance for said polished surface of said sample.

3,402,635
PHOTOGRAPHIC APPARATUS FOR TAKING PICTURES OF PRINTS AND DRAWINGS

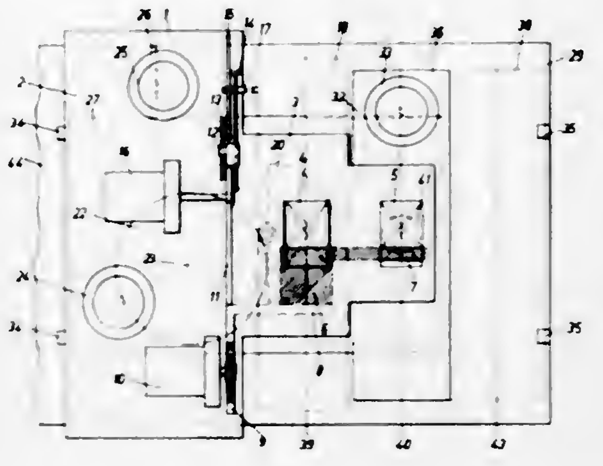
Alex Jacknau and Fredi Wolf, Berlin, Walter Scheffel, Langenfeld, and Fritz Beyer, Winsen, Germany, assignors, by direct and mesne assignments, to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed Apr. 21, 1965, Ser. No. 449,697

Claims priority, application Germany, Apr. 29, 1964, J 25,743

12 Claims. (Cl. 355—64)

A photographic apparatus, comprising a camera table and light projection means and a film magazine adjustably mounted over the camera table. The light projection means and film magazine are mounted on a platform arrangement, on a first base plate of which there is fixedly mounted an objective lens arrangement. A second base plate, which is movably mounted in two directions relative to said first base plate, includes two openings of equal size, the open areas of which can be adjusted by means of a slide, which is movably arranged on said second base plate over said two openings. A scanning and adjusting mechanism is operatively connected to said slide and to the film advance mechanism of said film magazine and is adapted to adjust the advance of the film therein to correspond to the length of said two openings.



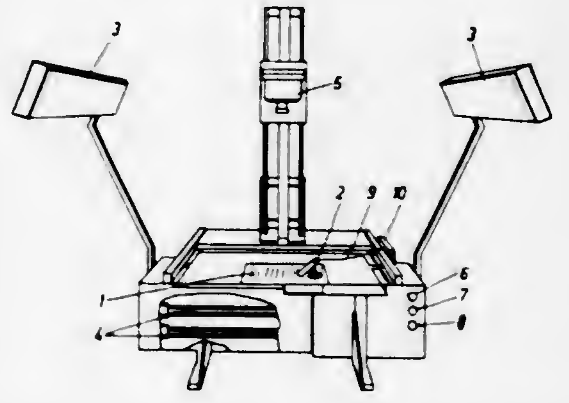
3,402,636
METHOD AND MEANS FOR AUTOMATICALLY ADJUSTING THE LIGHT PROJECTION IN MICROFILM CAMERAS

Richard Gemmer, Frankfurt am Main, and Walter Scheffel, Langenfeld, Germany, assignors, by mesne assignments, to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed June 3, 1965, Ser. No. 460,954

Claims priority, application Germany, June 3, 1964, J 25,954

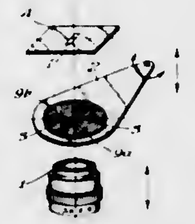
10 Claims. (Cl. 355—68)

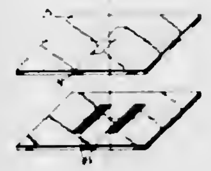


A photographic microfilm apparatus which illuminates directly and/or transilluminates the sheet to be photographed on microfilm by means of a plurality of green tinted fluorescent lamps. The light energy emanating from the illuminated sheet which is to be photographed impinges on a photoresistance, which by means of switching means and a phase-shift circuit adjusts the light energy emitted by the fluorescent lamps in inverse proportion to the amount of light energy reflected and partially directed into said photoresistance from the illuminated sheet that is to be photographed. The shutter mechanism of this arrangement has a fixed opening and a constant exposure time. The adjustment of the fluorescent lamps is such that substantially equal amounts of light energy, having substantially equal photochemical effects, enter the shutter opening, during each taking of a photographic picture, and impinge on the microfilm.

3,402,637
SHARP FOCUSING DEVICE FOR ENLARGER

Gilbert Durst, Brixen, near Bozen, Italy, assignor to Durst A.G. Fabrik Fototechnischer Apparate, Bozen, Italy
Filed Apr. 22, 1966, Ser. No. 544,611
Claims priority, application Italy, Dec. 17, 1965, 27,714/65
5 Claims. (Cl. 355—62)

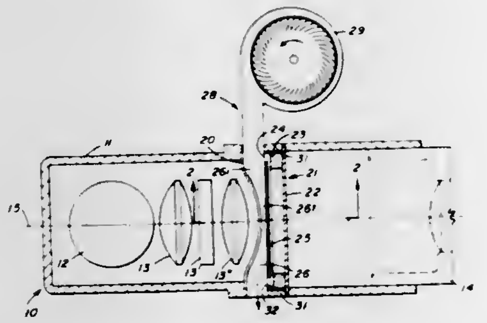




1. A sharp focusing device for disposing a beam splitting diaphragm in the optical axis of an object for use in enlargement apparatus, characterized in that said beam splitting diaphragm is located near the objective said diaphragm being provided with two juxtaposed openings, a negative holder, a test negative built in to said holder, coupling means connecting said diaphragm to said test negative whereby said diaphragm is automatically disposed in said optical axis when said test negative is placed over said objective.

3,402,638
AUTOMATIC FILM FOCUSING BY PNEUMATIC SERVOMECHANISM

Miller R. Hutchison, Jr., Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 5, 1966, Ser. No. 599,238
6 Claims. (Cl. 353—69)

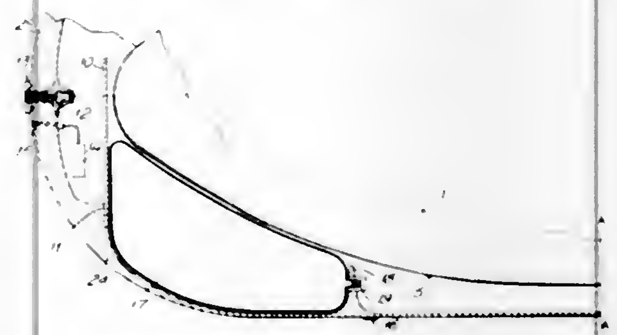


1. In a photographic apparatus for receiving film having at least one information area with a corresponding peripheral non-information area and for projecting an image thereof, said apparatus including:
- (a) means for supporting said film;
- (b) lens means in adjustable spaced relation to said film support means for focusing said image at a point remote therefrom;
- (c) channel means comprising a reference surface positioned in close spaced relations to one surface of said film to form between said information area and said reference surface a variable width channel having a narrowed throat portion; and
- (d) means for directing a stream of fluid through said channel, the pressure of said stream varying as a function of the spacing between said surfaces;

automatic focusing structure comprising:
- (e) an airtight chamber;
- (f) means for pneumatically interconnecting said chamber with the throat portion of said channel to equalize the pressure therebetween; and
- (g) resilient means interconnecting said film support means and said chamber and responsive to the pressure within said chamber for maintaining a predetermined spaced relation between said film and said reference surface, thereby maintaining image focus at said remote point.

3,402,639
SYSTEM FOR PROPELLING A DEVICE UNDER WATER

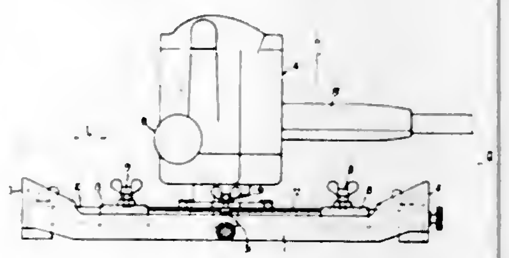
Roger Henri Beteille, La Napoule, and Marcellin Marie Laurent, Cannes, France, assignors to Sud-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France
Filed Oct. 21, 1966, Ser. No. 588,417
Claims priority, application France, Oct. 28, 1965, 36,494
12 Claims. (Cl. 89—1.809)



A pod surrounding at least a part of a missile casing during underwater trajectory thereof and separating itself completely from said missile at its exit from the water whereby said missile alone follows its aerial trajectory. The pod is constituted by light longitudinal sections mutually interconnected by locking means and fluid tight means, the value of the pressure inside the space enclosed between the pod and the missile being regulated, by a suitable device, equal or above the hydrostatic pressure that prevails at the external wall of said pod in the water, means being further provided for releasing said locking means when a change in pressure occurs upon emergence from the water.

3,402,640
MILLING TOOL

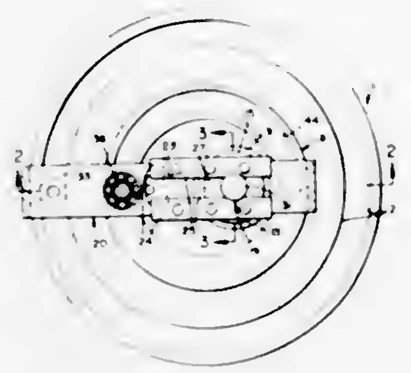
Bernhard Eisenbach, Niederbrechen uber Limburg (Lahn), Germany, assignor to Eugen Lutz KG, Muhlacker-Lomersheim, Wurttemberg, Germany
Filed Jan. 24, 1966, Ser. No. 532,032
12 Claims. (Cl. 90—12)



A motor-driven milling tool having a copying device connected thereto, the copying device having a frame adapted to be mounted to a workpiece. The milling tool is mounted on the frame so as to be movable longitudinally and transversely relative to the workpiece. A plurality of copying rails, including both longitudinal and transverse rails, are adjustably mounted on the frame and cooperate with a copying member for guiding the movement of the milling tool during the working operation. The milling tool is movably connected to the frame so as to be swingable into a noninterfering position when it is desired to adjust the position of the copying rails.

3,402,641
CUTTING DEVICE AND METHOD

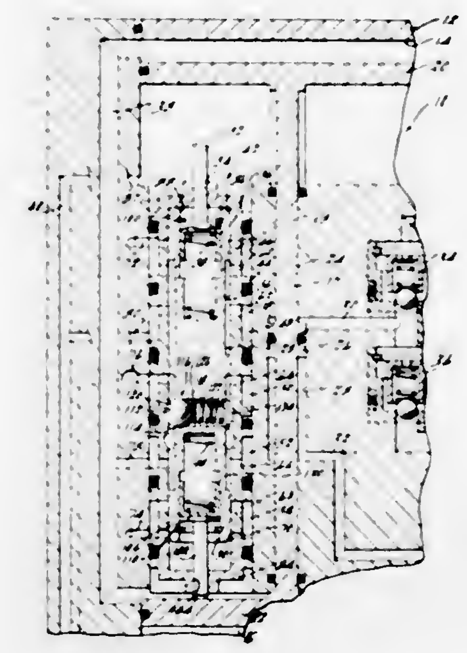
Bailey P. Dawes, 366 Warec Way, Los Altos, Calif. 94022
Filed May 4, 1966, Ser. No. 547,499
7 Claims. (Cl. 90—13)



A device and method for cutting material along an endless line in which a cutter is carried by a supporting arm which is constrained at one end to move along a fixed path and at the other end to pivot about, and move radially with respect to, a fixed axis.

3,402,642
RECIPROCATING VALVE AND PISTON

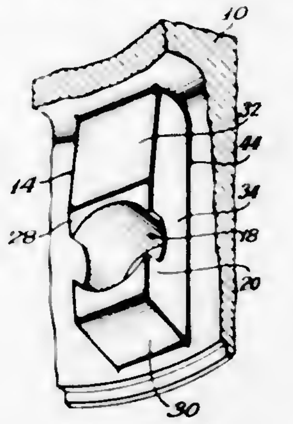
George J. Van Hecke, Detroit, and Peter Roy Chirco, Utica, Mich., assignors to Huck Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed Oct. 23, 1965, Ser. No. 503,701
14 Claims. (Cl. 91—329)



A two position reciprocatable valve for causing automatic reciprocation of a piston.

3,402,643
PISTON HAVING PIN BORE RELIEF AND METHOD OF MANUFACTURE

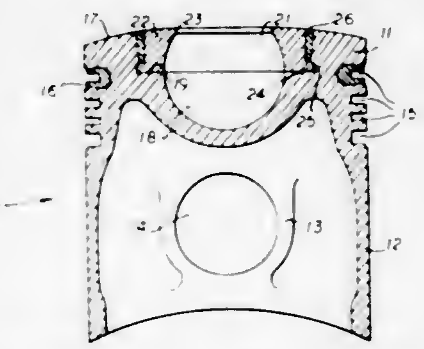
George J. Maat, Batavia, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed June 17, 1966, Ser. No. 558,330
16 Claims. (Cl. 92—187)



Piston cast with narrow struts such that, when the wrist pin bore is formed to its final size transversely through the struts and skirt of the piston, the bore walls forming the skirt sides of the bore are left with no appreciable thickness, i.e., the bore walls are either thin or, if present at all, they amount to no more than partial walls at the skirt sides of the bore.

3,402,644
INTERNAL COMBUSTION ENGINE PISTON WITH PRESTRESSED INSERT

Eugene J. Geiger, Dearborn, Mich., and Dale H. Breen, Naperville, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,660
10 Claims. (Cl. 92—224)



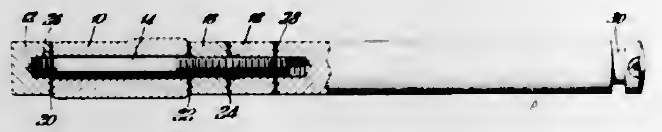
An internal combustion engine piston construction of the open chamber type wherein a combustion chamber cavity is provided in the head of the piston which cavity opens to the piston face and is partially defined by an annular insert at the combustion chamber opening. The annular insert is prestressed in compression by means of an annular ring encircling the same and the coefficient of expansion of the material of which the annular ring is made is greater than the coefficient expansion of the material of which the annular insert is made and is also equal to or less than the coefficient of expansion of the material of which the piston body proper is made.

3,402,645
PISTON ASSEMBLY

Loren C. Nelson, Middleburgh Heights, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Oct. 3, 1966, Ser. No. 583,874
7 Claims. (Cl. 92—258)

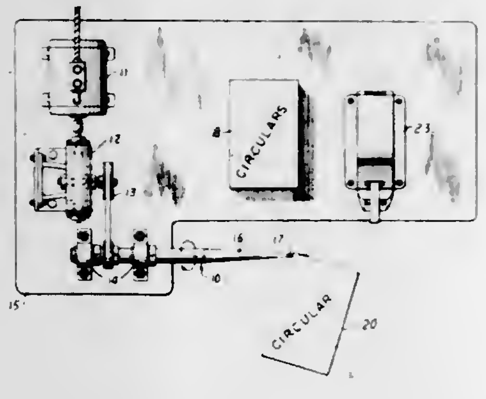
1. A piston assembly for use in an apparatus for die casting a high melting point metal comprising:

(a) a piston sleeve composed of titanium diboride, said piston sleeve having an annular opening therethrough;
(b) a piston tie rod composed of a metal having a lower coefficient of thermal expansion than the titanium diboride piston sleeve extending through said annular opening in said piston sleeve, said piston tie rod having a front and a rear end;



(c) a front end cap attached to the front end of said piston tie rod which is adapted to restrain the forward movement of said piston sleeve; and
(d) a means for restraining the rearward movement of said piston sleeve so that when said piston assembly is exposed to increasing temperatures said piston sleeve axially expands more than said piston tie rod thereby causing said piston sleeve to be maintained in compression between said front end cap and said means for restraining the rearward movement of said piston sleeve.

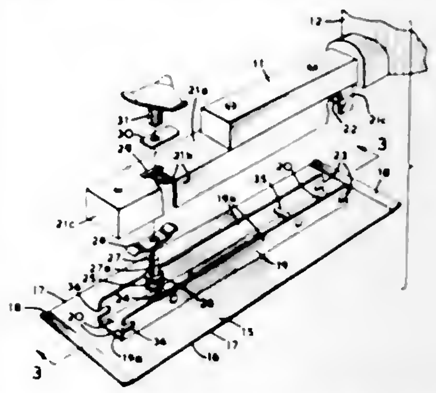
3,402,646
PAPER CONE ROLLING APPARATUS
Lester F. Hall, 5907 Sherry Lane,
Dallas, Tex. 75225
Filed Feb. 7, 1967, Ser. No. 614,460
4 Claims. (Cl. 93—79)



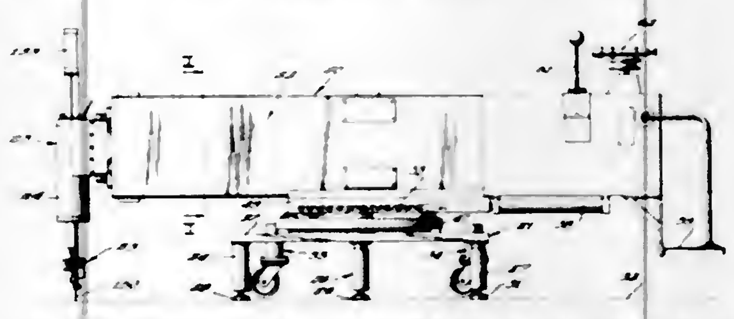
This application discloses apparatus for rolling paper cones including a cone-shaped, continuously rotated, spindle which is shaped at its tip to facilitate gripping of a corner of a sheet of paper which is to be rolled into a cone. The shaping of the tip of the spindle is such that the rolled cones may be easily removed. The apparatus is essentially manually operated.

3,402,647
TROWELLING BLADE ASSEMBLIES
Vincent P. Colizza, Burlington, Ontario, and Francesco Zochil, Hamilton, Ontario, Canada, assignors to Hamilton Float & Trowel Limited, Hamilton, Ontario, Canada
Filed Oct. 22, 1965, Ser. No. 502,683
17 Claims. (Cl. 94—45)

A trowelling blade assembly for use with a motor-driven trowelling machine consists of the blade and two attachment members fixed respectively to the blade and an arm of the machine; attaching means fastening the attachment members together comprise two spaced sets of cooperating pin means and slot means; at least one attaching means of one set is movably mounted on the respective attaching member to engage it and disengage it from the other means of the same set; each set consists of one means on one member and two alternatively engageable cooperating means on the other member to permit end-for-end reversal of the blade.

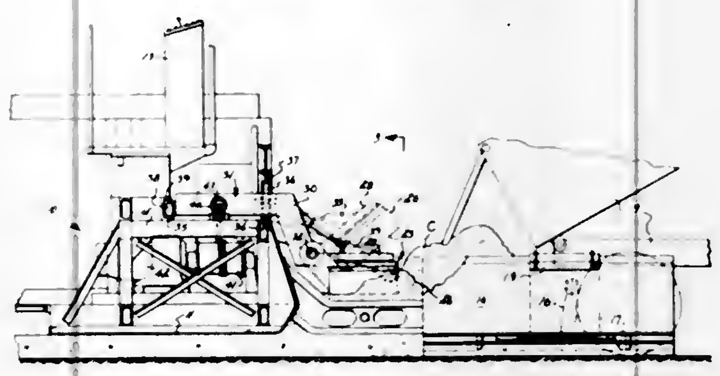


3,402,648
LEVELING MACHINE
Narciso G. Modesto, Lake Forest, Robert C. Pape, Cicero, and Wayne F. Ridenour, Chicago, Ill., assignors, by direct and mesne assignments, to General Stone and Materials Corporation, Roanoke, Va., a corporation of Virginia
Filed Sept. 15, 1966, Ser. No. 579,544
16 Claims. (Cl. 94—45)



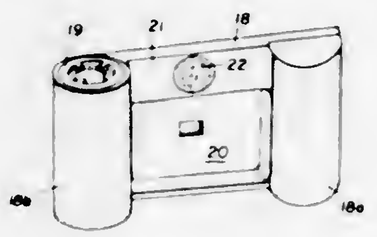
Leveling machine for cement floors or the like adapted to be oriented to a true horizontal plane, and being provided with a scraper means which has complete mobility in that it is movable toward and away from the support frame on which it is mounted, it is angularly movable about its axis, is readily raised and lowered, and is capable of reciprocation in the transverse or horizontal position with respect to the shaft on which it is mounted.

3,402,649
DISTRIBUTING BOX FOR ROAD-BUILDING MACHINE
Ronald M. Guntert, Stockton, Calif., assignor to Guntert & Zimmerman Const. Div., Inc., Stockton, Calif., a corporation of California
Continuation-in-part of application Ser. No. 519,821, Dec. 15, 1965. This application Dec. 19, 1966, Ser. No. 611,512
7 Claims. (Cl. 94—46)



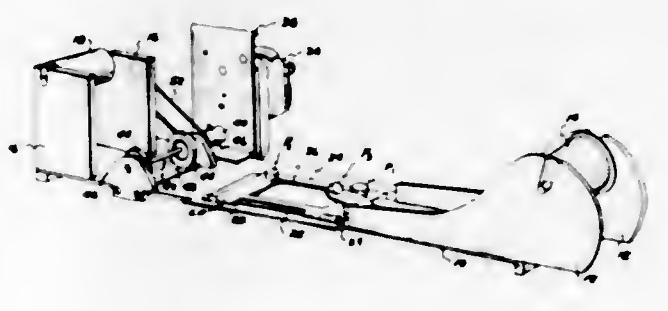
A road-building machine having a spreader car which may be moved transversely of the machine by a winch-operated cable, the framework of the spreader being also pivotally mounted on a horizontal axis from the spreader car and movable about that pivot by a fluid cylinder.

3,402,650
LIGHT DETECTOR SYSTEM FOR AUTOMATIC EXPOSURE CONTROL
Harvey O. Hoadley, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 14, 1965, Ser. No. 471,862
15 Claims. (Cl. 95—10)



A magazine for a camera with an exposure control system includes a surface for reflecting light from outside the camera onto photo-responsive means on the camera. The reflected light impinging on the photo-responsive means controls operation of the exposure control system.

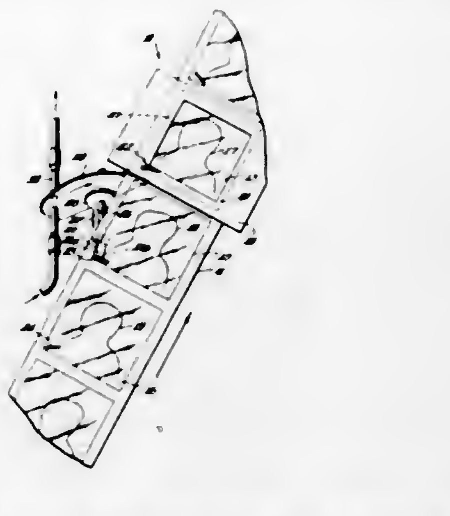
3,402,651
AUTOMATIC FILM PROGRAMMER
Cass A. Pieronek, 884 N. Renaud, Grosse Pointe Woods, Mich. 48236, and James H. Le Blond, Hazel Park, Mich.; said Le Blond assignor to said Pieronek
Filed June 28, 1965, Ser. No. 467,446
13 Claims. (Cl. 95—75)



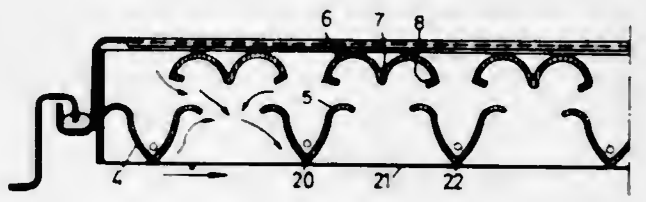
An automatic film programmer which includes support structure for feeding a strip of film through a platen having a frame opening in which the successive film frames are to be registered. Photoelectric cells and lights are arranged to sense film density and are integrated into automatic operating circuitry so that as film is moved through the platen the spaces between frames will be sensed to stop the feeding mechanism, operate an automatic printer or the like, and then restart the feed mechanism. Apparatus is provided to avoid actuation as a result of sensing film density contrasts other than that occurring between the frames.

3,402,652
NEGATIVE PROGRAMMING SYSTEM FOR CONTINUOUS ROLL FILM PRINTING
Haven D. Noble, 3225 Crestline Drive,
Davenport, Iowa 52803
Filed Oct. 15, 1965, Ser. No. 496,547
4 Claims. (Cl. 95—75)

A film negative programming system for roll film having a plurality of images thereon. The system includes apparatus for sensing the desired position and density of the film and placing a coated mark on the film in the region of each individual image. The mark is then used to accurately reposition the film and set the desired density controls to reproduce the film.

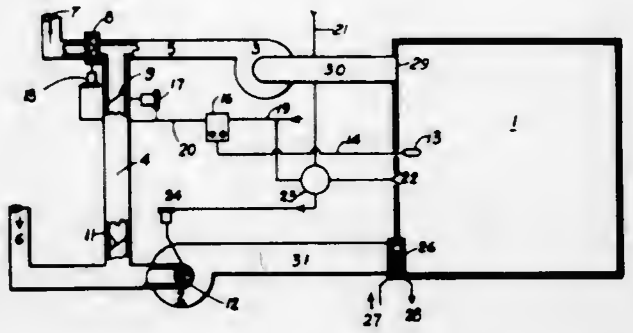


3,402,653
VENTILATION EXHAUST GRILLE
Eduard Lex, Pressatherstrasse 157a, Weiden, Radevormvald, Rhineland, Germany
Filed June 2, 1966, Ser. No. 554,732
Claims priority, application Germany, July 9, 1965, L 51,091
9 Claims. (Cl. 98—20)



A ventilation grille for moving vehicles, particularly railroad locomotives, for the exhaust of air from the interior of the locomotives having stationary ribs arranged in rows in the grille causing by their special shape and arrangement an exhaust effect while preventing rain, snow or the like from entering through the grille into the locomotive.

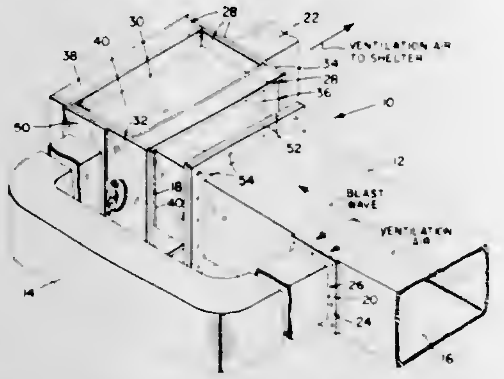
3,402,654
VENTILATION CONTROL
Albert H. Berst, Florissant, Mo., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed May 4, 1966, Ser. No. 547,607
14 Claims. (Cl. 98—33)



A ventilating arrangement for a plenum chamber which includes air supply means to provide air to the chamber, means to exhaust a portion of the air emitted from the plenum chamber and recirculate a portion of the air emitted from the chamber to the air supply means in accordance with the temperature in the chamber and flow control means responsive to the pressure in the chamber to control the flow of air through the air supply means to modulate the pressure in the chamber.

3,402,655
BLAST PROTECTED VENTILATION DUCT SYSTEM

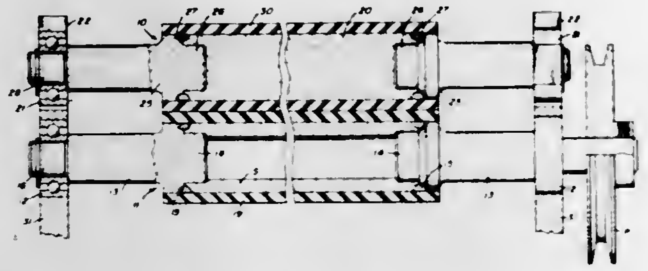
John M. Stephenson, Camarillo, and Donald E. Williams, Santa Barbara, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 1, 1967, Ser. No. 620,213
9 Claims. (Cl. 98—119)



A ventilation duct system which is capable of closing off a ventilation duct without any bypass of a blast wave from an outside explosion, such as that from an atomic bomb. The invention utilizes a main ventilation duct, a bypass ventilation duct, and a closure valve means within the bypass duct and responsive to a blast wave introduced through the main duct. The length of the bypass duct is such that the blast wave in the main duct closes the valve means prior to arrival of the blast wave in the bypass duct.

3,402,656
ROLLER SQUEEGEE

John L. Stocking, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 13, 1966, Ser. No. 586,446
5 Claims. (Cl. 100—155)

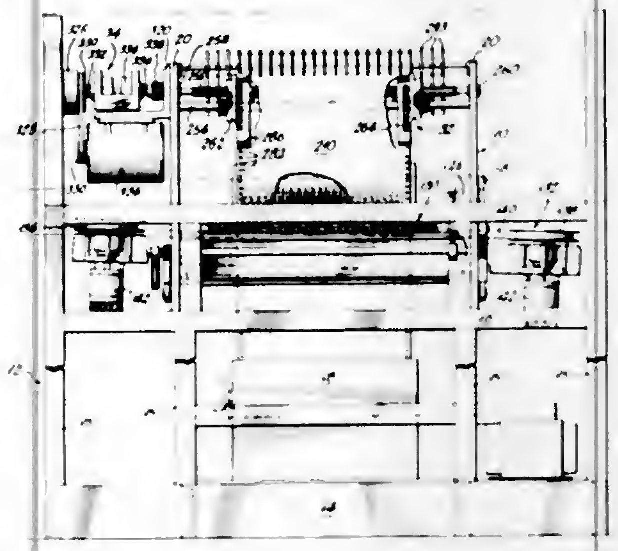


A roller squeegee comprising a fixed bottom roller and a floating upper roller held in contact with the bottom roller, and in which the section modulus to weight ratio of the two rollers is such that the upper roller will deflect under its own weight more than the bottom roller so that uniformity of contact pressure between the rollers is assured not simply by gravity but by the fact that the top roller deflects more under its own weight than the bottom roller.

3,402,657
HIGH SPEED BELT PRINTER WITH PRINTING SLUG SUPPORTING MEANS

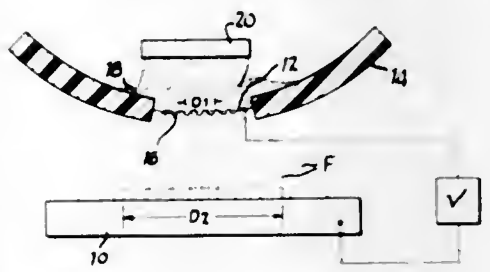
John T. Potter, Plainview, Thomas P. Foley, Huntington, and Carmine J. Antonucci, Uniondale, N.Y., assignors to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Nov. 24, 1965, Ser. No. 509,501
17 Claims. (Cl. 101—93)

This disclosure contains drawings and a description of a high speed chain printer in which the print chain is established by a plurality of integrally casted printing slugs clipped about the edges of a reinforced elastomeric timing belt. The print chain is supported relative to a plurality of print hammers by a frame featuring a modular or subassembly construction in which the basic components are formed from a length of precision stock of the same cross-section. Also, the printer includes a substantially inertialess control for web or paper feed by employing a paper feed clock in format control loop formed of paper and driven directly by the same tractors which feed the paper web.



3,402,658
ELECTRICAL PRINTING METHOD WHICH CHANGES IMAGE SIZE DURING POWDER TRANSFER

George L. Opdycke, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Jan. 6, 1965, Ser. No. 423,678
2 Claims. (Cl. 101—129)

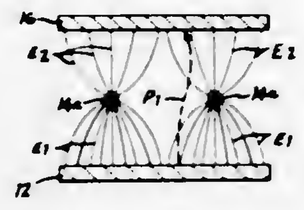


Methods for electrically transferring powder shaped images from an article or supply of printing powder particles in which the shape or size of the image may be modified during the transferring operation.

3,402,659
ELECTRICAL PRINTING PROCESSES EMPLOYING TWO FIELDS OF DIFFERENT STRENGTHS

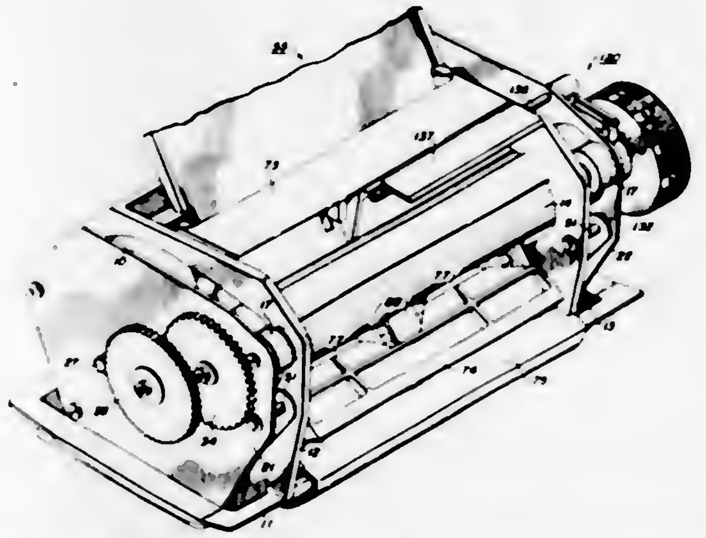
William E. Johnson, Temperance, Mich., assignor to Owens-Illinois, Inc., a corporation of Ohio
Continuation-in-part of application Ser. No. 393,817, Aug. 31, 1964. This application Aug. 29, 1966, Ser. No. 575,868
9 Claims. (Cl. 101—129)

Electrical printing processes in which an electric field is employed to electrically charge and accelerate printing powder particles from a powder supply bed through the image defining apertures of a screen or stencil to an article surface. The powder supply, screen and article surface are electrically conductive and the electric field is applied in pulses of a relatively short time duration. During the application of the electric field, the screen is maintained at a selected intermediate electrical potential relative to the bed and article surface to minimize problems of scattering and re-transfer of the powder particles.



3,402,660
DRUM SUPPORT AND DRIVE SYSTEM FOR REPRODUCTION MACHINES

Lyman H. Turner, Pittsford, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Sept. 30, 1965, Ser. No. 491,556
4 Claims. (Cl. 101—132)

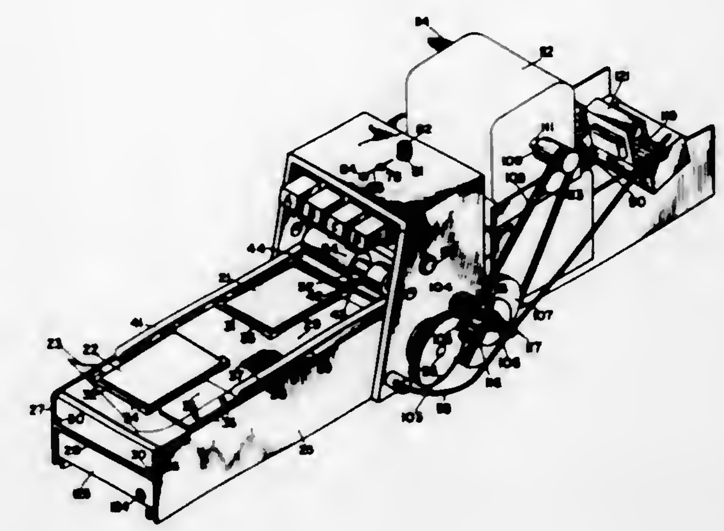


A reproduction apparatus of the pressure-transfer type incorporating a three-way roller bearing support for the rotatable copy drum and driving pressure roll, toggle type force generating means for holding the pressure roll in pressure contact with the copy drum, a foldable paper tray, automatic gripping means for attaching the transfer sheet to the copy drum, means for separating copies from the transfer sheet, and programming control means adapted at the last copy programmed to release the gripping means whereby the transfer sheet is expelled with the last copy.

3,402,661
CONTROL MEANS FOR TRAVELING PLATEN ROLLER IN BED AND CYLINDER PRINTING MACHINES

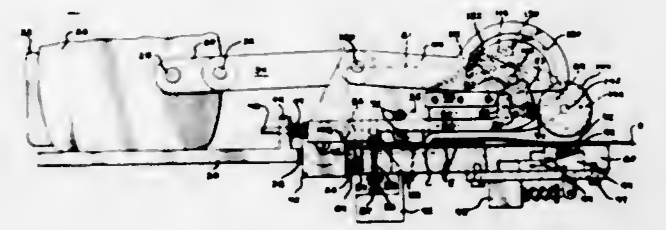
William Plumb Barbour, Alexandria, and Harvey L. Cook, Jr., Falls Church, Va., assignors to Farrington Business Machines Corporation, Springfield, Va., a corporation of Massachusetts
Filed Oct. 11, 1965, Ser. No. 494,815
12 Claims. (Cl. 101—269)

A printing machine is disclosed for use with portable printing means such as credit cards, the machine including a fixed base, a carriage mounted on the base, and a tray adapted for reciprocating travel on the base with respect to the carriage. The tray includes a print bed portion for receiving the credit card and any other suitable print elements. Mounted within the carriage is a platen assembly which may be impelled into one of a plurality of predetermined printing positions with respect to the print bed. The platen assembly, including a platen rotatably mounted thereon, is impelled into one of the predetermined printing positions when the tray is moved in a first direction during the imprinting stroke. It is then retracted to a non-printing positon when the tray is moved in the opposite direction during a return stroke.



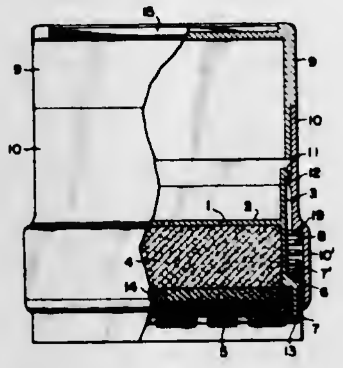
3,402,662
RECORD READER/IMPRINTER WITH GATE CONTROLLED ROLLER

Bryce Wilson Blair, Hershey, and Lindsay Carlton Friend, Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Jan. 31, 1967, Ser. No. 613,022
18 Claims. (Cl. 101—285)



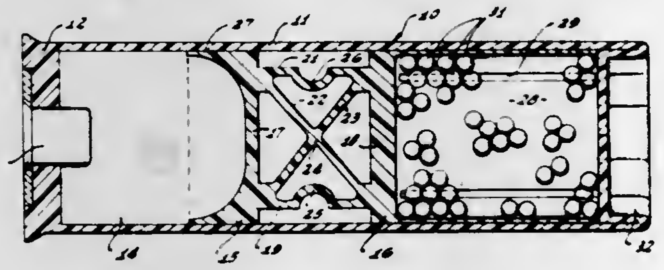
An apparatus is disclosed which is capable of first reading a record, such as a personal credit card having punched holes therein and an embossment thereon to identify the card holder and then, depending upon the credit status of the card holder, cause a second record, such as a retail slip, to be imprinted by the embossment on the credit card or to prevent such imprinting and thereby block completion of a credit transaction. The apparatus includes as a separate feature an auxiliary roller and imprinting symbol under the control of a solenoid to selectively mark the retail slip to limit the amount of credit extended in the transaction. The apparatus disclosed is comprised of a housing containing a support platen to receive and position the credit card and retail slip, a motor and drive mechanism connected to a reader head and to a first and second roller pivotally mounted relative to said platen and operated by said mechanism to effect a reading and/or imprinting of records placed thereon. The rollers are supported by a shaft made to engage rails supported above the base and projecting inwardly. A gate mechanism operated from a rear and relatively inaccessible portion of the housing is positioned for sliding movement to prevent or permit roller engagement with records on the base.

3,402,663
CONTINUOUS NONCELLULAR RUBBER FOAM STAMP
Takaji Funahashi, 1 2-chome, Kitatakajo-machi, Nishi-ku,
Nagaya-shi, Aichi-ken, Japan
Filed Nov. 18, 1966, Ser. No. 595,376
8 Claims. (Cl. 101—327)



A stamp pad having an ink pad and stamp plate secured in a lower compartment beneath a transverse wall in an inner frame, an outer frame being telescoped over the inner frame and engaging a spring acting on a sleeve which is interposed between the inner and outer frames and which has a lower edge extending below the plate when the spring is relaxed.

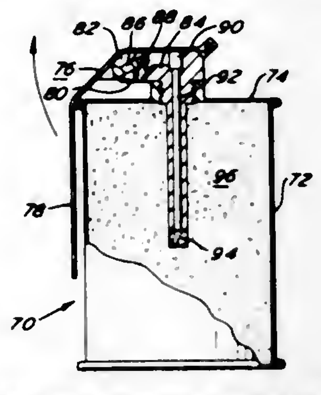
3,402,664
SHOT HOLDER AND WAD FOR SHOT SHELLS
John E. Cramer, 9012 Arrington Ave.,
Downey, Calif. 90240
Filed Sept. 13, 1966, Ser. No. 579,159
7 Claims. (Cl. 102—42)



A shot holder and wad unit for shot shells having a forward, cup-shaped container for shot pellets with longitudinally slotted walls and a rear disc-like wad with a rearwardly extending sealing skirt. The pellet container bottom and rear wad disc are interconnected by diagonal struts of substantial width presenting a substantially X-frame configuration and having outside longitudinally extending walls interconnecting the ends of the X-frame and of substantially the same width, the outside walls having their central portions bowed inwardly to control their collapse. The unit is formed of a flexible and deformable plastic material, such as polyethylene. The X-frame may be disconnected at its intersection to present a pair of separate V-shaped members extending generally transversely and inwardly of the unit from the outside walls. A shot shell employing this unit is illustrated and described.

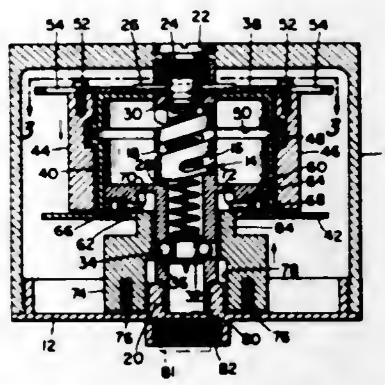
3,402,665
NONPYROTECHNIC DISSEMINATOR
William B. Tarpley, Jr., West Chester, Pa., and Charles Dana McKinney, Jr., Wilmington, Del., assignors to Aeroprojects, Incorporated, West Chester, Pa., a corporation of Pennsylvania
Filed Aug. 15, 1966, Ser. No. 572,473
14 Claims. (Cl. 102—65)

Disseminators for discrete particulate material, such as finely divided powders, and leaflets, wherein the material is propelled from a container by gasification of a gelled liquefied gas. The particulate material comprises from 30 to 70 volume percent of the composition within



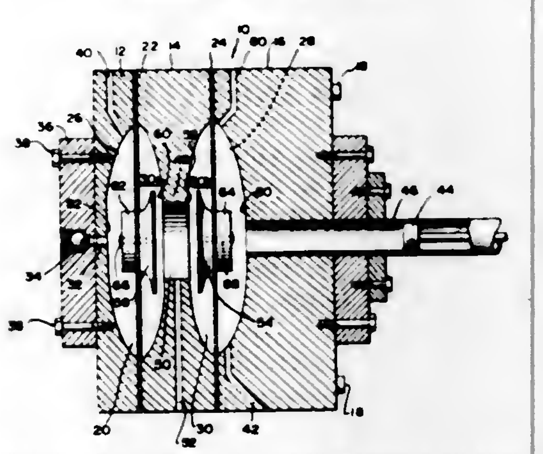
the container. The container includes means coupled to it whereby the container may be opened to permit ejection of its contents.

3,402,666
ARMING AND FIRING MECHANISM
William J. Bolster, Camarillo, and Gerald C. Googins and Robert J. Twiford, Oxnard, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed June 28, 1967, Ser. No. 650,162
9 Claims. (Cl. 102—82)



A mechanical, percussion type initiator for firing a booster-carried rocket, the device utilizing high energy level acceleration force to arm the initiator and a lower energy level deceleration force to fire the initiator when a predetermined deceleration point is achieved. It includes a time delay means in the acceleration responsive mechanism.

3,402,667
FLUID POWER TRANSFER APPARATUS
Frank A. Bower, Jr., Chicago, Ill., assignor to Panther Pumps & Equipment Co., Inc., Chicago, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 542,545, Apr. 14, 1966. This application Apr. 3, 1967, Ser. No. 643,768
21 Claims. (Cl. 103—44)



A fluid power transfer apparatus divided into chambers by a diaphragm wherein a fluid force is applied to one surface of the diaphragm in order to transmit the

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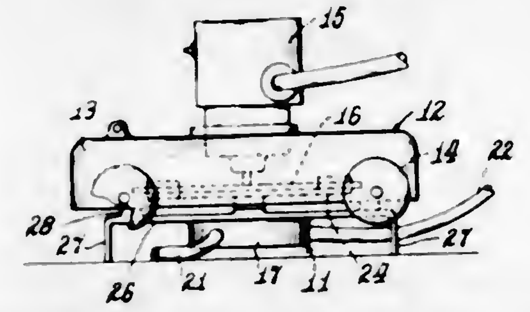
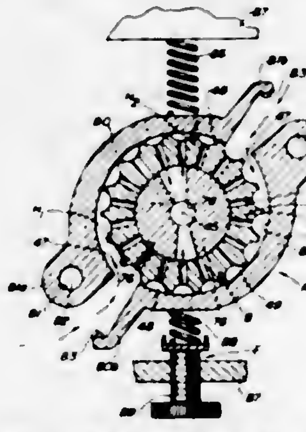
force to the opposite surface of the diaphragm. The diaphragm of the apparatus is protected against excessive wear or damage by a valve positioned in at least one of the chambers which responds to pressure changes in one of the chambers to limit diaphragm movements. The apparatus can utilize two or more diaphragms to provide at least one intermediate chamber between that wherein the force is applied and that wherein the force is utilized. Pressure responsive valves are also used in conjunction with these latter systems to limit diaphragm life. Each such apparatus is designed for the employment of modularized diaphragm and valve components to enhance interchangeability and replacement.

3,402,668
COMBINATION SUMP PUMP AND MOWER
Russell J. Pusztay, 15210 Oak St.,
Dolton, Ill. 60419
Filed Nov. 8, 1966, Ser. No. 592,892
4 Claims. (Cl. 103—87)



An attachment for a rotary type lawn mower comprised of a frame upon which the mower is seated and carrying on its under side a water pump having its driven shaft extending up through the frame and mounting an element having detachable connection with the mower cutter blade.

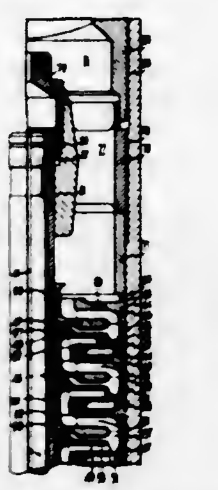
3,402,669
CENTRIFUGAL INERTIA PUMP
Anthony C. Mamo, Arlington Heights, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 17, 1966, Ser. No. 558,370
18 Claims. (Cl. 103—97)



A rotary pump has a rotor spaced from the housing. Between the rotor and the housing there is a convergent working space in the direction of rotation of the rotor from the inlet to the outlet. The rotor has a series of grooves on its periphery.

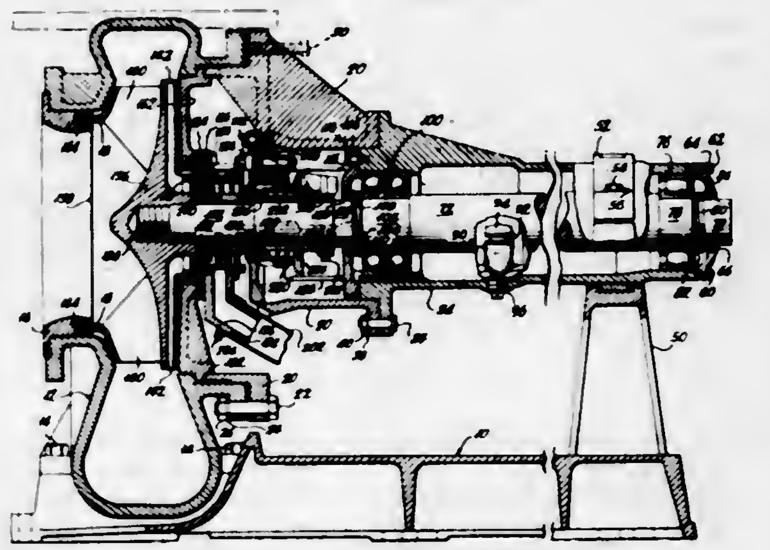
3,402,670
RUBBER BEARING FOR MULTISTAGE PUMP
Clinton A. Boyd, Tulsa, Okla., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 1, 1966, Ser. No. 554,490
3 Claims. (Cl. 103—102)

A bearing for a rotatable shaft including an axially extending annular ring connected to a rotatable shaft the ring having an annular resilient section including a plurality of axially extending radially directed spaced apart ribs extending outwardly of said ring and including outer arcuate surfaces. A multistage submersible pump



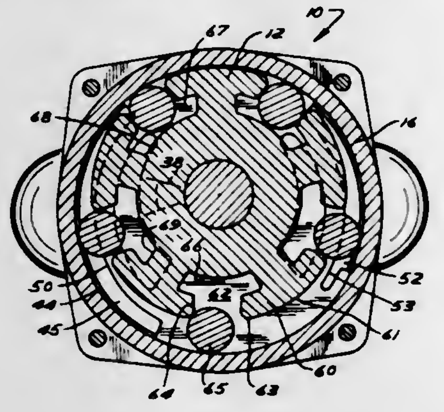
for suitable use in an abrasive environment is shown incorporating such a bearing to support the drive shaft of said pump.

3,402,671
CENTRIFUGAL PUMP AND SEALING MEANS THEREFOR
George M. Wilfley, Denver, and James B. Studebaker, Littleton, Colo., assignors to A. R. Wilfley and Sons, Inc., Denver, Colo.
Filed May 17, 1967, Ser. No. 639,078
9 Claims. (Cl. 103—111)



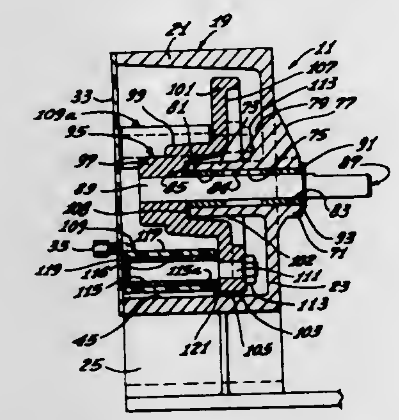
A centrifugal pump includes a rotatable shaft having an impeller secured thereto, the impeller including both pumping vanes and auxiliary expeller vanes. Exhaust means is provided for exhausting liquid from the pump, and sealing means is positioned intermediate the impeller and the exhaust means. The sealing means includes a first portion supported on the shaft and axially fixed relative to the pump; and a second sealing portion engageable with the first sealing portion is supported by a retainer means and is axially movable relative to the pump. The two sealing portions have sealing surfaces extending obliquely to the longitudinal axis of the shaft, and supplementary sealing means engages the retainer means to provide a seal therewith. The operating means for moving the second sealing portion includes push rod means connected with the retainer means. First spring means engages a portion of the push rod means for urging the second sealing portion away from the first sealing portion. A yoke means is connected with the push rod means. A spider is fixedly secured to the shaft, and an actuator body is slidably mounted on the spider. This actuator body engages the yoke means. A second spring means engages the actuator body and is stronger than the first spring means to normally urge the actuator body, the yoke means and the associated components to move the second sealing portion toward the first sealing portion. Speed responsive weights are pivotally mounted on the spider means and are engageable with the actuator body to move it in a direction to overcome the force of the second spring means to allow the first spring means to disengage the second sealing portion from the first sealing portion.

3,402,672
ROLLER PUMP ASSEMBLY
Ernest E. Cook, Anoka, Minn., assignor to Hypro, Inc., Minneapolis, Minn., a corporation of Ohio
Filed Apr. 21, 1966, Ser. No. 544,135
8 Claims. (Cl. 103—136)



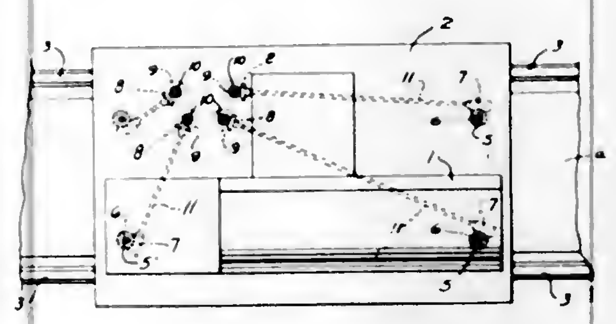
A roller pump comprising a cylindrical pumping chamber having a rotor rotatably mounted therewithin, and being provided with a plurality of roller receiving slots, each slot being generally radially disposed within said rotor and having leading and trailing surfaces for controlling the disposition of the roller, each of said slots having an arcuate extension cavity extending across the width of the rotor and defining a fluid reservoir chamber within the slot, the arcuate extension cavity having an arcuate length which substantially exceeds the arcuate width of the individual roller receiving slot.

3,402,673
PUMP
John W. Ballentine, Manhattan Beach, Leslie A. Woodson, Long Beach, and William S. Shamban, Pacific Palisades, Calif., assignors to W. S. Shamban & Co., West Los Angeles, Calif., a corporation of California
Filed Oct. 10, 1966, Ser. No. 585,505
17 Claims. (Cl. 103—149)



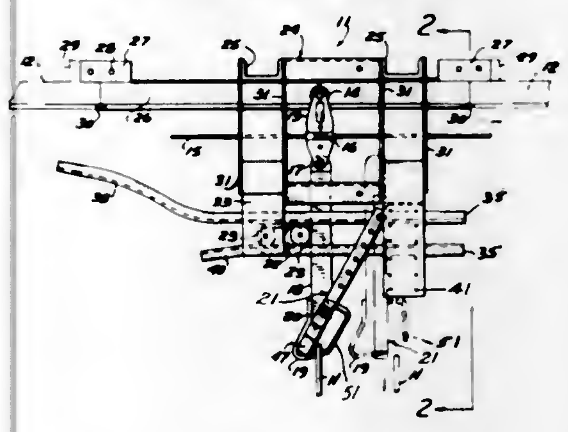
1. In a pump adapted to force material through a compressible tube, the combination of:
- a hollow pump housing, a section of the compressible tube being positionable within said pump housing;
- bearing means on said pump housing extending into the interior of said pump housing;
- a shaft rotatably mounted by said bearing means and having an end portion extending inwardly into said pump housing;
- a rotor having a hub portion mounted for rotation with said end portion of said shaft, said rotor having an outer portion secured to said hub portion and extending generally radially outwardly of said hub portion and in one direction generally axially of said shaft to cause at least a portion of said bearing means to lie within said outer portion of said rotor; and
- impeller means secured to said outer portion of said rotor and engageable with the section of the compressible tube for compressing the tube and causing the material to move through the tube.

3,402,674
DISPLACEABLE BASE FOR ASSEMBLING A MACHINE TOOL AND THE LIKE
Tamaki Tomita, 3 Kuribayashi, Modaiji-machi, Okazaki-shi, Aichi-ken, Japan
Continuation-in-part of application Ser. No. 207,251, July 3, 1962, and a division of application Ser. No. 331,308, Dec. 17, 1963, now Patent No. 3,299,498. This application Sept. 20, 1966, Ser. No. 580,767
4 Claims. (Cl. 104—1)



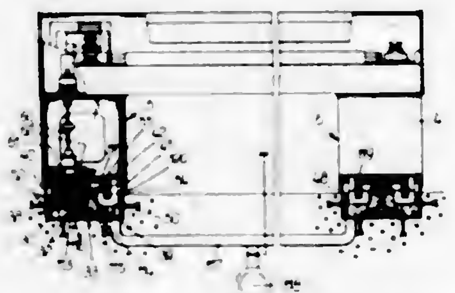
The present invention relates to a conveyor system for assemblying a machine tool having a track and a plurality of wheeled bases adapted to move on said track through a series of stations and which bases each have supporting bolts which can be individually raised and lowered for the purpose of raising, lowering or leveling each base relative to said track.

3,402,675
SUSPENDED CARRIER DESPATCH STATION AND TRIPPER
George L. Witt, Pontiac, Mich., assignor to My-T-Veyor Corporation, Oxford, Mich.
Filed May 23, 1966, Ser. No. 552,264
8 Claims. (Cl. 104—88)



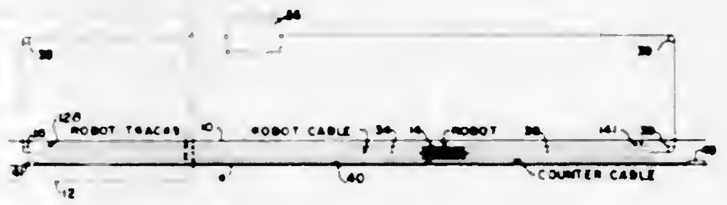
In a trolley conveyor system including a trackway movably mounting a trolley conveyor, an unloading station including a frame having a track to guidably receive the conveyor, a selectively located stop on said frame, said conveyor mounting a hook to hold a hanger, and a hanger retaining member pivotally mounted upon the conveyor engageable with the hanger and adapted to shift it laterally along the hook to discharge the hanger when the tripper member engages the stop.

3,402,676
CROSS-CARRIAGE FLAME CUTTING MACHINE GUIDEWAY
Georg Roder, Frankfurt am Main-Fechenheim, Germany, assignor to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed Sept. 22, 1966, Ser. No. 581,267
Claims priority, application Germany, Sept. 24, 1965, M 66,757
6 Claims. (Cl. 104—140)



An upper carriage guideway for a flame cutting machine which has a guide track on its lower carriage is characterized by including a guide track having guide means in the guideway with a liquid filled tank enclosing the guide track and with a liquid impervious cover extending above the guide track and both the guide means in the tank.

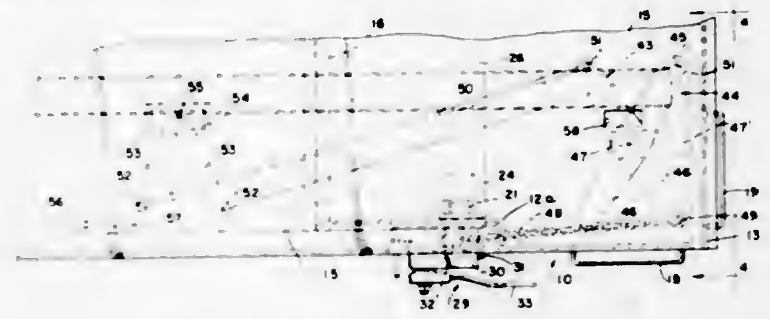
3,402,677
SIGNAL PRODUCING MEANS FOR USE WITH A RAILWAY CAR HANDLING MECHANISM
Wallace J. Saxonmeyer, Park Forest, Ill., assignor to Whiting Corporation, a corporation of Illinois
Filed Feb. 7, 1966, Ser. No. 525,500
15 Claims. (Cl. 104—176)



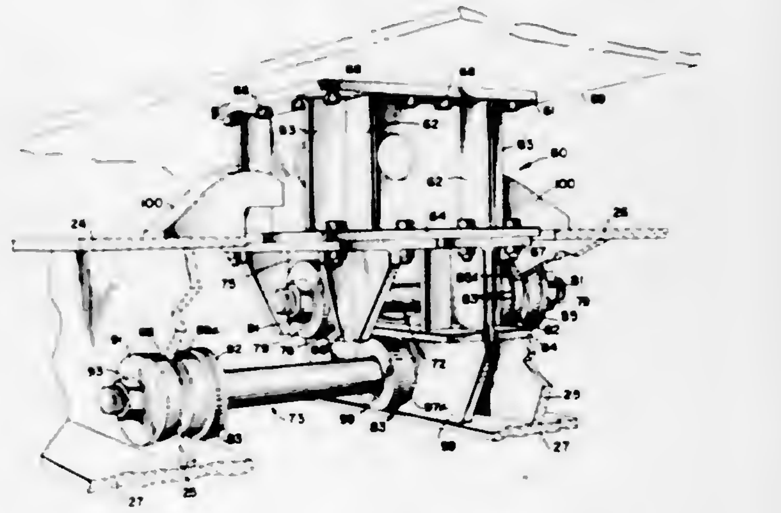
In one embodiment, the railway car handling robot supports an actuating member including a pair of rollers engaging a cable which is suspended along the track serviced by the robot and connected to a counting mechanism. The actuating member includes a member engageable with the flange of a railway car wheel so as to momentarily bend the cable each time the robot passes a railway car wheel. After the counting mechanism has been actuated a predetermined number of times by the bending action of the cable, a signal is produced indicating to the operator that the robot has been moved to the desired position. In another embodiment, a circuit is substituted for the cable actuating means for the counter. In this embodiment, the engagement of a member with the flange of the railway car wheel opens and closes a set of contacts which are connected in a circuit to the counter. After the contacts have been opened and closed a predetermined number of times, a signal is produced indicating to the operator that the robot has been moved to the desired position.

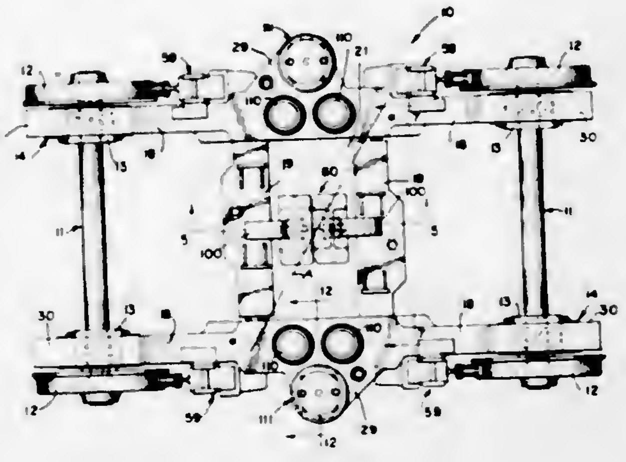
3,402,678
HAND BRAKE FOR FLAT DECK CAR
Roy W. Miller, Highland, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Dec. 19, 1966, Ser. No. 602,782
6 Claims. (Cl. 105—366)

A hand brake arrangement for flat cars with provisions to support containers thereon, including brake rigging, brake arms and linkages located underneath and inside of the flat deck of the car and being located in proximity to and connected to the hand brake mechanism which is located within ready reach of the operator who may be supported either on the side of the car or at one end of the deck of the car which also includes a hand hold spaced from the end of the car and from the container which may be carried thereon.



3,402,679
RAILWAY CAR TRUCKS
Andrew J. Christian, Chicago, and William Van Der Sluys, Homewood, Ill., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 502,840
14 Claims. (Cl. 105—199)

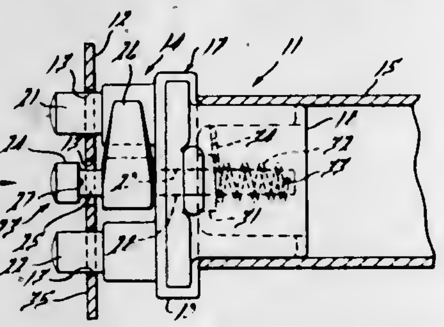




A railway vehicle truck for direct connection to a transit vehicle body including a pair of oppositely disposed side frames, each frame having a transversely extending transom and connecting means pivotally connecting the free end of each transom to the opposite frame with the transoms being longitudinally spaced from each other so that the frames are pivotal relative to each other about a diagonal axis extending through the connecting means; the side frames are supported by a pair of longitudinally spaced and transversely extending wheel and axle assemblies which are attached to the side frames by journal box assemblies having resilient means whereby the wheel and axle assemblies have relatively greater movement vertically than longitudinally.

3,402,680
FREIGHT BRACING DEVICE

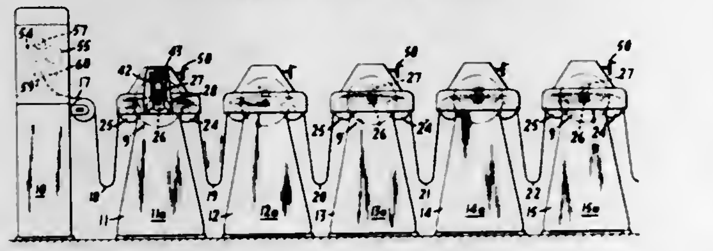
Floyd A. Hyatt, Birmingham, Mich., assignor to Evans Products Company, a corporation of Delaware
Filed Aug. 24, 1966, Ser. No. 574,738
4 Claims. (Cl. 105—369)



A freight bracing crossbar having an end fitting with an improved locking arrangement. The locking structure includes a rotatable eccentric member that is adapted to enter into a circular aperture in a belt rail and which is disposed in part behind the belt rail when rotated to its locked position.

3,402,681
STRUDEL DOUGH PLANT

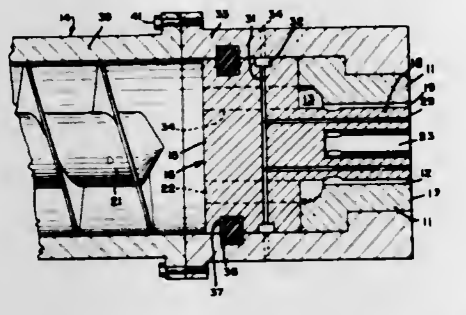
Edward Mandikian, Union City, N.J. (500 Hudson Ave., Weehawken, N.J. 07087), and Karl Loser, Isoldester, Germany; said Loser assignor to said Mandikian
Filed Apr. 7, 1966, Ser. No. 540,925
Claims priority, application Germany, Apr. 7, 1965, W 38,920
15 Claims. (Cl. 107—12)



In a process and apparatus for rolling dough into an extremely thin strip, the dough, in a preliminary stage is consecutively rolled, folded and rerolled by a roughing mill to produce a pre-formed strip of dough which is then passed successively through a plurality of roll nips of consecutively smaller clearance of a finishing mill. Between the roughing mill and the finishing mill and between successive roll nips of the finishing mill the dough strip is suspended downwards in a loop under the influence of its own weight.

3,402,682
DIE-HEAD FOR PRODUCING HOLLOW PARTICLES

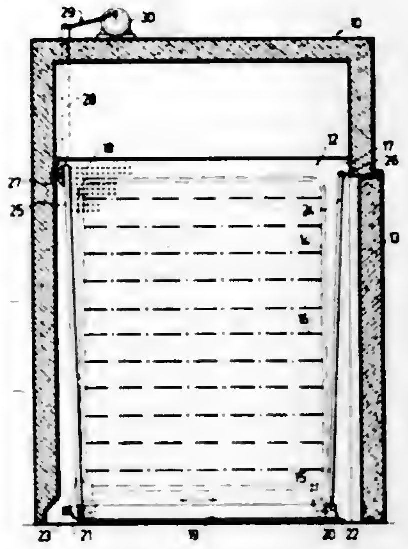
Merle F. Peden, Minneapolis, and La Verne M. Odden, Wayzata, Minn., assignors to General Mills, Inc., a corporation of Delaware
Filed Oct. 4, 1966, Ser. No. 584,205
5 Claims. (Cl. 107—14)



An extrusion die-head for attachment to a screw extruder. The die-head having passages for producing an extruded hollow tube with a web like inter structure. The die-head has chambers designed to equalize the pressures applied to the extruded material to insure uniform rate of flow of the product at the extrusion face of the die.

3,402,683
DISCONTINUOUS BAKING OVEN

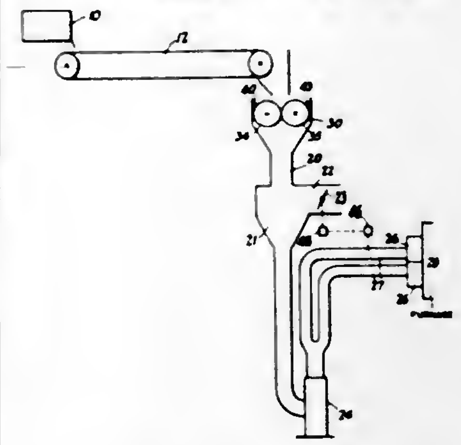
Magnus E. Tillander and Ake B. Persson, Vallingby, and Leif A. T. Johansson, Huddinge, Sweden, assignors to Ti-Pe Elmeko, Tillander & Persson
Filed Dec. 7, 1966, Ser. No. 599,785
Claims priority, application Sweden, Dec. 10, 1965, 16,020/65
9 Claims. (Cl. 107—55)



A discontinuous baking oven of the kind having a parallelepipedal baking chamber through which heated air is moved horizontally to touch dough pieces carried on superposed baking plates in a rack. The oven is provided with means for continuously reciprocating the rack in a vertical plane whereby the effects of an ununiform heat distribution in the baking chamber are reduced or eliminated. The rack is carried by a horizontal platform which is parallel to the floor of the baking chamber and suspended by pendulating levers to be reciprocated horizontally. According to another embodiment a similar platform is provided which is supported and guided laterally by rolling bodies, such as balls.

3,402,684
BARK FEEDING SYSTEM

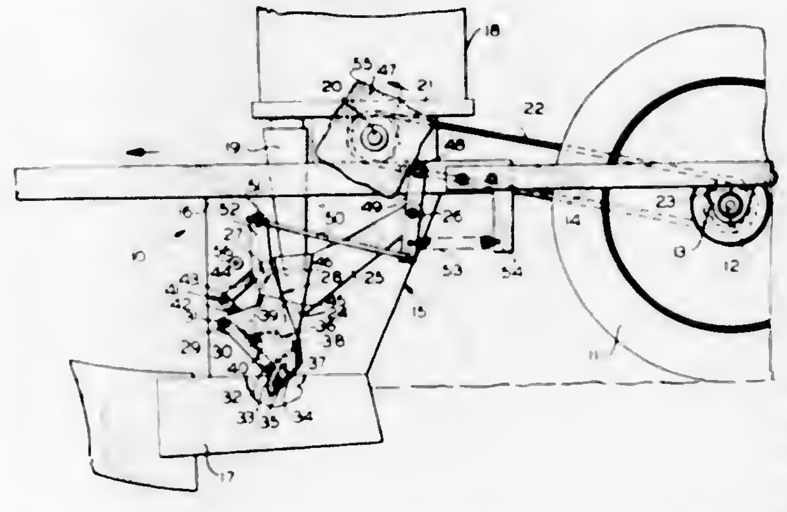
Joseph Gradischer, Bradfordwoods, Pa., and Thomas J. Smith, Bloomfield, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed June 26, 1967, Ser. No. 648,813
Claims priority, application Japan, Sept. 8, 1966, 41/59,383
8 Claims. (Cl. 110—102)



A system for conveying bark or material of similar character and feeding it to a furnace partially by conveying means using hot air or hot gases with a portion of the path over which the bark travels being maintained the atmospheric pressure. The bark is transferred from the atmospheric pressure portion to the subatmospheric pressure portion by means of a gate which comprises a pair of large diameter air-filled rotating rollers and sealing means fully occupying the cross section of the bark conveying path, the rollers having a soft, yielding surface maintained in mutual contact to form a seal while the bark passes between the rotating rollers from the atmospheric pressure portion of the conveying path to the subatmospheric pressure portion.

3,402,685
HIGH SPEED RECIPROCATING HILLDROP VALVE

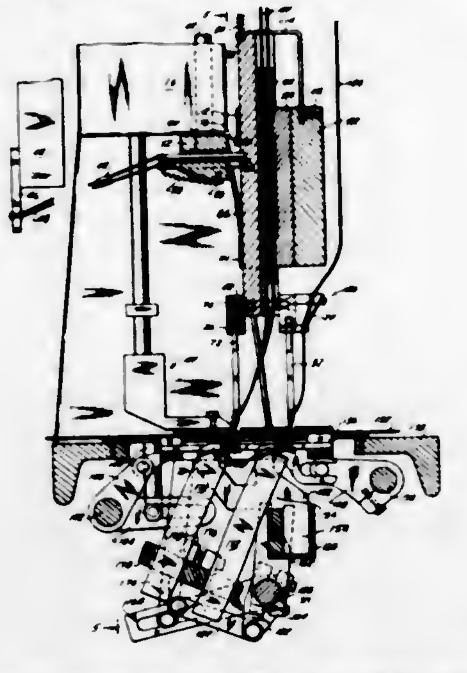
Gordon R. O'Neil, Westmont, and John F. Stufflebeam, Lockport, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 17, 1966, Ser. No. 521,062
5 Claims. (Cl. 111—37)



A hilldrop planter wherein a valve arrests and groups seed discharged from a hopper and is reciprocated at high speed between positions for accumulating seed and ejecting the accumulated seed to the ground.

3,402,686
TUFTING MACHINE

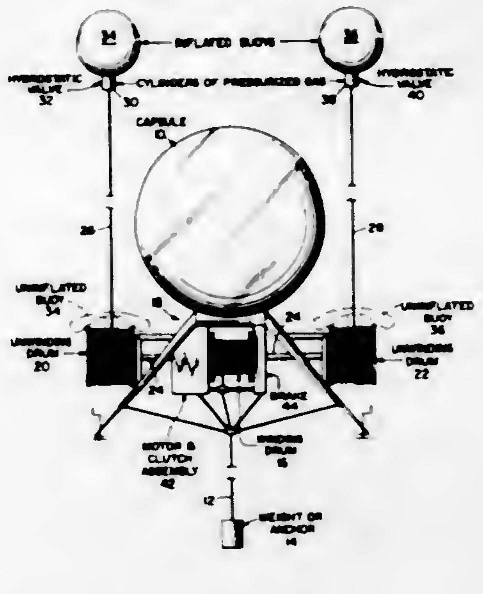
Martin Rodstein and Robert C. Hackney, Dalton, Ga., assignors to Carolyn Chenilles, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 11, 1967, Ser. No. 667,630
10 Claims. (Cl. 112—79)



The present disclosure describes a tufting machine in which there are two rows of needles, each having separate control means, which control means will give a predetermined pattern of tufts during the tufting operation.

3,402,687
DEPTH-POSITIONING APPARATUS FOR UNDERWATER RESEARCH VEHICLES

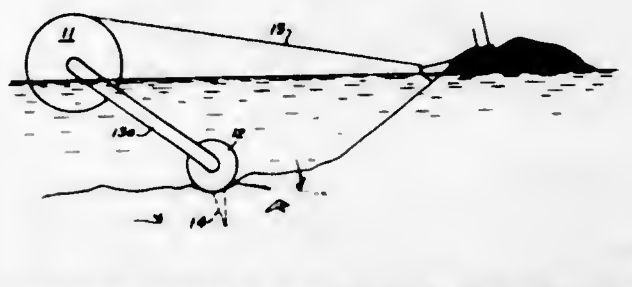
Kiyoshi Tsuji, Camarillo, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 14, 1967, Ser. No. 668,310
12 Claims. (Cl. 114—16)



Apparatus for use with a positively buoyant underwater vehicle such as a manned observatory in order to lessen the internal power required to bring the vehicle to a desired depth. The concept utilizes the upward force created by the inflation of a buoyant member at a given depth in a body of water in order to unwind a cable from one drum of a rotating winch mounted on the vehicle. A second cable, tethered to a weight resting on the ocean floor, is wound on a second drum by the rotation of the winch, and this winding action pulls the vehicle downwardly as the buoyant member rises to the surface.

3,402,688
GROUNDED SHIP RECOVERY APPARATUS

Edgar N. Rosenberg, 6914 Mission Gorge Road 92120, and Charles S. Manning, 3454 Bangor Place 92106, both of San Diego, Calif.
Filed Apr. 18, 1967, Ser. No. 631,845
3 Claims. (Cl. 114—51)

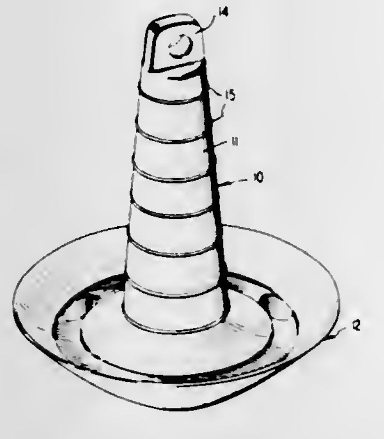


The invention relates to a grounded ship recovery apparatus that includes two cylinders joined by a pair of braces. A blade mounted on the external surface of a first cylinder is inserted into the ocean floor between the other cylinder and a grounded ship to provide a pivot point. A line extending from the other cylinder to the ship transmits a horizontal pulling force to the ship when the first cylinder is flooded. A preferred embodiment of the invention utilizes a floatable hoist apparatus in place of the first cylinder. Rotational force provided by the floatable hoist apparatus is converted into a horizontal force for removing the grounded ship. When the ship has been pulled free, using apparatuses made in accordance with the two embodiments, water is pumped from the sunken cylinders to permit recovery of the entire apparatus.

ERRATUM

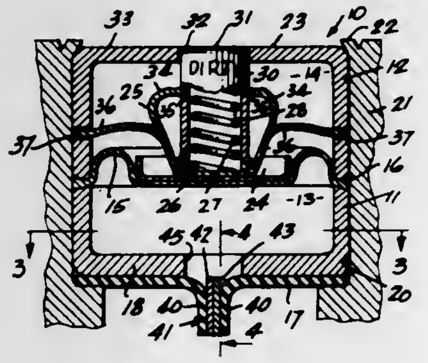
For Class 114—16 see:
Patent No. 3,402,687

3,402,689
ANCHOR
Forrest H. James, Jr., 108 N. 9th St., Opelika, Ala. 36801, and Clayton J. Ammondson, 730 Russell Ave., Reidsville, N.C. 27320
Filed Nov. 18, 1965, Ser. No. 508,491
5 Claims. (Cl. 114—206)



An anchor having a two part hollow plastic shell in which the shank is inserted into the head portion and the hollow interior is filled with cement and heavy material.

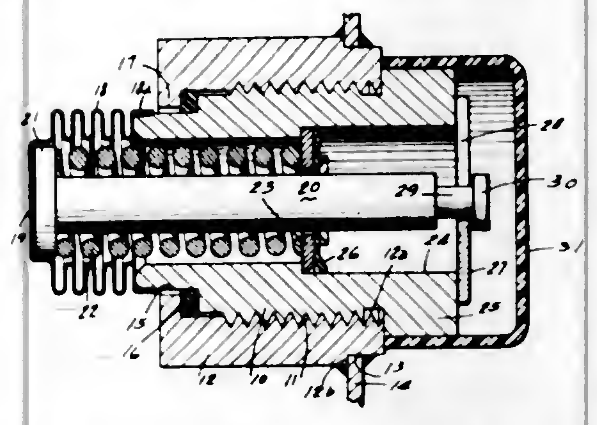
3,402,690
INDICATING DEVICE
William M. Willis, 30490 E. Sunset Drive, Redlands, Calif. 92373
Filed Oct. 23, 1965, Ser. No. 503,953
14 Claims. (Cl. 116—70)



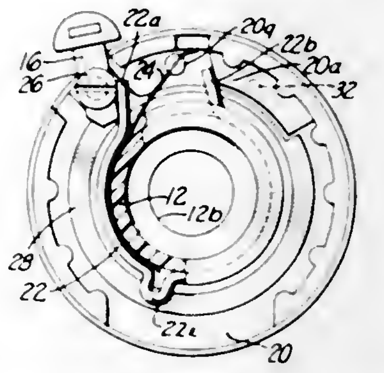
A signaling device for indicating a rise in pressure in a fluid system across a contaminable element of the system. This signaling device incorporates apparatus to prevent operation when low temperature fluid is present or upon pressure surges in the system. Upon a pressure rise held at a predetermined level, a signal is triggered and remains in a triggering position until manually reset.

3,402,691
PRESSURE INDICATOR
Arthur Rodgers, Kenmore, N.Y., assignor to General Fire Extinguisher Corporation, Northbrook, Ill., a corporation of Delaware
Filed June 13, 1967, Ser. No. 645,657
9 Claims. (Cl. 116—70)

A fluid pressure indicator having a frangible indicator associated with a spring urged plunger normally restrained from breaking the indicator by a pressure responsive element until a predetermined change in pressure occurs in an adjoining area.



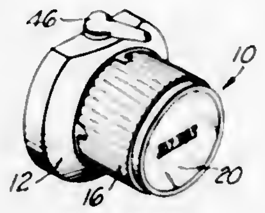
3,402,692
BRAKE AND TURNS-COUNTING MEANS FOR ROTARY INSTRUMENT
Harold G. Hickman and Robert L. Jones, Riverside, Richard L. Bomar, Pomona, and Marvin E. Harrison, Riverside, Calif., assignors to Bourns, Inc.
Filed Dec. 23, 1966, Ser. No. 604,273
7 Claims. (Cl. 116—115)



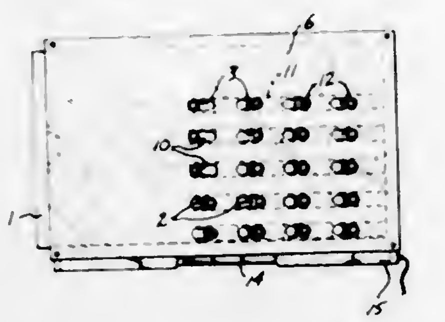
A device for attachment to a rotary-instrument operating shaft which shaft may extend from the instrument through a hole in a panel on which the instrument may be mounted, the device having a manually rotatable knob that is secured to the shaft for manual operation of the shaft and for holding the remainder of the device against the front face of the panel, the knob comprising an annular flange provided with indicia to indicate the fractional part of a turn of the shaft from a zero or index position, the device having a stationary body or base, a second annular indicator outwardly of the first and rotatably supported on the knob, jump-gear means on the base operatively interposed between the first and second indicator and effective to step the outer indicator one step for each revolution of the inner indicator and shaft, and brake means including a band riding in an annular groove in the knob adjacent the panel and effective to hold the indicators and base together and operable to clamp the knob against rotation relative to the base.

3,402,693
VARIABLE RESISTOR INDICATING AND LOCKING DEVICE
Donald G. Tweed and John R. Jungblut, Riverside, Calif., assignors to Bourns, Inc.
Filed Apr. 7, 1966, Ser. No. 540,985
6 Claims. (Cl. 116—115)

A variable resistor indicating and locking device for a multi-turn variable resistor or potentiometer, having fixed means including a base adapted to repose against a face of a panel and a rotary member to receive and be affixed to a rotary shaft of the resistor, the rotary member being rotated by gearing connected to a manually rotatable shell, and the fixed means supporting a digital counter connected to be driven by the gearing, and the fixed means having a contractile locking band and a lever operable to permit the band to clasp and lock the rotary member and operable to force the band out of engagement with the movable member to permit manual rotation of the shell and gearing to adjust the resistor.

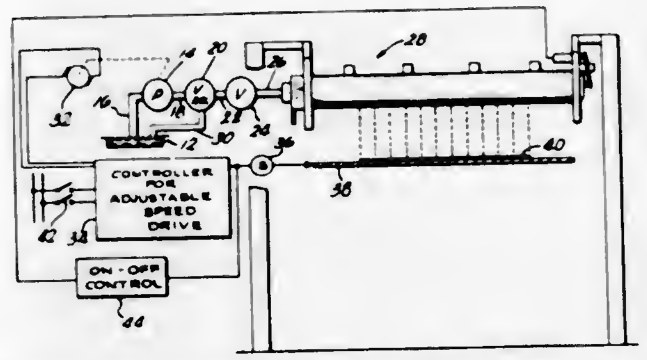


3,402,694
CARD-HOLDING INDICATING DEVICE
Marvin O. Christman, 4815 NE. 44th St., Seattle, Wash. 98105
Filed Apr. 14, 1965, Ser. No. 448,202
9 Claims. (Cl. 116—135)



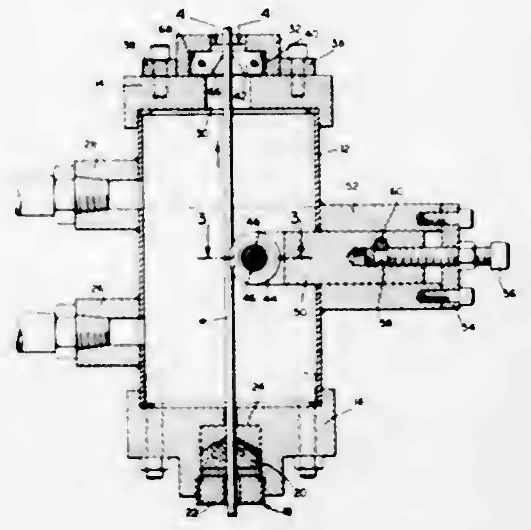
Three layers secured in overlying registry form a laminated body of rectangular shape. Inner marginal ribs around three sides of a back layer define a card-receiving cavity adjacent to a transparent intermediate layer. At the side of the transparent intermediate layer opposite the back layer, a face layer has parallel grooves in its side adjacent to the transparent intermediate layer in which sliders are received; and such sliders have knobs **12** projecting through elongated slots in the face layer in registry with the grooves. The slots have their lengths extending lengthwise of the grooves and are spaced apart lengthwise of the grooves.

3,402,695
LIQUID APPLICATOR SYSTEM
Owen R. Baker, Bloomfield Hills, Robert M. Gubbins, Birmingham, and Rudolf G. Hentschel, Ann Arbor, Mich., assignors to Baker & Gubbins Co., Clawson, Mich., a corporation of Michigan
Filed Oct. 24, 1966, Ser. No. 588,967
10 Claims. (Cl. 118—7)



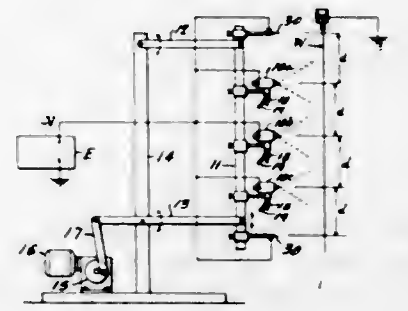
Apparatus for applying liquid to workpieces traveling on a moving conveyor. A positive displacement pump is driven by a variable speed electric motor for delivering the liquid to a header positioned over the conveyor for feed of the liquid onto the workpieces. Controls are provided to vary the rate of discharge of the liquid in accordance with the rate of travel of the conveyor, and to stop discharge when movement of the conveyor is interrupted. A mechanism is provided for varying the width of discharge of the liquid to accommodate workpieces of varying sizes carried by the conveyor.

3,402,696
INDUSTRIAL PROCESS AND APPARATUS
Edward E. Richards, Warminster, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 11, 1966, Ser. No. 533,596
10 Claims. (Cl. 118—125)



A wire coating die having split sections with a central orifice geometrically similar to and slightly smaller than the cross-section of the wire being coated. Flutes are circumferentially spaced about the orifice and have a perimetrical configuration whose periphery is also geometrically similar to the wire being coated and spaced therefrom by a substantially constant gap which determines the coating thickness independently of speed as the wire is axially fed through the die. The die is embraced by a resilient member so that land portions of the orifice continuously bear against the wire periphery.

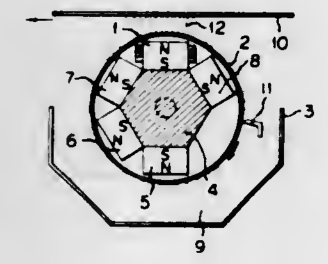
3,402,697
FILM THICKNESS CONTROL FOR ELECTROSTATIC COATING SYSTEMS
Erhard Kock, Toledo, Ohio, assignor to The DeVilbiss Company, Toledo, Ohio, a corporation of Ohio
Continuation of application Ser. No. 351,666, Mar. 13, 1964. This application Feb. 23, 1967, Ser. No. 618,237
2 Claims. (Cl. 118—624)



An electrostatic coating apparatus for controlling the thickness and uniformity of the coating deposited on a workpiece. A linear array of a plurality of uniformly charged electrostatic spray guns are mounted on a reciprocable stem and an electrode is provided on said stem at each side of said array, spaced from the adjacent gun at a distance substantially equal to the spacing between adjacent spray guns and charged to the same potential, the ends of the electrodes being spaced from the work at substantially the same distance as the discharge ends of said spray guns.

3,402,698
MAGNET ASSEMBLY FOR MAGNETIC DEVELOPING BRUSH AND DEVELOPING APPARATUS FOR ELECTROSTATIC PROCESS

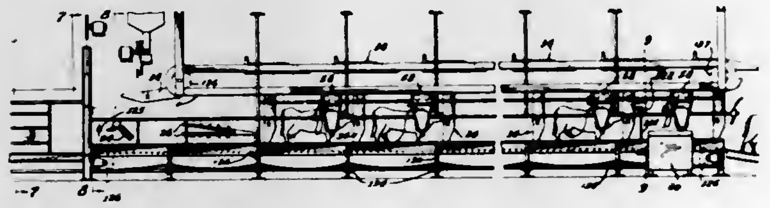
Motoki Kojima, Haruo Fujii, and Noboru Kutsuwada, Tokyo, Japan, assignors to Konishiroku Photo Industry Co., Ltd., Tokyo, Japan
Filed May 26, 1967, Ser. No. 641,516
Claims priority, application Japan, June 6, 1966, 41/36,215
6 Claims. (Cl. 118—637)



A magnet assembly for forming a magnetic developing brush which can be supplied with and carry developer powders for use in electrophotographic or electrostatic processes, comprises a main magnet and a pair of submagnets coupled to both sides of the main magnet and arranged so that their direction of magnetization lies substantially at right angles to that of the main magnet; each of the submagnets is disposed so that its inner pole has the same polarity as the active pole of the main magnet. This magnet assembly creates an intensified, uniform magnetic field of rectangular cross-section in front of and commensurate in width with the active or brush-forming pole.

3,402,699
MILKING SYSTEM

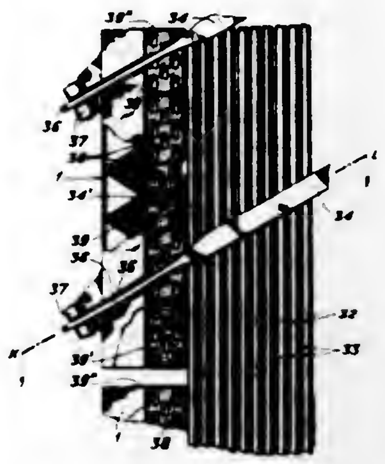
Harry C. Cain, 1836 Rosecrans Ave.,
Manhattan Beach, Calif. 90266
Original application Mar. 27, 1961, Ser. No. 98,366, now Patent No. 3,282,250, dated Nov. 1, 1966. Divided and this application Mar. 11, 1966, Ser. No. 558,155
23 Claims. (Cl. 119—14.04)



This disclosure describes a system for milking cows which includes means for cleaning of the cows bodies prior to performance of the milking operation. The cows are then put into stalls on a moving platform and feed is delivered automatically to the traveling stalls. The milking operation is performed by milking units which travel on an adjacent overhead track at the same rate as the moving platform.

3,402,700
STRUCTURAL PANEL FOR A STEAM GENERATOR

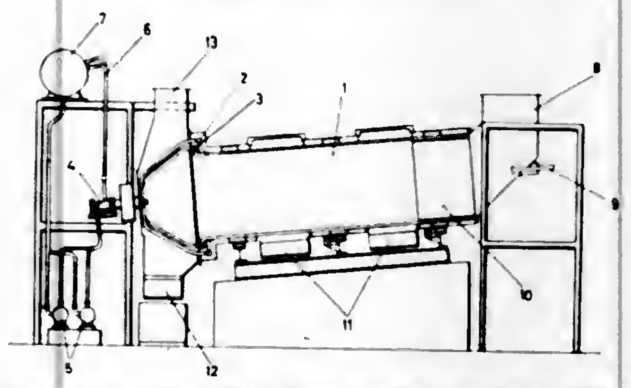
Alfred Brunner, Winterthur, Switzerland, assignor to Sulzer Brothers, Limited, Winterthur, Switzerland, a corporation of Switzerland
Filed July 22, 1966, Ser. No. 567,133
Claims priority, application Switzerland, July 22, 1965, 10,313/65
7 Claims. (Cl. 122—6)



The panels are disposed about the chamber walls of the steam generator in order to support the walls against outward bulging under the forces generated in the interior of the chamber. The tie bars maintain the panels in position about the chamber. The panels can also have parallelogram surfaces which are formed with pectinated free edges in order to damp sound vibration.

3,402,701
ROTATING CYLINDRICAL FURNACE WITH WASTE HEAT UTILIZATION FOR PERFORMING EXOTHERMIC PROCESSES

Ludwig Herrmann, Hofheim, Taunus, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
Filed June 13, 1966, Ser. No. 557,210
Claims priority, application Germany, June 24, 1965, F 46,424
5 Claims. (Cl. 122—11)

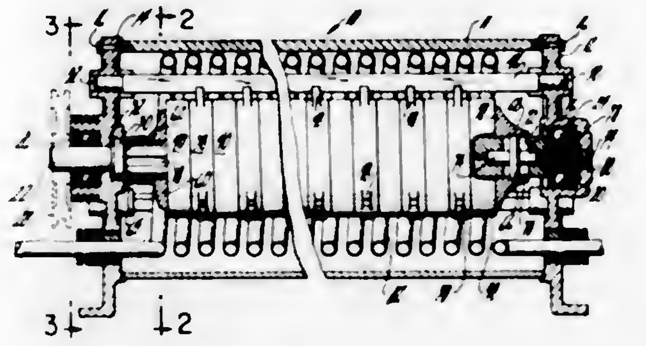


A rotatable cylindrical furnace for burning refuse and conducting exothermic reactions generally in which the interior cylindrical wall is constructed of tubes of a heat-conductive material such as metal and water or other cooling fluid is circulated through the tubes to absorb the heat generated in the furnace and utilize said heat to convert the water into steam.

3,402,702
FRICTION HEAT GENERATOR

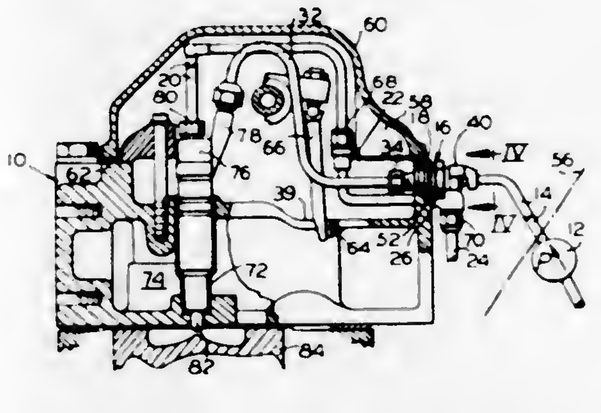
Herbert W. Love, South Coventry, Conn., assignor of fifty percent to William A. Wilson, West Hartford, Conn.
Filed July 7, 1967, Ser. No. 651,868
6 Claims. (Cl. 122—26)

The invention comprises a heat generator of the friction type having a casing, a plurality of juxtaposed discs disposed within the casing, alternate discs being rotatable relative to adjacent, non-rotatable discs by a driven shaft journalled within the casing. Each disc is formed with a chamber therein, the chambers of the non-rotatable discs being filled with material of low heat conductivity and the chambers of the rotatable discs being filled with material of high heat conductivity. The frictional surfaces of the non-rotatable discs are formed to provide vertical parallel grooves and the surfaces of the rotatable discs are formed with angularly spaced outwardly radiating grooves to permit more efficient transfer of heat from the discs to a fluid transfer medium within the casing.



3,402,703
FUEL CONNECTION TO CYLINDER HEAD

Devere C. Dickerson, Wheaton, and Ronald M. Bachorski, Glen Ellyn, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed July 8, 1966, Ser. No. 563,820
10 Claims. (Cl. 123—32)



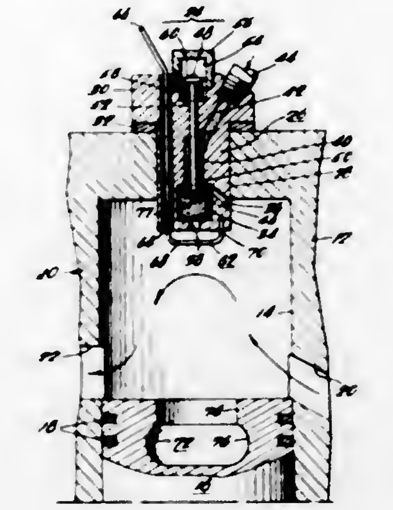
Fuel connection to cylinder head comprising a disconnectible coupling in the fuel line. The line can be broken at the coupling to avoid inconvenience. To prevent lube oil contamination, the coupling vents externally to atmosphere because of the eventuality that vibration may cause the seal in the coupling to leak, whereupon leaking fuel will harmlessly drain down the outside of the head.

3,402,704
GASEOUS FUEL ENGINE

Julius E. Witzky and John M. Clark, Jr., San Antonio, Tex., assignors, by mesne assignments, to American Gas Association, Inc., New York, N.Y., a corporation of New York
Filed Nov. 29, 1966, Ser. No. 597,676
5 Claims. (Cl. 123—32)

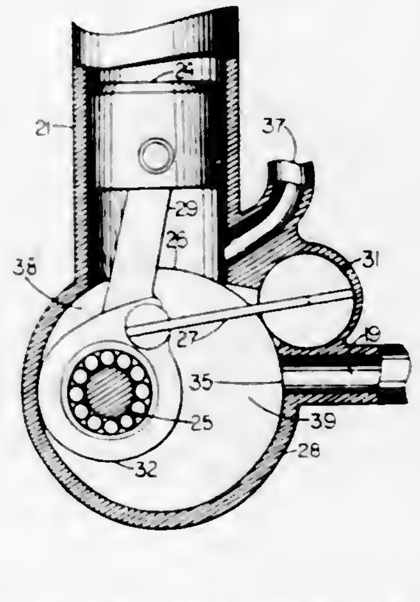
An internal combustion engine with a main combustion chamber in the cylinder, and a closed auxiliary combustion chamber with a throat connecting therewith has a separate fuel receiver located in the main combustion chamber.

Piston movement toward top dead center causes movement of the receiver into the throat of the auxiliary combustion chamber to thereby throttle the flow of air from the main into the auxiliary near the end of the compression stroke to create a pressure differential therebetween. A charge of fuel placed in the fuel receiver prior to compression is caused to discharge into the auxiliary combustion chamber passed an igniter by this pressure differential which acts through suitably located ports in the fuel receiver. Combustion is initiated in the auxiliary chamber near top dead center which causes a reverse of the first pressure differential and consequently a reverse flow in the receiver so that any remaining fuel is forced into the main combustion chamber and burned.



3,402,705
INTERNAL COMBUSTION ENGINE

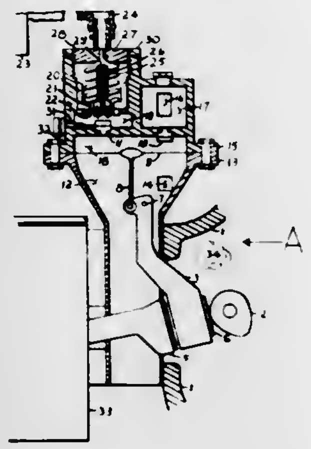
John Donald Stevenson, Costa Mesa, Calif.
(P.O. Box 104, Sedona, Ariz. 86336)
Filed Feb. 20, 1967, Ser. No. 617,311
2 Claims. (Cl. 123—119)



A piston reciprocable in a cylinder has a connecting rod connection with a rotatable crankshaft. The crankshaft has circular webs carrying the connecting rod journal. A vane partition reciprocable in a slotted cylindrical rotor extends between the connecting rod and crankcase dividing the interior of the crankcase into two chambers mutually isolated by the vane, crankcase, crankshaft web, and connecting rod during a portion of each crankshaft revolution. One of the chambers is provided with valving means for the transfer of a charge to a firing chamber, the other chamber is provided with means for inducting the charge.

3,402,706
MECHANISM FOR EXTRACTING VAPORS FROM CRANKCASE FOR USE AS A FUEL SAVER AND SMOG CONTROL

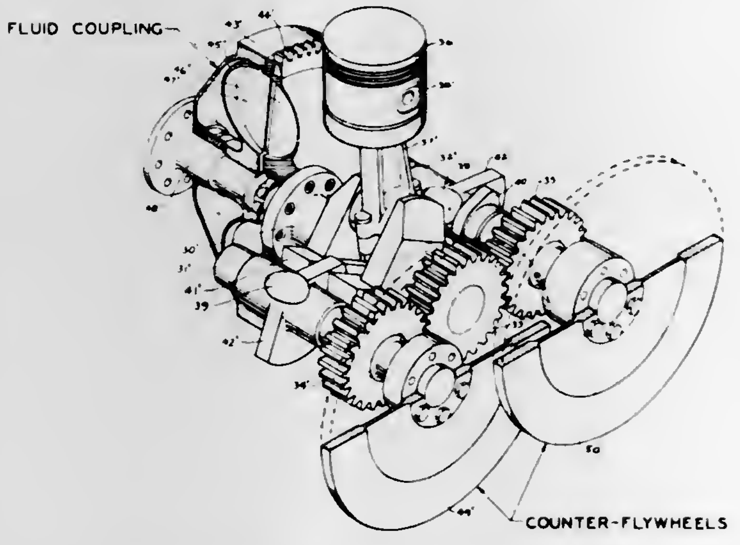
Daniel Franklin Yancho, West Palm Beach, Fla., assignor of one-half to Arthur Alexander Orme, Palm Beach, Fla.
Filed June 3, 1965, Ser. No. 461,006
24 Claims. (Cl. 123—119)



This invention provides a crankcase ventilating and flow regulating device which balances the supply of vapors from the crankcase to the manifold to the engine's speed, by reducing flow when the engine runs slower and vacuum is high, and forces flow by pump action when the engine runs faster, and vacuum is low. It also provides two external and one internal controls to permit one unit to fit many engines which have different demands and requirements.

3,402,707
VIBRATIONLESS ENGINES

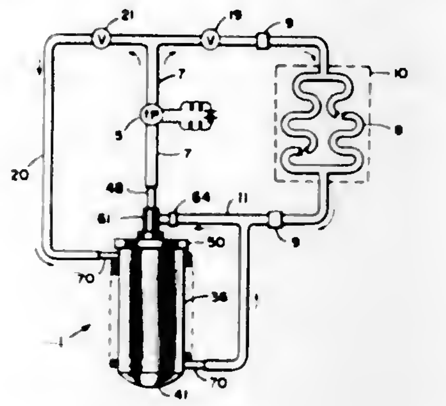
Paul Heron, 309 Riverside Drive, Oakville, Ontario, Canada
Continuation-in-part of application Ser. No. 140,972, Sept. 21, 1961, which is a continuation-in-part of application Ser. No. 366,927, July 9, 1953. This application Sept. 18, 1964, Ser. No. 397,587
29 Claims. (Cl. 123—192)



23. A power plant comprising an internal combustion engine having two shafts, mechanism for applying power impulses to at least one of the shafts, a rigid mechanism interconnecting the two shafts for making them turn in opposite directions at speeds that have a fixed ratio to each other and for making them accelerate and decelerate together in response to the power impulses, and flywheel means fixed to the shafts, and means for abstracting most of the power of the engine from one of the two shafts without interfering with said acceleration and deceleration of said shafts, the ratio of the moments of inertia of the two shafts and the parts connected to them to accelerate and decelerate with them being substantially the inverse of the ratio of their speeds.

3,402,708
SUIT HEATER

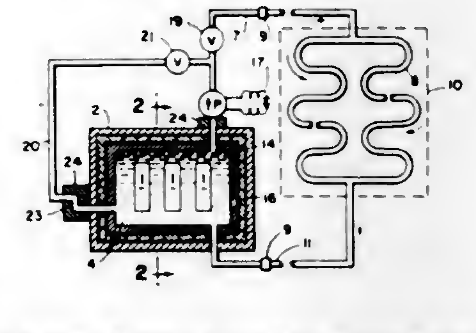
Michael G. Grega, Miamisburg, Ohio, assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed June 27, 1967, Ser. No. 649,361
7 Claims. (Cl. 126—204)



Apparatus for heating garments such as suits for swimmers or astronauts who may be subjected to cold water or space environments, which utilizes a radioisotope heat source to furnish heat to fluid that is pumped through conduits or passageways of the apparatus and garment, and which includes means for selectively bypassing fluid so as to vary the temperature of fluid pumped through the garment passageways.

3,402,709
SUIT HEATER

Rufus W. Shivers, Washington, D.C., and Edward L. Beckman, Gaithersburg, Md., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed June 27, 1967, Ser. No. 649,362
4 Claims. (Cl. 126—204)

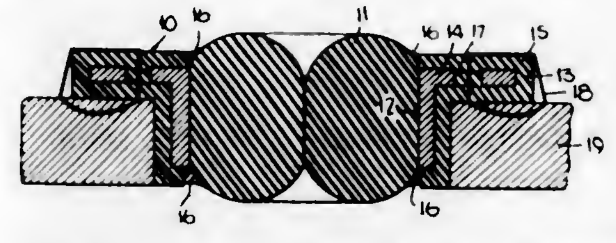


Apparatus for heating garments such as suits for swimmers or astronauts who may be subjected to cold water or space environments, which utilizes a radioisotope heat source to furnish heat to fluid that is pumped through conduits or passageways of the apparatus and garment, and which includes means for selectively bypassing fluid so as to vary the temperature of fluid pumped through the garment passageways.

3,402,710
SELF-CLOSING VALVE DEVICE FOR IMPLANTATION IN THE HUMAN BODY

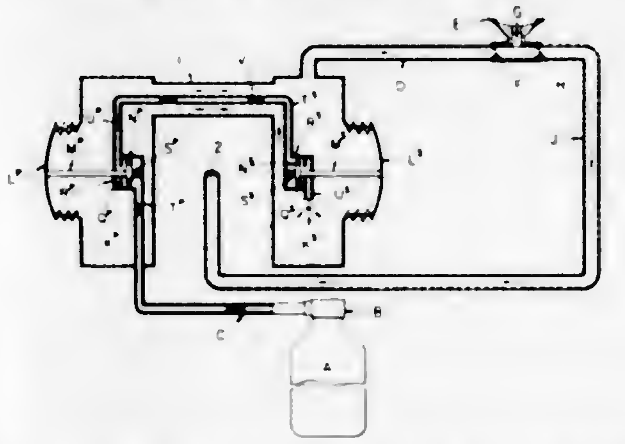
Maurice Paleschuck, Massapequa, N.Y., assignor to Hydra-Power Corporation, New Rochelle, N.Y., a corporation of California
Filed June 27, 1966, Ser. No. 560,715
5 Claims. (Cl. 128—1)

A self-closing valve device for implantation in the human body comprising a rigid sleeve or hollow cylindrical housing having a compressed silicone rubber closure member mounted therein. The closure member is in the form of a torus whose initial diameter is larger than that of the sleeve or housing member. The torus when compressed into the sleeve member provides a resilient closed opening through which surgical implements, such as catheters may be selectively inserted and removed. The sleeve member is also provided with a flange for easy securement to the body tissue. The whole valve device is constructed of material compatible with the body.



3,402,711
BREATHING APPARATUS

John H. Emerson, Arlington, Mass., assignor to Westinghouse Electric Corporation, a corporation of Pennsylvania
Filed Jan. 6, 1964, Ser. No. 335,724
6 Claims. (Cl. 128—142.2)

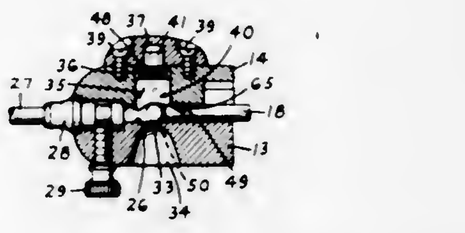


1. An underwater breathing system for connection to a user's airway including a source of breathable gas under pressure, a conduit system communicating between said source and the user's airway, said conduit system having a first valve and a second valve separated from each other and connected in series in a manner that the gas pressure at the outlet of said first valve is substantially equal to the gas pressure at the outlet of said second valve, said valves being controlled by movable wall areas of said conduit system which are separated from each other and which are exposed on one side to the interior of said conduit system and on the other side to the water and arranged to open when the pressure in the conduit system is changed in one direction and to close when the changed pressure is changed in the opposite direction, whereby when the system is positioned with one valve and movable wall thereof at a different distance from the surface of the water than the other, the valve which is located farthest from the surface of the water will open first upon a change in pressure in said system and as the pressure in said conduit system is subsequently changed further the second valve will open, allowing a flow of gas through said two valves.

3,402,712
PELLET IMPLANTER

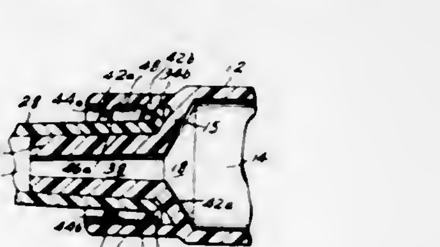
Henry R. Eisenhand, Lakewood, Colo., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed July 19, 1966, Ser. No. 566,331
6 Claims. (Cl. 128—217)

A gravity-feed pellet implanter has a tooth-engaging notch on the side of its plunger rod near its distal end, and a toothed cam extending into the plunger-containing bore and spring-biased against the notched side of the plunger; the toothed cam prevents advance of the plunger unless a pellet is in transport and prevents movement of pellets toward the needle unless the plunger is being advanced.



3,402,713
HYPODERMIC SYRINGE WITH IMPROVED RETAINING MEANS

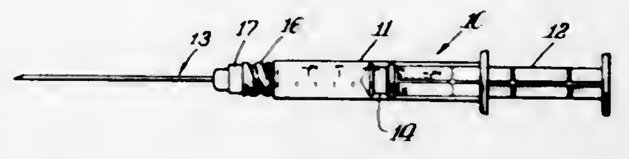
Thaddeus S. Senkowski, Cedar Grove, and Joseph T. Welch, Maywood, N.J., assignors to Becton, Dickinson and Company, East Rutherford, N.J., a corporation of New Jersey
Filed May 13, 1965, Ser. No. 455,548
7 Claims. (Cl. 128—221)



A one piece molded plastic hypodermic unit for use with a needle of the type comprising a cannula supported in a hub provided with radially outwardly extending flanges. The hypodermic unit includes a relatively flexible internally threaded retaining collar projecting forwardly from one end for receiving and retaining the hub. The collar threads have a forward sidewall substantially perpendicular to the longitudinal axis of the collar for guiding the hub into a locking position and a rear sidewall forming an acute angle with the longitudinal axis for cooperating with the internal surfaces of the collar to retain the hub in place.

3,402,714
SYRINGE ADAPTER

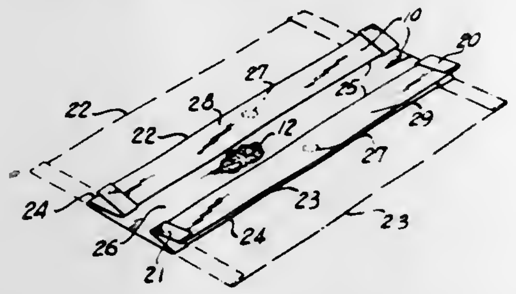
John L. Higgins, Daytona Beach, Fla., and Peter A. Stevens, St. Louis, Mo., assignors to Brunswick Corporation, a corporation of Delaware
Filed Feb. 3, 1967, Ser. No. 613,781
10 Claims. (Cl. 128—221)



This disclosure relates to hypodermic syringes having a barrel provided with a plastic frusto-conical outwardly narrowing tip for slip connection thereto of a corresponding needle hub. The invention comprehends the provision of an adapter for use with such a barrel tip for converting the syringe for use with a needle having a Luer-like lock type hub.

3,402,715
DIAPER

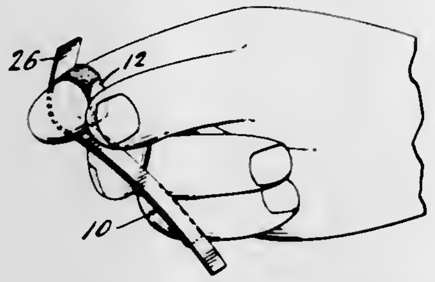
Gerald J. Liloia, North Brunswick, and Louis F. May, Jr., Old Bridge, N.J., assignors to Johnson & Johnson, a corporation of New Jersey
Filed May 9, 1966, Ser. No. 548,711
5 Claims. (Cl. 128—287)



1. A diaper comprising a water-pervious cover sheet, an absorbent bottom sheet having substantially the same width as said water-pervious cover sheet, an absorbent pad positioned between said water-pervious cover sheet and said absorbent bottom sheet and spaced from the side edges of said water-pervious cover sheet and said bottom sheet and disposed approximately centrally with respect to the side edges thereof, a water-impermeable film secured to the under surface of said bottom sheet said water-impermeable film extending from one side edge of said absorbent bottom sheet to the other side edge thereof and spaced from the ends of said absorbent bottom sheet to provide film-free portions at each end of said absorbent bottom sheet, said film-free portions being folded over the end portion of said diaper and secured to said cover sheet to provide absorbent waistbands at each end of said diaper, said diaper having both side edges infolded and then outfolded along lines substantially parallel to the center longitudinal axis of said diaper to provide a pair of double folds the exposed surface of the side edges of said diaper resulting from the outfolding being absorbent.

3,402,716
ADHESIVE STRIP SUTURE

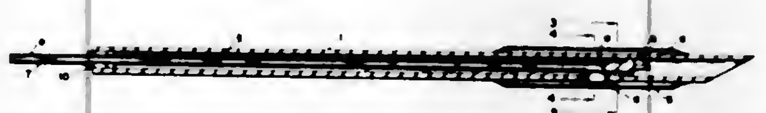
Thomas R. Baxter, Mount Vernon, Ohio, assignor to Surgical Devices, Mount Vernon, Ohio, a corporation of Ohio
Filed Jan. 30, 1964, Ser. No. 341,338
5 Claims. (Cl. 128—335)



1. A suture comprising: an elongated flexible backing strip having a pair of transversely extending weakened areas respective ones of which are spaced inwardly from respective ends of said backing strip, a layer of adhesive covering the portions of said backing strip adjacent and spaced toward each other from said weakened areas, the portions of said backing strip positioned toward the ends of said backing strip from said weakened areas being uncoated, and a relatively stiff protective strip extending between said weakened areas and covering said adhesive with the ends of said protective strip being generally conterminous with the outer edges of said layer of adhesive, said relatively stiff protective strip being sufficiently stiff to remain substantially planar when said suture is supported inwardly of one of said weakened areas and said elastic backing strip is peeled back away from the protective strip to achieve separation of said adhesive and said protective strip.

3,402,717
ENDOTRACHEAL TUBE WITH VALVED BALLOON HAVING A REMOVABLE INFLATION STYLET INSERT THEREIN

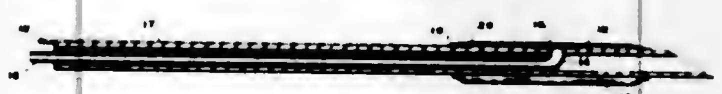
George O. Doherty, 2301 River Road, Missoula, Mont. 59801
Filed Aug. 12, 1965, Ser. No. 479,227
16 Claims. (Cl. 128—351)



An endotracheal tube having an aperture fitted with a check valve opening into an inflatable cuff at one end of the tube. A stylet is provided for insertion into the tube, and it has an enlarged head at its distal end for blocking the tube beyond the aperture so that when a compressed gas in introduced into the tube through its proximal end, the check valve will open and the gas will inflate the cuff.

3,402,718
ENDOTRACHEAL TUBE WITH VALVED BALLOON HAVING REMOVABLE INFLATION MEANS AND BALLOON RUPTURING MEANS ASSOCIATED THEREWITH

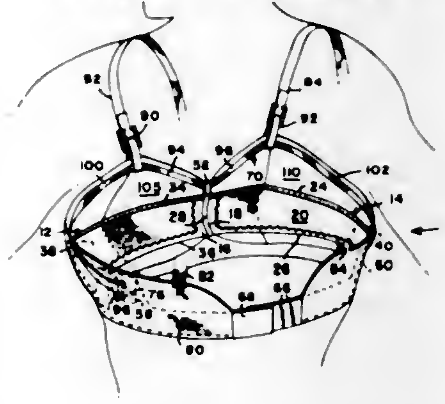
George O. Doherty, 2301 River Road, Missoula, Mont. 59801
Filed Aug. 12, 1965, Ser. No. 479,228
14 Claims. (Cl. 128—351)



An endotracheal tube including an open-ended tube having an aperture opening into an inflatable cuff at one end of the tube. A check valve covers the aperture, and a smaller diameter tubular inflation conduit extends from the aperture, into which its inner end is removably fitted, through the tube for connection to an external source of pressurized gas. A string extends along the external surface of the tube to the cuff, to which it is attached, for rupturing and thereby deflating the cuff.

3,402,719
BRASSIERE

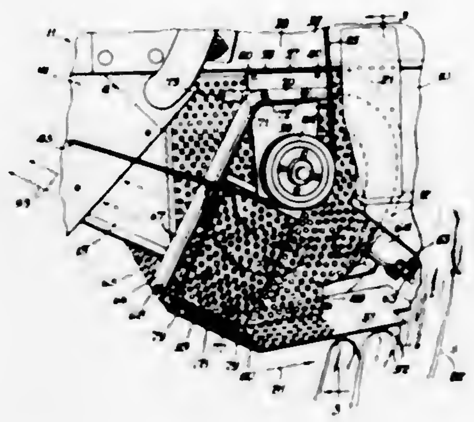
Carl G. Simonsen, 2204 The Alameda, San Jose, Calif.
Filed Apr. 18, 1966, Ser. No. 543,401
9 Claims. (Cl. 128—484)



A brassiere having abutting bust supporting bands, wherein a convexo-convex space is provided when said bands are in abutting relation, and, wherein a joinder at such abutting relation by stitching or the like forms the bust supporting bands into a configuration that follows the contour of the bust to provide a long wearing, comfortable brassiere.

3,402,720
FAN SCREEN CONSTRUCTION FOR COMBINES

Edward W. Rowland-Hill, Bettendorf, Iowa, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 6, 1965, Ser. No. 477,723
7 Claims. (Cl. 130—27)



A screen-shield for the fan of a combine, having a forward portion made of solid sheet material and situated to encounter the field crop beneath the combine, the remainder of said screen-shield being made of perforated sheet material for permitting the free passage of air. The screen-shield is spaced from the fan casing so there is an air cavity therebetween which can be supplied with air through any portion of the screen-shield.

3,402,721
TOBACCO PRODUCT WITH FLAVORANT

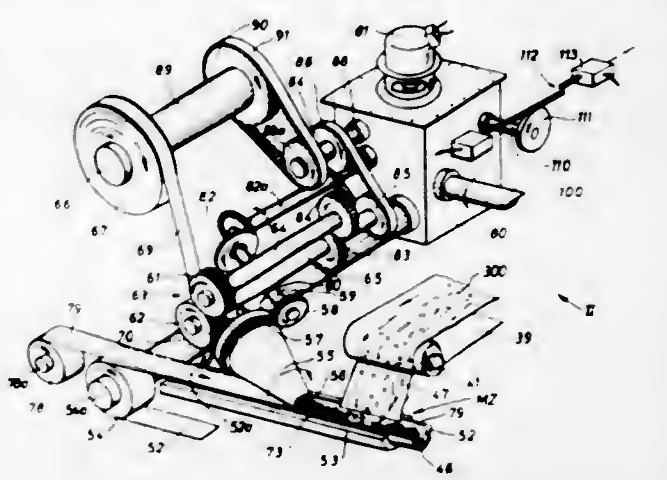
Ernst T. Theimer, Rumson, John James Westbrook III, Shrewsbury, John Wolt, East Orange, and Alton Dewitt Quinn, Cranford, N.J., assignors to International Flavors & Fragrances, Inc., New York, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 519,952, Jan. 11, 1966. This application Nov. 9, 1966, Ser. No. 592,985
10 Claims. (Cl. 131—17)

1. A tobacco product having improved flavor and smoking characteristics comprising tobacco and a small but effective amount by weight of a lactic acid ester of an isoprenoid alcohol.

3,402,722
METHOD AND APPARATUS FOR PRODUCING A TOBACCO-CONTAINING ROD

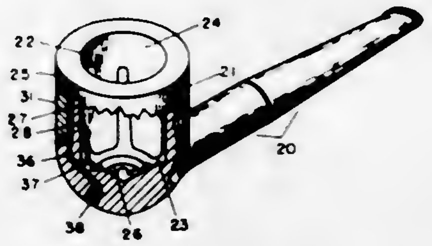
Horst Kochalski, Hamburg-Lohbrugge, Germany, assignor to Hauni Werke, Koerber & Co. K.G., Hamburg-Bergedorf, Germany
Filed Nov. 30, 1965, Ser. No. 510,570
Claims priority, application Germany, Dec. 1, 1964, H 54,433
2 Claims. (Cl. 131—20)

A tobacco rod is formed by merging a stream of shredded tobacco foil with a stream of shredded natural tobacco. The two streams are intermixed by showering one of the streams into the pathway of the other stream or by showering both streams into the pathway of the rod. By changing the speed of one of the streams, the ratio of natural tobacco to shredded foil in the rod is increased or reduced. By changing the speed of both streams to the same extent, the ratio of natural tobacco to shredded foil remains unchanged but the resulting rod moves at a different speed. At least one of the streams can be built up of weighed batches which are first converted into a carpet and the carpet is thereupon converted into a stream.



3,402,723
SMOKING PIPE APPARATUS

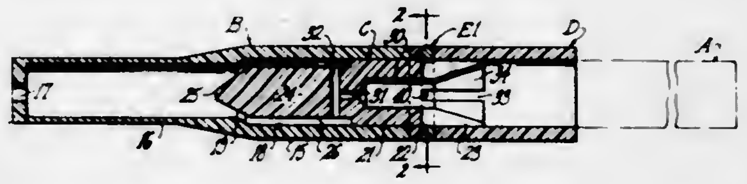
Yow-Jiun Hu, Alexandria, Va.
(47 Cummings St., Medford, Mass. 02155)
Filed Oct. 11, 1963, Ser. No. 315,660
4 Claims. (Cl. 131—185)



1. A smoking pipe comprising a stem connected to a bowl and tobacco chamber, an electrical conductor seated in said chamber, a battery with terminal means, means forming a recess in said pipe, means for positioning the battery in said recess means with the terminal means normally disconnected from the electrical conductor, switch means located on the pipe for connecting the terminal means to said electrical conductor, and a recharge outlet mounted in said bowl and electrically connected to said battery allowing the battery to be recharged from an outside source.

3,402,724
APPARATUS FOR WITHDRAWAL FROM TOBACCO HABIT

Lester L. Blount, 15012 Midway Place, Midway City, Calif. 92655, and Leonard L. Thomas, 11452 Jola Ave., Garden Grove, Calif. 92640
Filed Oct. 21, 1965, Ser. No. 499,266
3 Claims. (Cl. 131—198)

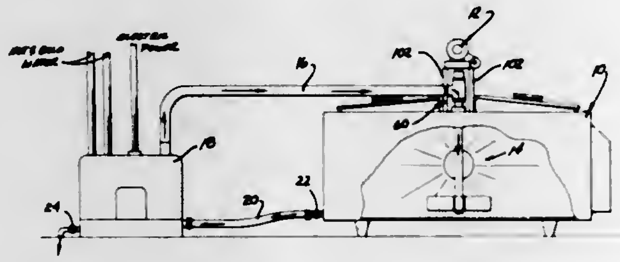


Disclosed herein is a smoking device (cigarette or cigar holder or pipe stem) embodying a receptacle for drawing smoke from a body of burning tobacco at one end thereof; a mouth-piece at its opposite end; an intermediate tubular barrel; an air inlet ring between the opposed ends of the barrel and receptacle; and core means including a body of plug form mounted in the barrel and having an axial smoke speed-up passage, and a plurality of circumferentially-spaced prongs projecting through the air inlet ring and into the receptacle and supporting the ring and the receptacle from the barrel, and including a barrier head axially opposed and adjacent to the downstream end of the smoke speed-up passage, for collecting tar from smoke drawn through the passage.

ERRATUM

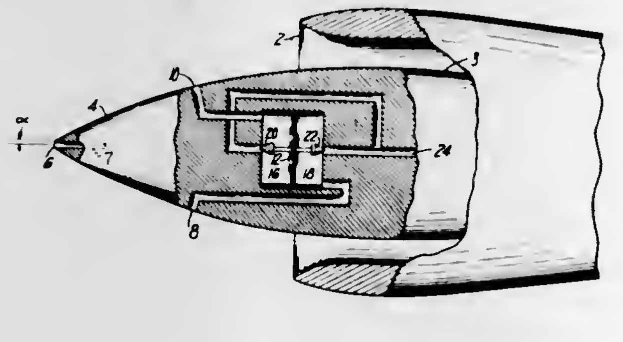
For Class 132—139 see:
Patent No. 3,402,730

3,402,725
BULK TANK WASHING APPARATUS
William M. Booth, Grand Haven, Mich., assignor to Werner Machinery Company, Grand Rapids, Mich., a corporation of Michigan
Filed July 8, 1966, Ser. No. 563,810
7 Claims. (Cl. 134—167)



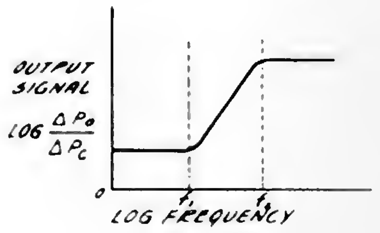
A spray structure for the interior of a bulk liquid storage tank or the like, including spray head means mounted on a hollow drive shaft and suspended inside the tank from a drive coupling which includes a T-shaped housing with a drive sleeve extending through the cross-arm portion of the housing and coupled on one end to the aforementioned drive shaft while being coupled on the other end to a driving means such as a motor and gear head. The leg portion of the T-shaped housing forms a fluid inlet port, and the drive sleeve has openings in its side wall through which fluid from such port may enter the hollow interior of the drive shaft.

3,402,726
ATTITUDE BIASED MACH SENSOR
Frank W. Barry, Windsor, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Jan. 20, 1966, Ser. No. 521,884
5 Claims. (Cl. 137—15.2)



For an air inlet in a supersonic aircraft having variable geometry, means for varying the geometry of the air inlet in response to a signal which is a function of the ratio of two pressure signals, one of which signals is responsive to changes in the direction of the airstream.

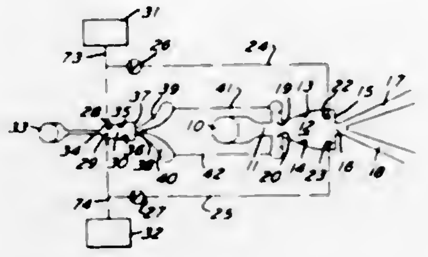
3,402,727
FLUID AMPLIFIER FUNCTION GENERATOR
Willis Anson Boothe, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 23, 1964, Ser. No. 398,605
4 Claims. (Cl. 137—81.5)



1. A fluid amplifier comprising,
a power nozzle from which a fluid power jet is discharged,
a pair of receivers downstream of said nozzle, said receivers comprising passageways respectively having entrances on opposite sides of the nominal path of the power jet and outlets from which an output signal is derived,
a pair of control ports respectively disposed on opposite sides of said power jet whereby pressure signals at said control ports will deflect said power jet towards one or the other of said receivers to alternately change the pressurization of said receivers and provide an output signal therefrom,
a pair of feedback ports respectively disposed on opposite sides of said power jet,
venting means between said ports and said receivers, and
flow restrictive, passageway means respectively connecting each receiver passageway with the feedback port on the same side of said power jet, said connecting passageway means pressurizing each feedback port to a lesser degree than the respective receiver passageway, in opposition to the control signal which has pressurized the receiver to which the feedback port is connected,
means, downstream of each connecting passageway means for restricting flow through said receiver passageways and thus assuring the relative pressurization of said receiver passageways and said feedback ports,
said connecting passageway means further including means for attenuating relatively rapid pressure variations in the flow of fluid therethrough, whereby, for a given strength control signal, the receiver signal pressure will increase as the opposition signal decreases with higher rates of change in receiver signal pressure.

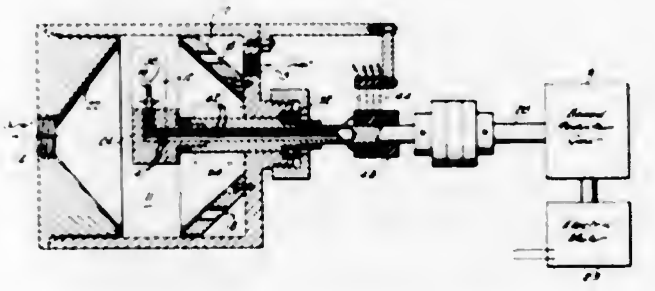
3,402,728
STAGED OSCILLATING DIVERTING VALVE
Robert B. Adams, Tredyffrin Township, Pa., assignor to Moore Products Co., Spring House, Pa., a corporation of Pennsylvania
Filed Aug. 9, 1966, Ser. No. 571,263
10 Claims. (Cl. 137—81.5)

1. An oscillating diverting valve comprising
a fluid delivery stage having a fluid control chamber for two flow conditions and a fluid supply connection connected to said chamber,
said fluid delivery stage having fluid delivery connections for each of said flow conditions and control ports in said chamber for controlling the fluid delivery to said delivery stage delivery connections,
a control stage having a fluid control chamber and a fluid supply connection connected to said chamber,
said control stage having fluid delivery connections and control ports in said chamber for controlling the fluid delivery to said control stage delivery connections,
fluid connections from said control stage delivery connections respectively to said delivery stage control ports,
fluid pressure pick up connections in said delivery stage fluid chamber in the fluid paths for each of said conditions,



fluid connections from each of said pick up connections respectively to one of said control stage control ports,
said fluid delivery stage chamber having a throat in advance of its delivery connections, and
said pressure pick up connections being in advance of said throat.

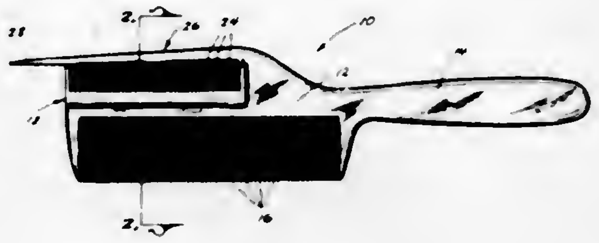
3,402,729
CONSISTOMETER
Robert C. Richmond and Lawrence F. Marsch, Port Arthur, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 417,020, Dec. 9, 1964. This application Aug. 4, 1967, Ser. No. 661,759
30 Claims. (Cl. 137—92)



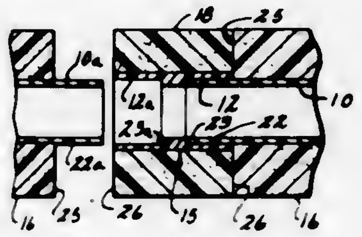
An apparatus for continuously measuring the consistency of a stream of material comprising a resilient member located in the stream so that the two surfaces about which it is flexible are parallel to the direction of the flow of the material in the stream, having strain gauges mounted thereon to provide an indication of the consistency of the material by measuring the reaction forces exerted thereon by the material flowing thereby. Means are provided for rotating the resilient member at a constant rate relative to the stream about an axis which is parallel to the direction of flow of the stream. In accordance with another embodiment the resilient member is held stationary while means, such as a rotatable drum with internal vanes, are provided for rotating the stream of material at a constant rate about an axis parallel to the direction of flow.

3,402,730
HAIR-GROOMING DEVICE
Paul A. Lawrence, 1660 Beaver, Des Moines, Iowa 50310
Continuation-in-part of application Ser. No. 418,631, Dec. 16, 1964. This application May 24, 1965, Ser. No. 458,086
7 Claims. (Cl. 132—139)

A hair-grooming device having two rows of aligned teeth oppositely directed on a frame member. An extending finger member mounted on the frame member spaced from one row of the teeth and having the teeth directed toward the finger and extending in spaced parallel relationship thereto.



3,402,731
PIPING SYSTEMS
George Martin, Louisville, Ky., assignor to American Standard Inc., a corporation of Delaware
Filed Aug. 11, 1965, Ser. No. 478,848
7 Claims. (Cl. 137—375)

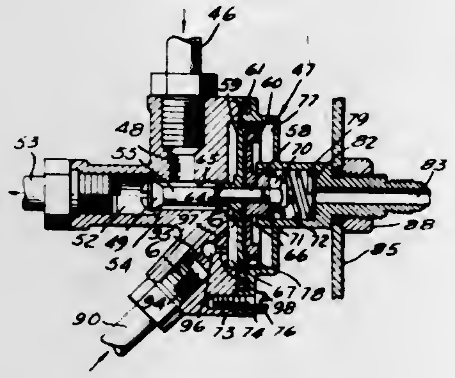


This invention provides means for interconnecting two pipes to each other, each of which is wrapped in foam insulation, the interconnection between the two pipes being made by connectors in such a manner as to obviate the necessity of applying insulation, or removing insulation, in the apparatus or during the interconnection procedure. By employing in-line connectors or T-type connectors, interconnection of the two pipes may be accomplished for conveying hot or cold liquids with a minimum of on-site labor and at a minimum cost.

3,402,732
LIQUID LEVEL AND PRESSURE CONTROL SYSTEM WITH PRECHECK MEANS FOR TANKS
Artson P. Hardison, Glendora, Calif., assignor to Schulz Tool and Manufacturing Co., San Gabriel, Calif., a corporation of California
Filed June 7, 1966, Ser. No. 555,889
13 Claims. (Cl. 137—390)

1. In a pressure sensitive valve having a paycheck means,
(a) a valve body;
(b) a chamber in said body;
(c) a diaphragm dividing said chamber into two parts;
(d) a valve having a stem extending through one of said parts and being connected to move with said diaphragm,
(e) said one part being closed.
(f) said diaphragm being spring biased to hold said valve in an open position;
(g) first passage means to said one part to communicate pressure to be sensed to said diaphragm whereby a predetermined pressure will actuate said diaphragm to move said valve to a closed position;
(h) the improvement comprising precheck means in communication with said first passage means to precheck the operation of said diaphragm and valve, said precheck means including:

(i) said first passage means having a liquid pressure source to supply liquid under pressure to said one part through said first passage means to actuate said diaphragm and valve at said predetermined pressure; and



(j) second passage means in communication with said one part and said first passage means to carry liquid to interrupt the flow of liquid in said first passage means flowing into said one part when the latter is filled which liquid and the diaphragm has been actuated,

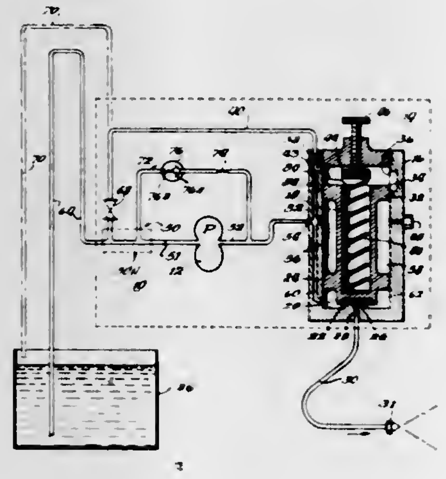
(k) said second passage means and said first passage means having discharge means adjacent where said flow of liquid is interupted.

3,402,733
FUEL SUPPLY APPARATUS

John C. McAlvay, Racine, Wis., assignor to Webster Electric Company, Inc., Racine, Wis., a corporation of Delaware

Continuation-in-part of application Ser. No. 562,908, July 5, 1966. This application Apr. 6, 1967, Ser. No. 628,990

12 Claims. (Cl. 137—467.5)



The apparatus provides for automatic purging of air from a single pipe supply system and manual purging (by opening of an air vent) of a two pipe type system combined with high lift and fast cut off. A pump supplies oil through flow cut off-pressure regulating means, such as a duplex valve, as to a burner nozzle. A first flow restricting bypass is connected across the pressure regulating means and a second but less restrictive bypass including normally closed valve means is connected effectively across the pump, preferably directly across the pump outlet and inlet means, the latter being either the pump inlet or the pump inlet chamber with filter means therein supplying the pump inlet. Alternatively, the second bypass may be connected across the outlet and a return line from the pressure regulating means.

3,402,734
BALANCED PISTON RELIEF VALVE

Roland W. Robbins, Jr., Arnold, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed May 26, 1966, Ser. No. 553,606

3 Claims. (Cl. 137—491)

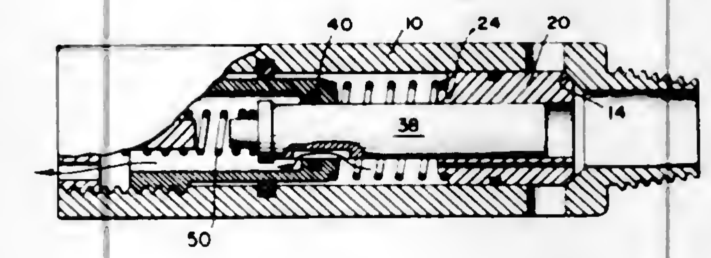
1. A pressure relief valve for hydraulic systems, comprising;

(a) a valve body having a bore therein, terminating at one end thereof in an inwardly tapering valve seat;

(b) a cylindrical poppet valve, having a central bore extending therethrough, and having a forward inwardly tapering end surface of a shape to conform to said valve seat, said poppet valve also having an annular forward surface disposed inwardly adjacent its tapering end surface and exposed to system pressure, said poppet valve also having a metering aperture extending between its opposite ends, permitting application of system pressure to its annular rear surface;

(c) at least one outlet pressure relief passage communicating with the bore of the valve body, blocked by the poppet valve, when in closed position, and communicating with system pressure when the poppet valve moves a predetermined distance away from its seat;

(d) a cylindrical pilot valve slideably disposed within the bore the poppet valve, said pilot valve having a circular end surface exposed to system pressure, said pilot valve having a portion disposed rearwardly of the rear face of the poppet valve in sealing engagement with the valve body, and providing a closed chamber adjacent the rear face of the poppet valve which may be pressurized to system pressure through said metering orifice, said pilot valve also having a channel therein adapted to bridge its sealing engagement with the body to thereby relieve the pressure in said chamber;



(e) a spring for urging said pilot valve in a direction toward the poppet valve, adapted to exert a force thereon sufficient to balance a desired system pressure, below the design or cracking pressure at which the poppet valve may open;

(f) and a return spring for moving the poppet valve to its seat after it has opened and system pressure has dropped to a desired value below cracking pressure;

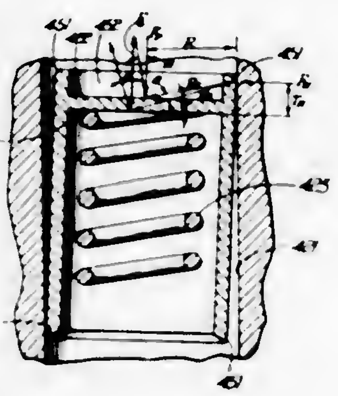
(g) the construction and arrangement being such that when the poppet valve is closed, it is maintained on its seat by the constant pressure of its return spring and the product of system pressure and the projected area of its tapering end, whereby increase in system pressure applied to its rear surface increases the pressure of the poppet valve on its seat, and when said pilot valve moves to a position to relieve pressure in said chamber, system pressure applied to the forward end of the poppet valve moves it to unblocked position relative to said outlet passage.

3,402,735
FLOW REGULATING APPARATUS

Willard A. Kates, Deerfield, Ill., assignor to The W. A. Kates Company, a corporation of Illinois

Original application Jan. 4, 1963, Ser. No. 249,379, now Patent No. 3,223,115. Divided and this application Sept. 23, 1965, Ser. No. 489,593

6 Claims. (Cl. 137—501)



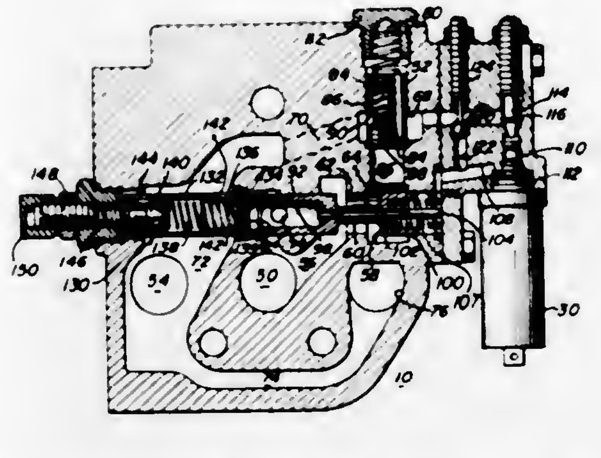
A fluid flow regulating device wherein a spring biases a piston in a cylinder. The piston has radial clearance with the cylinder wall and the device includes structure for shifting the action of the spring end against the piston tending to center the piston relative to the cylinder.

3,402,736
FLUID CONTROL VALVES

Robert E. Trick, Racine, Wis., assignor to Webster Electric Company, Inc., Racine, Wis., a corporation of Delaware

Filed Aug. 18, 1966, Ser. No. 573,250

22 Claims. (Cl. 137—596.12)



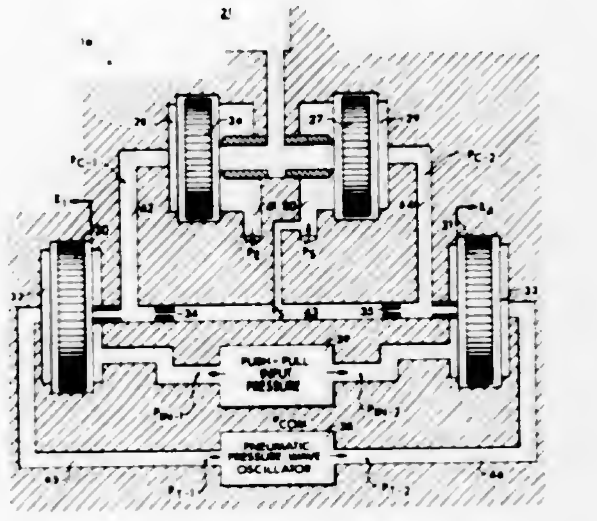
A hydraulic control valve including a spool valve movable in opposite directions from a central load circuit closing position, spring means acting on opposite ends of the spool for holding it in its central position, pressure chambers at opposite ends of the spool, passageways in the spool providing communication from a pressure port to the pressure chambers, orifices at the ends of the spool opening to an adjacent pressure chamber, exhaust passageways from each of the pressure chambers and means including selectively operable electromagnetic pilot valve means providing predetermined restricted flow through an exhaust passageway to effect movement of the spool to selected intermediate positions. The valve has also a pilot pressure providing bypass valve, an unloading valve upstream of the bypass valve and selectively operable electromagnetic pilot valve means for effecting movement of the unloading valve. A plurality of the control valves may be assembled in a system and control means provided for simultaneously effecting operation of the unloading valve and a selected one or ones of the plurality of control valves.

3,402,737
FLUID PRESSURE MODULATING SERVO VALVE

Seth R. Goldstein, Waltham, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

Filed Sept. 2, 1966, Ser. No. 576,901

8 Claims. (Cl. 137—596.14)



A two-stage, servo valve system in which a first pair of floating disks moves in response to a pair of modulating pressure wave signals having specified pressure wave shapes as a function of time and to a pair of push-pull input pressure signals generated from an input command signal. The motions of a second pair of floating disks are responsive to the motions of such first pair of disks so that the supply of pressure from a pressure system to the outlet port of the valve is thereby controlled, such pressure being used to cause an output load to move in a first direction, in a second opposite direction, or to remain substantially in a fixed position.

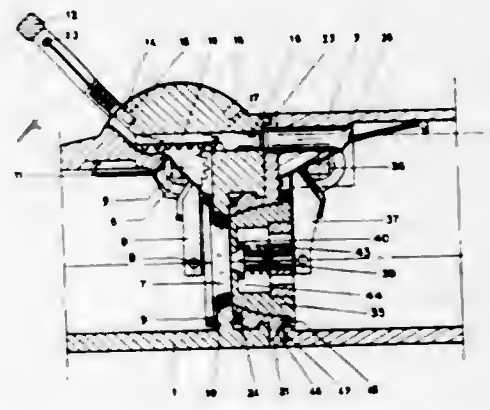
3,402,738
PIPE COUPLING WITH VALVES

Pierre Perolo, Blaye, Gironde, France, assignor to Etablissements J. Perolo & Cie, S.A., Blaye, France, a French company

Filed Oct. 14, 1965, Ser. No. 496,006

Claims priority, application France, Oct. 15, 1964, 991,473

5 Claims. (Cl. 137—614.06)

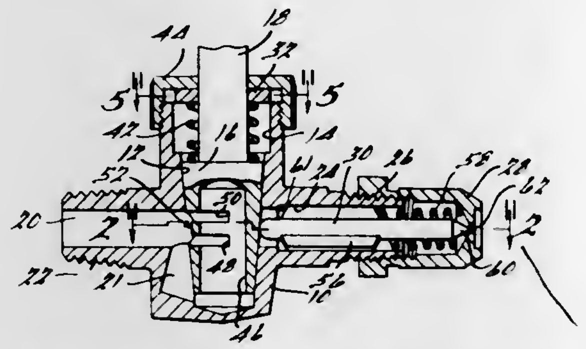


The two tubular elements of a pipe coupling are each equipped with a flap valve spring-biased toward the closed position and opened by a rack and pinion. A bayonet-type coupling connects the elements which are angularly secured by the rack of each element projecting into a recess of the other element when the valves are open. One valve is manually opened and its rack abuttingly engages an auxiliary rack of the other element in the recess of the latter, whereby the valves move in unison.

3,402,739
VALVE FOR GAS BURNER

Gerald H. Kass, Garden City, Mich., assignor to Anderson Brass Company, Detroit, Mich., a corporation of Michigan

Filed June 15, 1964, Ser. No. 375,226
17 Claims. (Cl. 137—628)

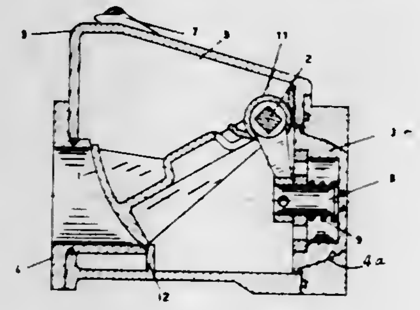


1. A fluid valve comprising rotary plug valve means and needle valve means communicating in series, said plug valve means being operable upon actuation to communicate inlet fluid to said needle valve means, said needle valve means being operable to meter the output fluid flow from the valve, all of the metering accomplished by the valve between its normal maximum and minimum output positions being performed solely by said needle valve means, and cam means on said plug valve means for actuating said needle valve means in response to actuation of said plug valve means, said cam means being contoured to cause said needle valve means, as said plug valve means is progressively actuated from its "off" position, to first rapidly open to an ignition output position, then close to its minimum output operating position and then progressively open to its maximum output operating position.

3,402,740
VALVE MECHANISM IN A JOINT FOR PASSING A FLUID UNDER ELEVATED PRESSURE

Pierre Perolo, Blaye, France, assignor to Etablissements J. Perolo & Cie, S.A., Blaye, France, a French company

Filed Jan. 12, 1966, Ser. No. 520,275
Claims priority, application France, Jan. 14, 1965, 1,943
8 Claims. (Cl. 137—630.14)

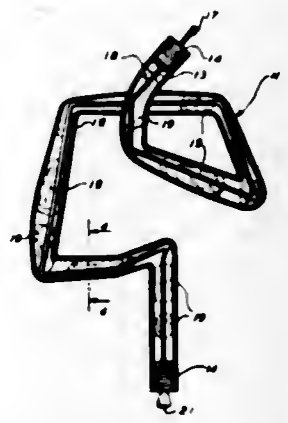


1. A joint comprising
(1) a downstream joint part;
(2) an upstream joint part spaced therefrom;
(3) a joint housing defining a chamber between the joint parts, the housing being fluid-tightly connected between the joint parts and the chamber being capable of communicating with respective openings in the downstream and upstream joint parts, whereby a fluid under pressure may flow from the opening in the upstream joint part through the chamber and into the opening in the downsream joint part; and
(4) valve means for opening and closing said openings, said means including
  (a) a principal check valve member mounted for fluid-tight engagement with the downstream joint part opening in a closing position,
  (b) a pressure-relief valve movably mounted in the check valve member for fluid-tight engagement with an outlet port in the check valve member in a closing position, the outlet port being in communication with the downstream joint part,
  (c) a gate valve member mounted with play in respect of the upstream joint part opening in a closing position, whereby some fluid under pressure may pass into the chamber past the gate valve member in said closing position,
  (d) a common pivoting shaft supporting the check and gate valve members for pivoting movement of said valve members from the closing positions into opening positions, and
  (e) operating means for rotating the shaft to effectuate the pivoting movement.

3,402,741
SELF-SUPPORTING, BENDABLE, SHAPE RETAINING DISCHARGE CONDUIT

Alfred Yurdin, 10 Fenton Drive,
Short Hills, N.J. 07078

Filed June 21, 1965, Ser. No. 465,459
5 Claims. (Cl. 138—118)



A self-supporting, bendable, shape retaining discharge conduit, which is bendable upon itself to any extreme degree without closing the discharge passage but which is sufficiently rigid to be both self-supporting and to retain its bent shape until a different shape is created by the application of an external force.

3,402,742
PIPE COATING METHODS AND COATED PIPE

Harold C. O'Brien, Jr., Pittsburgh, Pa., assignor to Royston Laboratories, Inc., a corporation of Pennsylvania

No Drawing. Filed Aug. 27, 1964, Ser. No. 392,639
5 Claims. (Cl. 138—143)

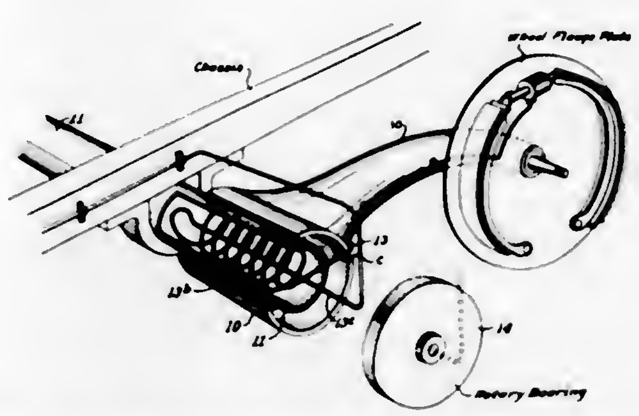
A method is provided for coating pipe with an electrically insulative and physically protective coating by the steps of cleaning the pipe, applying a coating of organic vehicle filled with finely divided organic resins insoluble in said vehicle and wrapping said coated pipe with a tape made up of two layers of resin dispersible in said vehicle, one layer on each side of a film material insoluble in said vehicle.

3,402,743
SUPPLY PIPE FOR FLUID UNDER PRESSURE

Antoine Brueder, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a corporation of France

Filed July 20, 1965, Ser. No. 473,442
Claims priority, application France, July 23, 1964, 982,712
1 Claim. (Cl. 138—178)

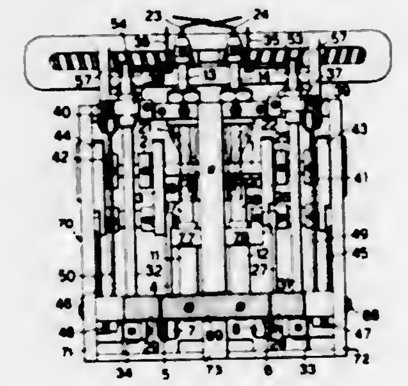
Piping used to carry fluid under pressure which has a helical section which permits oscillation along the axis of the helix as well as pivotal movement in a plane perpendicular to the axis of the helix. One of the ends of the helix extends inwardly to the axis thereof and then extends outwardly on that axis so that only simple stress is present even when the end is connected to a member which pivotally oscillates.



3,402,744
DEVICE FOR THE FORMATION OF STURDY SELVEDGES ON DOUBLE WIDTH FABRICS

Vittorio Scherillo, Florence, Italy, assignor to Nuovo Pignone S.p.A., Florence, Italy, an Italian company

Filed May 10, 1966, Ser. No. 548,942
Claims priority, application Italy, May 15, 1965, 10,933/65
7 Claims. (Cl. 139—54)



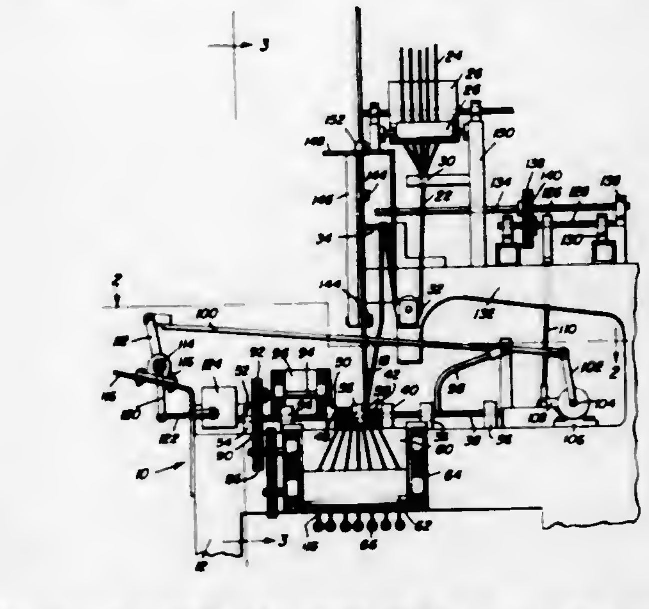
A dual selvedge device is mounted on the breastbeam of a shuttleless loom between dual lengths of fabric woven by the loom, and comprises a pair of auxiliary weft inserting needles that travel in helicoidal paths to insert selvedge weft loops into each of the inner ends of the two warp sheds, a pair of retaining needles that move downwardly into the sheds to enter and hold the weft loops in the sheds while the inserting needles are withdrawn and the sheds reverse, two pairs of scissors mounted beneath the needles to cut the wefts connecting the two lengths of fabric immediately adjacent each inner selvedge, and temple rolls for holding the fabric taut adjacent the scissors.

3,402,745
FRINGE-MAKING MACHINE

Norman F. Reints, P.O. Box 667,
Dalton, Ga. 30720

Filed Jan. 13, 1967, Ser. No. 609,019
6 Claims. (Cl. 139—118)

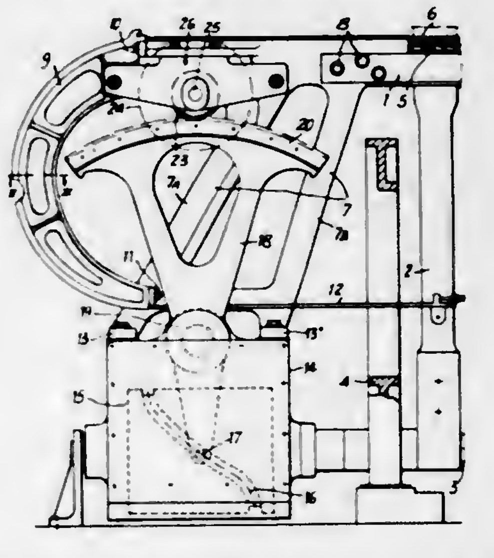
A machine for making fringe employing a vertically reciprocating needle or needles as a shuttle for carrying one or more threads cooperating with horizontally movable yarn carriers to act as a loom with a hook and cutter arrangement provided at the lower extremity of the needle stroke to cut the loop or leave it uncut as desired. The machine includes tension rollers for tensioning the finished fringe so that the needle makes unifrom selvage at the top of the heading and the machine also includes two spur rollers immediately behind the fringe to keep the woven part of the fringe from being pulled down into the throat plate by the reciprocating needle.



3,402,746
WEFT INSERTION NEEDLES IN WEAVING MACHINES

Raymond Dewas, 120 Blvd. de St. Quentin,
Amiens, Somme, France

Filed May 31, 1967, Ser. No. 642,602
Claims priority, application Luxembourg, June 2, 1966, 51,233
10 Claims. (Cl. 139—123)



In looms in which a weft is fed to the warp from stationary bobbins located outside the shed by reciprocating weft inserting needles which are comprised of a flexible ribbon attached at its leading end to a head portion which carries the weft. The trailing end of such ribbon reciprocates in a bow shaped guide and in order to reduce the resistance to bending of the trailing end of the ribbon such as provided with a shaped prolongation which allows said portion to more readily conform to the shape of the bow.

3,402,747
QUICK COUPLING FOR THE TRANSFER OF FLUIDS

Lucien François Simon Tissot-Dupont, Paris, France, assignor to Societe S. T. Dupont, Societe Anonyme, Paris, France, a company of France

Filed June 2, 1966, Ser. No. 554,834
Claims priority, application France, June 2, 1965, 19,327
10 Claims. (Cl. 141—348)

1. A quick coupling assembly for the transfer of fluid comprising:

(A) an elongated nozzle having radially expansible resilient jaw means at one end thereof,

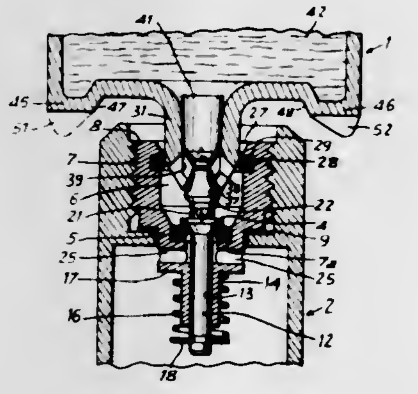
(B) means defining a cavity having a base and an opening axially opposed thereto, said base including an aperture, said cavity adapted to receive said nozzle through said opening,

(C) valve means including a valve head disposed in said cavity adjacent said base and urged thereagainst into its closed position by a valve spring to block said aperture, extension means axially affixed to said valve head and disposed in said cavity, said extension means terminating in an enlargement adapted to axially penetrate into said nozzle, said jaw means adapted to frictionally hold said enlargement to allow said nozzle to pull said valve head into an open position away from said aperture against the force of said valve spring when said nozzle is moved to a slightly withdrawn position,

(D) means disposed within said nozzle to block the passage of fluid therethrough, said last-named means adapted to be removed from its blocking position by said enlargement as said nozzle is introduced into said cavity,

(E) sealing means disposed in said cavity and adapted to frictionally engage the outer face of said nozzle as it is introduced into and maintained in said cavity, and

(F) means for holding said nozzle in said slightly withdrawn position to maintain fluid communication through said nozzle, said cavity and said aperture.

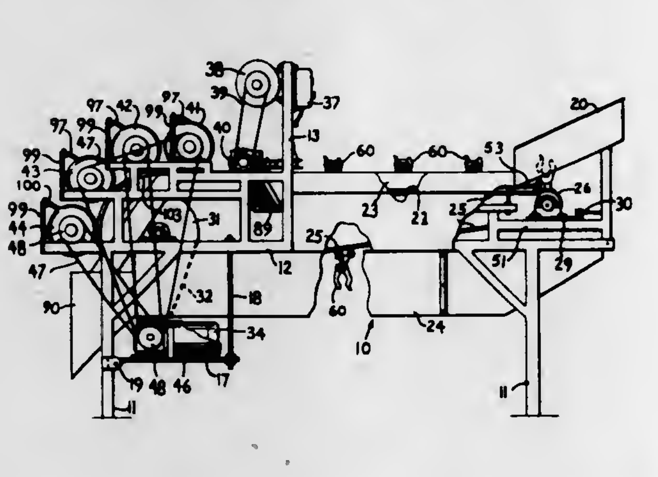


3,402,748
VEGETABLE TRIMMER AND SLICER

George J. Olney, Westernville, N.Y., assignor to Geo. J. Olney, Inc., Westernville, N.Y., a corporation of New York

Filed Apr. 15, 1965, Ser. No. 448,374

6 Claims. (Cl. 146—78)



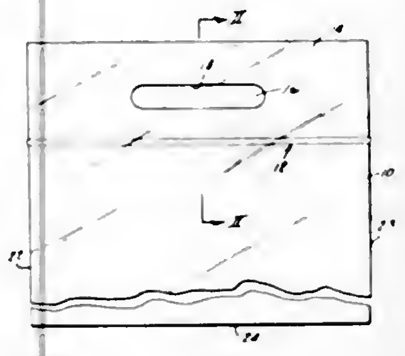
A vegetable trimming machine, for trimming the roots and stems from bulbous vegetables, and slicing same.

3,402,749
PLASTIC FILM SHOPPING BAG

Gustav Adolf Kinzler, Stuttgart, Germany, assignor to Minigrip, Inc., Orangeburg, N.Y., a corporation of New York

Filed Mar. 10, 1967, Ser. No. 622,294

5 Claims. (Cl. 150—3)



The disclosure embodies a plastic film bag having opposed walls with pressure interlocking releasible rib and groove elements along the top and heavier flanges extending thereabove with the walls, rib and groove elements and flanges being integral and hand holes formed in the flanges with their upper edges an equal distance from the center of the rib and groove elements.

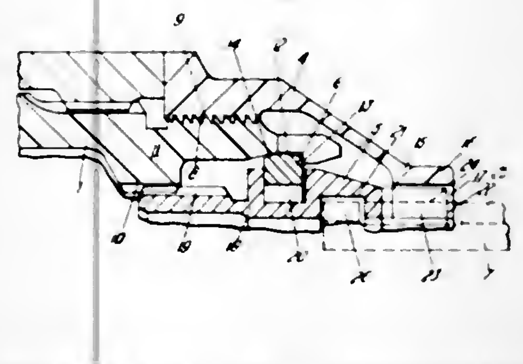
3,402,750
DEVICE FOR LOCKING TWO MEMBERS

John Readman, Allestree, Derby, and Wilfred Henry Wilkinson, Turnditch, England, assignors to Rolls-Royce Limited, Derby, England, a British company

Filed Aug. 16, 1966, Ser. No. 572,744

Claims priority, application Great Britain, Sept. 29, 1965, 41,280/65

9 Claims. (Cl. 151—8)



A device for locking two members rotatably secured to one another in a fixed positional relationship. The device includes a locking member engaging each of said two members to prevent relative rotation, the locking member being movable to a second position where it is disengaged from one of the members thus permitting relative rotation of the two members. A spanner engageable with the locking member for moving the same is so arranged that it cannot be disengaged from the one member of the two relatively rotatable members until the locking member is returned to a position where it engages the member to which it had previously become disengaged.

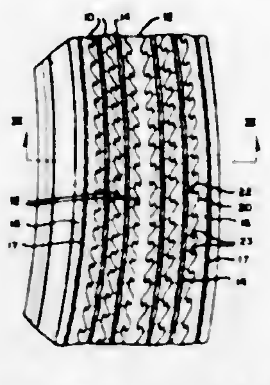
3,402,751
NON-SKID TIRE TREAD

Joseph N. Jacobs, Indiana, Pa., assignor to McCreary Tire and Rubber Company, Indiana, Pa., a corporation of Pennsylvania

Filed Mar. 21, 1966, Ser. No. 535,856

12 Claims. (Cl. 152—209)

A vehicular tire is disclosed having a tread arrangement including arcuate or sinusoidal siping arrangements. Water entrapped in the siping is swirled owing to the shape of the siping and is eliminated by transverse sipes connecting the arcuate siping with adjacent circumferential grooves. Elimination of road water in this manner minimizes hydroplaning when the road surface is covered with a water film. The siping arrangements also are arranged to form road-gripping asperities which improve the anti-skid characteristic of the tire.



3,402,752
REINFORCING CORD AND TIRE THEREFROM

Charles W. Beringer, Hopewell, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Continuation of application Ser. No. 473,215, July 19, 1965. This application Oct. 9, 1967, Ser. No. 674,014

4 Claims. (Cl. 152—359)

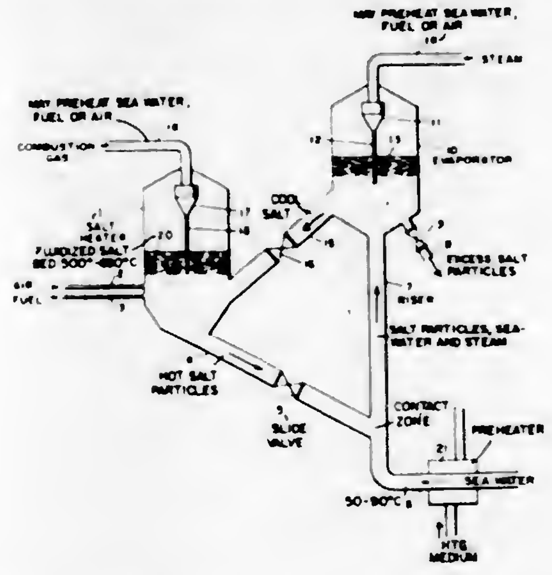
A tensilized cord for reinforcing belts and especially tires, the cords being composed of continuous filaments of nylon 6 or nylon 66 in which is dispersed microfibers of polyethylene terephthalate at 50:50–75:25 weight proportion, the microfibers averaging 0.02–0.2 micron in diameter and averaging in length 250–15,000 times their average diameter. These cords as the result of tensilization have elongation at break of 12.4%–19% and have good to excellent ratings in all of the critical properties by which tire cords are rated, including flat spot index superior to that of similar cords from the nylon ingredient alone.

3,402,753
FLUIDIZED MASS PROCESS FOR DESALINATION OF SEA WATER

Charles L. Thomas, Swarthmore, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed May 6, 1966, Ser. No. 548,093

10 Claims. (Cl. 159—47)



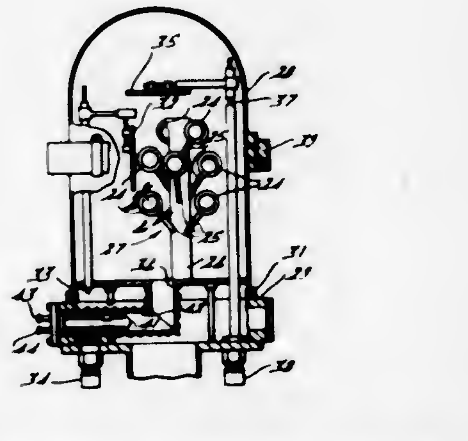
1. The method of desalinating sea water comprising heating a fluidized mass of salt particles with heated gases, conveying a portion of the heated particles to the bottom of a riser zone where said heated particles directly impinge a stream of sea water, the combined steam of salt and water ascending in the riser zone and the heated salt evaporating the water, discharging the relatively cooled and moist salt into a drying bed of said salt from which a dried portion is withdrawn and conveying by gravity, another portion of the drying bed salt to the fluidized mass of salt particles for reheating.

3,402,754
METHOD FOR CASTING IN A SHELL MOLD

Rodney E. Christian, Birmingham, Mich., assignor to Traub Manufacturing Company, a corporation of Michigan

Filed Jan. 13, 1966, Ser. No. 520,461

13 Claims. (Cl. 164—35)



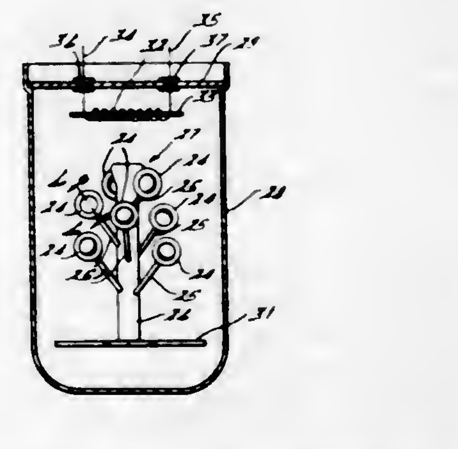
A method and apparatus of forming a precision casting. A thin hollow mold is formed from the material that is to form the exterior of the finished casting by depositing the material on a destructible core or pattern. The pattern is then removed by destruction leaving a hollow thin shell mold into which molten material is poured. The molten material when poured fuses to the interior of the mold to form an intimate bond but does not substantially change the characteristics of the exterior of the mold so that a high degree of surface finish of the finished article results.

3,402,755
METHOD FOR MAKING A PRECISION CASTING

Rodney E. Christian, Birmingham, Mich., assignor to Traub Manufacturing Company, a corporation of Michigan

Filed Jan. 13, 1966, Ser. No. 520,462

1 Claim. (Cl. 164—35)



A method of making a precision casting wherein a nonmetallic destructible pattern is coated with a thin layer of metal by a metallizing technique. The pattern is then destructibly removed leaving a thin hollow shell mold that is filled with a molten metal. After the poured metal solidifies the mold is also destructibly removed.

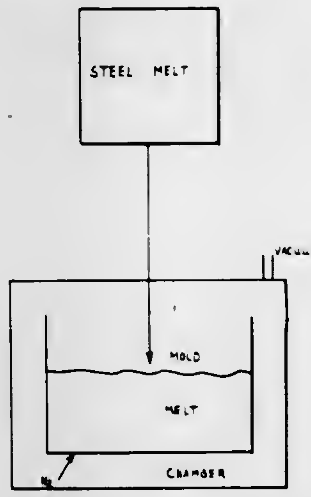
3,402,756
PROCESS OF PRODUCING HIGH-NITROGEN ALLOY STEEL

Josef Frehser, Albert Bohlergasse 8, and Christian Kubisch, Steinerhof-Allee 7, both of Kapfenberg, Styria, Austria

Filed Apr. 27, 1965, Ser. No. 451,324

Claims priority, application Austria, May 12, 1964, A 4,129/64

5 Claims. (Cl. 164—55)



Described herein is a process of producing high-nitrogen alloy steel by preparing a steel melt sufficiently overheated to cause it to remain molten during the succeeding steps of process. The melt is poured into a mold where it can be vacuum degassed, then nitrogen is blown into the melt to create superatmospheric pressure, and the melt is solidified in the nitrogen environment under the superatmospheric pressure.

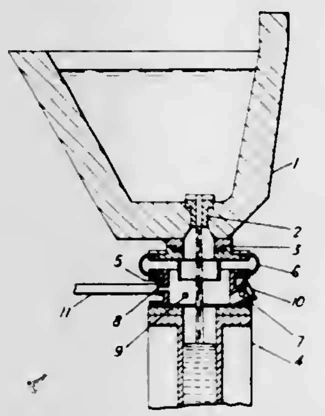
3,402,757
METHOD FOR CONTINUOUS CASTING OF STEEL THROUGH A CLOSED GAS FILLED CHAMBER

Iain M. D. Halliday, Barrow-in-Furness, England, assignors to The United Steel Companies Limited, Sheffield, England, a British company

Filed Nov. 22, 1965, Ser. No. 508,895

Claims priority, application Great Britain, Nov. 24, 1964, 47,823/64

7 Claims. (Cl. 164—66)



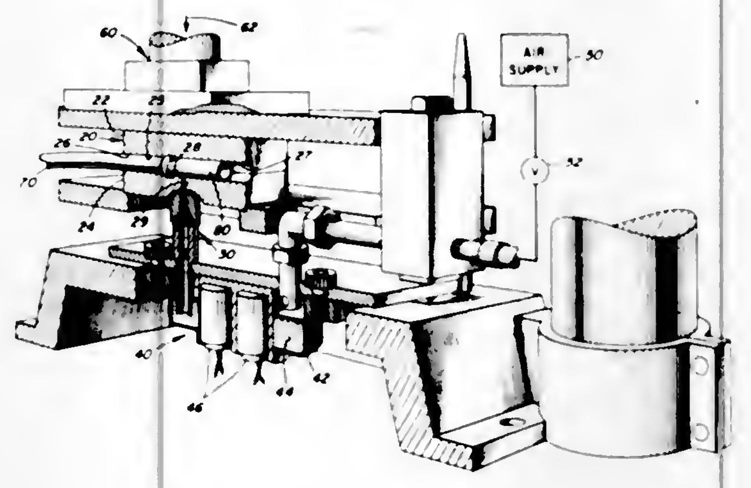
A method for continuous casting of steel through a gas filled chamber obtains a strand substantially free from oxide formed during pouring and from pin holes without the use of aluminum. In the method the closed chamber is purged with a reducing or inert gas before starting the cast and is then filled with the gas. An increase in pressure in the closed chamber as the casting proceeds is reduced by permitting the gas to escape at a greater rate than it enters, and reducing gas is passed through the chamber at such a rate that oxygen concentration in the chamber is not greater than 250 parts per million while maintaining the pressure in the chamber substantially constant.

3,402,758
METHOD FOR DIE-CASTING ELECTRICAL CONNECTIONS

Robert H. Cushman, Princeton Junction, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed June 8, 1966, Ser. No. 556,133

15 Claims. (Cl. 164—108)



15. A method of simultaneously, mechanically and electrically connecting an insulated, stranded or solid, unstripped conductor to another workpiece, at least a portion of which is hollow, by means of an electrically conductive, adhesive medium having both a fluid and a solid state, which comprises the steps of:

inserting the conductor partially into the hollow portion of the workpiece,

forming a mold cavity about the so-placed conductor and workpiece,

forcing the medium in its fluid state into the hollow portion of the workpiece to fill the remainder of such hollow portion not occupied by said conductor and to penetrate between the conductor and its insulation, and

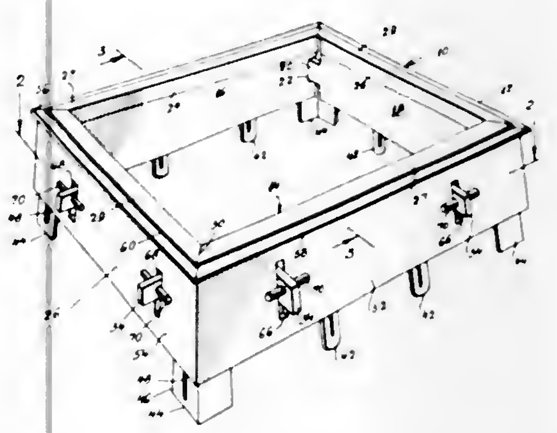
causing the medium to solidify.

3,402,759
ADJUSTABLE JACKET FOR MOLD USED IN FOUNDRIES

Joseph Gardella, 4133 57th St., Woodside, N.Y. 11377

Filed May 9, 1966, Ser. No. 548,503

10 Claims. (Cl. 164—396)



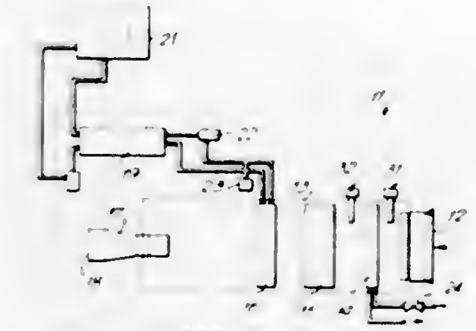
1. A slip jacket for a foundry mold comprising a rectangular sectional body with an inner structure and an outer structure, the inner structure having opposed side plates and opposed end plates, said plates being separately and loosely connected with each other to permit limited horizontal movement relative to the outer structure, depending legs adjustably mounted on the inner structure, depending posts adjustably mounted on the inner structure at the corners thereof, means for moving said opposed side and end plates of the inner structure horizontally, means for permitting limited vertical movement between the inner and outer structure, and means for protecting the inner and outer structures from damage by pouring molten metal into the mold.

3,402,760
AIR-CONDITIONING SYSTEM HAVING FRESH AIR INTAKE

Theodore Cohen, 55 Ruxton Road, Great Neck, N.Y. 11023

Continuation-in-part of application Ser. No. 485,325, Sept. 7, 1965. This application Sept. 8, 1967, Ser. No. 666,246

5 Claims. (Cl. 165—21)



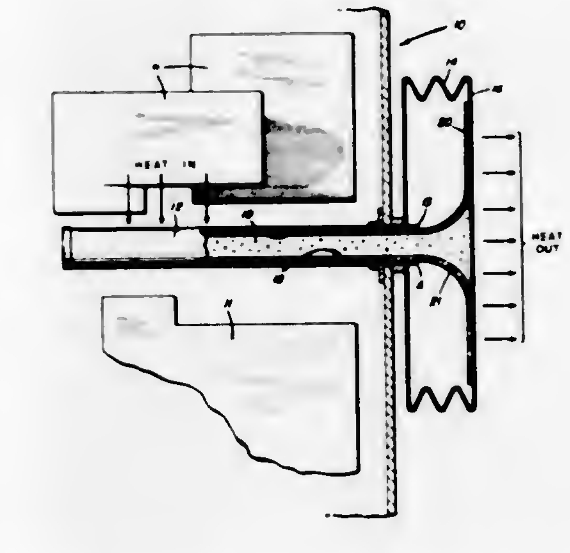
An air-conditioning system of the type having a fresh air intake and a blower to draw air through said intake and discharge the same after it has been conditioned. Cooling means are located between the intake and the blower and heating means between the intake and the cooling means. Sensing means controlled by the humidity of the air entering the fresh air intake vary the temperature of the heating means correspondingly to vary the temperature of the air passing through the heating means before flow of such air through the cooling means.

3,402,761
CONTROLLABLE HEAT PIPE APPARATUS

Charles J. Swet, Mount Airy, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Feb. 17, 1967, Ser. No. 617,781

7 Claims. (Cl. 165—32)



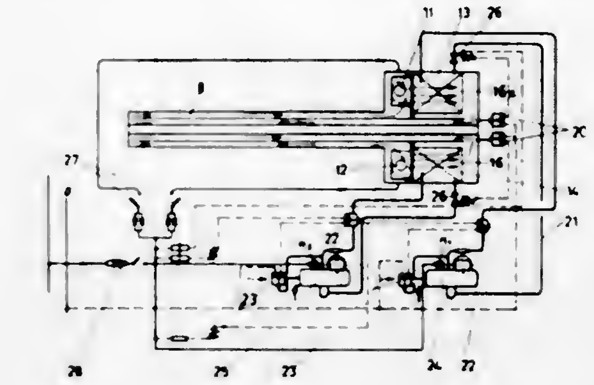
The present invention generally pertains to a heat pipe for discharging heat from the interior of a satellite or other space vehicle. The invention utilizes a radiator element which is movable axially for regulating the discharge of heat from the satellite so that the interior thereof may be maintained at a desired temperature. The radiator element also serves as a condenser for the vapor, which is returned as liquid to the heat input end of the pipe by a wick.

3,402,762
METHOD OF AND APPARATUS FOR COOLING CHOCOLATE-COVERED ARTICLES OR THE LIKE

Walter Kreuter, Hamburg-Langenhorn, and Theobald Thamerus, Bemerode, near Hann, Germany, assignors to Kreuter & Co. K.G., Hamburg-Langenhorn, Germany

Filed Dec. 22, 1965, Ser. No. 515,641

2 Claims. (Cl. 165—39)



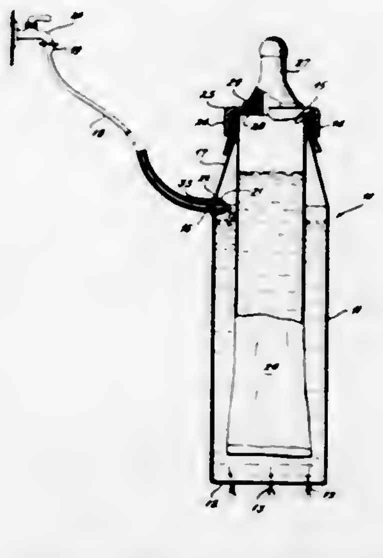
An apparatus for cooling chocolate covered articles or the like in which the articles are fed on a band conveyor adjacent the bottom wall of an elongated cooling duct in one direction therethrough, and in which two independently controllable cooling systems are provided which are respectively in heat exchange with the top and the bottom wall of the cooling duct and through each of which a cooling fluid is passed in counter-current to the movement of the articles passing through the duct.

3,402,763
DEVICE FOR WARMING OR COOLING INFANT FOOD

Francis C. Peterson, Affton, Mo., assignor to C. Hager & Sons Hinge Manufacturing Company, St. Louis, Mo., a corporation of Missouri

Filed Dec. 5, 1966, Ser. No. 599,152

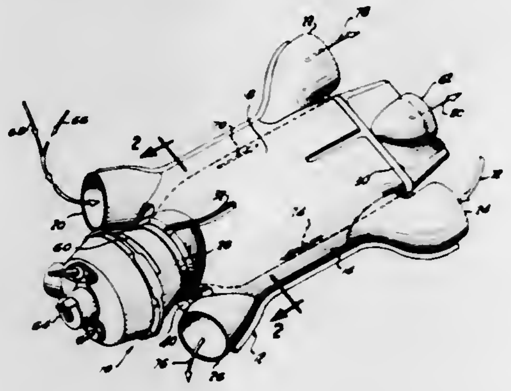
6 Claims. (Cl. 165—46)



A device for treating infant food contained in thin plastic containers supported in an outer shell by means of a screw-on lid containing a nipple with the open end of the plastic bag positioned between the lid and the shell. The treating arrangement comprises a conduit positioned in a side wall of the shell and connected to a water faucet with openings in the bottom of the shell to permit egress of the warming or cooling water.

3,402,764
HEAT EXCHANGER

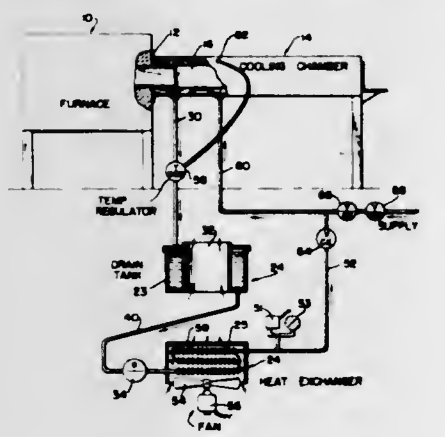
Gordon J. Fairbanks, Indianapolis, Ind., assignor to Stewart-Warner Corporation, a corporation of Virginia
Filed Jan. 20, 1966, Ser. No. 521,961
16 Claims. (Cl. 165—51)



A heat exchanger including a heat transfer tube secured in a housing formed with extensions that define a pair of inlet passageways and a pair of outlet passageways one each adjacent the opposed end corners of the housing whereby to accommodate two fluid flow paths through the housing about the heat transfer tube.

3,402,765
APPARATUS FOR USE IN CONSERVING WATER IN A FURNACE COOLING SYSTEM

Herbert W. Westeren, Barrington, and William H. Kimball, Providence, R.I., assignors to C. I. Hayes, Inc., Cranston, R.I., a corporation of Rhode Island
Filed Oct. 24, 1966, Ser. No. 588,921
7 Claims. (Cl. 165—65)

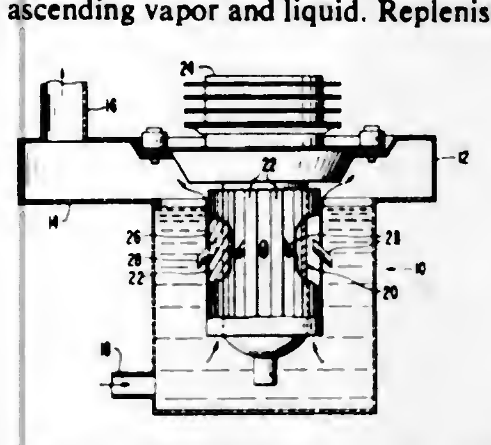


Apparatus for conserving fluid in a cooling system wherein the heated fluid is removed from a cooling jacket and recirculated in a closed system through a free standing cabinet having a heat exchanger located therein, the fluid being directed through the heat exchanger for return to the cooling jacket.

3,402,766
METHOD AND MEANS FOR VAPOR COOLING AN ELECTRON TUBE

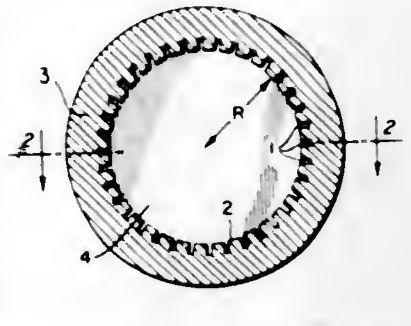
Coenraad van Loo, San Jose, and James P. Polese, Menlo Park, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed May 23, 1967, Ser. No. 640,680
9 Claims. (Cl. 165—74)

Improved method and means for vapor-cooling an electron tube anode submersed in liquid within a boiler. Ascending vaporized liquid is restricted to a flow path closely adjacent the sides of the anode thereby increasing the velocity of ascending vapor and liquid. Replenishing liquid is introduced circumferentially about the sides of the anode into the flow path.



3,402,767
HEAT PIPES

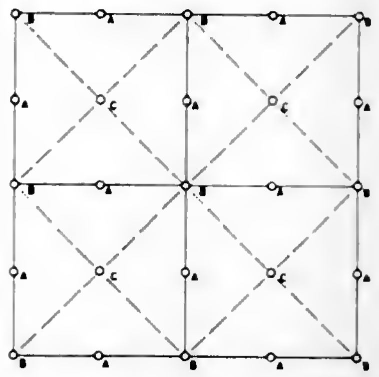
Josef Bohdansky, Taino, Varese, René Caron, Ispra, Varese, and Hermann Strub, Taino, Varese, Italy, assignors to European Atomic Energy Community (Euratom), Brussels, Belgium
Filed Nov. 12, 1965, Ser. No. 507,450
Claims priority, application Germany, Nov. 23, 1964, E 28,220
3 Claims. (Cl. 165—105)



A closed tubular container of heat resistant material for vaporizing a small quantity of a heat transfer liquid contained in the container. A condensing zone and an evaporation zone are defined in the container and capillary means are disposed therein for transporting condensed liquid from said condensing zone to the evaporation zone. The capillary means are constituted by parallel grooves of capillary diameter formed in the inside wall of the container.

3,402,768
OIL RECOVERY METHOD USING A NINE-SPOT WELL PATTERN

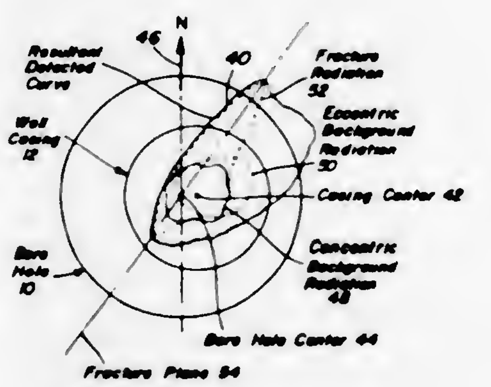
Martin Felsenthal, Charles E. Finley, and Howard H. Ferrell, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Continuation-in-part of application Ser. No. 429,379, Feb. 1, 1965. This application Mar. 29, 1967, Ser. No. 633,342
7 Claims. (Cl. 166—2)



A secondary recovery method comprises three phases: first, a grid or network of manifolds is established through the "fingering" effect resulting from a point-to-point drive to breakthrough using an inefficient sweep technique; second, these manifolds are used as injection areas for water flooding toward additional wells to a time prior to breakthrough; and third, the resulting enlarged manifolds are used as injection areas for water flooding toward still other wells.

3,402,769
FRACTURE DETECTION METHOD FOR BORE HOLES

Otto Glenn Doggett, Abilene, and John R. Seay, Midland, Tex., assignors to Go Services, Inc., a corporation of Texas
Filed Aug. 17, 1965, Ser. No. 480,322
4 Claims. (Cl. 166—4)



The peripheral distribution of fracturing fluid about a bore hole is measured and recorded at various levels by detection of radiation emitted from a radio active tracer in the fracturing fluid in order to locate vertical fracture planes intersecting the bore hole. The recorded distribution of fracturing fluid is corrected for errors introduced by background radiation and bore hole casing eccentricity so that the angular orientation of any vertical fracture planes may be determined by analysis and interpretation of the recorded data.

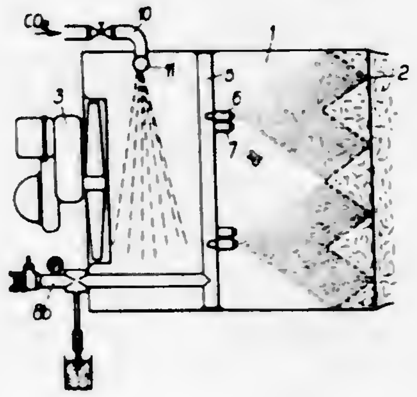
3,402,770
MULTIPLE-PURPOSE SOLVENT AND METHOD FOR TREATING SUBTERRANEAN FORMATIONS

Joseph U. Messenger, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed June 2, 1965, Ser. No. 460,711
11 Claims. (Cl. 166—40)

This specification discloses a multicomponent solution which has many uses in cleaning up a well and the surrounding subterranean formation, and method for employing the solution. Specifically, the solution contains as its essential elements an organic solvent for oil and asphalt and a liquid having mutual solubility for oil and water. Other components such as acid, or surfactant, may be added and the solution will still remain a single-phase solution. The solution is mainly useful as a solvent to remove a wide variety of flow-restricting materials such as damaging water, mud filtrate, emulsions, wax, asphalt, and scale, even when present in layered form. Illustrative of the organic solvent for oil and asphalt are carbon disulfide, benzene, toluene, and xylene. Illustrative of the liquid having mutual solubility for oil and water are ethylene glycol monomethyl ether, ethylene glycol monoethyl ether, ethylene glycol monobutyl ether, isopropyl alcohol, tertiary butyl alcohol, and diethylene glycol monomethyl ether. Illustrative of acids which can be added and still form a single-phase solution are concentrated hydrochloric, hydrofluoric, formic, sulfonic, and acetic.

3,402,771
DEVICE FOR THE PRODUCTION OF PHYSICAL FIRE-FIGHTING FOAM HAVING A HIGH DEGREE OF FOAMINESS

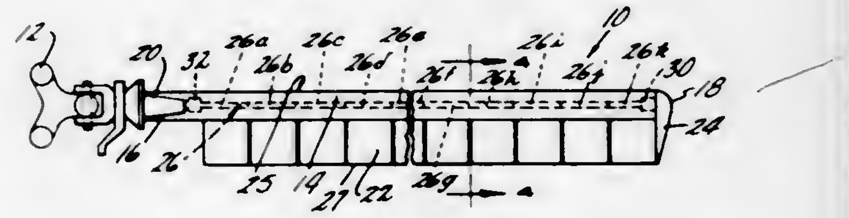
Wilhelm Frey, Dettingen an der Erms, Germany, assignor to Minimax Aktiengesellschaft, a German firm
Filed Sept. 29, 1966, Ser. No. 582,846
Claims priority, application Germany, Oct. 13, 1965, M 66,924
8 Claims. (Cl. 169—15)



Device for the production of high foam to liquid ratio fire-fighting foam wherein at least two separate nozzle systems of different rates of delivery of a mixture of water and foaming agent are arranged in a chamber between a screen and a fan which produces a stream of air, the nozzle systems being operable either jointly or separately, as desired. Provision is made for admixing a gas such as CO_2 with the stream of air passing through the chamber with or without the nozzle systems.

3,402,772
REDUNDANTLY RETAINED COUNTERWEIGHTS FOR HELICOPTER ROTOR BLADE

Frank J. Sobanik, Stratford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed June 5, 1967, Ser. No. 643,549
10 Claims. (Cl. 170—159)



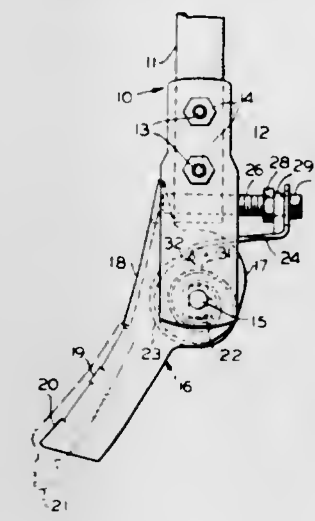
A series of nonstructural counterweights extending in a chain along the span and within the interior of a hollow section of a helicopter blade and with redundant retention systems for the counterweight chain. Each counterweight is joined through a loose knuckle joint to the adjoining counterweights to produce the counterweight chains and a counterweight retention block is provided at the blade tip against which the counterweight chain bears due to centrifugal force loading for retention during blade rotation. A second counterweight retention system is provided which includes a member connecting the inboard counterweight to the hollow blade section so as to coact with said knuckle joints to retain the counterweight chain within the hollow blade section should the counterweight retaining block fail.

3,402,773
SPRING TRIP FOR IMPLEMENTS

Marvin D. Jennings, Naperville, Ill., and Benjamin A. Shader, Golden, Colo., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Jan. 26, 1966, Ser. No. 523,146

5 Claims. (Cl. 172—265)



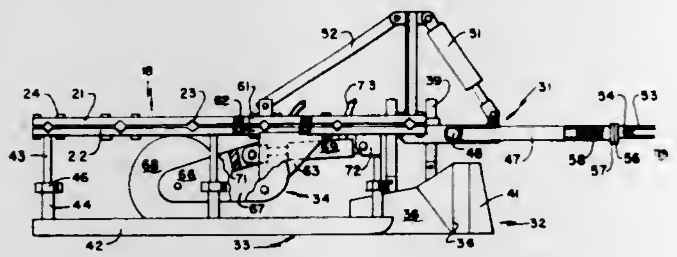
1. In an implement a shank having a transverse pivot pin mounted in its lower end, an earth penetrating tool mounted on said pivot pin for tripping about the axis thereof from an operating to a tripped position, yieldable means opposing the tripping of said tool comprising a leaf spring having one end anchored to said shank and a plurality of coils helically arranged about the axis of said pivot pin, means securing the other end of said spring to the shank at a location remote from said pivot pin, said spring having means forming an abutment thereon, and a stop member mounted on said tool and engageable with said abutment to hold the tool against tripping in the normal operation thereof, said spring being yieldable radially in response to abnormal draft forces acting on said tool during operation to cause said stop member to ride over said abutment and accommodate tripping of the tool.

3,402,774
SOIL TILLAGE SLED

Mayes R. Robinson, Gilroy, Calif., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Oct. 14, 1965, Ser. No. 495,811

2 Claims. (Cl. 172—413)



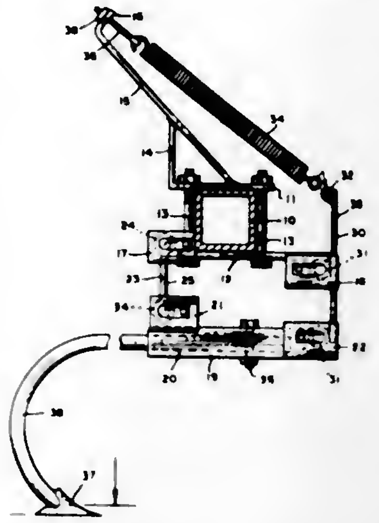
A frame and supporting wheel construction for a soil tillage sled wherein the frame includes at least three transverse square bars rigidly interconnected at their ends by unitary elongated channel shaped opposed clamping elements having longitudinally spaced notches adapted to seat opposite sides of all of said bars with means securing the clamping elements to the bars, and wherein the supporting wheels mounting means likewise includes opposed channel-shaped elements longitudinally notched to seat opposite sides of any two adjacent bars and adjustable longitudinally of the frame for optional attachment to any other two adjacent frame bars.

3,402,775
SHANK HOLDERS WITH SPRING RELEASE FOR CULTIVATING IMPLEMENTS

Lucien Rene Leduc, Box 368, Assiniboia, Saskatchewan, Canada

Filed Dec. 30, 1965, Ser. No. 518,765

4 Claims. (Cl. 172—705)



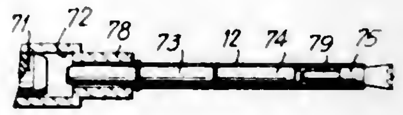
A parallel rule-shaped shank holder having the upper member thereof clamped under an implement cross bar, the lower member being a tubing for fastenably receiving the upper end of a tool shank, so said shank can be swung on the holder for tool raising and lowering without change of the tool angle; and one end link of the parallel rule extending upwardly to form a rocker bar therewith, and which is spring-connected to a stretch bar carried by the clamping means, for resiliently holding said rocker bar against one end of the clamped upper member.

3,402,776
DEVICE FOR IMPACT LOADING A SOLID BODY

Evgeny Vsevolodovich Alexandrov, 4 Poselok Vugi, kv. 9, Lyubertsy, Moscow, U.S.S.R.

Filed May 12, 1965, Ser. No. 455,090

11 Claims. (Cl. 173—133)



A device for impact loading a solid body having two colliding systems, a first of which directly acts on the body and is composed of one or more working members, the other system being a striker constituted of a material having a smaller elastic modulus than the material of the working member which contacts the solid body, there being a clearance provided between the solid body and the working member which strikes it or between the working members of the first system.

3,402,777
KELLY STABILIZATION SYSTEMS

John V. Watson, Fort Worth, Tex., assignor to Watson Manufacturing Company, Fort Worth, Tex.

Filed July 3, 1967, Ser. No. 651,026

5 Claims. (Cl. 173—147)

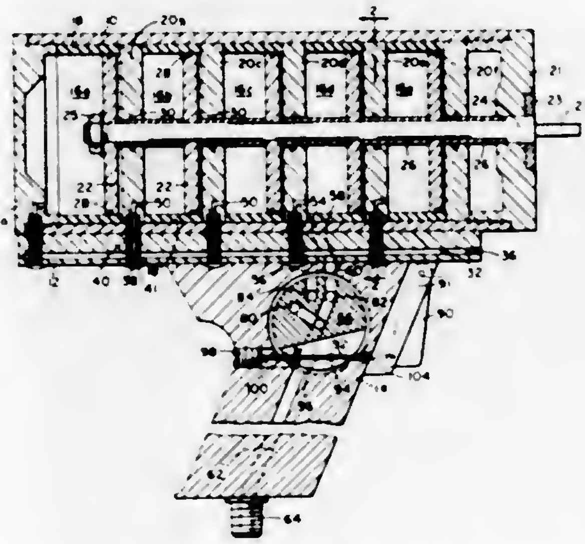
Following is disclosed a kelly stabilizer system which limits transverse movements of a kelly supported in a drilling mast used in earth boring operations. A stabilizer swivel through which the kelly extends is utilized in this system. The stabilizer swivel is connected with a kelly swivel on top the kelly by means of a cable system which correlates stabilizer and kelly swivel movements. The kelly and stabilizer swivels each have radially oriented and beveled rollers spaced at 90 degree intervals. Moreover, the mast has generally L-shaped roller receiving tracks spaced at 90 degree intervals. The kelly swivel has ball bearing assemblies with oppositely facing thrust shoulders secured in selected axial locations on the kelly and kelly swivel to equalize longitudinal thrust carrying capacity. Moreover, the stabilizer swivel has upper and lower pulleys for securing cables thereto, with the pulleys being spaced above and below the center of gravity of the stabilizer swivel.

3,402,778
PNEUMATIC RIVET GUN

Donald F. Carter and Robert D. Carter, Malden, Mass., assignors to D. F. Carter Co., an unincorporated company of Massachusetts

Filed Apr. 18, 1967, Ser. No. 631,734

7 Claims. (Cl. 173—169)



A pneumatic rivet gun which includes a plurality of axially aligned cylinders each having a piston ganged to a common axially movable shaft adapted to be connected to a rivet fastening head. A rotary valve is contained within the handle of the gun and is operative by a manually actuated trigger mechanism to couple an air supply to the powered end of all the cylinders and also to provide an exhaust path for air escaping from the exhaust end of the cylinders. Air is coupled between the rotary valve and the cylinders via first and second manifolds contained within the gun housing, one manifold providing an air passage to one end of respective ones of the cylinders, and the other manifold providing an air passage to the other end of each of the cylinders. The pistons are powered on both the forward stroke and the backstroke, the first manifold functioning during a backstroke via the rotary valve, to supply pressurized air to one side of the cylinders to drive the pistons rearward while the second manifold provides an exhaust path for air escaping from the other side of the cylinders. To accomplish a forward stroke, the functions of the manifolds are reversed by action of the rotary valve, and the second manifold now supplies pressurized air to the other side of the cylinders to drive the piston forward, while the first manifold now provides an exhaust path for air escaping from the one side of the cylinders.

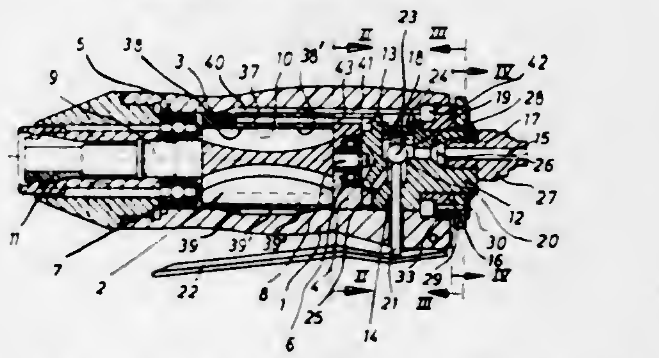
3,402,779
HAND TOOL COMPRISING A COMPRESSED-AIR MOTOR

Stetan Elmer, Maulbronn, Germany, assignor to Schmid & Wezel, Maulbronn, Germany

Filed June 8, 1966, Ser. No. 556,060

Claims priority, application Germany, Aug. 26, 1965, Sch 37,615

9 Claims. (Cl. 173—170)



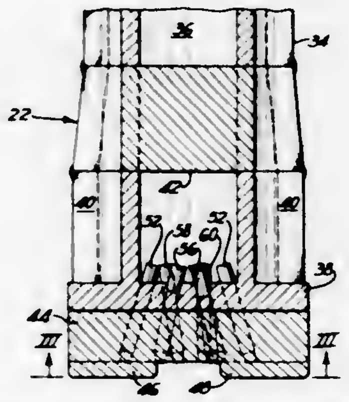
A hand tool having a housing with a compressed-air motor therein. Means is provided for adjusting the cross-section of flow for the compressed air. At a given pressure gradient, the size of the cross-section of the flow for the air controls the air flow rate and with it the power and speed of the compressed-air motor. A quick closing valve is incorporated in the path of movement of the compressed air between the air inlet and the rotor of the motor. The motor comprises a stator and a rotor rotatably mounted in the stator. The flow path comprises longitudinal bores, and a flow passage in said rotor connected at one end by said additional bores to said longitudinal bores. Grooves formed in the housing extend parallel to the longitudinal bores. Transverse bores in the stator connect the other end of the flow passage to the grooves. The grooves open into a collecting chamber in the housing.

3,402,780
HYDRAULIC JET DRILLING METHOD

Robert J. Goodwin, Oakmont, and Joseph L. Pekarek, Penn Hills Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

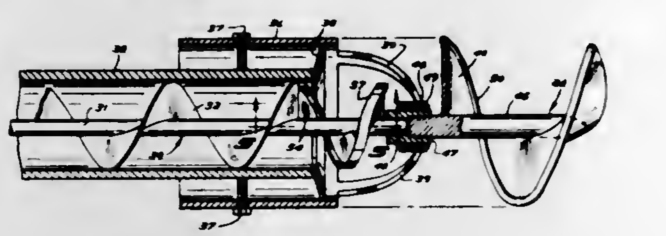
Filed Dec. 27, 1965, Ser. No. 516,237

6 Claims. (Cl. 175—67)



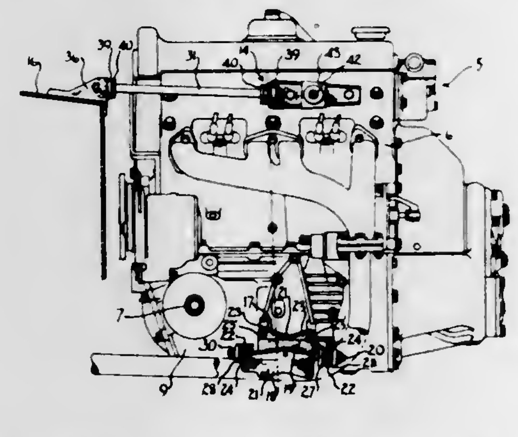
Wells are drilled through hard formations by discharging streams of abrasive-laden liquid from nozzles in a rotating drill bit at velocities in excess of 500 feet per second against the bottom of the borehole of a well. The streams are positioned in the drill bit to cut a central hole, a plurality of concentric grooves around the central hole, and an outer groove having an outer diameter equal to the borehole diameter. Thin intervening ridges between the grooves are readily broken by engagement with the drill bit.

3,402,781
SEWER PIPE INSTALLING MACHINE
Arne T. Sandberg, Minneapolis, Minn., assignor to San-Wil, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Nov. 3, 1966, Ser. No. 591,766
5 Claims. (Cl. 175—171)



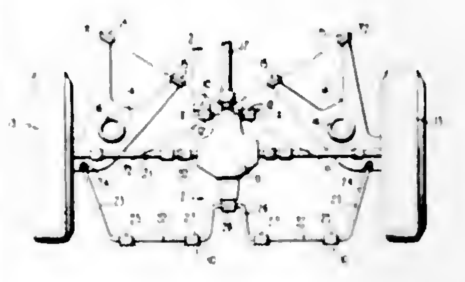
1. In a sewer pipe installing machine:
- (a) a track;
- (b) a carriage frame mounted for fore and aft movement along the track;
- (c) auger drive means mounted on the frame;
- (d) means on the frame for irrotatably supporting a pipe section to extend in a fore and aft direction;
- (e) an auger section extending longitudinally through the pipe section and having driven connection with the auger drive means;
- (f) an annular bonnet adapted to be mounted on the forward end of the pipe section;
- (g) the auger section having a shaft portion extending forwardly beyond the bonnet;
- (h) a bearing disposed forwardly of the bonnet and journalling the shaft portion;
- (i) a bracket arm extending forwardly from the bonnet and supporting the bearing;
- (j) an auger vane on the shaft portion forward of the bearing;
- (k) and said auger vane having an external diameter equal to or slightly greater than that of the bonnet.

3,402,782
MOTOR VEHICLE DRIVING UNIT AND SUSPENSION MEANS FOR THE SAME
Gunnar Ljungström, Trollhattan, Sweden, assignor to Saab Aktiebolag, Linkoping, Sweden, a corporation of Sweden
Filed May 9, 1966, Ser. No. 548,576
Claims priority, application Sweden, May 11, 1965, 6,105/65
7 Claims. (Cl. 180—64)



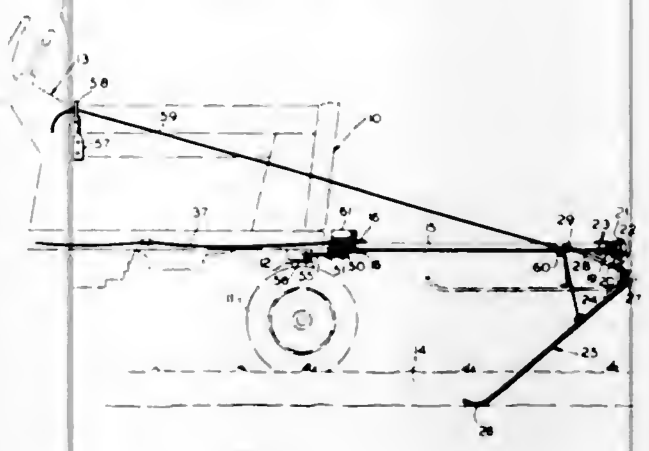
Suspension means for a motor vehicle driving unit comprising an engine having a crankshaft and a transmission having output drive shafts transverse to the crankshaft in which elastic means supports the driving unit for relative freedom of movement about the crankshaft and bracing means precludes relative movement of the driving unit about the drive shafts.

3,402,783
WHEEL SUSPENSION
Kurt Trachte, Echterdingen, Wurttemberg, and Kurt Enke, Fellbach, Wurttemberg, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Nov. 5, 1965, Ser. No. 506,461
Claims priority, application Germany, Nov. 7, 1964, D 45,806
17 Claims. (Cl. 180—73)



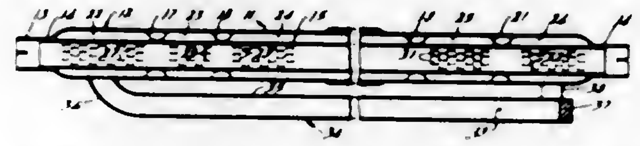
A suspension of the driven wheels, especially of the rear wheels of a motor vehicle which includes an axle gear housing that is pivotally suspended at the vehicle superstructure about a cross axis and which is so supported on a part of the spring system of the wheels partaking in the spring deflections of the wheels that the reaction moment occurring during the drive of the wheels at the axle gear housing produces a torque directed opposite to the pitching moment of the vehicle superstructure during starting and/or accelerations; in particular, the axle gear housing may be supported on a cranked portion of a transversely extending stabilizer which forms a part of the vehicle spring system.

3,402,784
TRACTOR GUIDANCE APPARATUS
Raymond F. Roberson, Sacramento, Calif., and Donald P. Storm, Hinsdale, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 19, 1966, Ser. No. 573,699
5 Claims. (Cl. 180—79)



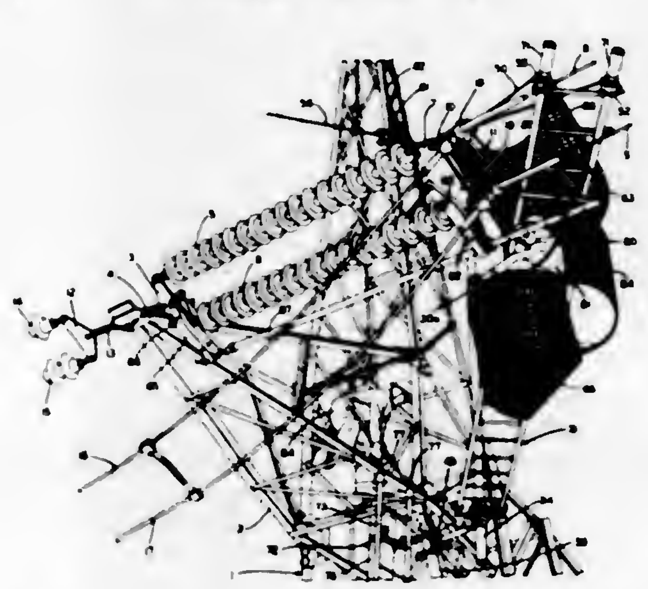
A tractor having an implement such as a plow propelled thereby is automatically guided by a sensing device operatively engageable with an external guide line such as a furrow wall. The sensing device is deflectable from a normal neutral position when the tractor or implement strays, and such deflection, through suitable energy transmission means, actuates the tractor steering means to offset the deflection of the sensing device.

3,402,785
MUFFLER WITH RESONANCE CHAMBERS FOR HIGH AND LOW FREQUENCIES
Walter H. Powers and Robert A. Heath, Jackson, Mich., assignors to Walker Manufacturing Company, a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,692
12 Claims. (Cl. 181—48)



A closed tuning tube, such as a Quincke tuner, is coupled to the gas stream through a spit chamber whereby the chamber volume and perforations act to broad band the attenuation range of the tuning tube.

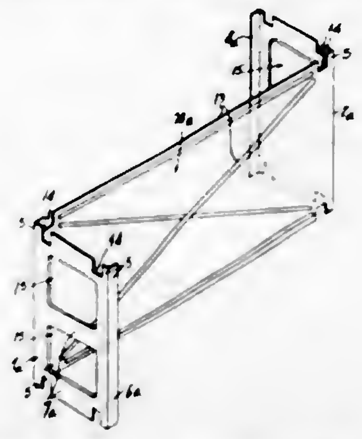
3,402,786
PERSONNEL PROTECTIVE EQUIPMENT FOR WORKING ENERGIZED CONDUCTORS
Lewis H. White, Box 50, West Millgrove, Ohio 43467, and Jack L. Roberson, Rte. 3, Box 812, Lima, Ohio 45801
Filed Oct. 6, 1966, Ser. No. 584,722
14 Claims. (Cl. 182—46)



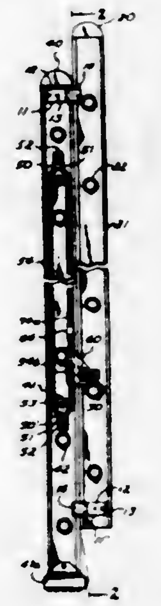
Protective equipment used at any place or in any type of terrain for maintenance and repair of live-line, high and extra-high voltage power transmission lines permitting protected linemen to work with bare hands and complete freedom in performing live-line maintenance while safely supported from the tower structure on which the transmission lines are supported. A gin pole is adjustably mounted on the tower, supporting an insulating platform for horizontal movement through an arc to position the platform outer end adjacent the live-line insulators being maintained or changed. The lineman rides a trolley along the platform to its outer end, where an insulating cradle may be used, supported from the structure and live-lines, to receive an insulator string for repair or replacement.

3,402,787
SELF-SUPPORTING ELEMENTS FOR ERECTING DISMANTLEABLE CONSTRUCTIONS
Jacques Léon Alexandre See, 47 Rue Guersant, Paris 17eme, France
Filed Aug. 29, 1966, Ser. No. 575,815
Claims priority, application France, Nov. 1, 1965, 30,156; Feb. 11, 1966, 49,226; June 2, 1966, 63,932
10 Claims. (Cl. 182—118)

1. Prefabricated self-supporting element forming a protecting panel for erecting partitions, coffer-dams and other dismantleable constructions, characterized in that it comprises a frame comprising four rectilinear sections delimiting a rectangle covered by a solid panel, one at least of the sections being rigidly connected by crossbars to an auxiliary section to delimit at least one ladder element extending appreciably at right angles to the plane of the panel and at least two of said sections, likewise the auxiliary section, forming inserting tips for connecting members by insertion so that any number of identical elements can be assembled together.



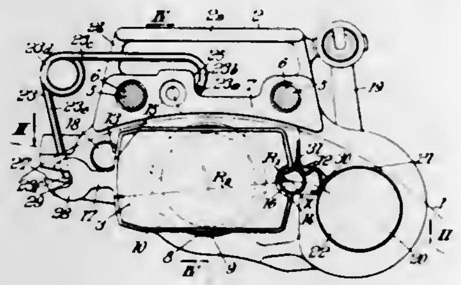
3,402,788
EXTENSION LADDERS
James Charles Redman, Hadley, Pa., assignor to R. D. Werner Co., Inc., Greenville, Pa., a corporation of Pennsylvania
Filed May 25, 1967, Ser. No. 641,176
7 Claims. (Cl. 182—207)



There is disclosed herein, in conjunction with an extension ladder having a base section and a longitudinally slidable fly section, a pair of spaced pulleys mounted on the outside of one side rail of the base section, a rope engaging said pulleys, a connector adjustably connecting the ends of the rope for taking up slack in the rope, and a bracket carried by the fly section adapted to detachably receive the connector for hoisting and lowering the fly section.

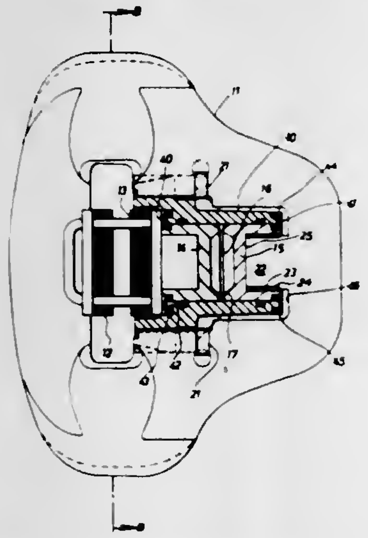
3,402,789
DISC BRAKE FRICTION PAD AND RESILIENT SUPPORT MEANS THEREFOR
Edmond Henry-Biabaud, Paris, France, assignor to Société Anonyme André Citroën, Paris, France, a society of France
Filed Dec. 29, 1966, Ser. No. 608,719
Claims priority, application France, Dec. 29, 1965, 44,120
7 Claims. (Cl. 188—73)

A brake frame is disposed astride the brake disc, the brake frame supporting a friction member on each side of said disc. Each fraction member includes a pad supported by a plate including two bearing surfaces cooperating with two holding surfaces rigid with the frame. All these surfaces are cylindrical with a common axis about which, after a retractable abutment has been brought out



of action, the friction member plate can pivot to permit of removing a worn friction member and resetting a new friction member parallelly to the plane of the disc. The two retractable abutments consist of the end portions of a spring permanently secured to the brake frame.

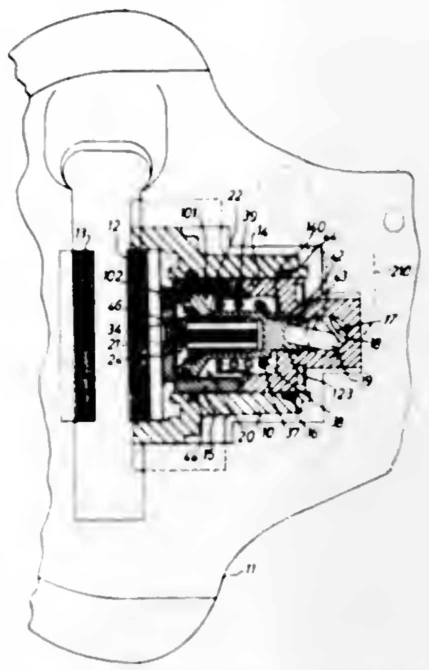
3,402,790
SPOT TYPE DISC BRAKES
Heinrich Bernhard Rath, Koblenz-Lutzel, Germany, assignor to Girling Limited, Birmingham, England
Filed Apr. 3, 1967, Ser. No. 627,880
Claims priority, application Great Britain, Apr. 1, 1966, 14,491/66
7 Claims. (Cl. 188—73)



A spot type disc brake comprises a hydraulic actuator including a body member and opposed pistons slidable in a through bore therein. One piston engages a yoke slidably mounted on the body member and operatively engaging an indirectly operated pad. The other piston engages a directly operated pad. The pads are supported by a U-shaped member of which one limb bottoms in a blind bore in the body member and the other limb passes through another bore in the body member and has a spring ring thereon to prevent its withdrawal. Protective boots are secured to the body member by spring rings and prevent the ingress of dirt into the cylinder. The yoke is prevented from contacting the adjacent boot by making the corresponding securing ring protrude axially beyond the boot.

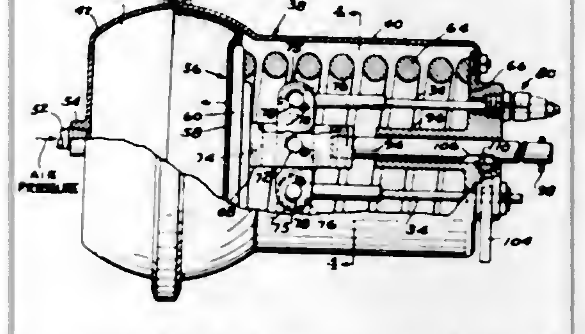
3,402,791
AUTOMATIC ADJUSTERS FOR VEHICLE BRAKES
Hermann H. Hoenick, Immendorf, Germany, assignor to Girling Limited, Birmingham, England
Filed Mar. 15, 1967, Ser. No. 623,329
Claims priority, application Great Britain, May 5, 1966, 19,819/66
10 Claims. (Cl. 188—106)

An automatic adjuster for a hydraulic brake actuator comprises a linear ratchet mechanism operative between a piston of the actuator and a cam (auxiliary mechanical actuator) journalled in a second piston opposed to the first-mentioned piston or in a cylinder body in which the piston is slidable. A thrust member biased by a spring against the cam is slidingly sealed to a bore in the piston and has an abutment for engaging the pawls of the ratchet mechanism to step the mechanism when excessive travel



takes place between the piston and the second piston opposed thereto or the cylinder body. This thrust member is acted upon by the brake fluid pressure and the spring is overcome when this pressure exceeds a comparatively low value at which the brake clearances have been taken up but the brake pads are not applied with substantial force. When the spring is overcome further adjustment cannot take place.

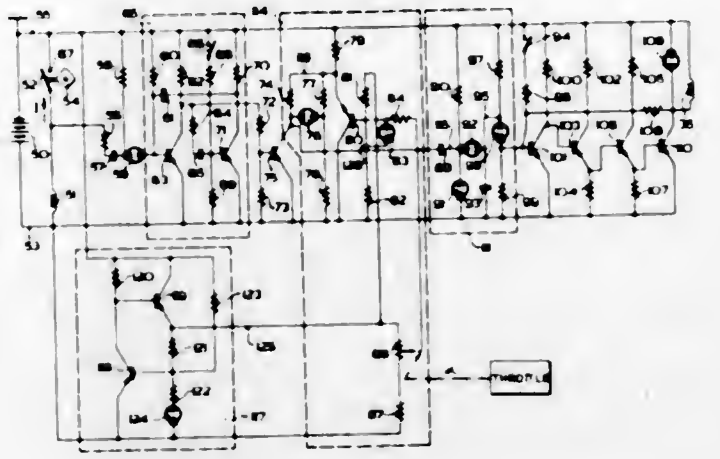
3,402,792
BRAKE ACTUATING APPARATUS
Lloyd D. Masser, Muskegon, Mich., assignor to Neway Equipment Company, Muskegon, Mich., a corporation of Michigan
Filed Jan. 3, 1967, Ser. No. 606,614
15 Claims. (Cl. 188—170)



A spring applied-fluid pressure released secondary air brake actuator, or pot, for applying a plurality of brakes. The actuator piston has a yoke pivotally mounted thereon with a brake cable connected on each end of the yoke. During brake actuation, the yoke pivots to equalize the braking force.

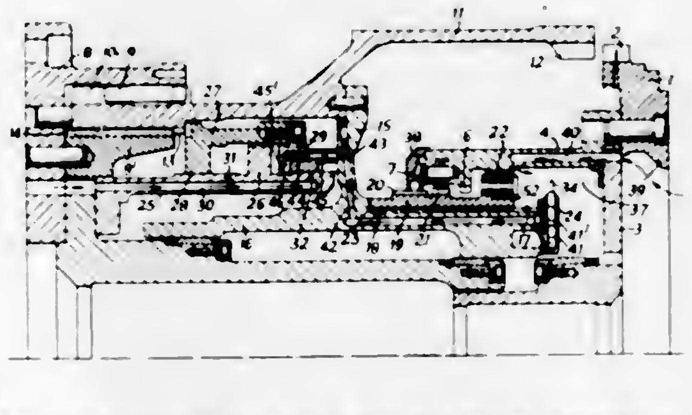
3,402,793
ELECTROMAGNETIC COUPLING ARRANGEMENT
Hermann Scholl, Stuttgart, Germany, assignor to Robert Bosch, G.m.b.H., Stuttgart, Germany
Filed Sept. 28, 1966, Ser. No. 582,583
Claims priority, application Germany, Oct. 2, 1965, B 83,973
13 Claims. (Cl. 192—.033)

An electromagnetic coupling arrangement for use in motor vehicles. The coupling arrangement has a driving coupling member and a driven coupling member for transmitting a torque between them. The driving member is mechanically linked to the engine of the motor vehicle. An electrical coil mounted on one of the coupling members establishes a magnetic field when energized. The magnetic field then acts to permit the transmission of torque between the coupling members. The magnitude of the torque transmitted is controlled by a pulsating current passed through the electric coil. The average intensity of the current determines the magnitude of the torque that may



be transmitted between the coupling members. Electronic circuitry is provided for varying the waveform of the pulsating current passed through the electrical coil as a function of the operating characteristics of the engine. When the operating characteristic of the engine is the speed of the engine, the opening of the throttle is detected and the electronic circuitry is actuated in relation to the throttle opening. The current circulated through the electrical coil of the coupling is thus made a function of the engine speed.

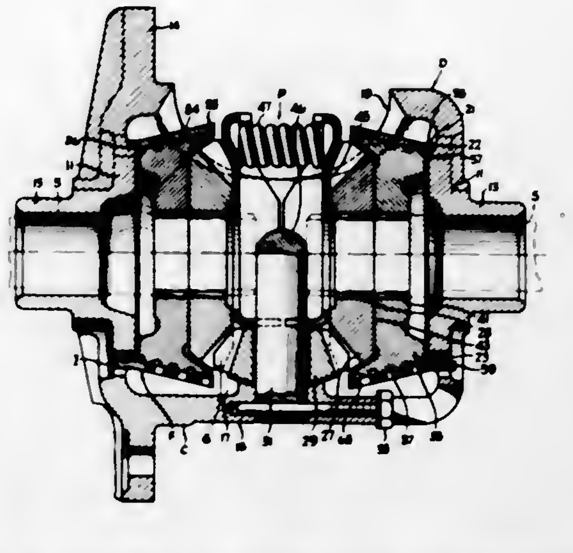
3,402,794
SYNCHRONOUS SELF-SHIFTING CLUTCHES
Harold Sinclair, Kensington, London, and Herbert Arthur Clements, Weybridge, England, assignors to S.S.S. Patents Limited, London, England
Filed Mar. 4, 1966, Ser. No. 532,004
Claims priority, application Great Britain, Apr. 6, 1965, 14,654/65
3 Claims. (Cl. 192—67)



An over-running toothed clutch having a dashpot for damping clutch engagement. When the clutch input part is rotating at a sufficient speed liquid is fed to the dashpot cylinder under pressure due to centrifugal force, through a duct or ducts in the input part. When the clutch input part is stopped or is rotating at low speed this pressure will be inadequate to charge the dashpot.

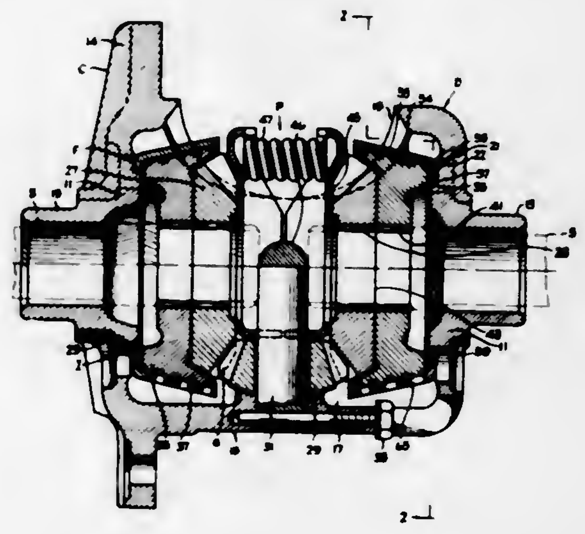
To meet this problem, the invention provides that when the clutch output member is rotating at a sufficiently high speed a rotating ring of liquid is formed in it, and a scoop tube transfers liquid from the ring to the dashpot cylinder when the input member is rotating slowly or is stopped.

3,402,795
DIFFERENTIAL MECHANISM
Jack F. Engle, Auburn, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original application July 29, 1965, Ser. No. 475,810, now Patent No. 3,327,559, dated June 27, 1967. Divided and this application May 10, 1967, Ser. No. 655,688
3 Claims. (Cl. 192—107)



An insert for a limited slip differential mechanism defining a conical clutch member seating surface including an axially extending generally cylindrical flange disposed adjacent the convergent end of said conical seat surface extending laterally in a direction away from said seat surface. Said flange includes a generally cylindrical pilot surface radially positioning said insert within a differential mechanism casing and terminating at an end opposite said conical seating surface in a radially directed annular ring axially positioning said insert within said mechanism.

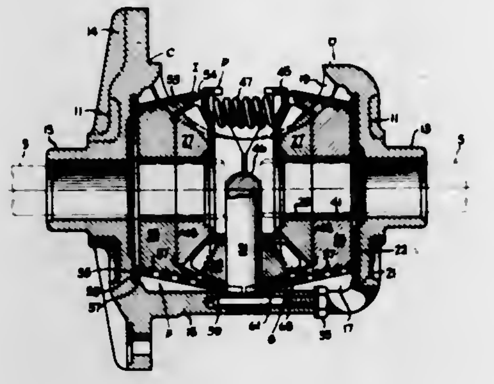
3,402,796
DIFFERENTIAL MECHANISM
Spencer H. Mieras, Ft. Wayne, Ind., assignor to Borg-Warner Corporation, a corporation of Illinois
Original application July 29, 1965, Ser. No. 475,808, now Patent No. 3,327,557, dated June 27, 1967. Divided and this application May 10, 1967, Ser. No. 655,690
7 Claims. (Cl. 192—107)



An insert for a limited slip differential mechanism defining a conical clutch member seating surface. The insert includes means for a radial and axial positioning within the insert as well as for providing driving engagement between the insert and the mechanism casing.

3,402,797
DIFFERENTIAL MECHANISM

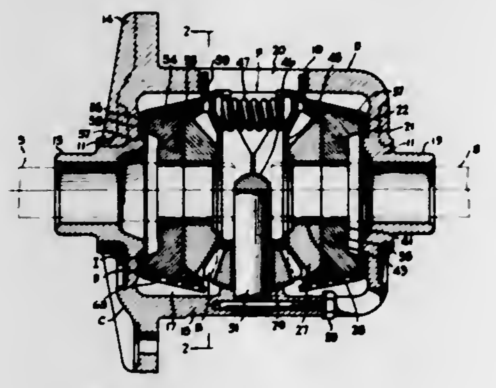
Jack F. Engle, Auburn, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original application July 29, 1965, Ser. No. 475,814, now Patent No. 3,327,563, dated June 27, 1967. Divided and this application May 10, 1967, Ser. No. 655,691
3 Claims. (Cl. 192—107)



An insert for a limited slip differential mechanism defining a conical clutch member seating surface including a flange adjacent the convergent end of the seating surface to radially and axially position the insert and a flange associated with the divergent end of the conical seating surface to effect a driving connection between the insert and the differential casing.

3,402,798
DIFFERENTIAL MECHANISM

John W. Holdeman, Auburn, Ind., assignor to Borg-Warner Corporation, a corporation of Illinois
Original application July 29, 1965, Ser. No. 475,811, now Patent No. 3,327,560, dated June 27, 1967. Divided and this application May 10, 1967, Ser. No. 655,967
7 Claims. (Cl. 192—107)

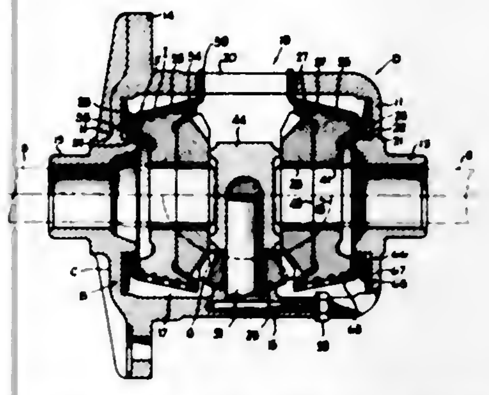


An insert for a limited slip differential mechanism defining a conical clutch seating surface. The insert includes means for radial and axial positioning of the insert as well as for providing driving engagement between the insert and the mechanism casing.

3,402,799
DIFFERENTIAL MECHANISM

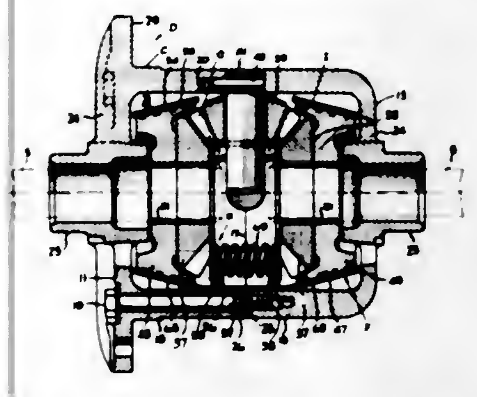
Bernard Tharpe, Garrett, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original application July 29, 1965, Ser. No. 475,815, now Patent No. 3,327,564, dated June 27, 1967. Divided and this application May 10, 1967, Ser. No. 655,968
2 Claims. (Cl. 192—107)

A preassembled sub-assembly for a limited slip differential mechanism including a shaft engaging member having a conical clutch member portion, an insert defining a conical clutch member-engaging surface and a biasing means urging said clutch member portion into frictional engagement with said insert conical seat surface.



3,402,800
DIFFERENTIAL MECHANISM

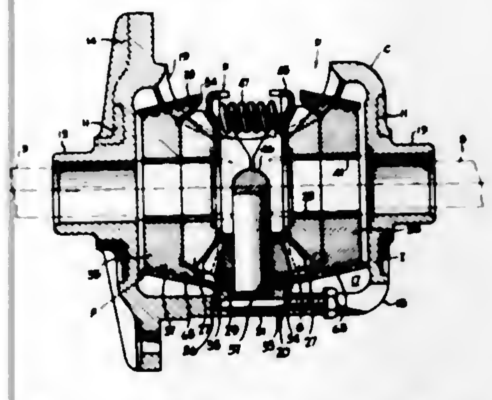
William G. Jeakle, Auburn, Ind., assignor to Borg-Warner Corporation, a corporation of Illinois
Original application July 29, 1965, Ser. No. 475,812, now Patent No. 3,327,561, dated June 27, 1967. Divided and this application May 10, 1967, Ser. No. 666,524
3 Claims. (Cl. 192—107)



An insert for a limited slip differential mechanism defining a conical clutch seating surface. The insert includes means for radial and axial positioning of the insert as well as for providing driving engagement between the insert and the mechanism casing.

3,402,801
DIFFERENTIAL MECHANISM

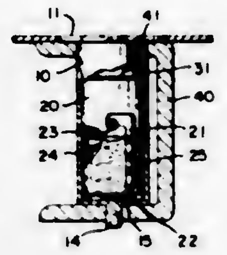
John W. Holdeman, Auburn, Ind., assignor to Borg-Warner Corporation, a corporation of Illinois
Original application July 29, 1965, Ser. No. 475,813, now Patent No. 3,327,562. Divided and this application May 10, 1967, Ser. No. 671,506
2 Claims. (Cl. 192—107)



An insert for a differential mechanism including a conically shaped clutch engaging surface. The insert includes means for radially and axially positioning an insert within a differential mechanism as well as means for providing a driving engagement.

3,402,802
RETRACTABLE ROLLER GUIDE ASSEMBLY

Robert S. Lint, 7800 Perimeter Road S., Seattle, Wash. 98108
Filed Apr. 7, 1967, Ser. No. 629,179
9 Claims. (Cl. 193—37)



A retractable roller guide assembly having a piston-roller urged by spring or air pressure upwardly from retracted position to an operative raised position wherein it is adapted to guide pallets or the like along a defined path. A set screw cooperates with grooves in the piston-roller to limit endwise movement thereof and to hold the piston-roller in retracted position when spring pressure is used to urge it into extended position; in the latter instance a partial turn releases the piston-roller.

3,402,803
ARTICLE CONVEYING, COLLECTING AND METERING METHOD AND APPARATUS

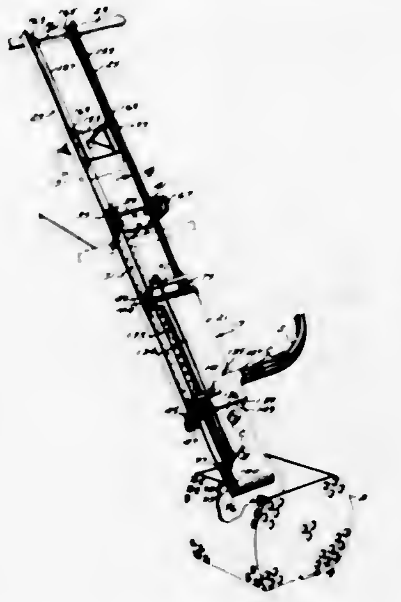
Arthur J. Griner, Wyckoff, N.J., assignor to National Biscuit Company, New York, N.Y., a corporation of New Jersey
Continuation-in-part of applications Ser. No. 310,532, Sept. 19, 1952, and Ser. No. 169,164, Jan. 5, 1962. Division of application Ser. No. 334,796, Dec. 31, 1963. This application Dec. 21, 1966, Ser. No. 603,486
23 Claims. (Cl. 198—32)

Apparatus for continuously advancing parallel rows of flat articles, such as biscuit stacked on edge while sequentially segregating and advancing measured groups of articles from said rows in staggered relation, directing the staggered groups into a single continuously advancing column, and dividing the column into spaced-part metered packageable units of said articles.

3,402,804
CAN LOADER

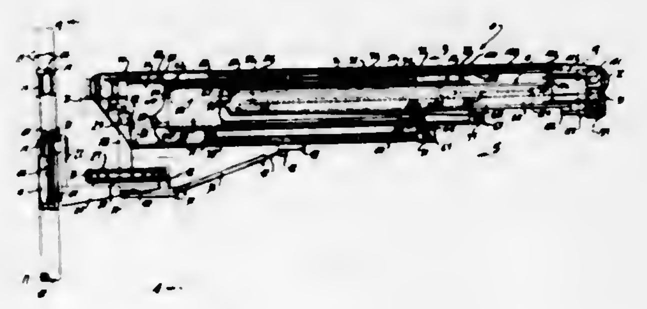
Nick F. Elich, San Pedro, Calif., assignor to Star-Kist Foods, Inc., Terminal Island, Calif., a corporation of California
Filed Jan. 23, 1967, Ser. No. 610,945
4 Claims. (Cl. 198—41)

A can loader including a conveyor belt mechanism depending rollably from a downward and forwardly inclined main frame and having a magnet supported under the conveyor belt. A driven pinion on the upper shaft of the conveyor belt mechanism that engages the upwardly-moving length of an endless drive chain carried on a pair of sprockets supported from the main frame, one of the sprockets being driven by a motor. The cans are received on the upper portion of the conveyor belt and are maintained frictionally against the downwardly-moving face of the belt by the magnet and move therewith. When deposited cans collect at the lower end of the conveyor and interfere with those moving down the face of the belt, movement of the belt will be resisted and the upwardly-moving length of chain engaged with the pinion will roll the conveyor up the main frame sufficiently to alleviate such interference.



3,402,805
VEHICLE MOUNTED CONVEYOR

Francis T. Spellman, Jr., Verona, Wis., assignor to Spellman Hydraveyor, Inc., Madison, Wis., a corporation of Wisconsin
Filed June 8, 1966, Ser. No. 556,026
15 Claims. (Cl. 198—139)



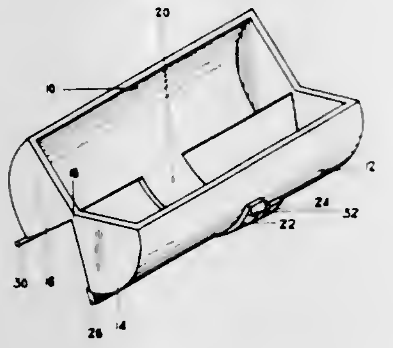
The invention relates to an adjustable, vehicle-mounted conveyor including a series of telescopic conveyor sections with the innermost conveyor section being adjustably connected to the truck so that the conveyor is capable of pivoting both in a horizontal and vertical plane, as well as moving vertically and being pivotable around a horizontal axis.

The conveyor includes an endless belt carried by the telescopic conveyor sections and the belt telescopes with telescopic movement of the sections. The belt is supported on a series of rollers and a provision is made to move at least a portion of the rollers during telescopic movement of the conveyor sections so as to maintain approximate equidistant spacing between the rollers as the conveyor sections extend and retract.

The conveyor belt is driven by a hydraulic motor located at the outer end of the outermost conveyor section and the hydraulic lines which are connected to the motor extend within the conveyor sections and telescope with telescopic movement of the sections.

3,402,806
COINHOLDERS

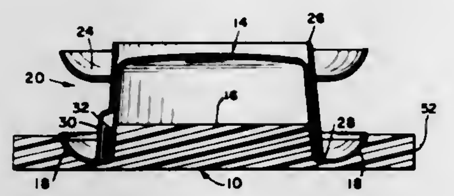
James Sutherland, 20 Shakespeare Ave., Senderwood, and Allan Charles Watts, 2 Meinwin Court, Langerman Drive, Kensington, both of Johannesburg, Republic of South Africa
Filed Aug. 7, 1967, Ser. No. 658,844
Claims priority, application Republic of South Africa, Aug. 11, 1966, 4,777/66; Sept. 22, 1966, 5,732/66
3 Claims. (Cl. 206—.82)



A coinholder comprising two body members, each being a segment of a hollow cylinder, which are joined together at each end by end-pieces. The end-pieces taper towards the centre of the cylinder to allow relative pivotal movement between the body members about a line parallel to the cylinder axis. A tongue and slot combination, the tongue being attached to one of the body members and the slot being formed in the other, holds the two body members in a predetermined position. In use, the body members are moved relatively to each other to an open position and a row of coins is placed in the trough defined by the two segments. The body members are then released, which members return to a closed position in which the coins are held captive in the trough. The body members are held fixed in the closed position by the tongue and slot combination.

3,402,807
HAT BOX AND HAT SUPPORT

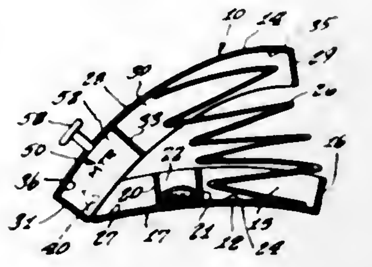
Robert Hatcher, Jr., 2444 Wheeler, Indianapolis, Ind. 46218
Filed June 5, 1967, Ser. No. 643,660
6 Claims. (Cl. 206—8)



Means for shaping, protecting, storing and carrying a plurality of hats comprising a base having a generally ovally shaped cut-out proportioned and arranged to engage the bottom surface of the brim of a hat and a boss centrally located within the cut-out and arranged to extend upwardly into the crown of the hat; a plurality of forms, each of which is provided with a tubular portion and an outwardly and peripherally extending flange carried intermediate the upper and lower ends of the tubular portion, the lower end of the tubular portion being provided to fit down over the crown of a hat and to engage peripherally the juncture between the brim and crown of the hat, the upper end of the tubular portion being provided to extend upwardly into the crown of a second hat and the flange being provided to engage the bottom surface of the brim of the second hat; and a cover arranged to fit down over the uppermost hat in a stack and to engage peripherally the juncture between the brim and crown of the uppermost hat. In one embodiment of the invention, a tubular carrying case is provided for receiving a base, a plurality of hats, a plurality of forms and a cover, the base and cover being held against transaxial movement in the case.

3,402,808
EMERGENCY MEDICAL INFORMATION ALARM

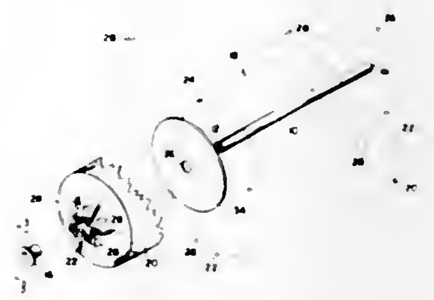
Anthony Yannuzzi, 10 Birchwood Ave., West Orange, N.J. 07052
Filed June 27, 1966, Ser. No. 560,510
2 Claims. (Cl. 206—42)



An emergency medical information carrier consisting of a compartmentized container having in one compartment a manually operated audible alarm device, in a second compartment a medical information containing card or sheet and in a third compartment a medicament such as a tablet or pill. The container includes a bottom housing in which the compartments are provided and an upper enclosing hinged cover including a compartment mating with the alarm containing compartment of the housing, the container is formed to be worn on the wrist of a person and the alarm device is provided with a manually operated stem extending upwardly from the cover which on appropriate movement by the person will cause the alarm device to operate whereby to attract the attention of others to the container on the person in the event of an emergency and to the medical information contained therewithin.

3,402,809
PACKAGE FOR ROLLED ARTICLES

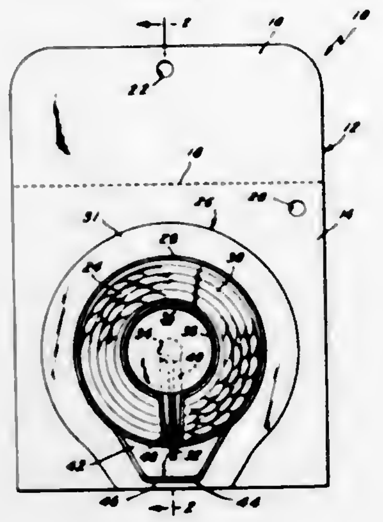
John M. Snyder, New York, N.Y., assignor to Commercial Carpet Corporation, New York, N.Y., a corporation of New York
Filed May 9, 1967, Ser. No. 637,106
3 Claims. (Cl. 206—59)



A package and method for making same for wrapping rolled articles such as, for example, carpets, drapery materials, or the like, comprising hollow core means around which the article is rolled, a cover such as a burlap or paper cover around the rolled carpet or other article, gathered on each end thereof and provided with holes through which end plugs are fitted into the ends of the hollow core, or with the ends of the cover material stuffed between the end plugs and the hollow core. The end plugs may be provided with flanges at their outer ends and with friction holding means, and tag means with a hole may also be provided to be held against the package by means of one of the end plugs.

3,402,810
TWINE DISPENSING DEVICE

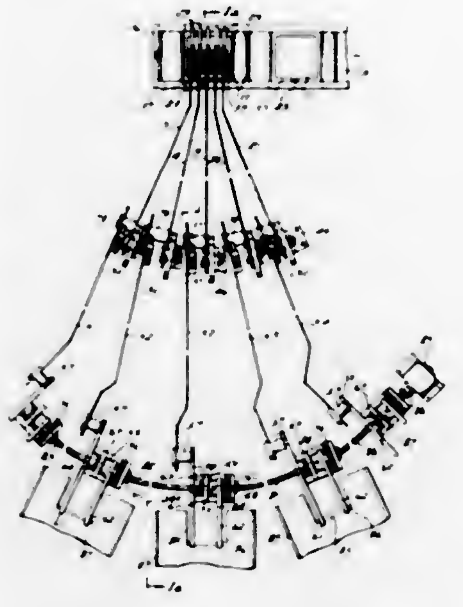
Earl M. Percelay, Pawtucket, R.I., assignor to New England Twine & Cordage Company, Pawtucket, R.I., a corporation of Rhode Island
Filed June 27, 1967, Ser. No. 649,187
5 Claims. (Cl. 206—59)



A twine dispenser including a display card on which a clear plastic housing is mounted, a package of twine being located in the housing and conforming generally to the configuration thereof, an opening being formed centrally of the front wall of the housing for receiving a free end of the twine therethrough wherein the twine is extracted from the dispenser in required lengths, without removing the twine package from the dispenser in which it is purchased.

3,402,811
SORTING APPARATUS FOR FILM CARTRIDGES

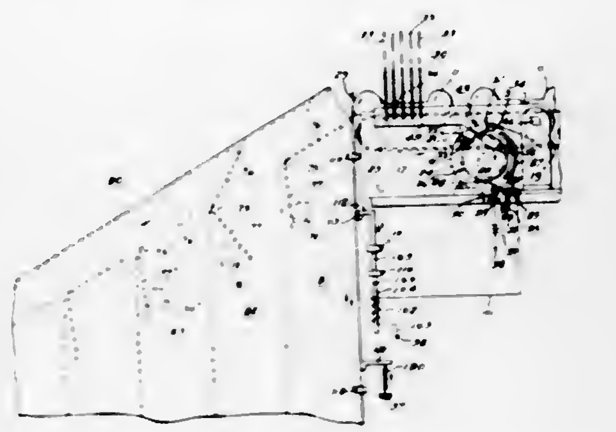
Hubert Nerwin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 17, 1967, Ser. No. 616,916
9 Claims. (Cl. 209—74)



For automatically sorting film cartridges in accordance with the position of an identifying notch placed in the outer surface thereof to identify the contents of the cartridge, an apparatus is provided which moves a group of cartridges, with the same orientation, in succession to a sensing station whereat the one of a plurality of oscillatable sensing and pick-up arms which senses the presence of a notch is activated to pick up the cartridge from the sensing station and carry it to one of a plurality of points of deposition corresponding to the identifying notch of the sensed cartridge.

3,402,812
SORTING APPARATUS FOR FILM CARTRIDGES

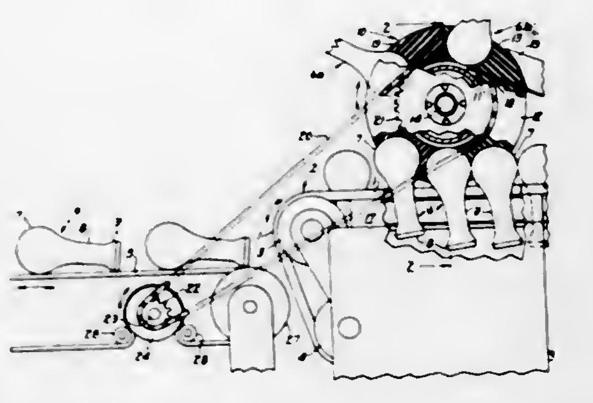
Hubert Nerwin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 18, 1966, Ser. No. 573,347
14 Claims. (Cl. 209—80)



An apparatus for automatically identifying and sorting film cartridges each having identification notch means positioned at different locations within a selected peripheral distance along an edge of the cartridge. The cartridges are sequentially fed in identically oriented positions to and from a sensing station at which a plurality of sensing members move into engagement with the edge of the cartridge to sense the location of the notch therein. That sensing member which encounters a notch produces a characteristic signal which controls a sorting mechanism for allocating the cartridge to a particular one of a plurality of end positions to which it can move from said sensing station.

3,402,813
LAMP BULB CONVEYOR MECHANISM

Arne Molbach, Ivrea, Turin, Italy, assignor to General Electric Company, a corporation of New York
Filed Oct. 12, 1966, Ser. No. 586,212
7 Claims. (Cl. 209—80)



In a lamp bulb conveyor lane wherein an accumulation of bulbs is required to maintain a constant supply in a downstream section of the lane which runs intermittently when there is a demand for bulbs but is otherwise stopped, the accumulation is achieved in an upstream section of the lane consisting of a pair of constantly running round belts between which the bulbs are suspended. At the end of the accumulating section there is an escapement device which prevents the bulbs from piling up on the downstream belt when the latter is stopped. This escapement device is made to perform a dual function by making it in the form of a gripper wheel having spaced discs and which is mounted so that it straddles the path of movement of the upper bowl sections of bulbs near the end of the upstream belts and is driven by the intermittently running belt so that when the latter belt is stopped, the wheel is also stopped with one or more bulbs gripped thereby and the bulb accumulation is held back. There is also provided suitable mechanism to insure that normal bulbs will be released from the gripper wheel to continue their travel whereas broken bulbs with no cullets will be carried away by the gripper wheel and discharged.

3,402,814

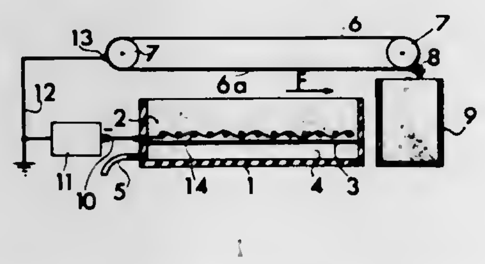
METHOD AND APPARATUS FOR THE ELECTROSTATIC SORTING OF GRANULAR MATERIALS

Roger Claudius Marius Morel and Pierre Tauveron, Grenoble, France, assignors to Sames, Societe Anonyme de Machines Electrostatiques, Paris, France, a French joint-stock company

Filed June 25, 1964, Ser. No. 377,917

Claims priority, application France, June 27, 1963, 939,522

19 Claims. (Cl. 209—127)



1. A method for the electrostatic sorting of particles having particular characteristics, comprising the steps of forming a fluidized bed of the particles to be sorted, electrically charging the particles in said fluidized bed to a D.C. potential of the same polarity, forming an electrostatic extracting field between an electrode immersed in said fluidized bed and a collector member in spaced relationship with said bed, at least some of the charged particles being withdrawn out of said bed and into contact with said collector member substantially solely by said electrostatic extracting field, electrostatically retaining on said collector member only those particles having a common characteristic different from the corresponding characteristic of the remaining particles, and thereafter removing the retained particles from said collector member.

7. In apparatus for the electrostatic sorting of particles having particular characteristics, a container for the particles to be sorted, said container including a bottom portion and side walls extending upwardly from said bottom portion, means for directing a stream of fluidizing gas into said container to form a fluidized bed of said particles, a collector member in spaced juxtaposed relationship with said container, and means including a charging electrode disposed within said fluidized bed and spaced above the bottom portion of said container for applying a D.C. potential of the same polarity to the particles in said container and for forming an electrostatic extracting field between said charging electrode and said collector member, at least some of the charged particles being withdrawn out of said bed and into contact with said collector member substantially solely by said electrostatic extracting field, the electrostatic attraction between said particles and said collector member being sufficient to retain thereon only those particles having a common characteristic different from the corresponding characteristic of the remaining particles.

3,402,815

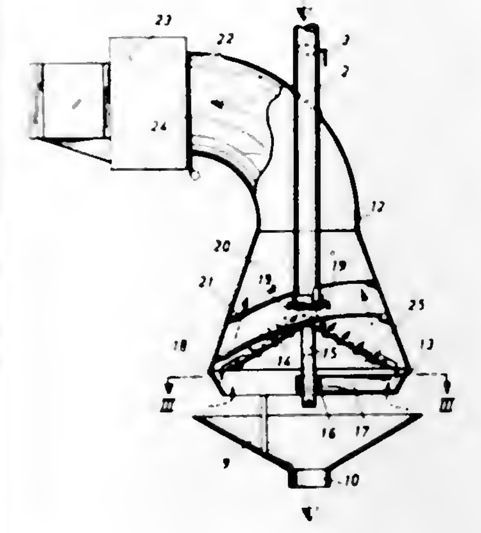
APPARATUSES FOR THE CLEANING OF CORN AND THE LIKE

Karl Axel Bertil Jarreby, Falkenberg, Sweden, assignor to Skandinaviska Apparatindustri AB, Falkenberg, Sweden, a corporation of Sweden

Filed Sept. 14, 1965, Ser. No. 487,167

Claims priority, application Sweden, Oct. 1, 1964, 11,784/64

16 Claims. (Cl. 209—139)



An apparatus for cleaning granular material, such as corn, wherein a tubular housing is provided having a lower open end. A conical spreading disk is arranged with its apex upwards at the lower open end. Means for feeding granular material centrally down on said conical spreading disk are provided and a source of negative air pressure is connected to the housing at its upper end to cause an air stream to meet and clean the granular material adjacent the disk and bring along upwardly foreign light bodies contained in the granular material. Means such as flanges and openings are provided upon said housing and disk for producing a swirling current of air above said spreading disk in the housing.

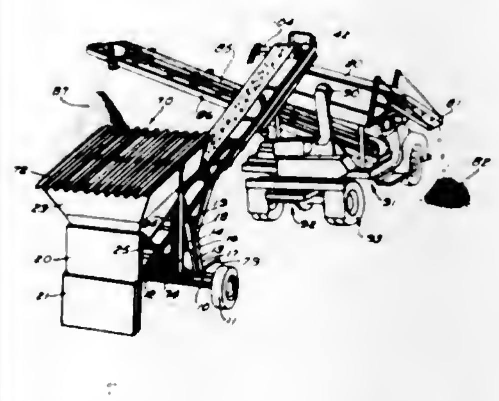
3,402,816

PORTABLE GRAVEL HANDLING APPARATUS

Joseph M. Taylor, Cape Elizabeth, Maine, assignor to Machinery Incorporated, Maine, a corporation of Maine

Original application July 22, 1965, Ser. No. 473,936. Divided and this application Aug. 8, 1966, Ser. No. 570,797

2 Claims. (Cl. 209—260)



A hopper for gravel material with a grizzly over the mouth thereof hinged to one end and swung about its hinge to discharge large pieces of material collected on the grizzly.

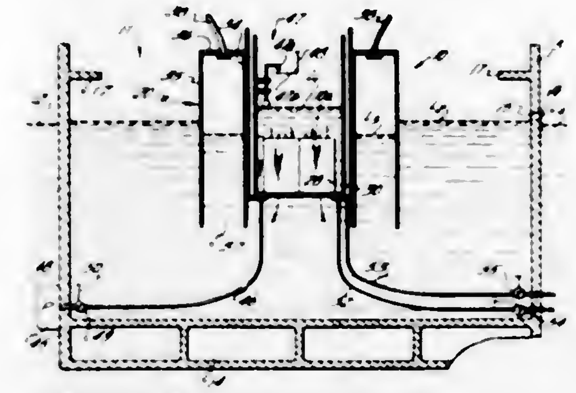
3,402,817

BALLAST OPERATED FILTER

James P. Dovel, Birmingham, Ala., assignor to Filtration Equipment Corporation, Rochester, N.Y.

Filed May 5, 1967, Ser. No. 636,411

10 Claims. (Cl. 210—80)



A filter unit, such as a confined bed of sand, through which a liquid, such as water, flows to form a pool. The filter unit has one or more pontoons to cause it to float in the pool of filtered water. The filter unit is raised by displacing water from the pontoon to produce a liquid level in the unit above the liquid level in the pool so that liquid flows downwardly through the filter bed into the pool; or lowered by releasing air from the pontoon to produce a liquid level in the unit below the liquid level in the pool to reverse the direction of flow of liquid from the pool through the filter bed for backwashing the bed.

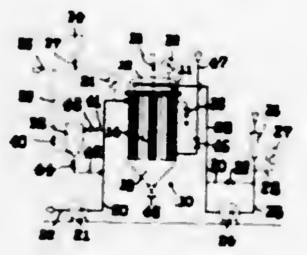
3,402,818

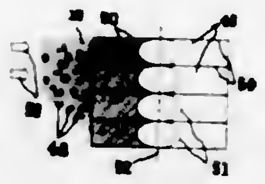
OSMOSIS FILTERING METHOD AND DEVICE

Jiro Sasaki, 881 Suminodo, Yata-cho, Higashisumeyoshi-ku, Osaka, Japan

Filed Sept. 14, 1964, Ser. No. 396,278

7 Claims. (Cl. 210—82)





1. An osmotic filtering method in which the liquid to be filtered is contacted with a filter body having a large adhesion area and innumerable capillary passages connected therewith, passing the liquid into contact with the adhesion area for loose adhesion and collection thereon of impurities to be filtered out with substantial precipitation thereof by gravity after increasing in size without substantial penetration of the filter body, and withdrawing purified liquid from the opposite side of the filter body after capillary movement thereof through the capillary passages.

3,402,819

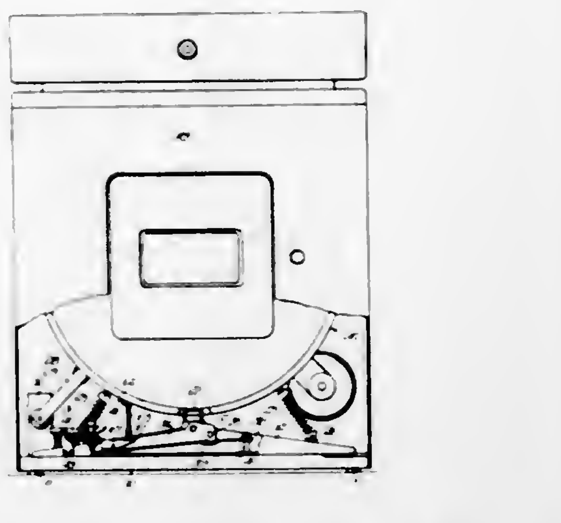
SAFETY CONTROL MECHANISM

John C. Mellinger, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware

Continuation-in-part of application Ser. No. 686,450, Sept. 26, 1957. This application June 22, 1964, Ser. No. 377,000

The portion of the term of the patent subsequent to Apr. 9, 1980, has been disclaimed

5 Claims. (Cl. 210—144)



1. Laundry apparatus for centrifuging fluid from fabrics comprising, a support, a casing, a clothes receptacle revolubly mounted within said casing on a non-vertical axis and adapted to receive said fabrics, drive means for rotating said receptacle, means mounting said casing on said support in one primary degree of freedom about a non-vertical primary axis for attainment of a force isolation system having a resonant frequency during the rotation of said receptacle, and means sensitive to a predetermined amount of centrifugal force measured by movement of said casing in a secondary degree of freedom relative to said support for decreasing the power supplied by said drive means to said receptacle.

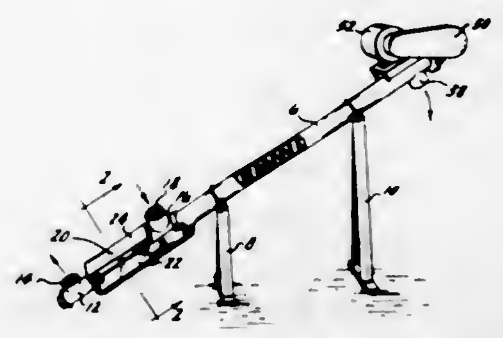
3,402,820

MAGNETIC CLEANER FOR COOLANT

Edward Pratt Lohmann, 2377 N. 73rd St., Wauwatosa, Wis. 53213

Filed Oct. 24, 1965, Ser. No. 504,889

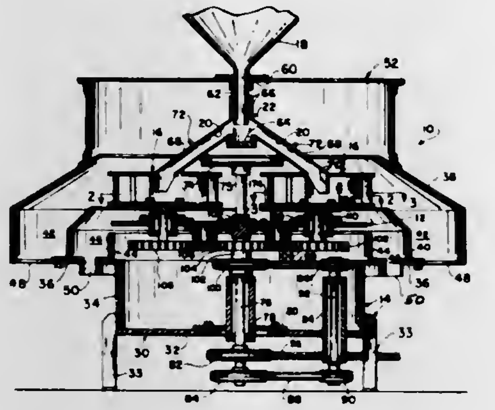
2 Claims. (Cl. 210—222)



A nonmagnetic tube continuously inclined in one direction has an intermediate inlet for coolant and chips to be removed therefrom, there being a lower outlet for coolant discharge and an elevated outlet for chip discharge. Surrounding the tube are radially magnetized ceramic magnets arranged in stacks with several stacks disposed in rows axially of the tubes to attract magnetic chips to the inner periphery of the tube so that a floating helix operated by power within the tube will lift the chips to the point of chip discharge while allowing the coolant to flow by gravity from the lower outlet.

3,402,821
CENTRIFUGAL SEPARATOR

William H. Peck, Tulsa, Okla., assignor of one-third to William H. Peck, Jr., San Antonio, Tex.
Filed Aug. 31, 1966, Ser. No. 576,322
11 Claims. (Cl. 210—325)

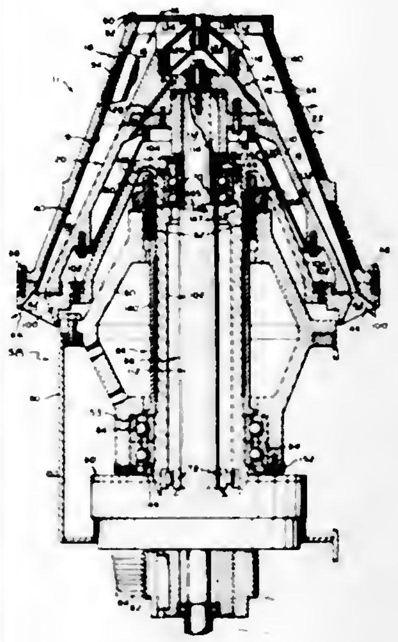


1. A centrifugal separator for dehydrating solids contained in slurry and comprising a horizontal carrier rotatable about a central vertical axis, a plurality of filter baskets eccentrically and rotatably mounted on said carrier in circumferentially spaced relationship for rotation about respective vertical axes and for orbital movement about the axis of the carrier, each basket incuding a base plate rotatable with the basket in a horizontal plane and adapted to receive slurry thereon in the central region thereof, distributon ducts mounted on and rotatable with the carrier and leading to the baskets for depositing slurry on said central regions of the baskets, each basket further including a series of filter screen units mounted on said base plate in circumferentially spaced relationship and including respective filter screens proper projecting upwardly from the upper surface of the base plate, said filter screens substantially encompassing said central region of the base plate and being so disposed that when an individual screen assumes an outer ecliptic position with respect to the axes of the carrier and basket slurry will be flung radially outwardly of the carrier by centrifugal force and against the screen, and when such screen assumes an inner ecliptic position slurry particles adhering to the screen will be dislodged from the screen by centrifugal force and flung diametrically across the basket, there being a series of liquid discharge openings in said base plate in the vicinity of each screen on the side thereof remote from the axis of rotation of the basket, a liquid collection trough embracing each series of openings and presenting an open side across which the associated filter screen projects, means for rotating said carrier at a relatively high rate of speed, and means for rotating said baskets at a relatively low rate of speed.

3,402,822
SCREENING CENTRIFUGES

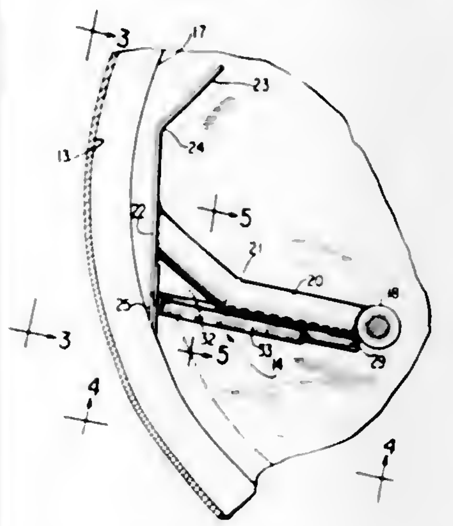
Haakon C. F. Oyen, Stamford, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Filed Aug. 17, 1966, Ser. No. 572,981
5 Claims. (Cl. 210—374)

1. In a screening centrifuge having a conical screening means, a coaxial conical conveying means therein, and respective coaxial shaft means connected at one end to said screening means and to said conveying means to rotatably drive same, said conveying means including helical vanes and rotating at a speed differential with respect to said screening means to move material along said screening means away from the apex end thereof; the improvement comprising zero-end-play bearing means between the respective coaxial shaft means to prevent said conveying means from moving axially toward said screening means during operation, said bearing means being a double-row rolling-element bearing system arranged with an axial preload on one of the rows of rolling-elements reacted against a preload on the other row of rolling elements.



3,402,823
DOUBLE EDGE CENTRIFUGAL PLOW

Frederick R. Gruner, Moline, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed July 21, 1967, Ser. No. 655,158
6 Claims. (Cl. 210—375)

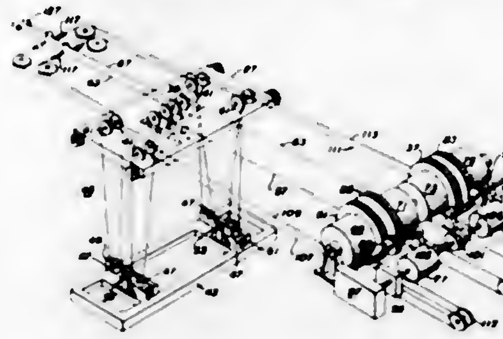


A plow blade assembly for removing the filter cake accumulated on the inner wall surface of the rotary separator drum of a centrifugal separator having two cutting edges, with said cutting edges disposed at approximately right angles to each other and the cutting edge parallel to the inner wall surface having set-back portions at its outer edges.

3,402,824
CONVERTIBLE CARGO HANDLING SYSTEM

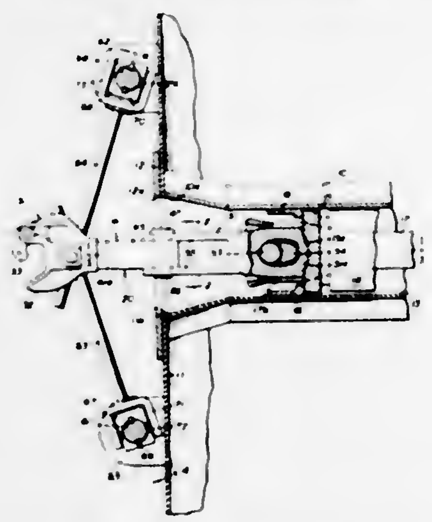
Charles H. Zweifel, Oakland, Calif., assignor to Pacific Coast Engineering Company, a corporation of California
Filed July 25, 1966, Ser. No. 567,436
17 Claims. (Cl. 212—17)

An integrated machinery and reeving system for a crane which permits conversion of the operation of the crane from bulk unloading to cargo container handling, or to operation of a magnet, a cargo hook, or a scrap skip. Four aligned wire rope drums are driven by two motors which can be interlocked to drive two of the drums and the associated reeving synchronously or the motors can be uncoupled to drive the other two drums and the associated reeving thereof independently.



3,402,825
RAILWAY CARS PROVIDED WITH DRAFT RIGGINGS INCORPORATING SHOCK-ABSORBING MECHANISMS

Thomas C. Gray, Kern City, Calif, and Deodat Clejan, deceased, late of Chicago, Ill., by The Harris Trust and Savings Bank, executor, Chicago, Ill., assignors to Cushion Coupler Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 7, 1966, Ser. No. 600,696
6 Claims. (Cl. 213—8)

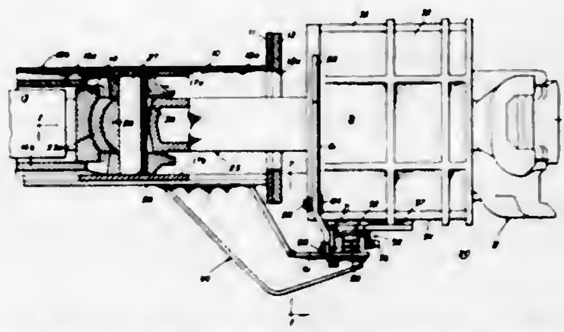


There is disclosed in a railway car an improved draft rigging that comprises in addition to the usual draft gear acting upon the center sill of the underframe thereof a cushion mechanism that acts on the end sill of the underframe; in draft, the draft gear and the cushion mechanism act in parallel relationship, whereby the draft rigging is relatively stiff; in initial buff, the cushion mechanism acts independently of the draft gear, whereby the draft rigging is initially relatively supple; and in subsequent buff, the draft gear and the cushion mechanism act in parallel relationship, whereby the draft rigging is relatively stiff.

3,402,826
RAILWAY CAR PROVIDED WITH CAR COUPLER AND COMBINATION CARRYING AND CENTERING MECHANISM THEREFOR

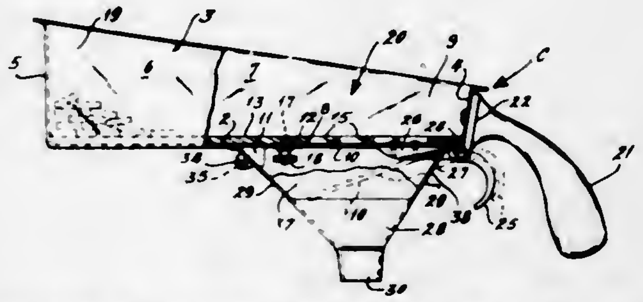
Deodat Clejan, deceased, late of Chicago, Ill., by Harris Trust and Savings Bank, Executor, Chicago, Ill., and Thomas C. Gray, Kern City, Calif., assignors to Cushion Coupler Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 16, 1966, Ser. No. 596,390
12 Claims. (Cl. 213—21)

There is disclosed a railway car having a car coupler incorporating therein a combination carrying and centering mechanism, so as to retain the coupling head of the car coupler in proper vertical elevation for the coupling purpose, and notwithstanding substantial forward projection of the coupling head with respect to the striker carried by the adjacent end of the underframe of the railway car, and so selectively to restrain the coupling head in a normal centered position disposed substantially along the longitudinal centerline of the center sill of the car underframe, and so as to accommodate lateral pivotal movements of the shank of the car coupler to either side of the longitudinal centerline of the center sill, with the consequent selective movements of the coupling head and the two corresponding laterally offset operated positions respectively disposed on opposite sides of the longitudinal centerline of the center sill.



3,402,827
PORTABLE PILL COUNTER

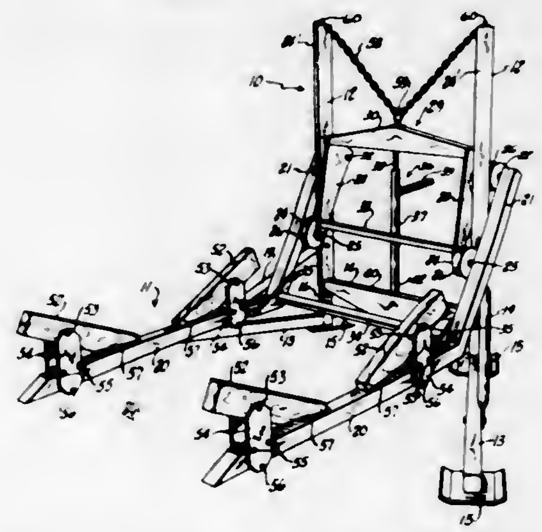
Shirley O. White, 1515 Dial Court, Springfield, Ill. 62704
Filed May 31, 1966, Ser. No. 554,188
10 Claims. (Cl. 214—1)



A portable pill counter having replaceable bottom portions with a plurality of holes for receiving pills, a door positioned beneath said holes, and a funnel positioned beneath said door and extending downwardly for receiving the counted pills after the door has been opened.

3,402,828
BOAT LIFTING AND MOORING DEVICE

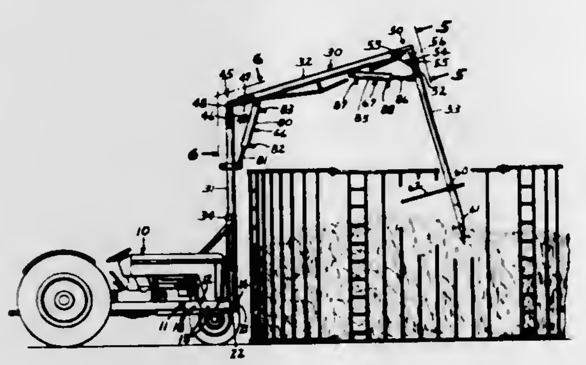
Thomas R. Vilter, Oconomowoc, Wis., assignor to Hydraulic Unit Specialties Company, Pewaukee, Wis., a corporation of Wisconsin
Filed Aug. 23, 1966, Ser. No. 574,439
5 Claims. (Cl. 214—1)



A boat lifting unit supported from spaced columns has cantilever arms projecting outwardly over a stable base structure from which the columns rise. The arms are engageable under the hull of a boat to lift it out of the water during the application of power to the lifting unit to carry it upwardly along the columns.

3,402,829
PORTABLE STACKER FOR HAY AND THE LIKE

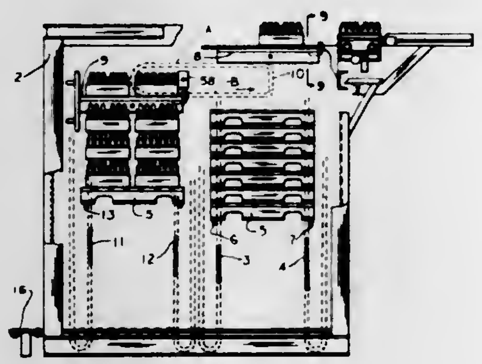
Alvin N. Leedahl, Leonard, N. Dak. 58052
Filed Oct. 23, 1965, Ser. No. 503,340
1 Claim. (Cl. 214—5)



Apparatus adapted to be attached to the front end of a tractor including a first generally vertical segment, a second segment having one end pivotally attached to the upper free end of the first segment, and a third segment having one end pivotally attached to the outwardly extending free end of the second segment. A first hydraulic cylinder is connected between a frame mounted in a stationary position on the tractor and the first segment to impart rotary movements about the longitudinal axis hereof. A second hydraulic cylinder is connected between the first segment and the second segment to rotate the second segment about the pivotal connection thereof to the first segment. A third hydraulic cylinder is connected between the second and third segments for imparting rotary movement of the third segment about the pivotal connection thereof to the second segment. The third segment has attached to the free end thereof a pair of tines projecting outwardly generally along the longitudinal axis of the third segment and a third tine projecting perpendicular to the first two tines for engaging hay or the like in spreading and packing movements. The longitudinal dimensions of the three segments are such that spreading and packing movements can be imparted to hay within relatively high stack forming devices and the like.

3,402,830
PALLETIZER

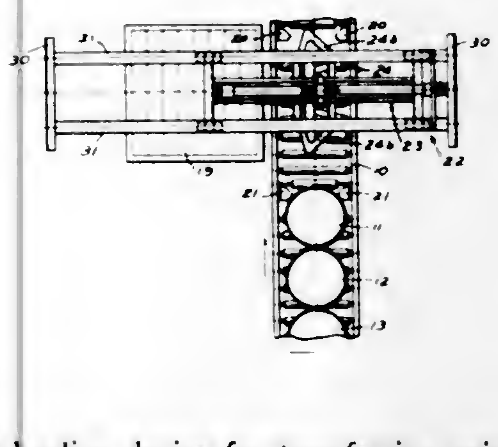
Bruce G. Copping and Walter D. Hardee, Akron, Ohio, assignors to Geo. J. Meyer Manufacturing Company, Milwaukee, Wis.
Filed Feb. 28, 1966, Ser. No. 530,286
11 Claims. (Cl. 214—6)



The palletizing machine has means for receiving a plurality of filled cases positioned to form a layer for a pallet, a transfer plate is provided positioned for fixed orbital movement in horizontal and vertical directions under and beyond the case positioning means while the transfer plate is retained level. The machine also includes a transfer means carried by the transfer plate to move the cases as a layer onto the transfer plate when the transfer plate is moved through its fixed orbital path, and means are provided to position a pallet under the transfer plate at one position of its movement after the cases are thereon. Stop means are provided in the apparatus adjacent the lower path of the transfer plate to engage the cases and force them off of the transfer plate onto a positioned pallet or cases thereon with continued orbital movement of the transfer plate.

3,402,831
LOADING DEVICE FOR PALLETS

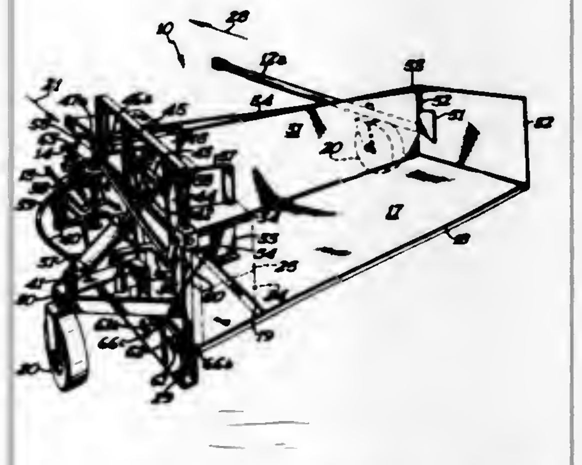
George G. Coombe, Bloomfield, N.J., assignor to Elbert Lively and Co., Inc., Bloomfield, N.J., a corporation of New Jersey
Filed Apr. 2, 1965, Ser. No. 444,954
6 Claims. (Cl. 214—6)



A pallet-loading device for transferring pairs of load units from a fixed loading position to a pallet so that a first pair of load units to be transferred occupies one part of the pallet and a second pair another part of the pallet, placement of successive pairs of load units upon the respective parts of the pallet being automatically effected by servo-operated transport and grab means.

3,402,832
BALE ACCUMULATOR

James F. Wehde, Garretson, S. Dak. 57030
Filed Aug. 15, 1966, Ser. No. 572,391
6 Claims. (Cl. 214—6)



1. A bale accumulator adapted to receive bales of a predetermined size for assembly into a stable group and to discharge the stable group for subsequent handling, said bale accumulator comprising

a frame having wheels rotatably mounted thereon and including means adapted to connect said frame to a towing vehicle,

a generally horizontally disposed bale receiving bed tiltably mounted on said frame for tilting about an axis generally transverse to the direction of travel of said bale accumulator, said bale receiving bed adapted to receive bales forwardly of the bale receiving bed and discharge bales rearwardly of the bale receiving bed,

means adapted to receive at least one bale at a time onto said receiving bed and positioning the bale with the longitudinal axis of the bale substantially parallel with the direction of travel of said bale accumulator,

means advancing an accumulated bale transversely of the direction of travel of said bale accumulator one bale's width to permit receipt of a subsequent bale onto said bale receiving bed, the subsequent bale adapted to be advanced transversely of the direction of travel of said accumulator one bale's width to permit receipt of a next bale, each of the bales being advanced a bale's width, the second contacting and advancing the first received bale, each bale being maintained by said bale advancing means in the position received onto said receiving bed with the longitudinal axis of the bale substantially parallel with the direction of travel of said bale accumulator,

first mechanical control means operably connected to said bale advancing means whereby a bale received onto said bale receiving bed actuates said first mechanical control means whereby said means advancing bales at least one bale's width is actuated,

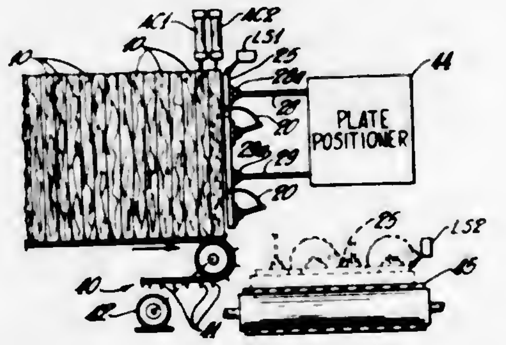
mechanical lever means responsive to a predetermined group of bales received onto said bale receiving bed, said mechanical lever means operably connected to said first control means whereby said first control means is disengaged after a predetermined number of bales have been received onto said bale receiving bed thereby suspending action of said means advancing bales,

second mechanical control means positioned in response to said mechanical lever means, said second mechanical control means positioned to contact the last bale received onto said bale receiving bed,

means tilting said bale receiving bed operably connected to said second mechanical control means and responsive to said second control means whereby contact of the last bale with said second control means actuates said means tilting said bale receiving bed thereby permitting said bale receiving bed to tilt and discharge the predetermined stable group of bales from said bale receiving bed.

3,402,833
METHOD AND APPARATUS FOR HANDLING FIBROUS MATERIALS

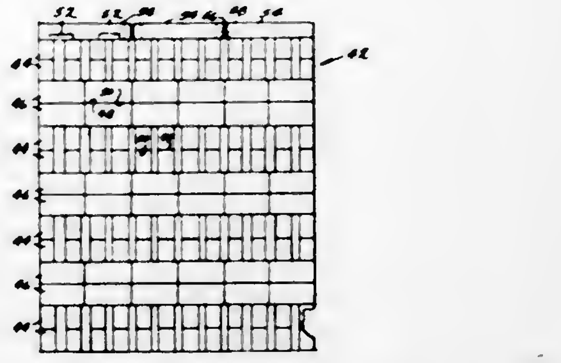
John A. Pershing, Toledo, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Aug. 29, 1966, Ser. No. 575,633
4 Claims. (Cl. 214—8.5)



Method and means for handling fibrous mat material without harming the mat formation by inserting a plurality of fingers into the material along nontear lines, moving the engaged material to a new position, and retracting the fingers just before the material reaches the new position to permit the material to settle into place without stress between the material and the fingers due to the reversal of travel of the fingers. This further permits an unexpectedly large increase in the number of moving operations per period of time because there is no requirement for a stop or rest at the deposition end of the cycle.

3,402,834
METHOD FOR STABILIZING BRICK CUBES AND BRICK CUBES STABILIZED THEREBY

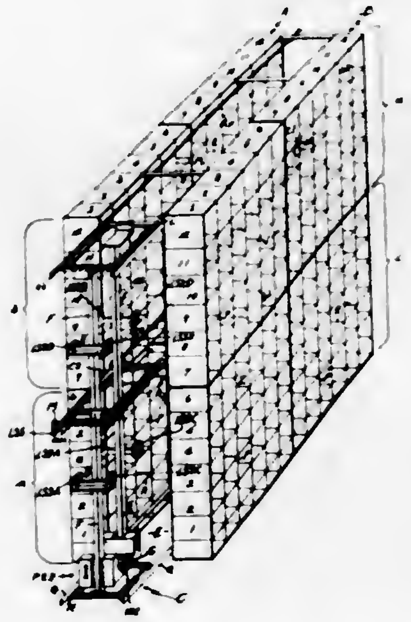
Paul S. Kelsey, Rocky Hill Road, Plymouth, Mass. 02360
Filed Sept. 17, 1965, Ser. No. 488,083
9 Claims. (Cl. 214—10.5)



Stabilizing green brick stacked in a cube on a kiln car for drying and firing, by depositing on the green brick, relatively heavy, rough surfaced plates each bridging a plurality of piers of brick in the cube, thus reducing independent lateral mobility of the piers. The plates may be of refractory material and loosely linked to one another. The plates have a collective horizontal cross-sectional area substantially equal to that of the cube.

3,402,835
CONTROL SYSTEM FOR A ZONED AUTOMATIC WAREHOUSE ARRANGEMENT

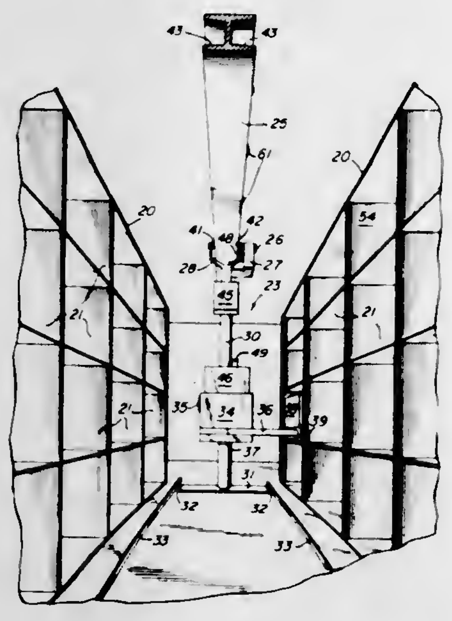
Sanford Saul, Cleveland, Ohio, assignor to The Triax Company, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 14, 1964, Ser. No. 418,048
11 Claims. (Cl. 214—16.4)



An electrical control system for controlling the movement of an article conveyor in an automatic warehouse apparatus wherein the storage racks of the apparatus are divided into discrete zones with means therein in which the article conveyor is responsive to during its movements. The system is operative to accommodate for any irregularities, such as sagging, that may occur in the rack structure that would hinder the proper positioning of the article conveyor at a predetermined location in the warehouse.

3,402,836
CONTROL SYSTEM FOR AN AUTOMATIC WAREHOUSE APPARATUS

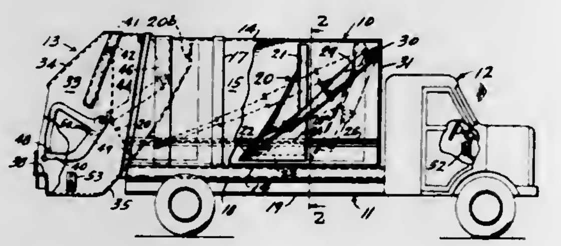
Robert J. Debrey, Oak Park, Ill., James M. Deterding, Annapolis, Md., and John R. Weyer, Gary, Ind., assignors, by mesne assignments, to Conco Inc., a corporation of Illinois
Filed Nov. 23, 1964, Ser. No. 413,016
14 Claims. (Cl. 214—16.4)



Each bin in a warehouse is uniquely identified by a binary number which locates its position with relation to the remaining bins. A control circuit, storing the address and warehousing function for several bins, moves a stacker crane toward a selected bin by comparing the binary address at which the stacker crane is located with the binary address identifying the selected bins, and stops the stacker crane when a match is found. The stacker crane operates at maximum efficiency by anticipating the final desired location, by determining direction of travel and by handling multiple commands.

3,402,837
REFUSE COLLECTING VEHICLE

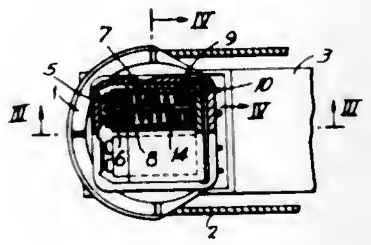
George W. Palmer, Richard C. Gast, and Ray E. Bartholomew, Galion, Ohio, assignors to Hercules Galion Products, Inc., Galion, Ohio, a corporation of Delaware
Filed Sept. 12, 1966, Ser. No. 578,588
4 Claims. (Cl. 214—83.3)



A refuse truck having a hollow body, an ejection platen positioned across the body and movable therethrough from end to end and a loading device at the open rear end of the body. The loading device comprises a hopper and a packer blade for transferring refuse from the hopper into the rear of the body. The packer blade has a normal position extending across the open rear of the body and is mounted for movement rearwardly from a normal position across the open rear end of the body to the rear of the hopper and then forwardly through the hopper back to normal position. The truck has mechanism for moving the platen in the body, mechanism for moving the packer blade through its path and control means, including a time delay device, for moving the platen incrementally forwardly in the body before the packer blade is moved rearwardly from its normal position.

3,402,838
THRUST MECHANISM FOR THE BUCKET OF AN EXCAVATOR

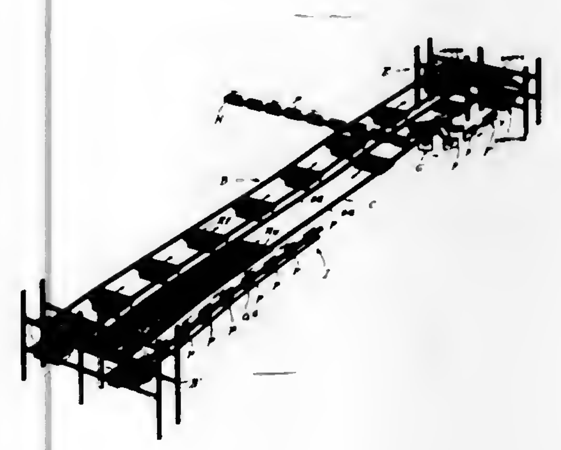
Boris Ivanovich Solokhin, Leningradskoi obl., prospekt im. Lenina 21, kv. 40, and Alexandr Alexandrovich Bakhvalov, Leningradskoi obl., Vokzalnaya ul. 11, kv. 6, both of Kolpino, U.S.S.R., and Vladimir Iosifovich Khazak, Dalnevostochny prospekt 60, kv. 4, Leningrad, U.S.S.R.
Filed Jan. 7, 1966, Ser. No. 519,263
5 Claims. (Cl. 214—135)



A thrust mechanism composed of a displaceable cone engaged in a split ring constituted by a plurality of wedges which are inserted in a tapered sleeve and act on a spring contained in the sleeve.

3,402,839
APPARATUS FOR HANDLING PACKS OF PRINTED SIGNATURES

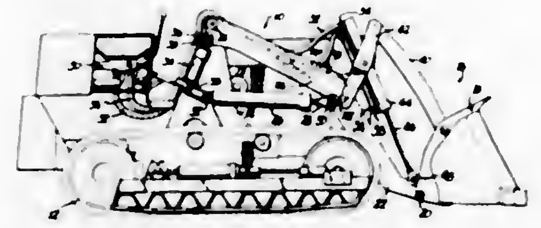
Otho Kile, Homewood, Ill., assignor to R. R. Donnelley & Sons Company, a corporation of Delaware
Original application Mar. 22, 1962, Ser. No. 181,754, now Patent No. 3,206,043, dated Sept. 14, 1965. Divided and this application May 14, 1965, Ser. No. 455,841
14 Claims. (Cl. 214—309)



Apparatus for receiving storage and transfer racks which have clamps holding packs of printed signatures side-by-side, removing the packs from the racks seriatim and transferring them consecutively to a conveyor that feeds them to a binding machine.

3,402,840
LOADER BUCKET CONTROL

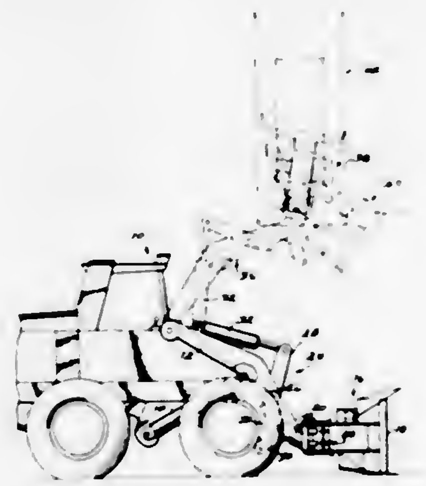
Gary J. Goth, Rogers, Minn., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Feb. 24, 1967, Ser. No. 618,435
4 Claims. (Cl. 214—764)



A bucket is pivotally mounted on a boom to be moved between two extreme positions by a hydraulic bucket cylinder with a second hydraulic cylinder capable of raising and lowering the boom with respect to a vehicle. A valve is interposed in the hydraulic circuit leading to the bucket cylinder with a linkage connection between the bucket, the lift cylinder and the valve so that the valve is automatically closed at a predetermined position of the bucket on the boom while the boom is being raised and lowered to prevent complete bucket roll back at full height of the boom.

3,402,841
SIDE-DUMPING FRONT END LOADER

Karl Salna, Mundelein, Herbert A. Mark, Northbrook, and Stanley Urman, Waukegan, Ill., assignors to International Harvester Company, a corporation of Delaware
Filed Sept. 13, 1965, Ser. No. 486,612
11 Claims. (Cl. 214—768)

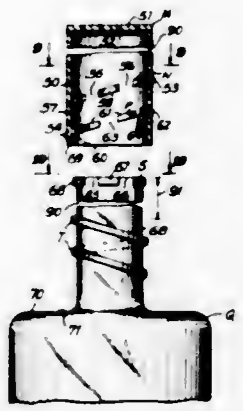


A bucket attachment for a tractor loader vehicle with a pair of pivot assemblies on the bucket adapted to be selectively locked to a bucket carrier for side dumping and digging operations, and with a control system providing interlock features and bucket dumping and return speed control.

3,402,842
SAFETY CLOSURE

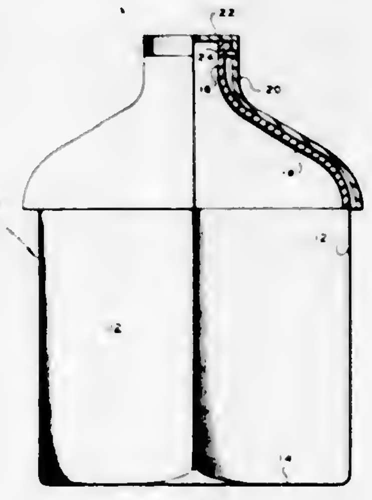
Stephen J. Millian, 61—25 98th St., Rego Park, N.Y. 11374
Filed Feb. 10, 1967, Ser. No. 615,256
4 Claims. (Cl. 215—9)

The disclosure describes a plastic or glass or other container particularly designed to carry medicaments which should be kept out of reach or availability to children. The cap of the container has an internal interrupted screw or separated alignment of projections which will cooperate with a series of peripheral spaced-apart ridges or threads on the exterior of the neck of a bottle or container so that the cap may only be removed by an adult using definite manipulations and may not be removed by a child or minor inadvertently. In this way the pharmaceutical contents, whether they be aspirin or other drugs, are rendered unavailable to children who might be subject to harm if they took them in uncontrolled doses.



3,402,843
BOTTLES WITH PROTECTIVE CAPE OR COVER

Paul E. Campbell, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 11, 1966, Ser. No. 564,158
4 Claims. (Cl. 215—100)

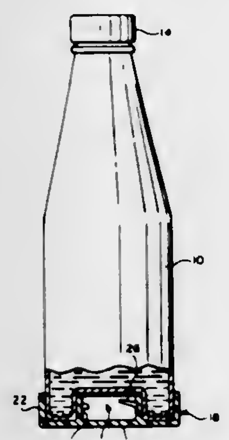


A cape or cover formed of a material which excludes ultraviolet light is applied on a bottle or similar container having a neck of restricted cross section joined to the upright wall of the bottle by an outwardly flared shoulder section, said bottle being formed of material which transmits ultraviolet light.

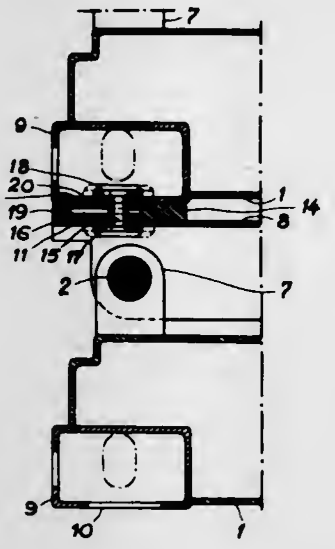
3,402,844
CATSUP BOTTLE WITH CAP-STAND

Wesley S. C. Chin, 3934 S. Bronson Ave., Los Angeles, Calif. 90008
Filed Apr. 25, 1967, Ser. No. 633,514
1 Claim. (Cl. 215—100.5)

A conventional catsup bottle modified to provide a central bottom well opening downwardly from the bottom wall, and a cap-stand removably affixed thereto for use as a cap-stand to support the bottle in an inverted position after the contents are partially used. The cap-stand has an annular wall frictionally fitted on the bottom of the bottle and a concentric cap wall fitted into the bottom well and dimensioned internally to grip the exterior surface of the bottle neck for supporting the bottle in inverted position.



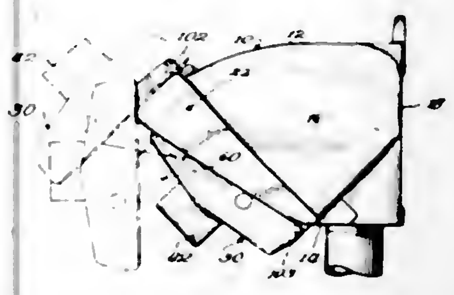
3,402,845
DEVICE FOR CONNECTING COLLAPSED CONTAINERS IN STACKED RELATION
**Lars Erik Eriksson, Dosentintie 5A,
Helsinki, Finland
Filed Feb. 16, 1967, Ser. No. 616,659
Claims priority, application Finland, Dec. 30, 1966,
3,488/66
5 Claims. (Cl. 220—1.5)**



A device which is usable in conjunction with a large container, the ends of which can be pivoted around hinge pins towards one another and placed on top of the bottom in order to collapse the container to a small volume. In the corners of the bottom are corner fittings with holes for lifting hooks. Openings are made in the lower part of the ends, which when the ends are collapsed are situated opposite the openings in the corner fittings of the container placed above this container, whereby the containers can be secured to one another by means of locking pieces passing through the coincident openings.

3,402,846
ARTICULATED COVER AND FACE PLATE UNIT
**Paul J. Zerwes, Chicago, Ill., assignor to Bell Electric Co., Chicago, Ill., a corporation of Illinois
Filed June 1, 1967, Ser. No. 642,872
19 Claims. (Cl. 220—3.8)**

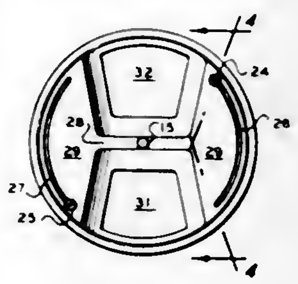
A rain tight articulated cover and face plate unit for an electrical junction box, the cover formed as a hollow body member having top and peripheral walls, the peripheral walls having coplanar free edges defining a cavity opening to a planar face plate and sealingly engageable therewith adjacent the perimetric edges thereof, the cover being mounted to the face plate by means of pivot connections at opposed ends thereof and said connections each comprising a planar link arranged journalled to a bracket formed interior of the cover and to a bracket mounted to the face plate, each planar link having a pocket formed therein at one end thereof to accommodate a spiral spring, said pocket being in the form of a passageway through the link and being enclosed by the last mentioned bracket; the bracket consisting of a pair of upstanding spaced tabs carrying coaxial passageways of differing cross-sectional configuration and the link being journalled on a bifurcated shaft member engaged through said link and the coaxial passageways, the arms thereof engaging the spring; the shaft being free to rotate when engaged through one of the passageways and the link but restricted against rotation when engaged further through the other of said passageways, torque on the spiral spring being applied when the shaft is free to rotate and the resulting tension being maintained by driving the shaft further through said other passageway locking same against rotational movement. Detent means also is provided at a location adjacent the face plate for maintaining the cover in open condition against the normal spring bias thereof with a considerable portion thereof overhanging outwardly of said face plate so as to shield the surface thereof. A novel method of mounting bracket means for said pivot connection to said face plate also is described.



ERRATUM

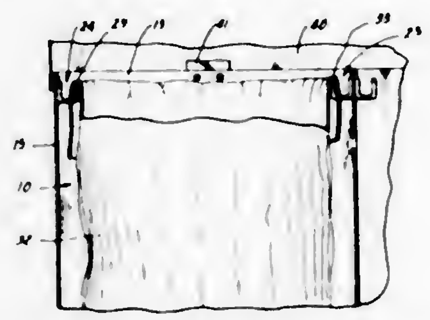
For Class 220—4 see:
Patent No. 3,402,878

3,402,847
CONTAINER CLOSURE
**Orville J. Bridenstine, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 16, 1967, Ser. No. 646,520
7 Claims. (Cl. 220—33)**



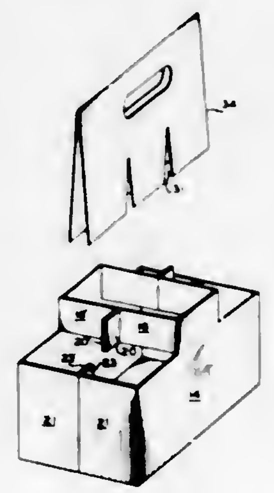
A utility container closure is made with openings on either side of the center handle and is further provided with a disc having matching openings attached to the outer closure which is rotatable by means of lugs extending through slots in the perimeter of the outer closure and which disc can be spring biased so that in a normally closed position matching openings are covered by the outer closure. In an alternative embodiment, a form fitted disc snaps into the handle of the outer closure and when closed sheds water and dirt to the outside.

3,402,848
REFUSE RECEPTACLE
**Jay J. Busey, 5926 Ridgeway Drive,
Houston, Tex. 77033
Filed Aug. 21, 1967, Ser. No. 662,132
6 Claims. (Cl. 220—63)**



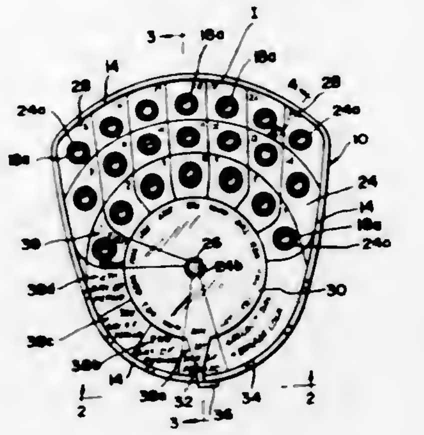
The refuse receptacle described comprises an outer container and a disposable bag positioned in the container to receive the refuse. The container has a bottom and four vertical side walls and is generally rectangular in shape. It has an open upper end which is closed by a lid hinged to one of the side walls. A disposable bag of flexible plastic material is positioned in the container to be supported by the bottom and side walls of the container as it is filled with refuse. The bag is held open to receive the refuse by two brackets, which are attached to oppositely facing side walls of the container adjacent the open end thereof. These brackets comprise spaced U-shaped end members with an elongated rod extending between the ends of one leg of each U-shaped member. The other leg of the U-shaped members is pivotally connected to a side wall so that the rod is horizontal and parallel to the side wall. These brackets are positioned close enough to the top of the container so that as the bag is pulled upwardly from the container they will pivot and move the rod portions thereof to the outside of the container and out of the way of the bag as it is being removed. When pivoted to the inside of the container, the upper end of the bag can be draped over the rods between the rods and the side walls and the brackets will hold the bag open until it is filled. The weight of the refuse in the bag is supported by the bottom and the side walls of the bag and not by the brackets.

3,402,849
ARTICLE CARRIER
**Robert W. Matthews and Robert A. Carle, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 29, 1966, Ser. No. 538,271
8 Claims. (Cl. 220—118)**



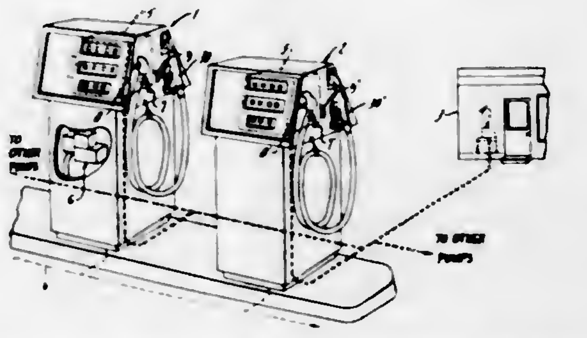
A collapsible container is formed of two pieces of foldable sheet material. One piece is a separate handle portion, and the other piece is formed of a foldable blank to produce a bottom panel, two side panels, two end panels, and partition-forming members surmounting the carrier.

3,402,850
TABLET DISPENSER
**Raymond W. Barton, Evansville, Ind., and William H. Toepfer, Newtown, Conn., assignors to Mead Johnson & Company, a corporation of Indiana
Continuation of application Ser. No. 576,637, Sept. 1, 1966. This application Nov. 1, 1967, Ser. No. 691,081
17 Claims. (Cl. 221—8)**



A tablet dispensing device for dispensing tablets on a schedule which must be synchronized with the personal schedule of the user. The dispenser has a "fan" shape with the tablets arcuately arranged in seven columns on one side of a rotatable calendar disc. Day-of-week designations on the disc can be aligned with the columns in a desired sequence. The tablets and the calendar disc are disposed on a substantially flat base member with the tablets being contained in blister pack means, the pack being deformable to dispense tablets selectively through holes corresponding to the arcuately arranged seven columns. In a preferred form, the flat base member has a marginal flange with seven notches for receving an arm extending outwardly from the disc to hold the disc in any one of the positions. In another form, the disc is removably, adhesively attached to the base member for circular adjustment.

3,402,851
REMOTE CONTROLLED DISPENSING SYSTEM
**George A. Ciotti and Stephen Stasenko, Erie, Pa., assignors to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed July 18, 1966, Ser. No. 566,145
31 Claims. (Cl. 222—16)**

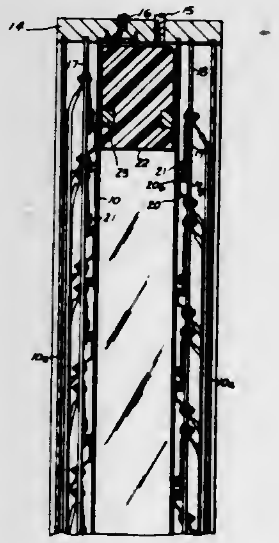


The invention relates to a fuel dispensing system and a remote control unit for control of a plurality of pumps and permitting either a fill-up, postpayment mode or a prepayment mode of operation of each pump. An interlock system is provided whereby a single operator at the remote control unit selects the particular pump and the mode of operation and releases that pump for the desired dispensing operation. The remote control unit includes a pair of pulsed counters, one additive and a second subtractive. The latter is preset when a prepaid amount is to be dispensed. The pumps include a flow responsive pulse generator which is connected for driving the counters. In the prepayment mode only, the subtractive counter is driven to the preset null or disconnect position to automatically terminate the dispensing operation.

Telephone dials are connected in a presetting circuit to establish a number of pulses equal to 10 minus the number dialed and are connected by a selection switch to the various subtractive counters to preset a corresponding counter by a dialed number. To properly identify the numbers dialed, the decimal digits are reversed from the conventional counterclockwise arrangement. The dials are disconnected from the related counter when the corresponding pump is operating to permit control of other pumps.

3,402,852
LIQUID MEASURING AND DISPENSING DEVICE

James O. Jones, Spokane, Wash., assignor to Central Pre-Mix Concrete Co., Spokane, Wash.
Filed Mar. 3, 1967, Ser. No. 620,313
6 Claims. (Cl. 222—61)

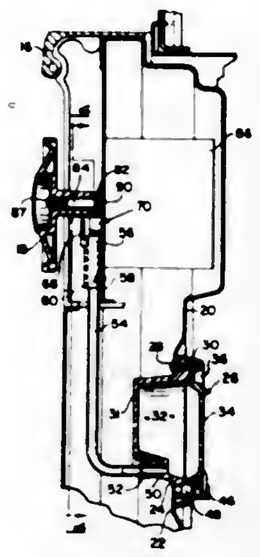


The invention is a device for measuring liquids and for dispensing such liquids upon a given signal against a head of pressure if desired. The device is equipped to flush the measuring chamber with a rinsing liquid and to discharge the liquids with a blast of air or other gas at the completion of each dispensing cycle. In particular the invention provides a measuring tube with a float freely positioned therein which carries a magnet. Outside the tube a series of magnetically operable selector switches are arranged in vertically spaced relation. An electrical circuit including said switches is provided for operating valves at the bottom outlet of the tube and in the air inlet and the rinsing liquid inlets in a given sequence for a selected amount of liquid to be dispensed. The electrical circuit, during each cycle and after operation of the selector switch, causes the opening of the bottom outlet. Thereafter the introduction of a desired liquid to the tube, its discharge, the introduction of rinsing liquid and the introduction of air under pressure to flush out the tube follow in sequence to complete a cycle.

The device is particularly adapted to the supply of additive liquids to a batch of concrete being mixed. However, it is useful generally wherever it is desired to proportion out additive liquids into a mixing operation of batch type and where the liquids need to be varied either in kind or quantity or both.

3,402,853
DETERGENT MIXING DISPENSER

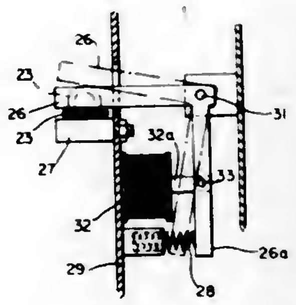
Richard L. Perl, Mansfield, Ohio, assignor to The Tappan Company, Mansfield, Ohio, a corporation of Ohio
Continuation of application Ser. No. 383,194, July 16, 1964. This application Aug. 4, 1966, Ser. No. 570,379
4 Claims. (Cl. 222—70)



1. In an automatic dishwashing machine and the like having a washing chamber and timing means for controlling the washing operation of the machine, a detergent mixing dispenser comprising a container for detergent having an open side and being mounted in the machine with said open side at an interior wall section of the washing chamber, whereby communication is provided between the container and the chamber, cover means for fully closing the open side of the container and thus shielding detergent placed therein from the washing operation while the cover means is in closed condition, the container being provided with a liquid inlet and except for said inlet and open side being otherwise closed, liquid supply means including a delivery line connected to said inlet for supplying liquid under pressure therethrough to the container, means for controlling said liquid supply means by said timing means to supply the liquid to the container at a predetermined point in the washing operation, and means for normally maintaining said cover means in the container closing condition thereof and opening the same after an interval following initiation of the supply of the liquid to the container, whereby mixing of the liquid with detergent previously placed in the container commences with such initiation of the supply of the liquid and the cover means is delayed in the opening thereof which discharges the detergent solution to the washing chamber.

3,402,854
JUICE MACHINE

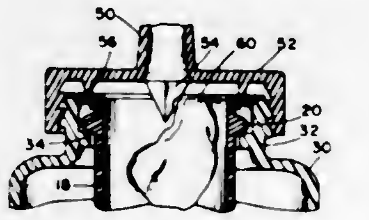
Richard J. Marchetti, Norristown, Pa., assignor to Milli-Switch Corporation, Gladwyne, Pa., a corporation of Pennsylvania
Filed Mar. 23, 1967, Ser. No. 625,414
5 Claims. (Cl. 222—76)



A plastic bag of juice concentrate has an outlet connected to a short length of rubber hose. The bag is disposed in a machine so that the hose hangs vertically. A spring biased bar normally impinges on the hose and prevents the juice concentrate from flowing down through the hose. The other end of the hose is connected to a mixing chamber. A water line is likewise connected to the mixing chamber downstream of the connection to the hose. The connection between the mixing chamber and the water line is such that water will flow vertically downwardly in the mixing chamber at an acute angle to the normal direction of flow through the mixing chamber. The water line is controlled by an electric valve. The bar impinging on the hose is connected to a solenoid which when activated will remove the bar from the hose and allow juice concentrate to flow therethrough. Both the electric valve on the water line and the solenoid controlling the bar are simultaneously controlled by a push button electric switch. When the button is pushed, juice concentrate will flow through the hose and be mixed with water in the mixing chamber, and the resulting juice mixture will be discharged downstream from the chamber.

3,402,855
MIXING CONTAINER

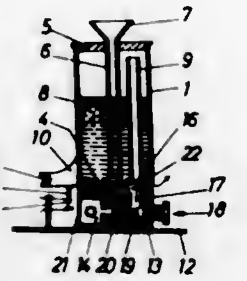
George A. Schroeder, Addison, and Harold E. Pearson, Chicago, Ill., assignors to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed May 16, 1967, Ser. No. 638,816
9 Claims. (Cl. 222—83)



A device for mixing ingredients comprising an inner container supported within an outer container so that their mouths are coplanar and sealed, a rupturing element to open the seal and place the inner container in a position where it may be movable within the outer container. The rupturing element in a preferred embodiment is a screw cap with a delivery spout and projecting elements which rupture the seal and move the inner container by engaging nibs projecting from the inner container and moving them until they line up with openings in the lands projecting from the outer container, on which lands the nibs rest in the sealed position, so that the inner container may fall to the bottom of the outer container. A closure cap may be provided to protect the seal during shipment and storage.

3,402,856
LIQUID DISPENSING APPARATUS

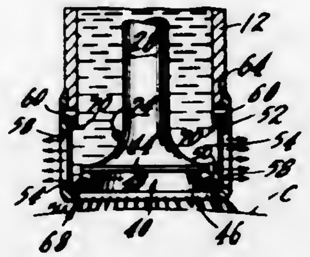
Hubert Donhauser, 175 Egglhamer Str., 8359 Aldenbach, Lower Bavaria, Germany
Filed Jan. 25, 1967, Ser. No. 611,765
Claims priority, application Germany, Feb. 1, 1966, D 49,274
11 Claims. (Cl. 222—164)



The disclosure deals with a sealed liquid container having a delivery tube extending through the container top and having thereabove an enlarged end in form of a liquid dispensing receptacle open at its top. The container, which also has an inlet for compressed gas to displace liquid through the tube into the receptacle, is tiltable into dispensing and inoperative positions and normally spring-held in its inoperative position, and provisions are made for supplying the container through its inlet with compressed gas on tilting the same to its dispensing position.

3,402,857
NOZZLE FOR MILK FILLER VALVE

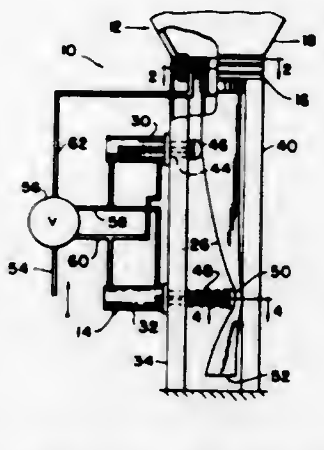
Oscar Frederick Ecklund, Barrington, and Royce Kenneth Harker, Lombard, Ill., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 28, 1967, Ser. No. 626,586
6 Claims. (Cl. 222—189)



A liquid-filling apparatus has a fill tube in which a foot valve is longitudinally movable between opened and closed positions. A discharge nozzle disposed at a longitudinal end of the fill tube downstream of the foot valve seat has a longitudinal end opening and at least one transverse side opening adaptable to discharge liquid both in a longitudinal and lateral direction respectively when the foot valve is in its open position thereby to reduce turbulence during filling.

3,402,858
VOLUMETRIC MEASURING UNIT FOR MATERIALS

Harry W. Dietert, Kerrville, Tex., assignor to Harry W. Dietert Co., Detroit, Mich., a corporation of Michigan
Filed July 11, 1966, Ser. No. 564,416
3 Claims. (Cl. 222—195)

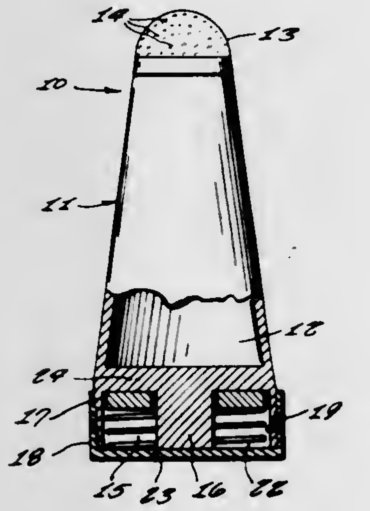


Structure for measuring predetermined quantities of powdered material or the like, including a circular discharge opening in a storage bin through which powdered material is fed by gravity, a plenum chamber surrounding the opening in the storage bin, openings between the plenum chamber and storage bin having filter material therein, means for blowing air into the plenum chamber and through the filter material under pressure to fluidize the powdered material around the discharge opening, and means for measuring a predetermined quantity of fluidized powdered material passing through the discharge opening. The means for measuring a predetermined quantity of fluidized powdered material includes a flexible but not stretchable tube for receiving the powdered material through the discharge opening and piston and cylinder structure for pinching the tube closed at predetermined locations therealong alternatively. The air passed into the plenum chamber may be exhaust air from the piston and cylinder structure.

3,402,859

TAPPER SHAKER

Amos Turner, 815 Shelden Ave.,
Houghton, Mich. 49931
Filed June 26, 1967, Ser. No. 648,664
1 Claim. (Cl. 222—196.5)

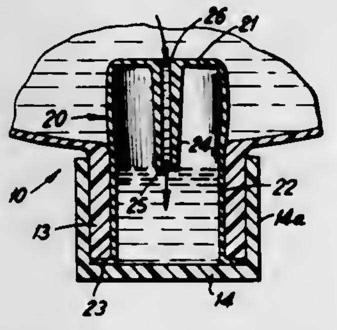


A salt or pepper shaker having a self-contained tapping mechanism so as to easily discharge the contents therefrom through the usual perforated openings in a cap at the end of the shaker, the self-contained means comprising a relatively heavy weight which abuts against the housing when the shaker is moved, thus providing a gentle tapping action.

3,402,860

COMBINATION CLOSURE AND LIQUID METERING DISPENSER FOR SQUEEZE BOTTLES

Albert H. Torongo, Jr., Yardley, Pa., assignor to McKesson & Robbins Incorporated, New York, N.Y., a corporation of Maryland
Filed Dec. 20, 1966, Ser. No. 603,359
9 Claims. (Cl. 222—207)

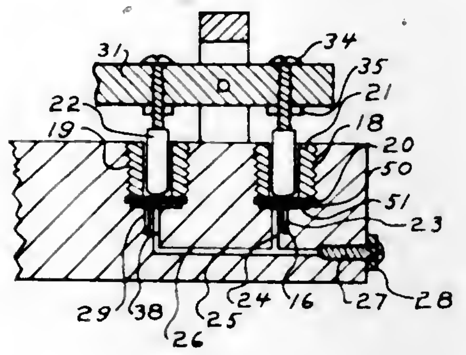


A liquid metering device for squeeze bottles which mounts within the neck of the bottle to seal the bottle interior and employs an upstanding tube within an opened top metering chamber in conjunction with a bottle cover cap for trapping air within the chamber when the bottle is inverted and the chamber loaded with the metered volume of liquid by squeezing, the bore of the tube which serves as the liquid conduit between bottle interior and chamber being small enough to prevent passage of air into the bottle while liquid is present in the tube, as when the bottle is inverted without being squeezed.

3,402,861

METERED INTERMITTENT SPRAY DISPENSER

John P. Cotes, Sarasota, Fla.
(1115 Eriel, Torrance, Calif. 90503)
Filed Jan. 3, 1967, Ser. No. 606,628
3 Claims. (Cl. 222—402.2)

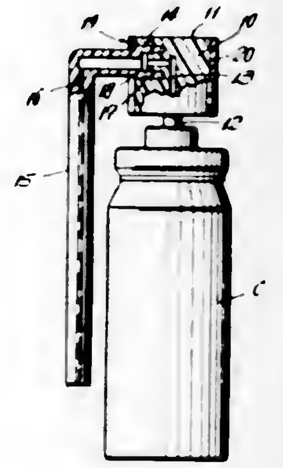


A device for dispensing measured volumes of liquids under pressure at predetermined intervals, including a measuring chamber with separate alternately operating inlet and outlet valves.

3,402,862

DIRECTIONAL DISPENSER FOR MATERIALS UNDER PRESSURE

Philip Meshberg, 15 Stoneleigh Road,
Fairfield, Conn. 06430
Filed Jan. 3, 1967, Ser. No. 606,617
9 Claims. (Cl. 222—402.11)



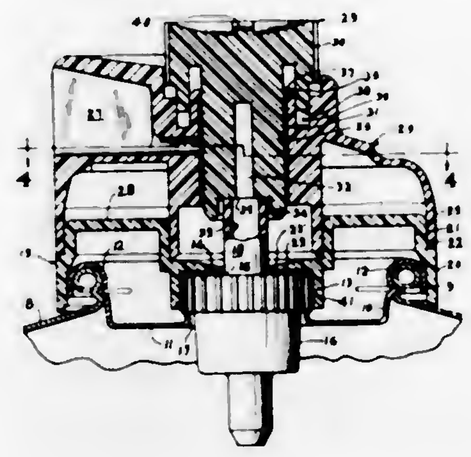
A dispensing button for controlling the dispensing of material under pressure from a container and having a directional tube provided with a cylindrical end rotatable in a socket in the button and a sleeve surrounding the button and engaging an annular shoulder on the tube adjacent the cylindrical end to prevent accidental displacement of the tube from the socket. The sleeve may also form an outboard bearing for the button and/or tube to support them against lateral movement relative to the container.

3,402,863

AEROSOL VALVE ASSEMBLY HAVING A DISPENSER CAP AND SPACER COLLAR

Derek G. Green, Manchester, N.H., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Dec. 7, 1966, Ser. No. 599,787
7 Claims. (Cl. 222—402.13)

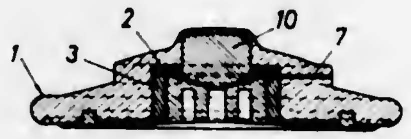
A three-part overcap and actuator for an aerosol container. One part, a spacer collar, fits over the rim of a standard mounting cup for the container and serves to shield the upper surfaces of the mounting cup from the material being dispensed. A standard overcap fits snugly on the spacer collar. A plunger button is slidably and rotatably mounted in the overcap. A slotted stem depending from button engages the top of the actuator stem on the aerosol container. Dispensing is effected by aligning the slot in the stem with a discharge passage in the overcap and then depressing the button.



3,402,864

CONSTRUCTION OF VALVES FOR AEROSOLS

Derek A. Rogers, General Varela S/N,
Rubi, Barcelona, Spain
Filed Aug. 31, 1966, Ser. No. 576,312
Claims priority, application Spain, Sept. 16, 1965, 317,518
6 Claims. (Cl. 222—402.24)



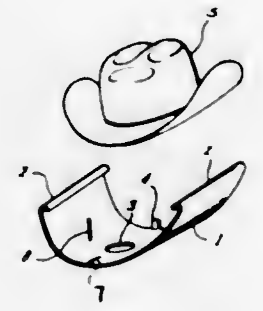
In a piston-operated aerosol valve, the piston forms a shoulder into which ducts open which communicate with the aerosol content of the container and, when open, with the valve outlet.

The ducts are normally closed by a sealing washer against which the piston shoulder is forced by the pressure of the aerosol.

3,402,865

HAT SHAPING DEVICE

Wilfred J. Moreau, P.O. Box 546,
Dayton, Tex. 77535
Filed July 28, 1966, Ser. No. 568,580
1 Claim. (Cl. 223—84)

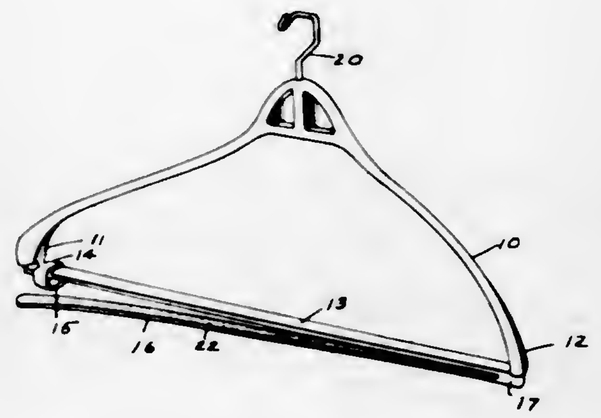


A hat shaping device for retaining the shape of a hat brim when the hat is not in use. A sheet of thermo plastic material is shaped and provided with overturned margins and projections to receive and shape the brim of the hat.

3,402,866

CLOTHES HANGER

William R. Byrd, Erie, Pa., assignor to Byrd Plastics, Inc., Erie, Pa., a corporation of Pennsylvania
Filed Oct. 23, 1965, Ser. No. 503,783
1 Claim. (Cl. 223—91)



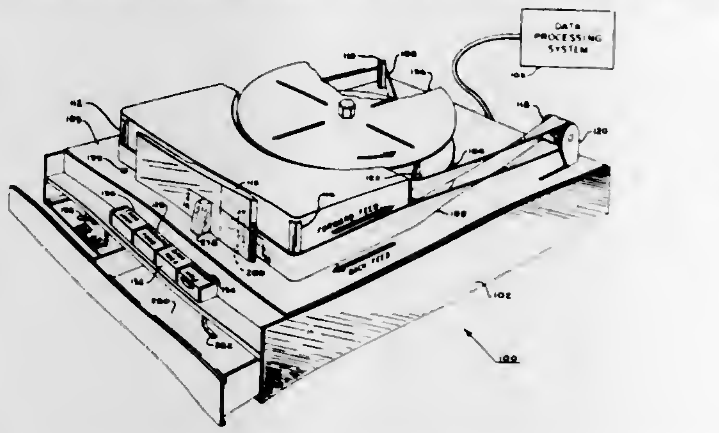
1. A clothes hanger having a generally U-shaped hanger body terminated in a first end and a second end spaced from said first end,
- a crossbar attached to said ends,
- a retainer member below said crossbar and fixed at one end to said crossbar at said first end,
- a hook member secured to said crossbar at said second end and extending downwardly therefrom and having a hook portion spaced from said crossbar defining a space to receive the distal end of said retainer member,
- said retainer member being made of resilient material,
- the free end of said retainer member being adapted to be received under said hook member with said retainer and said crossbar defining a space therebetween extending substantially the entire distance between said first end and said second end,
- said retainer being integrally fixed to said crossbar,
- said crossbar being curved away from said retainer at said end that is fixed to said retainer,
- and said retainer being curved away from said crossbar,
- said curve of said crossbar and said curve of said retainer being straight when said retainer is received in said hook,
- said hanger having a hook at the central position between said ends,
- said retainer curving away from said crossbar in a plane at right angles to said first mentioned curve.

3,402,867

PUNCHING SYSTEM

Ronald N. Borrelli, Moraga, Richard A. Edwards, Walnut Creek, Charles A. Lindberg, Menlo Park, Harry F. Noller, Moraga, Robert I. Stitt, Mountain View, and James R. Wilson, Jr., Berkeley, Calif., assignors, by mesne assignments, to Control Data Corporation, a corporation of Minnesota
Original application Jan. 17, 1964, Ser. No. 338,359, now Patent No. 3,301,477, dated Jan. 31, 1967. Divided and this application Sept. 29, 1966, Ser. No. 583,147
15 Claims. (Cl. 226—76)

A mechanism is disclosed for advancing tape, individual cards, or fanfold cards through a punching station. Control means operates for reverse feed of the tape. Selectively operable guide means coacts with the sprocket to drive tape but is inactive for card feed. Indexing means coacts with clutch control structure for the feeding operation. Sprocket drive means is located in offset relation

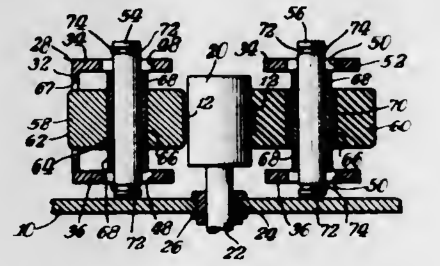


with the sprocket holes and guide structure for proper feeding.

3,402,868

TAPE DRIVE ARRANGEMENT

Robert J. Hammond, Stevensville, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed Dec. 16, 1966, Ser. No. 602,314
11 Claims. (Cl. 226—187)

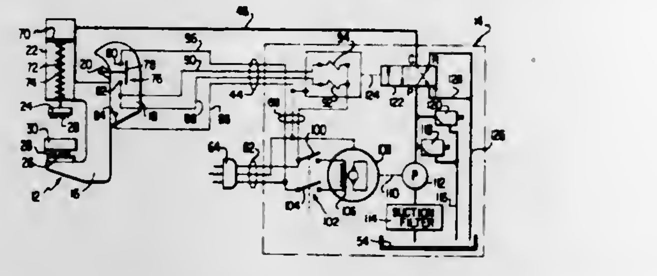


1. A tape drive arrangement for use with a flexible tape and the like, comprising, in combination, a drive capstan supported for rotational movement about its center axis and adapted to engage the tape by a portion of its peripheral surface in driving relation, a first pressure roller having a non-compliant peripheral surface thereon adapted to engage the tape against said peripheral surface of said drive capstan, and a second pressure roller having a compliant peripheral surface thereon adapted to engage the tape against said peripheral surface of said drive capstan, said second pressure roller being disposed in circumferentially spaced relation about said drive casptan relative to said first pressure roller.

3,402,869

PORTABLE C-CLAMP PRESS

Frederick H. Otis, Miami, Fla., assignor to Automated Building Components, Inc., Miami, Fla., a corporation of Florida
Continuation of application Ser. No. 495,166, Oct. 12, 1965. This application Aug. 7, 1967, Ser. No. 658,948
3 Claims. (Cl. 227—152)

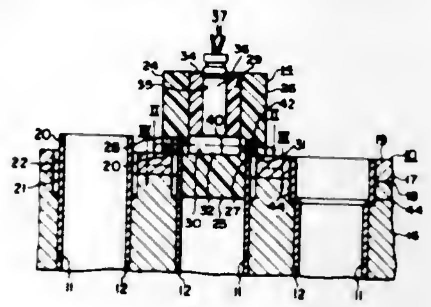


Disclosed is a portable C-clamp press for driving metal connectors into structural lumber and particularly the lightweight wood structures used in mobile homes. The press frame and platens are made of aluminum to form a hand unit weighing no more than 10½ pounds but having a nominal rated capacity of 3 tons of squeezing pressure. The hydraulic cylinder driving the movable platen is coupled by a flexible line to a caster mounted power unit and controlled by an electrical switch on the hand unit.

3,402,870

EXPLOSIVE TUBE WELDING DEVICE

Ronald J. Carlson, Galloway, Ohio, Charles C. Simons, Kennewick, Wash., and Ronald L. Bradford, Columbus, Ohio, assignors, by mesne assignments, to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 20, 1965, Ser. No. 488,670
6 Claims. (Cl. 228—3)



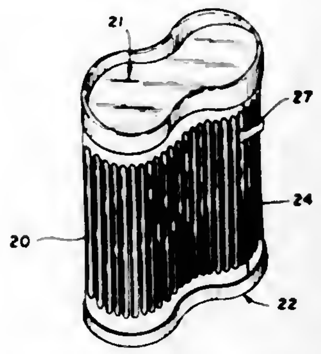
An expendable device for explosively welding an open-ended metal tube to the wall of a bore in a metal plate member, such as a heat exchanger tube sheet, comprises a plastic body member having a first cylindrical portion adapted to be inserted in the tube and a second cylindrical portion of larger cross-section having an annular skirt portion adapted to encompass the open end of the tube and having an end face adapted to abut the surface of the plate member. An explosive charge of discrete disc-shape is disposed in the plastic body in a plane parallel to the end face of the skirt. The body is further provided with an axial cavity for receiving a suitable detonating device.

The above device, in use, is effective to properly position the end of the tube a predetermined protrusion degree above the surface of the plate member and the explosive charge in predetermined juxtaposition with said surface, thereby to transmit the explosive energy of the explosive charge in a predetermined optimal manner to the tube to promote welding of the tube to the tube sheet. The above device may be made in mass production and insures accurate placement of the explosive charge with respect to the tube and tube sheet in a repetitive manner by an unskilled operator. This aspect is especially important in the heat exchanger art where many tubes must be welded in an identical optimal and reliable manner to the tube sheet.

3,402,871

MULTI-PIECE CONTAINER-STEEL FOIL BODY WALL

Charles E. Palmer, Somers, Conn., assignor to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 24, 1966, Ser. No. 589,059
9 Claims. (Cl. 229—3.5)

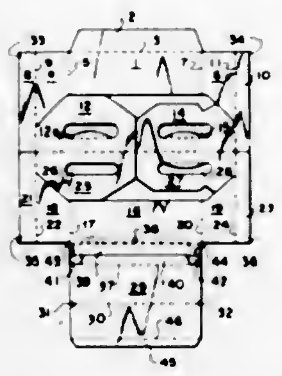


Containers comprising body members constructed of steel foil and including a series of folds extending between the upper and lower edges of the body member and terminating short of said edges are disclosed.

3,402,872

REINFORCED CARTON STRUCTURE

Homer Webb Forrer, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed July 25, 1966, Ser. No. 567,447
7 Claims. (Cl. 229—28)

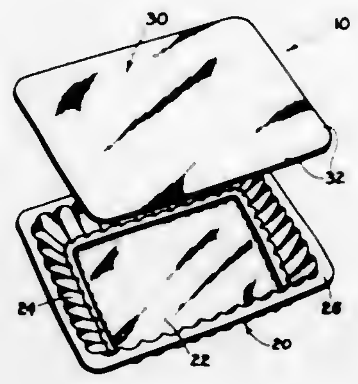


The bottle carrier as disclosed herein is provided with a bottom panel which is secured on each side edge to the carrier side walls by a double thickness reinforced construction. One side wall of the carton is secured to the bottom panel by a lap panel forming an extension along the bottom edge of the side wall which extension is secured to the bottom of the bottom panel together with a reinforcing panel foldably joined to the bottom panel along the adjacent side edge, the reinforcing panel being secured to the inner surface of the side wall. On the other side of the carton, a lap panel forms an extension of the side wall and a reinforcing panel is foldably joined to the adjacent side edge of the bottom panel and the bottom panel is attached to the lap panel by a pair of swing straps foldably joined at one end thereof to the edge of the lap panel remote from the side wall and at the other end thereof to the adjacent side edge of the bottom panel. The swing straps serve to maintain the bottom panel and the remaining elements of the blank as a single unitary structure during the formation of the blank and during manipulation of the various panels to form the carrier from the blank.

3,402,873

HEAT-SEALED ARTICLE AND METHOD

Thomas Reid Lauterbach, Jr., Elmwood Park, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Nov. 9, 1964, Ser. No. 409,870
12 Claims. (Cl. 229—43)

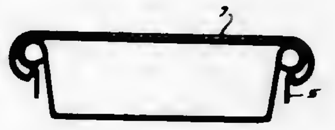


An article of manufacture composed of at least two members, portions of which are made of thermoplastic material and having a stress differential, which portions are heat sealed together in accordance with a method for heat sealing the two portions to each other.

3,402,874

CONTAINER CLOSURE

Martin M. Sternau, Flushing, N.Y., assignor, by direct and mesne assignments, to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut
Continuation-in-part of applications Ser. No. 591,628, June 15, 1956, and Ser. No. 653,227, Apr. 16, 1957. This application May 12, 1964, Ser. No. 366,784
10 Claims. (Cl. 229—43)

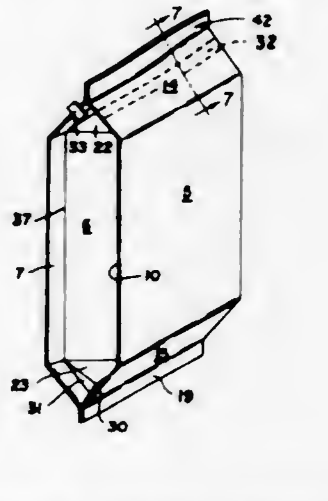


1. A closure for a container comprising a piece of partially heat shrinkable thin film material, a central portion of said piece of material having a first shrinkable condition and adapted to extend over the open mouth of the container, and a rim portion of said piece of material having a second shrinkable condition and adapted to extend over the rim of the container and hold the closure on the container, said central portion being more shrinkable than said rim portion.

3,402,875

CONTAINERS

Charles E. Palmer, Somers, Conn., assignor to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 8, 1966, Ser. No. 592,855
10 Claims. (Cl. 229—51)



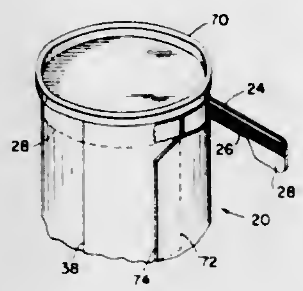
The present invention provides containers constructed of steel foil and steel foil-paper laminates. The containers are constructed so as to take full advantage of the highest strength afforded by the use of steel foil.

3,402,876

EASY OPEN CARTON CONSTRUCTION AND BLANK THEREFOR

Morris William Kuchenbecker, Neenah, Wis., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 10, 1967, Ser. No. 629,584
17 Claims. (Cl. 229—51)

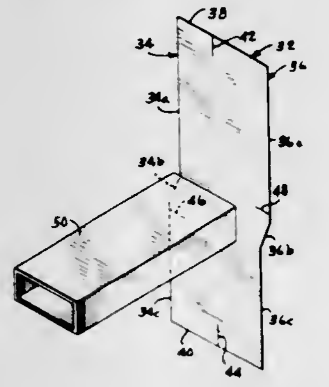
An improved end construction for an easy open carton in which the body wall has a folded over extension so as to provide resistance to torsion in the course of opening the carton by means of a tear strip. The upper wall is either notched or provided with cut scores to enable the extension member to fold backwardly and inwardly upon the body wall without binding. The bottom of the carton may be either rectangular or circular with the top always being circular. Vertical corner score lines provide rigidity to the rectangular base and a gradual transition from the rectangular bottom shape to the circular shape of the top.



Intermediate vertical score lines permit the blank to be shipped flat.

3,402,877
PACKAGE AND BLANK FOR A PACKAGE

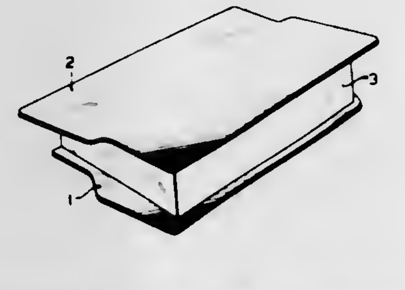
Jesse R. Pinkham, Winston-Salem, N.C., assignor to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a Corporation of New Jersey
Filed June 16, 1967, Ser. No. 646,577
20 Claims. (Cl. 229—87)



A package and a blank for a package. The blank has a side edge including three successively connected segments, two of which are parallel and joined by the third segment. The edge segments define edges of panels in the package formed from the blank. The parallel edge segments permit wide and narrow flaps to be formed in the package, which together form a side of the package, with the wide flap overlying the narrow flap and extending over most of the side of the package. The blank is slit to rovide for a tuck and fold in the side of the package adjacent to an end of the package; the tuck is substantially fully covered by the wide flap.

3,402,878
TRAY COMBINED WITH A BREADBOX

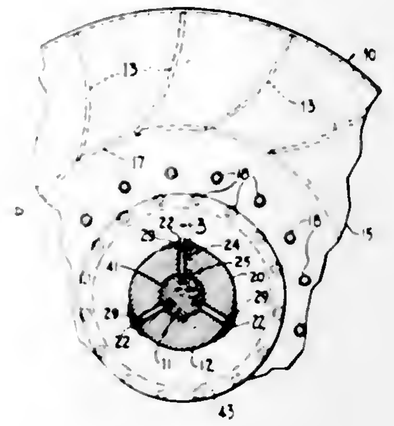
Carl Harry Lennart Andersson, 65 Norra Langgatan, Kalmar, Sweden
Filed May 28, 1965, Ser. No. 459,585
3 Claims. (Cl. 220—4)



There is disclosed a serving tray device for food in which two or more trays are stacked one over the other and separated by a box like frame of which the tray forms the top and bottom. The frame may be fixed to either tray and at least one tray is detachable. The trays may be fitted wih latral hand grips.

3,402,879
FAN CONSTRUCTION

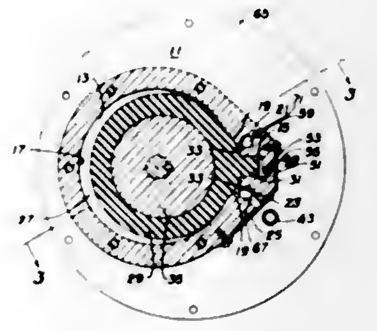
Joachim W. Schroeter, Depew, N.Y., assignor to Buffalo Forge Company, Buffalo, N.Y., a corporation of New York
Filed Apr. 3, 1967, Ser. No. 627,792
21 Claims. (Cl. 230—134)



A hub to shaft mounting construction for a fan in which a plurality of equidistantly circumferentially spaced radial screws extend through the hub and thread into the shaft, with each of the screws having equal torque applied thereto so as to place the central portions of the screws between the heads and the threaded portions thereof in tension to thereby maintain the hub centered on the shaft, the radial screws including means for locking them in their tensioned positions. In addition, a plurality of axially extending screws fasten the hub to the shaft to eliminate the shear loading on the radial screws.

3,402,880
FLEXIBLE ROTOR VACUUM PUMP

David B. Webb, 181 Easy St., Alamo, Calif. 94507
Filed Feb. 6, 1967, Ser. No. 614,291
12 Claims. (Cl. 230—147)

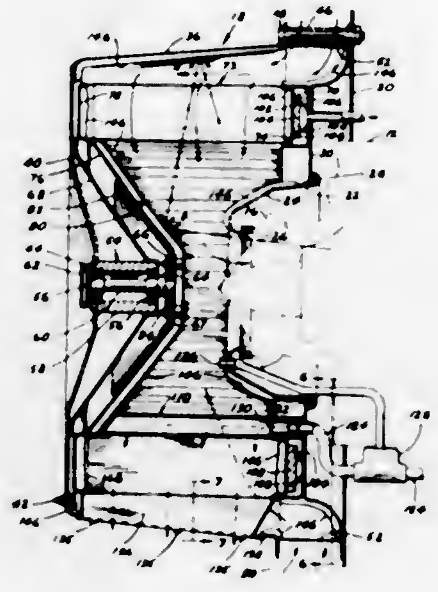


A vacuum pump employing a generally annular flexible rotor with a radially projecting guide which reciprocates in a guide slot in the pump housing.

3,402,881
AIRCLEANER AND SILENCER

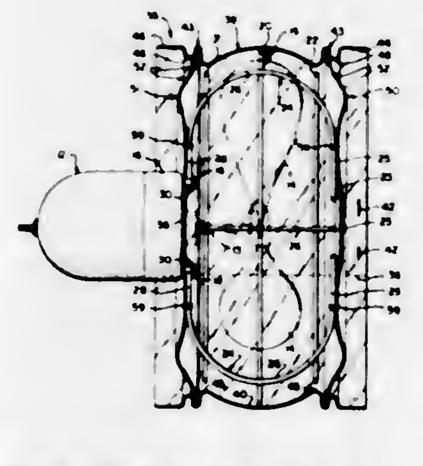
Henry B. Moore, Birmingham, and Sam B. Williams, Pontiac, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed May 26, 1965, Ser. No. 458,949
2 Claims. (Cl. 230—232)

A combination aircleaner and silencer device particularly adapted for mounting on a gas turbine engine having a circular air inlet, the device comprising a generally cylindrical housing having concentrically and rotatably mounted therein a generally cylindrical filter drum, the drum mounting mechanism being disposed entirely in a cavity formed in the front wall of the filter drum, the filter drum being dynamically sealed so that unfiltered air must enter through the periphery thereof comprising vanes over which the filter media is woven and the flow of air through which causes rotation of the drum at a rate related to engine speed, the inner surfaces of the drum being arranged to deflect cleaned air into the engine air intake and to prevent engine sound waves from leaving the aircleaner structure, the device also having intermittent self-cleaning means by which some engine compressor air is caused to back flow under sonic vibration through the filter media when the pressure within the aircleaner falls to a predetermined value.



3,402,882
RIGID SLEEVE FAN GUARD

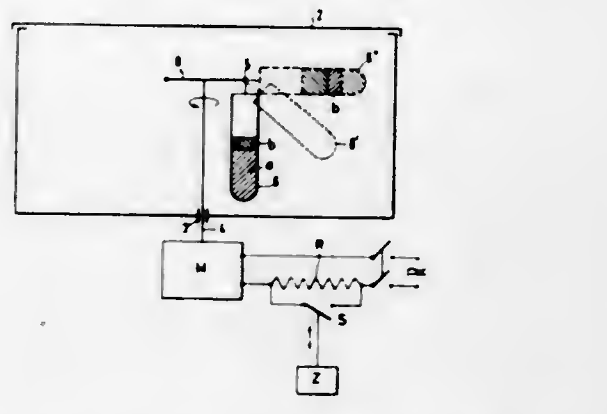
James V. Militello, Buffalo, N.Y., assignor to American Allsafe Co., Buffalo, N.Y., a corporation of New York
Filed Oct. 4, 1966, Ser. No. 584,165
9 Claims. (Cl. 230—275)



A rigid sleeve fan guard includes an impervious tubular sleeve surrounding a rigid fan cage and formed from a plastic sheet to provide overlapping ends fastened to compress the sleeve around the cage periphery. The sleeve is provided with inwardly open channels along its front and rear ends to compressively receive the outer peripheral raw edges of front and rear foraminous plastic face guards, and with front and rear annular end flanges projecting outwardly from such channels and of greater inside diameter than that of the meeting edges of such front and rear channels and a substantially deeper central channel surrounding the fan blades, to produce a venturi shape.

3,402,883
METHOD FOR OPERATING AN ULTRACENTRIFUGE AND A SUITABLE CENTRIFUGE FOR SAID METHOD

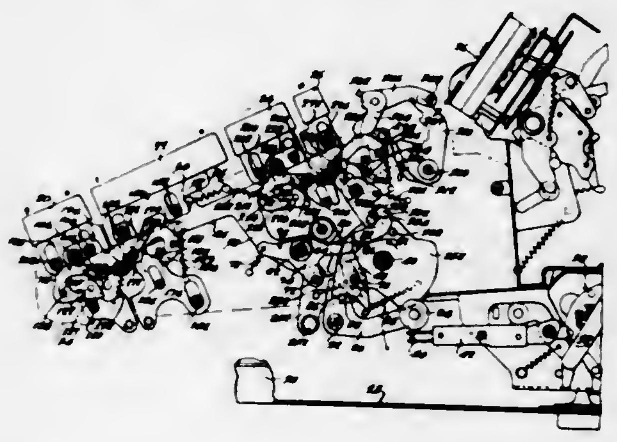
Karl-Heinz Römer, Osterode am Harz, Germany, assignor to Firm Martin Christ, Osterode am Harz, Germany
Filed Nov. 23, 1965, Ser. No. 509,361
Claims priority, application Germany, Nov. 25, 1964, C 34,478
7 Claims. (Cl. 233—26)



Method for the operation of an ultracentrifuge and centrifuge for practicing the method, where the vessels in the centrifuge are vertically disposed and in operation are swung into horizontal position by centrifugal forces. In the method the motor for the centrifuge is first operated at a low speed so that the vessels are only moved outwardly to a somewhat inclined position, and then the centrifuge motor is operated at full power to swing the vessels into horizontal position. In operation a liquid is placed in the vessels, the density of which increases upwardly, and the substance to be contrifuged is placed into the vessel with this liquid.

3,402,884
OPERATING MEANS FOR FUNCTION CONTROL KEYS IN CALCULATING MACHINES AND THE LIKE

Ralph L. Schultz, Chicago, Ill., assignor to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois
Filed June 7, 1966, Ser. No. 555,834
14 Claims. (Cl. 235—60)

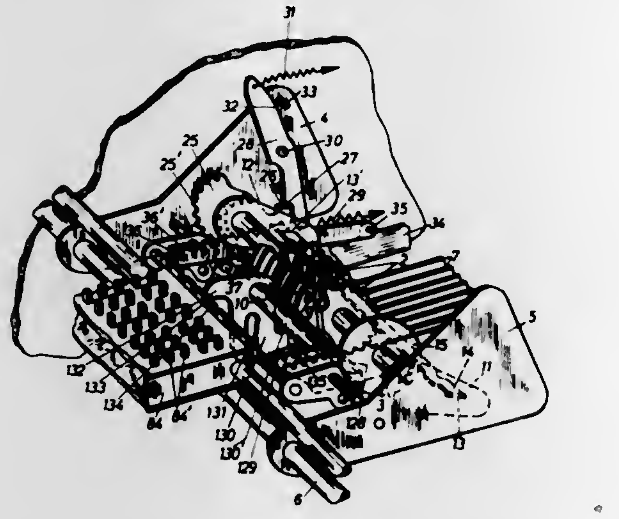


1. In a motor powered calculating machine or the like having a motor, a motor control switch, and a plurality of manually operable function control keys, the combination comprising, a longitudinally slidable motor switch trip slide, means biasing said slide in a first direction, linkage operated by said slide when moved in a second direction to operate the motor control switch to energize the motor, a pivotally mounted power crank corresponding to each function control key engageable with said slide and adapted when pivoted to move said slide in said second direction, power driving means connected

to each power crank to pivot said crank in slide moving direction, a latch engageable with each power crank to restrain it against movement by said driving means, and means connecting each latch to its corresponding function control key whereby operation of one of said function control keys releases its corresponding latch from the power crank with which it is normally engaged and said driving means pivots said released crank to drive said motor control slide in the second direction to operate the motor control switch to energize the motor.

3,402,885
MULTIPLICATION ARRANGEMENT IN CALCULATING MACHINES

Otto Haberkorn, Gerstetten, Wurttemberg, Germany, assignor to Walther-Boromaschinen G.m.b.H., Gerstetten, Wurttemberg, Germany, a limited-liability company of Germany
Filed July 26, 1966, Ser. No. 567,985
7 Claims. (Cl. 235—60)

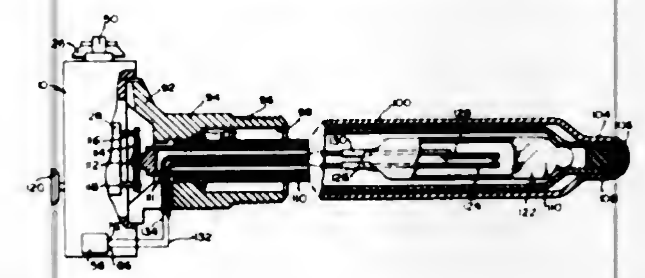


1. In an arrangement in calculating machines for multiplication wherein the multiplicands may be continuously added or subtracted and there is a corresponding successive series of machine revolutions for each decimal place of the multiplier, the combination of a housing having a key board thereon, a set pin carriage laterally movable within said housing upon depression of a key in said key board, a multiplication mechanism including a pair of spaced supporting arms pivotally mounted within said housing, a plurality of coaxially arranged multiplication gears mounted between said multiplication mechanism arms, a shaft extending between said arms and having an angle lever pivotally mounted thereon for operative engagement with said carriage, a plurality of differential members actuated by said set pins and operatively connected to said multiplication gears to transmit a value from said set pins to said gears, a stabilizing bar slidably mounted across said multiplication mechanism and lockingly engageable with said gears to lock said gears in position, and a multiplication unit mounted on a wall of said housing and lockingly engageable by said bar to couple said unit and mechanism in operative relationship.

3,402,886
THERMOSTATIC CONTROL DEVICE WITH HIGH LIMIT SWITCH

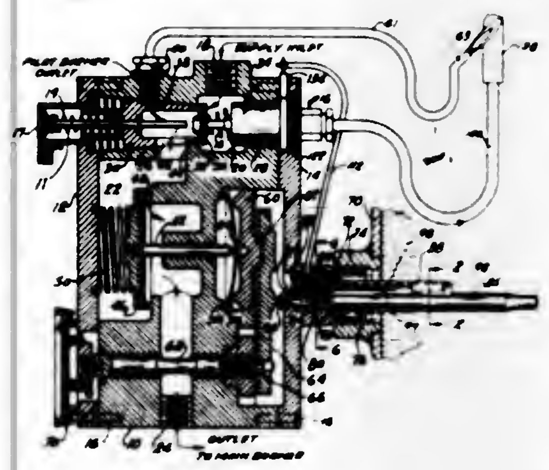
Wilbur F. Jackson, Rolling Hills, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Apr. 28, 1966, Ser. No. 545,992
3 Claims. (Cl. 236—21)

A dual thermostatic control device with a normal temperature sensor housing an abnormal temperature sensor. The normal temperature sensor includes an outer tube of thermally expandable material and an inner tube of thermally non-expandable material with adjacent ends of such tubes being joined so that the inner tube moves axially in response to thermal expansion and contraction of the outer tube. The abnormal temperature sensor includes a bimetal switch disposed in the inner tube and being actuated in response to an abnormal temperature condition.



3,402,887
BURNER CONTROL DEVICE FOR A WATER HEATER

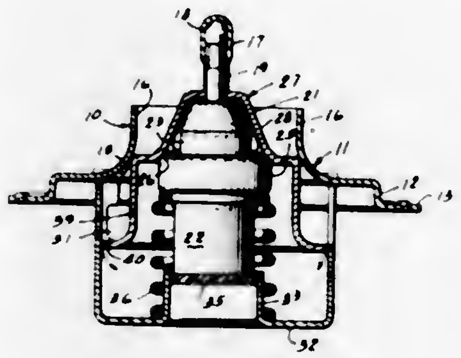
Charles D. Visos, St. Louis, Mo., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed June 16, 1966, Ser. No. 558,012
4 Claims. (Cl. 236—21)



1. In a device of the kind described having a valve body, an externally threaded mounting boss projecting from said body, a main valve in said body, a rod and tube type thermostat operatively connected to said main valve, a biased closed cutoff valve in said body, electromagnetic means which when energized holds said cutoff valve open, and a circuit including an electrical power source for energizing said electromagnetic means; the improvement which consists in providing said mounting boss with a relatively large longitudinal bore extending inwardly from its outer end and terminating in a flat bottom and in providing two relatively small longitudinal passages extending inwardly from said bore bottom to the interior of said valve body, one of which passages is internally threaded; in providing a relatively thin-walled encapsulating tube of good heat conductive material having a closed end, an open end, and a circular off-center flange at its open end, which flange fits said relatively large bore, is entered into said bore, and lies flat against said bore bottom, and said tube being aligned with the other of said relatively small passages and extending outwardly from said mounting boss, said off-center flange having a perforation therein aligned with said one relatively small passage; in providing the tube of the rod and tube thermostat with a reduced diameter, externally threaded, inner end portion passing through said flange perforation in fitting relationship and being threadedly engaged in said one relatively small passage, thereby clamping said flange against said bore bottom; in providing a normally closed thermostatic switch responsive to open at a relatively high temperature and in supporting said switch with its thermostatic actuator in said encapsulated tube near the outer closed end thereof; and in providing circuit connections connecting said thermostatic switch in series with said electromagnetic means and said power source in said energizing circuit.

3,402,888
PILOT CONTROLLED PRESSURE OPERATED WATERLINE THERMOSTAT

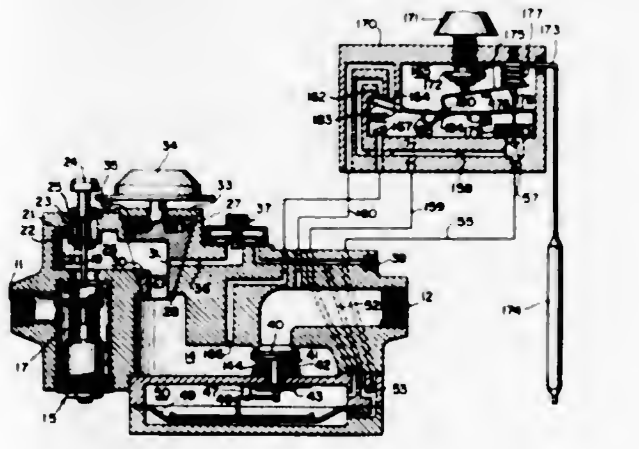
Douglas E. Kelly, Northfield, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Feb. 14, 1967, Ser. No. 616,064
9 Claims. (Cl. 236—34)



Pilot controlled pressure operated waterline thermostat for the coolant for internal combustion engines, in which fluid under pressure in a balancing chamber balances the valve and a temperature responsive element meters fluid from the balancing chamber upon increases in temperature, to unbalance the valve and accommodate opening of the valve by pressure.

3,402,889
FLOW CONTROL SYSTEMS HAVING COMBINED MODULATION AND PRESSURE REGULATION OF A FLUID FLOW

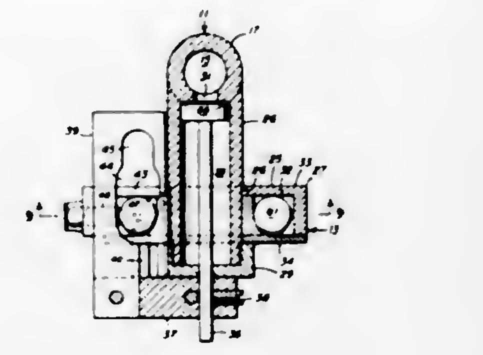
James R. Willson, Fountain Valley, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed June 5, 1967, Ser. No. 643,698
10 Claims. (Cl. 236—80)



A flow control system for main and pilot burner apparatus having a differential pressure operated diaphragm modulating a main valve to regulate the pressure of the main flow between preselected limits and having a pilot regulator controlling the pilot flow, which regulated pilot flow is branched to one side of the main diaphragm and is selectively bled therefrom to vary the differential pressure for operation of the main valve.

3,402,890
SEQUENCING SPRINKLER

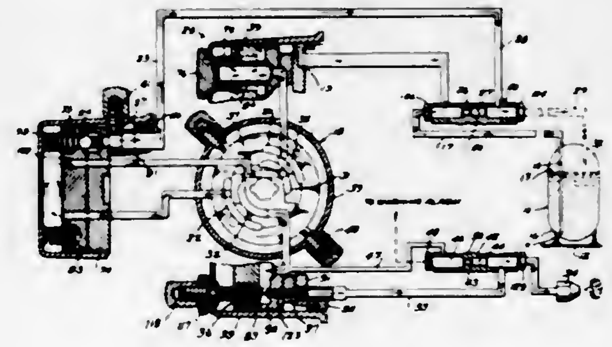
Charles J. Heitzman, Honolulu, Hawaii, assignor to R&H Molding, Inc., Honolulu, Hawaii, a corporation of Hawaii
Filed May 25, 1966, Ser. No. 552,870
14 Claims. (Cl. 239—66)

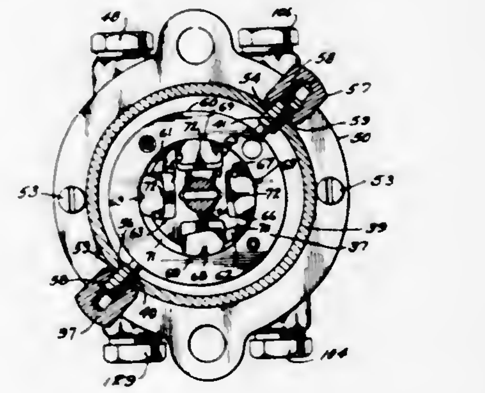


A programmable sequencing valve for a system having a line to which fluid pressure is supplied at on intervals, the valve including a body connectable to the line and having an outlet, pressure responsive sensing means in the body which on connection of the body to the line is exposed to pressure therein on each on interval, valve means normally closing and operable by the sequencing means for opening the outlet, a plurality of opening and non-opening sensed elements selectively assemblable in any of a plurality of a series on the body, and means for causing the sensing means on the on intervals sequentially to sense the sensed elements of the selected series and only on sensing of an opening element operate the valve means to open the outlet.

3,402,891
FURNACE PUMP AND OIL BURNER CIRCUIT

Hubert M. Clark and Gilbert H. Drutchas, Birmingham, and Philipp Becker, Utica, Mich., assignors to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 20, 1965, Ser. No. 481,366
7 Claims. (Cl. 239—127)





An oil burner circuit characterized by a furnace pump utilizing a pivoted pump ring forming a pumping chamber for a double stage slipper pump wherein slippers rock angularly and move radially in following the contour of an adjoining inner wall of the pump ring so that pivotal adjustment of the pump ring will vary the displacement and thereby the output of the pump in direct proportion to the eccentricity for maintaining a given pressure drop across a fixed orifice nozzle while minimizing by-pass flow.

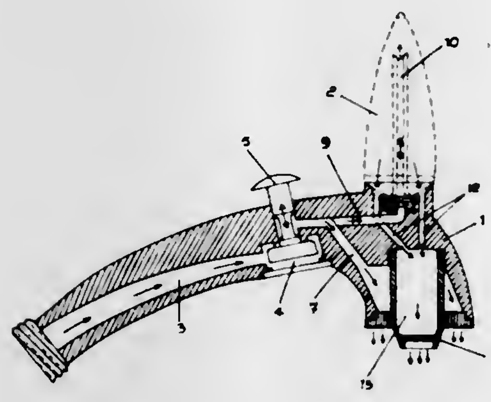
3,402,892
SHOWER APPLIANCE, PARTICULARLY FOR WASHING HAIR

Jacques Hugues René Ayrial, Trebeurden-Plage, Cotes du Nord, and Armand Jean Wimel, Rue du Stade, Ploudalmezeau, Nord-Finistere, France

Filed Sept. 19, 1966, Ser. No. 580,233

Claims priority, application France, Sept. 23, 1965, 32,462

2 Claims. (Cl. 239—312)



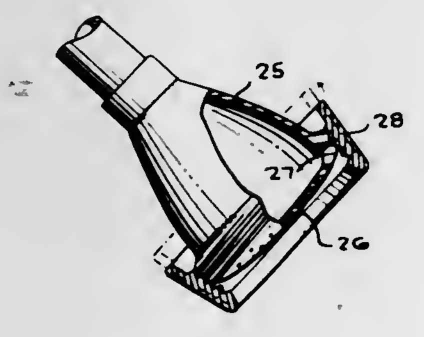
Shower apparatus, specifically for washing hair which includes a spraying head having two liquid flow paths independent of each other. A removable cartridge is provided opposite the spraying head. The cartridge contains a cleaning product which may selectively be dispensed through the spraying head. The cartridge conrapidly removed and the material to be dispensed varied as desired.

3,402,893
ADJUSTABLE SPRAY HEAD

Clyde V. Hindman, 1385½ Eastern Ave., Morgantown, W. Va. 26505

Filed July 27, 1966, Ser. No. 568,293

3 Claims. (Cl. 239—546)



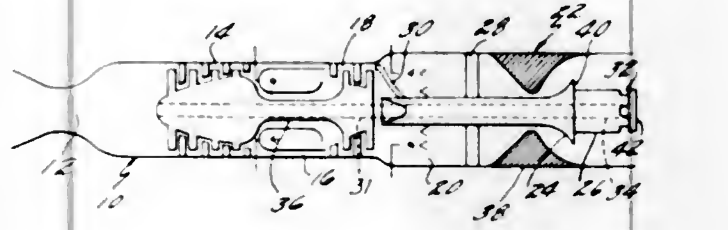
A spray head consisting of a shell and a resilient, apertured face plate, which may be separate from, or integral with, the shell. Threaded means are provided for engagement with threads carried by the shell which, when rotated, will cause the face plate to flex and change its contour and thereby vary the angular relationship of the apertures in the face plate to change the water spray pattern.

3,402,894
BASE-THRUST NOZZLES

Thomas A. Wynosky, Hazardville, and Keith L. Mueller, East Hartford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed June 1, 1966, Ser. No. 554,952

11 Claims. (Cl. 239—265.17)



Improved base-thrust nozzles are provided for the jet propulsion system of supersonic and hypersonic vehicles. The nozzles include a base member mounted within the nozzle and having a surface on its downstream end substantially normal to the direction of flow of fluid from the nozzle. A sting extends downstream from the base member and affords a second surface for receiving upstream thrust pressure during operation of the propulsion system. The sting preferably includes means for diverting a portion of the jet flow from the nozzle upstream and toward the downstream end of the base member to increase the upstream thrust pressure acting on the base member.

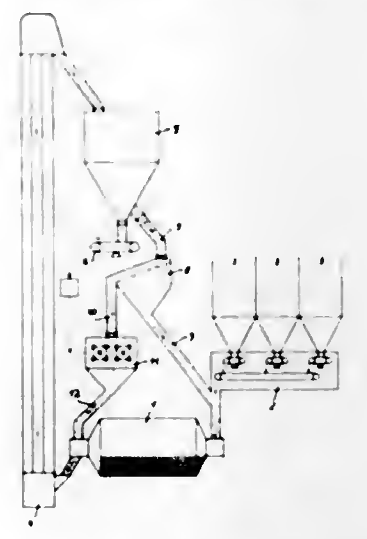
3,402,895
PLANT FOR THE SIMULTANEOUS GRINDING OF DIFFERENTLY GRINDABLE MATERIALS

Karl Willmann, Wulfrath, Germany, assignor to Rheinische Kalksteinwerke G.m.b.H., Wulfrath, Germany

Filed July 18, 1966, Ser. No. 566,049

Claims priority, application Germany, July 17, 1965, R 41,114

1 Claim. (Cl. 241—36)



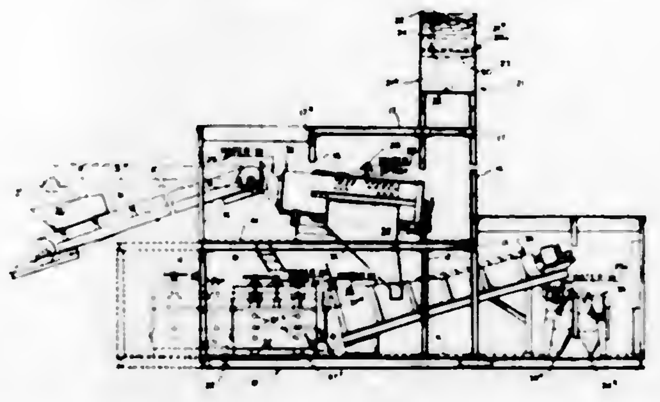
1. An apparatus for the simultaneous grinding of a plurality of raw materials of different grindability in constant amounts comprising a tube mill and a high speed mill having common discharge outlets, means charging a mixture of materials of different grindability to said tube mill, separating means comprising sorting means and classifying means, said sorting means separating the finished ground material and discharging the same, said classifying means separating the grits and the coarse grain, conveyor means passing said common discharge to said separating means, means passing said coarse grain from said classifying means to said high speed mill, means returning said grits from said classifying means to said tube mill, and means adjusting the finely ground output of the high speed mill as a function of the output of the finished ground material from said sorting means.

3,402,896
PORTABLE ORE MILLING PLANT

Arthur C. Daman, Denver, Colo., assignor to Denver Equipment Company, Denver, Colo., a corporation of Colorado

Filed July 5, 1966, Ser. No. 562,588

3 Claims. (Cl. 241—38)



Portable ore milling plant transportable as unitary assembly having two floor levels above base and compartmented water supply above upper floor, circuit includes combined reduction mill and screening assembly on upper floor with hinged feed conveyor extending outwardly from end of combined assembly for reception of raw ore feed at selected elevations above base level. Classifier on lower floor receives gravity-flow scrubbed ore discharge from combined assembly and feeds underflow to jigging and overflow to flotation concentration stages on lower floor by gravity. Water input into upper compartment of water supply with excess overflowing into lower compartment. Constant head discharge of water from upper compartment by gravity to jigging. All other water input into circuit from fluctuating level lower compartment by gravity flow.

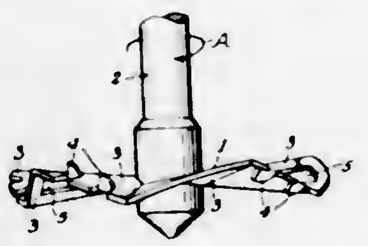
3,402,897
DEVICE FOR THE OSCILLATING TREATMENT OF SUBSTANCES

Peter Willems, Lucerne, Switzerland, assignor to Forschungs-Institut Prof. Ing.-Chem. P. Willems, Lucerne, Switzerland

Filed Aug. 17, 1964, Ser. No. 389,941

Claims priority, application Switzerland, Aug. 21, 1963, 10,389/63

15 Claims. (Cl. 241—46)



A disc type comminuting agitator having a configuration such that the substance being treated is caused to move in an extremely turbulent manner. The comminution is effected by knife or hook-shaped projections on the extremity of the disc.

3,402,898
METHOD AND APPARATUS FOR FORMING A PACKAGE OF YARN

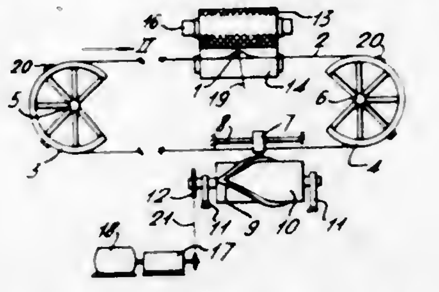
Denis Albert Edward Mattingly, London, England, assignor to The Klinger Manufacturing Company, Limited, London, England, a British company

Filed May 6, 1965, Ser. No. 453,635

Claims priority, application Great Britain, May 11, 1964, 19,522/64

11 Claims. (Cl. 242—43)

A yarn winding method and apparatus is provided in which yarn is laid onto a take-up bobbin to form a package in which the yarn traversing speed is varied from time to time to reduce or eliminate yarn build up at the ends of the package formed.

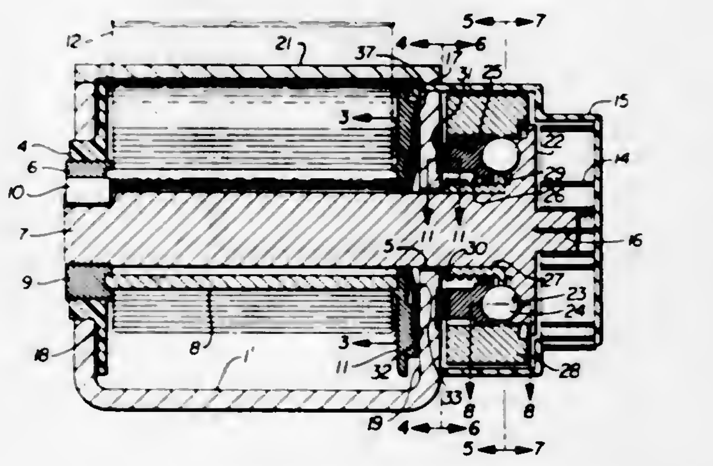


3,402,899
SAFETY HARNESS DEVICE

William S. Wright, Jr., Orange, Calif., and Albert William Francis, Farmington, Mich., assignors to Pacific Scientific Company, Commerce, Calif., a corporation of California

Filed Mar. 8, 1967, Ser. No. 621,572

3 Claims. (Cl. 242—107.4)



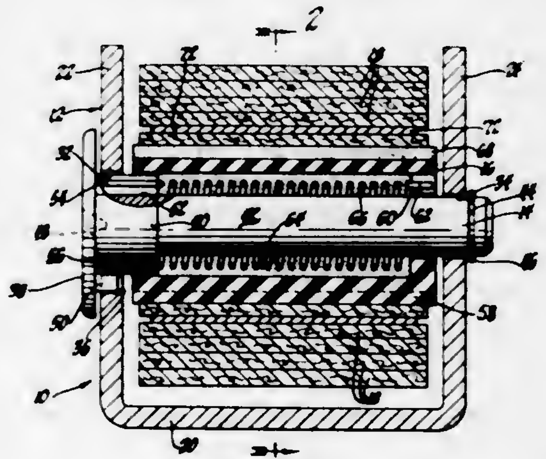
A safety harness device to limit outward movement of a strap from a winding spindle by acceleration responsive means wherein a clutch member and a spindle flange having opposed tapered sockets therein and ball means within the sockets, and an inertia member are mounted exteriorly of a U-shaped frame. Locking of the spindle is effected by binding the clutch member against friction means on the exterior of a frame end wall.

3,402,900
SAFETY SEAT BELT RETRACTOR

Andrew J. Van Noord, Grand Rapids, Mich., assignor to Kent Engineering, Grand Rapids, Mich., a partnership of Michigan

Filed Mar. 28, 1966, Ser. No. 538,061

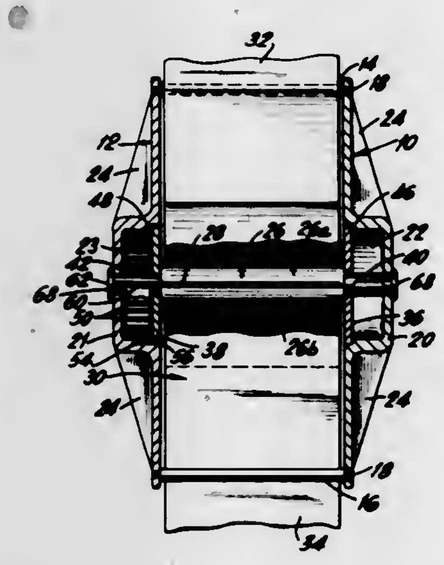
5 Claims. (Cl. 242—107.5)



A seat belt retractor including a roller or sleeve member rotatably supported on a shaft and having an inturned flange at one end which cooperates with an enlarged shoulder surface area formed on the shaft, near the opposite end therefrom, to provide concentric spacing within which a tensioning spring is disposed, and with means for releasably keying the shaft to a retainer side wall against rotation in assembly and for winding the spring as required.

3,402,901
ROLL-UP MEANS FOR FLEXIBLE STRIPS

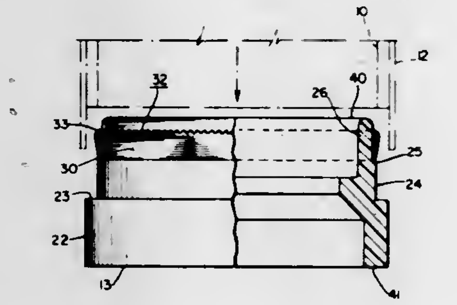
Oliver F. Van Houten, Allentown, N.J., assignor to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed Aug. 9, 1966, Ser. No. 571,212
2 Claims. (Cl. 242—107.11)



A roll-up means for flexible strips comprising a centrally located shaft journalled between two elongated side members, said shaft being adapted to roll up the flexible strip thereon. A constant force spring is attached to one of the side members and to the shaft, and arms are provided at the ends of the elongated side members and connected between them to prevent twisting of the flexible strip during extension and retraction.

3,402,902
PIRN

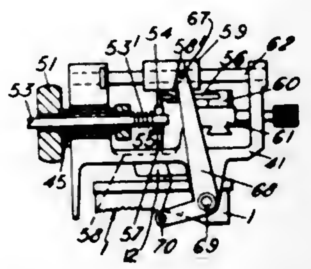
William L. Schmidt, Gastonia, N.C., assignor to Cocker Machine & Foundry Company, Gastonia, N.C., a corporation of North Carolina
Filed Jan. 9, 1967, Ser. No. 608,147
2 Claims. (Cl. 242—118.31)



A pirn having an end plug and means for retaining the end plug within the barrel portion of the pirn. This means comprises a substantially flat strip having a serrated edge having generally inwardly extending teeth which are imbedded in the side wall of the plug at a location intermediate the ends thereof.

3,402,903
AUTOMATIC WINDING MACHINE

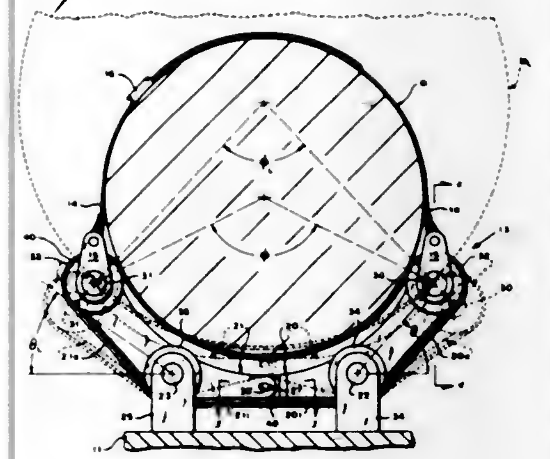
Giuseppe Camardella, Via E. Biondi 1, Milan, Italy
Filed Sept. 30, 1965, Ser. No. 491,741
Claims priority, application Italy, Oct. 3, 1964, 51,987/64
11 Claims. (Cl. 242—158.5)



In an automatic winding machine, an axially operated circular cam which is formed by a closed band of semi-rigid material having one longitudinal edge fixed to a rotary drum. The free edge of the band is profiled according to the law of motion to be imparted by the cam.

3,402,904
STORE HANDLING APPARATUS

William Paraskewik, Lansdale, Pa., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 31, 1966, Ser. No. 576,802
8 Claims. (Cl. 248—119)

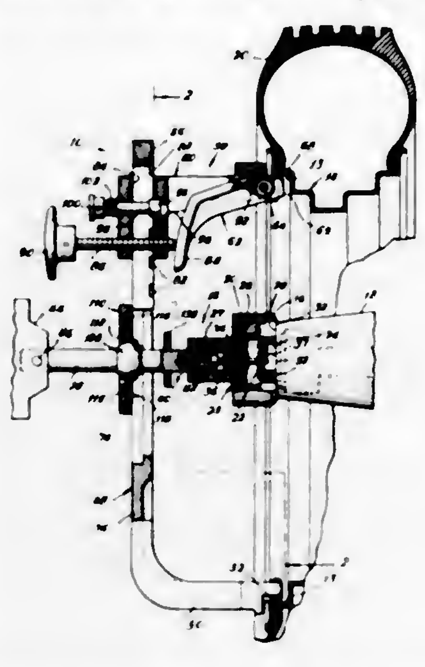


Load adjusted store handling apparatus for receiving stores of various sizes including a pair of store cradles each including a pair of obtusely angled bell cranks fixed for coplanar rotation about their respective apexes, having their proximal arms linked for limited relative dependent rotation, and equipped with belt supporting rollers carried at the ends of the unlinked distal arms and at the apexes of the bell cranks for supporting an endless belt whose extent between the ends of the distal arms conforms to the abutting periphery of the store supported thereby.

3,402,905
ATTACHING MEANS FOR WHEEL GAUGES AND THE LIKE

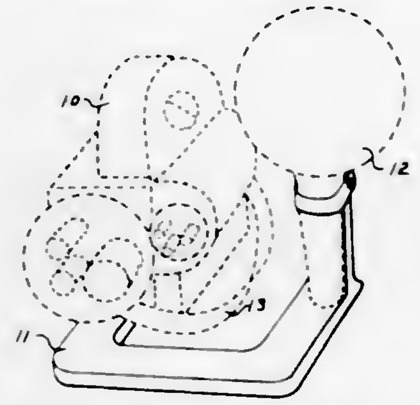
Charles W. MacMillan, Rock Island, Ill., assignor to Bear Manufacturing Company, Rock Island, Ill., a corporation of Delaware
Filed Sept. 1, 1966, Ser. No. 576,752
14 Claims. (Cl. 248—205)

Apparatus for attaching a wheel alinement gauge or the like to the wheel of an automotive vehicle including an adapter which abuts against a machined end face of the wheel hub and has a shaft or spindle for mounting an alinement gauge, and a rim clamp which attaches rigidly at the rim of the vehicle wheel and includes adjustable supporting means for rigidly supporting the spindle of the adapter while permitting the spindle to assume a position perpendicular to the machined hub end face independently of the position of the rim clamp.



3,402,906
CAMERA LAMP BRACKET

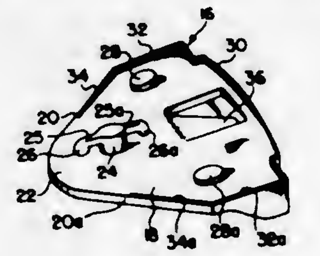
Joseph F. Wellman, 1722 48th Ave. N., St. Petersburg, Fla. 33714
Filed Oct. 31, 1966, Ser. No. 590,833
5 Claims. (Cl. 248—205)



A U shaped bracket for rigidly connecting an electric lamp to a portable camera, so proportioned as not to interfere with the proper grasping of the camera by the hand of the operator.

3,402,907
MOUNTING BRACKET

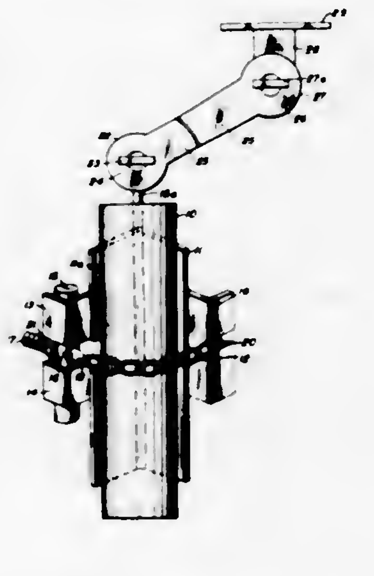
Julian V. Fisher, Carpentersville, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Aug. 3, 1967, Ser. No. 658,149
9 Claims. (Cl. 248—216)



A mounting bracket having spaced projections on its inner face to cooperate with mating recesses in a supporting wall by initial assembly of one projection with a corresponding recess and thereafter rotation of the bracket to align and lock another projection in a corresponding recess, and having means on the outer face thereof for reception and support of an elongate member, such as a retainer bar across the shelf-type recess of a refrigerator door.

3,402,908
BASE FOR SUPPORTING DRILL PRESSES ON COLUMNS

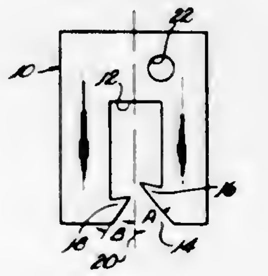
John F. Gill, 1255 Fairlane Ave., Brookfield, Wis. 53005
Filed July 18, 1966, Ser. No. 566,448
2 Claims. (Cl. 248—231)



A portable base support adapted for engagement with the vertical portions of a tubular scaffold including a vertical angle iron adapted to lodge against the tubular member, a chain element fixed by one end to the angle iron and utilized to embrace said tubular member, and adjusting means for tightening said chain.

3,402,909
HANGER STRUCTURE

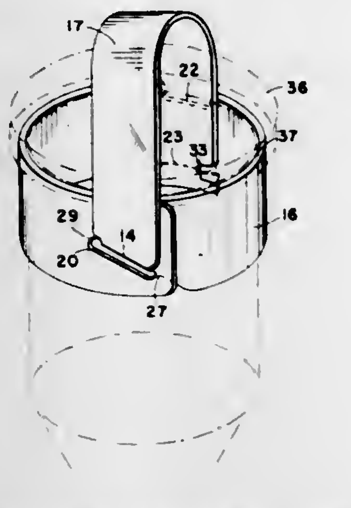
Allan B. Ely, Jr., Stow, Ohio, assignor to Weather-Seal, Inc., Barberton, Ohio, a corporation of Ohio
Filed June 20, 1966, Ser. No. 558,638
1 Claim. (Cl. 248—317)



A hanger for suspending therefrom flat metal workpieces or the like includes a substantially rectangularly shaped holder member having a central opening therein with two adjacent axially spaced, sharp pronged sections forming and guarding an entrance to the opening. The pronged sections are spaced from the vertical center line of the holder member and are adapted to wedge against opposed surfaces of the metal workpiece inserted into the opening. The hanger member has a hole offset from its vertical center line adapted to receive a hook member or the like and a hook member extends through the hole to engage and support the hanger member and position it in a suspended, inclined position.

3,402,910
DISPOSABLE BOTTLE HOLDER

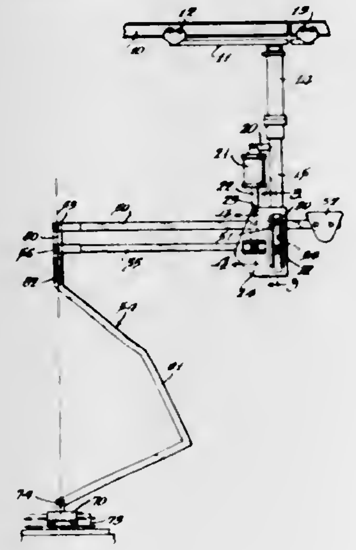
James A. Purvis, Indianapolis, Ind., assignor to Creative Packaging, Incorporated
Filed Sept. 29, 1966, Ser. No. 582,853
4 Claims. (Cl. 248—318)



A disposable and integral bail and collar for a bottle formed from a strip of sheet material in which the strip is divided into two segments by a crease line, the first segment forming a collar and the second segment extending through said collar and connecting its free end to an opposite point on the collar to form a bail.

3,402,911
LOADING BALANCER

Charles J. O'Neill, Mendota, Ill., assignor to Conco Engineering Works, Inc., a corporation of Illinois
Filed Oct. 6, 1966, Ser. No. 584,917
1 Claim. (Cl. 248—325)

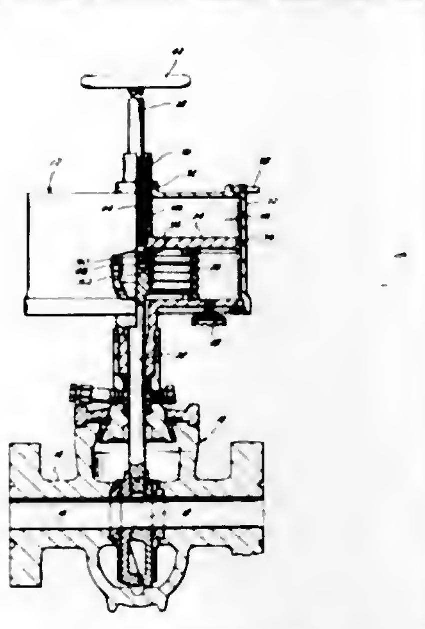


A loading balancer having a multi-arm system and associated structure for balancing a load connected to one of said arms. Power mechanism is connected to another of said arms and includes a fluid-actuated piston and with the arms supporting the load having a bend therein and a swivel connection to facilitate handling of the load.

3,402,912
MANUAL AND PISTON VALVE OPERATOR

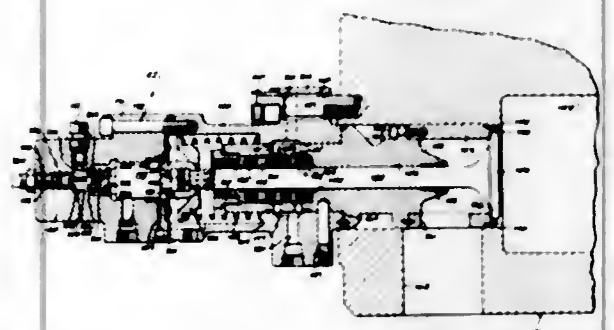
Fred E. Watkins, Houston, Tex., assignor to Camco, Incorporated, Houston, Tex., a corporation of Texas
Filed June 29, 1967, Ser. No. 649,953
3 Claims. (Cl. 251—14)

A manual and piston actuated valve operator for operating a reciprocating gate valve in which the piston includes an operating cylinder and a hand operated shaft threadably engaging the interior of the tubular extension and connected to the valve stem by a rotatable thrust bearing connection between the shaft and the stem for longitudinally moving the stem and valve, but allowing rotative movement between the shaft and stem.



3,402,913
VALVE ASSEMBLY FOR ENGINE

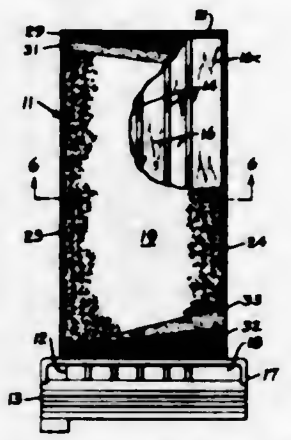
William H. Payne, Olean, N.Y., and Ralph E. Henry, Rixford, Pa., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Division of application Ser. No. 341,565, Jan. 31, 1964. Continuation-in-part of application Ser. No. 36,644, June 16, 1960. This application June 27, 1966, Ser. No. 590,109
2 Claims. (Cl. 251—63.6)



A valve assembly for an engine power cylinder includes a poppet valve closure member having a head and stem, the head seating on a valve seat opening to the cylinder, and the valve being opened by movement of the closure member into the cylinder. The actuator for opening the valve includes a piston attached to the poppet stem and reciprocable within a cylinder, the face of the piston remote from the valve stem being exposed to an actuator chamber. The actuator chamber is communicated with a source of hydraulic fluid by means of a fluid passageway, the opening of the fluid passageway into the actuator chamber defining a shoulder. A tubular member is disposed partially in the passageway and partially in the chamber defining an annular passage and an internal passage opening to the actuator chamber. An annular check valve closure member is slidable on the exterior of the tubular member and is urged by a spring against the shoulder to permit fluid flow through the annular passage only into the actuator chamber. The actuator piston is provided with a plunger which is received into the internal passage of the tubular member providing a restricted passage to flow of hydraulic fluid snubbing the terminal return movement of the actuator piston and valve closure member. The main valve closure member is continuously urged to the closed position by a spring. During return movement of the closure member, fluid flow from the actuator chamber is initially restricted to flow through the central passage, and this flow is further restricted when the piston plunger enters this passage. The position of the tubular member is longitudinally adjustable, to pre-adjust the snubbing action of the valve closure member.

3,402,914
METHOD OF CONTROLLING THE PERMEABILITY OF A POROUS MATERIAL, AND TURBINE BLADE FORMED THEREBY

Donald J. Kump, Hackensack, and Norman F. Lauziere, Mahwah Township, Ramsey, N.J., assignors to Curtiss-Wright Corporation, a corporation of Delaware
Filed Feb. 10, 1965, Ser. No. 431,538
6 Claims. (Cl. 253—39.15)

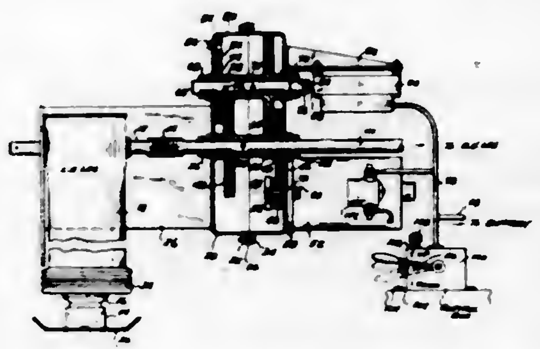


1. A transpiration cooled blade for use in an environment wherein portions of said blade are subjected to different operating temperatures: comprising in combination a strut member of generally airfoil configuration having on the surface thereof a plurality of lands extending in the generally radial direction of said blade; a permeable sheath member formed of porous mesh material surrounding said strut member and forming the operating surface of said blade and having a leading edge, a trailing edge, a concave side, a convex side, a radially inward end, and a radially outward end; said sheath being attached to said lands and defining with said strut coolant passages between said lands; said blade having supply passage means communicating with said coolant passages for supplying coolant thereto; said sheath having on at least one of said sides at each end first masked portions of low permeability, said first masked portions being of generally triangular shape bounded by the blade ends and the trailing edge and tapering toward the leading edge; said sheath also having second masked portions contiguous to each of said first portions, said second masked portions being of higher permeability than said first portions and of generally triangular shape bounded by said first portions and the trailing edge and tapering toward the leading edge; each of said masked portions being formed of a layer of sintered particles adhering to said sheath; said sheath having an unmasked portion in the mid-region between said second masked portions, said unmasked portions being of higher permeability than said second portions, whereby said sheath will pass a larger proportion of said coolant through the unmasked portions of said mid-region and successively less through said second and said first masked portions toward said blade ends.

3,402,915
POWER PACKAGE FOR SEMI-TRAILER SUPPORT

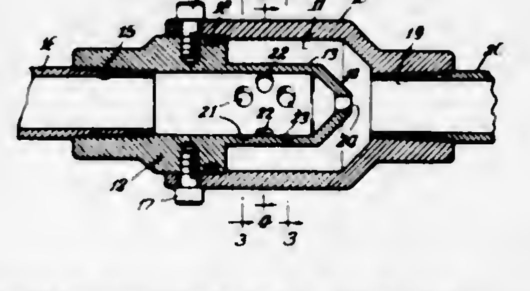
Thomas B. Dalton, Muskegon, Mich., assignor to Westran Corporation, Muskegon, Mich.
Filed Aug. 1, 1966, Ser. No. 569,253
6 Claims. (Cl. 254—86)

A semi-trailer landing gear operated by a reversible DC motor through a switch control normally biased to a position raising the landing gear. A rechargeable storage battery is mounted on the semi-trailer and is rechargeable from the tractor electrical system through a current directional and limiting element.



3,402,916
FLUID MIXING DEVICE

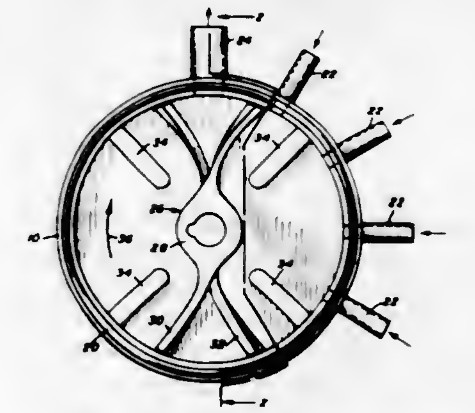
Willard A. Kates, Deerfield, Ill., assignor to The W. A. Kates Company, a corporation of Illinois
Filed Dec. 2, 1965, Ser. No. 511,122
5 Claims. (Cl. 259—4)



The invention provides a fluid mixing device comprising a passage surrounded by a chamber. The passage is provided with a first and second plurality of ports which are inclined relative to the radius of the passage and which are oriented in opposite directions so as to provide intense turbulence at the shear planes thus created, thereby to mix the fluids thoroughly. The surrounding chamber is provided with an exit for the mixed fluids at one end and the passage may also be provided with an opening directed toward said end to aid in ejecting fluid from the chamber.

3,402,917
FLUID MIXER

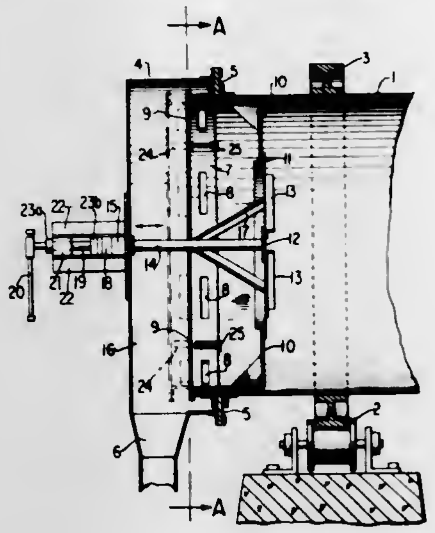
Jack A. Van Ingen, Webster, and John C. McFall, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Nov. 1, 1967, Ser. No. 679,695
11 Claims. (Cl. 259—7)



A fluid mixer which blends two or more viscous fluids without substantial hold-up time in the mixing chamber having an impeller with at least two axially spaced blades. At least one stationary blade extends radially inwardly from the mixing chamber housing between the blades of the impeller. Each of the impeller blades has a pitch which varies from near the axis of the impeller to the outer tip of the blade.

3,402,918
DISCHARGE VALVE FOR ROTATING DRUM MATERIAL TREATER

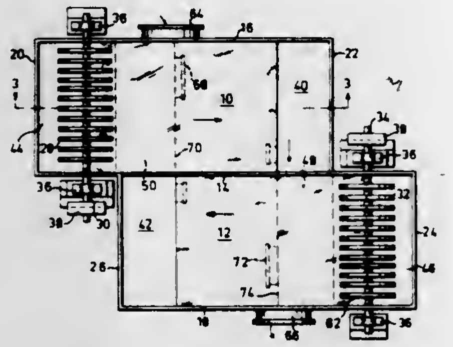
Louis R. Soulier, Monroe, La., assignor to Columbian Carbon Company, New York, N.Y., a corporation of Delaware
Filed Dec. 20, 1966, Ser. No. 603,348
10 Claims. (Cl. 259—30)



A particulate material discharge device for rotary drum treaters having an axially movable dam, with an attached circular flange which fits either in or over the discharge end of the rotary drum walls. A series of ports or openings are located on the wall of the flange, so that when the dam is moved away from the discharge end of the rotary drum, the openings in the flange are uncovered allowing complete and quick discharge of material in the drum.

3,402,919
CONTACTING APPARATUS FOR GASES AND LIQUIDS

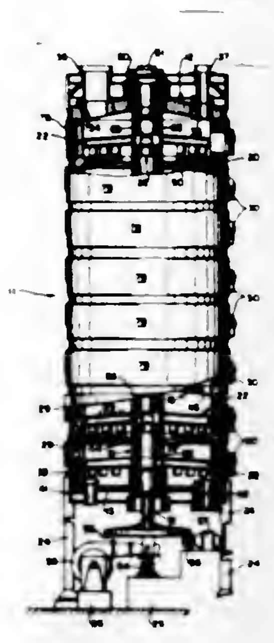
Gustaf Haglund, Backvagen 20, Enskede, Sweden
Filed July 5, 1966, Ser. No. 562,884
Claims priority, application Sweden, July 15, 1965, 9,371/65
5 Claims. (Cl. 261—92)



Apparatus for effecting contact between a liquid and a gas, of the type in which two upwardly open elongated compartments are disposed side by side in a receptacle, with a rotor at one end of one compartment and a rotor at the opposite end of the other compartment partially immersed in the liquid in the receptacle, is improved by the provision of a channel at the end of each end of each compartment opposite the end in which the rotor is disposed. The channel extends below the level of the bottom of the compartments, and inclines downwardly from its own compartment toward the other compartment, and then inclines upwardly and emerges behind and below the rotor of the other compartment.

3,402,920
CALCINATION METHOD AND APPARATUS

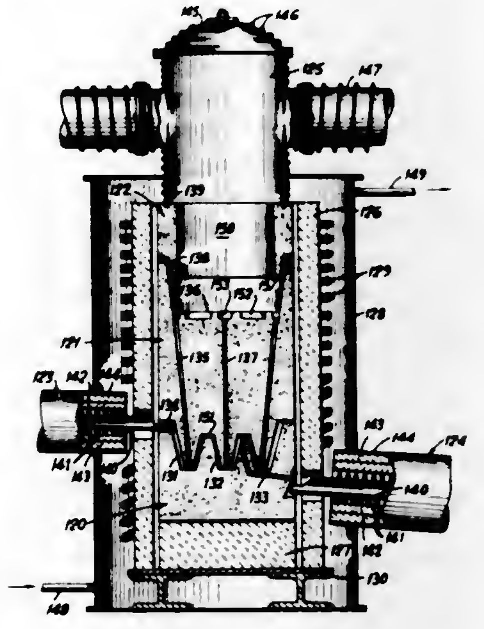
Charles F. Von Dreusche, Jr., Ramsey, N.J., and Robert E. Sullivan, Anaconda, Deer Lodge, Mont., assignors to The Anaconda Company, New York, N.Y., a corporation of Montana
Filed Feb. 10, 1967, Ser. No. 615,148
15 Claims. (Cl. 263—26)



The metal parts of apparatus adapted to calcine solid materials in an atmosphere containing relatively high concentrations of such corrosive gases as hydrogen chloride and the like are protected against attack by the hot corrosive furnace gases by providing cooling and special insulating means for maintaining these metal parts at a temperature above the dew point of hydrochloric acid and below about 500° F. when the furnace gases themselves are at a temperature of between about 1000° F. and 1800° F.

3,402,921
APPARATUS AND METHOD OF MAKING APPARATUS FOR VACUUM PURIFICATION OF METALS

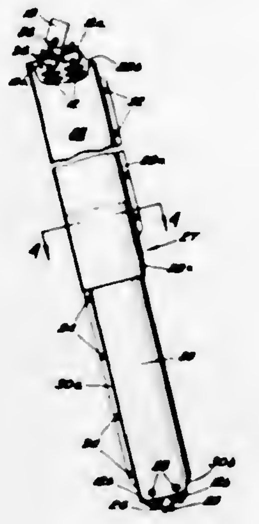
Thomas Gordon Hart, San Francisco, Calif., assignor to Phelps Dodge Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 30, 1965, Ser. No. 483,601
27 Claims. (Cl. 266—34)



Vacuum treatment apparatus is constructed from solid blocks of a refractory such as graphite. The blocks are so shaped that when interfitted, they cooperate to form reservoirs, feedpaths, and exposure chambers.

3,402,922
SAFETY MEANS

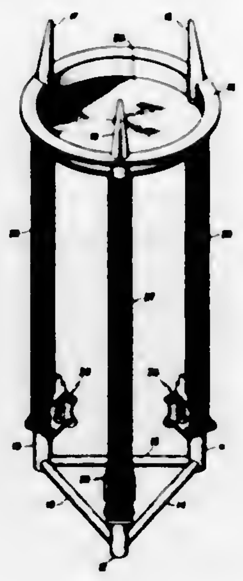
Henry F. McCan, 2310 Ravina Curve, Upland, Calif. 91786
Substituted for abandoned application Ser. No. 593,759, Nov. 14, 1966. This application May 26, 1967, Ser. No. 648,523
5 Claims. (Cl. 267—1)



A telescoping protective shield for the tension springs of a garage door or the like wherein the shield may be readily applied to existing spring mechanisms and one or more plastic strips provide a guide for easy telescoping action.

3,402,923
DEVICE FOR INACTIVATING A SELECTED PORTION OF A COIL SPRING

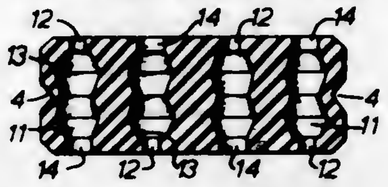
Delmar D. Rhoads and Robert H. MacKay, Fort Wayne, Ind., assignors to Lincoln Manufacturing Company, Inc., Fort Wayne, Ind., a corporation of Indiana
Filed Feb. 3, 1967, Ser. No. 613,908
5 Claims. (Cl. 267—61)



Helical springs are wound on elongated members to provide a structure that can support a load. In order that the spring deflection may be varied for different loads, a selected number of turns of each spring are inactivated by a clamp to leave the desired number of active turns for each spring.

3,402,924
SPRINGS

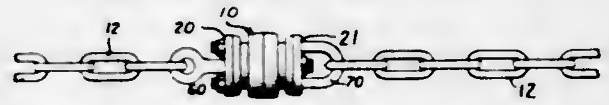
Johannes Rix, Kassel, Germany, assignor to Aeon Products (London) Limited, London, England
Filed May 2, 1966, Ser. No. 546,854
Claims priority, application Great Britain, May 3, 1965, 18,515/65
17 Claims. (Cl. 267—63)



A spring for damping and absorbing shock and vibrations, the spring being in the form of an oblong body of elastomeric material and provided with a plurality of cavities spaced in direction of the elongation of the body from each other and extending transverse to opposite engaging faces of the body and each having a portion of double frusto-conical form arranged in such a manner that the conical faces defining each cavity approach each other on compression of the body.

3,402,925
IMPACT ENERGY ABSORPTION DEVICE

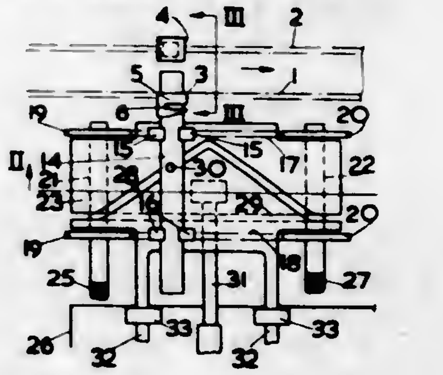
Phillip D. Schwiebert, Glencoe, Ill., assignor to MacLean-Fogg Lock Nut Co., Mundelein, Ill., a corporation of Delaware
Filed Mar. 3, 1966, Ser. No. 531,611
3 Claims. (Cl. 267—71)



An energy absorption device utilizing elastomeric material in compression for resilient absorption of force and energy, and wherein the elastomeric material is divided into segregated blocks which are utilized in a series arrangement to limit the necessary size of the unit, improve force absorption characteristics and limit the force effected distortion thereof, and also wherein the force effected distortion of the elastomeric material is physically and progressively limited by confinement within relatively rigid structure which avoids and prevents injury to the material.

3,402,926
MACHINE FOR FOLDING FLEXIBLE FOLDABLE ARTICLES

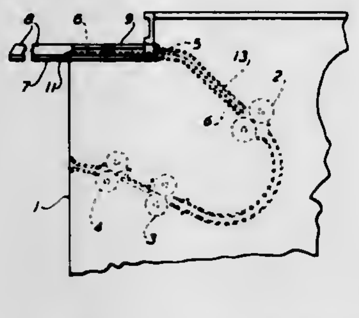
Norman Boodson, Handsworth Wood, Birmingham, England, assignor to Lighting Fasteners Limited, London, England, a corporation of Great Britain
Filed June 1, 1965, Ser. No. 460,294
Claims priority, application Great Britain, June 23, 1964, 25,931/64
5 Claims. (Cl. 270—83)



A machine for folding flexible articles is provided and the machine includes a carriage mounted article holding member which can travel along a predetermined path so that a transverse folding device can move across the predetermined path of movement and form folds in the flexible article. A retaining member is also carried for movement along with the carriage mounted article holding means, and the retaining member functions to receive a portion of a fold and to maintain the fold in the article while the transverse folding device moves back to a beginning position. Further, abutment means are included in the article holding member for fixing the position of the article while it is being folded.

3,402,927
SHEET FEED MEANS FOR SHEETS OF AT LEAST A GIVEN LENGTH

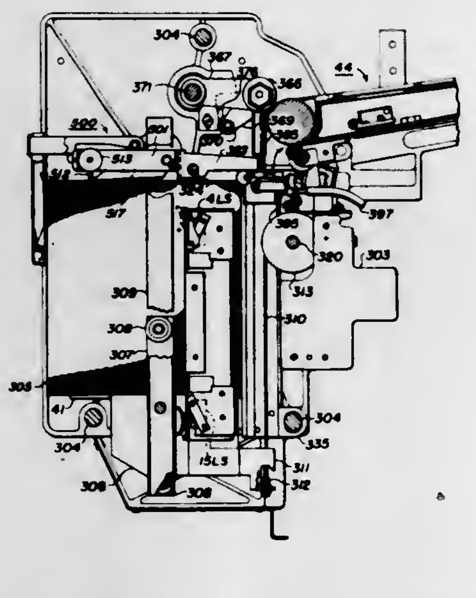
Leslie R. Day, Old Bridge, N.J., assignor to Litton Business Systems Inc., a corporation of New York
Filed Dec. 10, 1965, Ser. No. 526,641
10 Claims. (Cl. 271—56)



A sheet feed means for copying machines whereby a control plate prevents sheets from being manually fed into the machine that are less than a given length. By means of the control plate, sheets less than the given length can not be inserted a sufficient distance into the throat of the machine to enter the bite of the first set of rollers and thereby will not be fed into the machine.

3,402,928
SHEET HANDLING APPARATUS

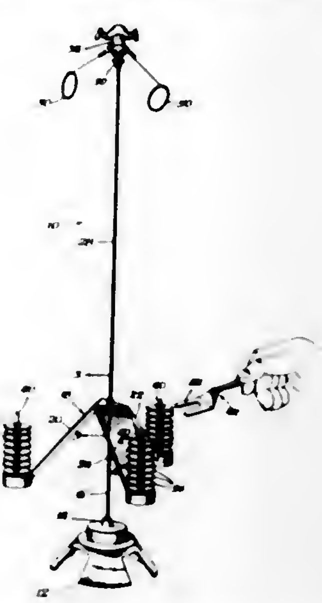
Thomas P. Redding, Penfield, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 11, 1966, Ser. No. 585,886
4 Claims. (Cl. 271—62)



Apparatus for raising a stack of sheet material so that it may be retained at a predetermined height for being sequentially transported by sheet feeding means. The apparatus includes a sheet sensor member to control a sheet elevator. The sheet sensor member oscillates into and out of contact with the topmost sheet of the stack and includes arms which support a rotatable member. The rotatable member has radial vanes of different lengths so that the height of the stack, relative to the sheet feeding means, may be controlled as a function of the vane selected to contact the topmost sheet of the stack.

3,402,929
BALANCING GAME APPARATUS

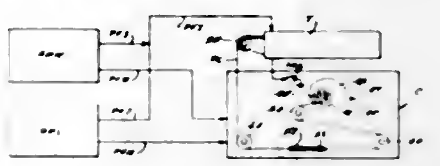
Marvin I. Glass and Burton C. Meyer, Chicago, Norman T. McFarland, Urbana, and Henry Stan, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Mar. 16, 1965, Ser. No. 440,146
3 Claims. (Cl. 273—1)



A game of skill wherein a base member provides a pivotal support for a flexible pole having three radially extending arms at its lower end and including means for balancing a figure on the upper end of the pole. Each of the arms includes a vertically extending rod at its outer end adapted to receive circular playing pieces during the play of the game, in accordance with instructions from a chance device.

3,402,930
BOWLING PINFALL TOTALIZER

Jack A. Russell, Muskegon, Mich., assignor to Brunswick Corporation, a corporation of Delaware
Filed Apr. 22, 1965, Ser. No. 450,099
20 Claims. (Cl. 273—54)



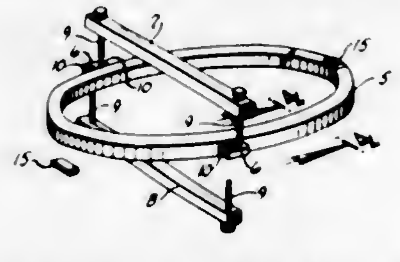
An apparatus for counting bowling pinfall from pinfall information available as a plurality of changes in electrical signals one such change corresponding to the position of a pin at each of a plurality of pin positions including a differential unit having a single power output and a plurality of power inputs one for each pin position and connected to the output, and motor means for each pin position for actuating the respective power input in response to a change in the electrical signal at the respective pin positions.

3,402,931
TENNIS RACKET PRESS

Glenway Maxon, Jr., 1830 E. Kane Place, Milwaukee, Wis. 53202
Filed Apr. 26, 1965, Ser. No. 450,740
2 Claims. (Cl. 273—74)

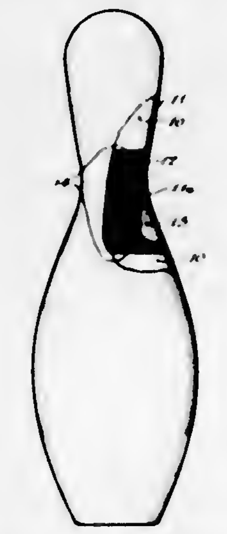
A press base member of tubular material, for rigidity, having an elliptical shape corresponding to that of a racket frame, has opposite surfaces that define parallel planes

and either or both of which can be overlain by a racket frame. A clamping bar overlies a racket frame on the press base member, and screws through its ends are engageable in lugs on opposite sides of the base member that are on a line parallel to its minor axis and intermediate the minor axis and one end of the base member.



3,402,932
PIN HAVING DECREASED NECK CHECKING TENDENCIES

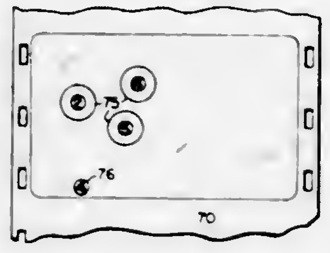
Robert M. Conklin, Muskegon, Mich., Fred E. Satchell, Cincinnati, Ohio, and Louis J. Trier and Foster W. Berry, Muskegon, Mich., assignors to Brunswick Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 268,300, Mar. 27, 1963. This application Jan. 17, 1966, Ser. No. 532,489
5 Claims. (Cl. 273—82)



A wood bowling pin with a plastic coating and having decreased neck-checking tendencies by virtue of a skin bonded to the wood surface in the neck region and covered by the plastic coating. The wood surface in the neck has a gradual transition and the bonded skin structure is of high modulus of elasticity and higher tensile strength than the wood so that it bears and withstands compression and tension stresses due to longitudinal bending of the pin under impact.

3,402,933
MARKSMANSHIP TRAINING TARGET FILM

George E. De Vogelaere, Brighton, N.Y.
(594 Landing Road N., Rochester, N.Y. 14625)
Filed Jan. 16, 1964, Ser. No. 338,239
4 Claims. (Cl. 273—105.1)



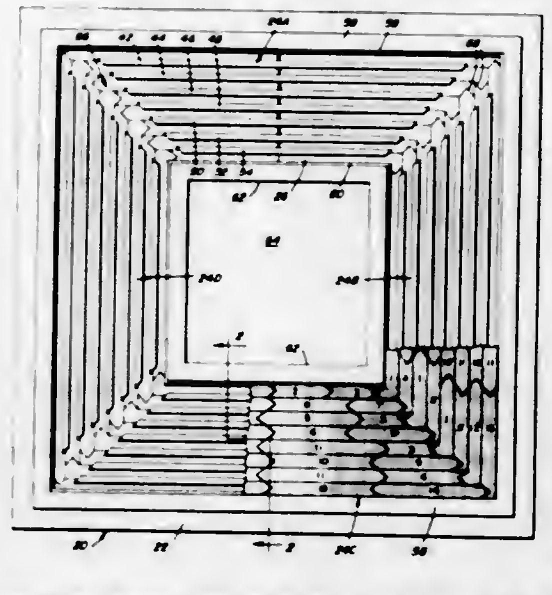
1. Target apparatus comprising

(a) a film strip having frames adapted to be projected onto a screen,

(b) each frame having a plurality of potential target images thereon, and the image of a symbol indicating which potential target image is the image of a target that is to be fired at when that frame is projected onto said screen, the image of said symbol corresponding visually with the image of a portion of at least one of the targets of a frame.

3,402,934
PUZZLE GAME

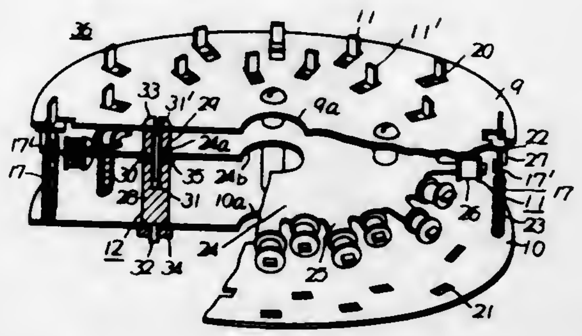
Doris E. Adams, Rye, N.Y., assignor of one-half to Harriet L. Foster, Larchmont, N.Y.
Filed Aug. 18, 1966, Ser. No. 573,404
15 Claims. (Cl. 273—156)



1. A puzzle game comprising a game board and a plurality of playing pieces to be placed thereon, said gameboard having four playing areas, each playing area being in the shape of an isosceles trapezoid, said areas touching each other along their non-parallel sides and providing a rectangular figure with their longest sides outermost and their shortest sides innermost, each playing area having a plurality of elongated playing piece receiving playing lanes progressively increasing in length from said innermost shortest side to its outermost longest side, said playing pieces being a group of various elongated shapes and lengths with the length of the longest pieces being no longer than the length of the shortest playing lanes, the added length of all said playing pieces being equal to the added length of all said piece receiving lanes.

3,402,935
AUTOMATIC RECORD PLAYER APPARATUS

Ryozo Kitazawa, Kawasaki-shi, Kanagawa-ken, Japan, assignor to Nippon Columbia Kabushikikaisha, Nippon Columbia Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Dec. 6, 1966, Ser. No. 599,521
Claims priority, application Japan, Dec. 8, 1965, 40/75,770
7 Claims. (Cl. 274—10)

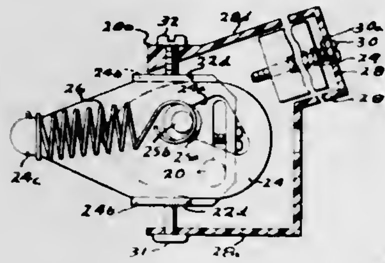


An automatic record player that selects and plays one or both sides of a record using a double-headed electromagnet support for the transducer and which has novel record holding, selecting and driving means.

ERRATUM

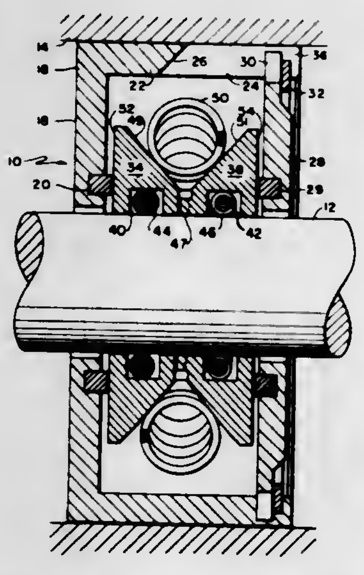
For Class 274—15 see:
Patent No. 3,403,067

3,402,936
PHONOGRAPH TONE ARM SUPPORT
Willard J. Faulkner, Glen Ellen, Ill., assignor to Karl W. Jensen, La Grange, Ill.
Original application Feb. 24, 1964, Ser. No. 346,602, now Patent No. 3,304,092, dated Feb. 14, 1967. Divided and this application Dec. 20, 1966, Ser. No. 627,567
3 Claims. (Cl. 274—23)



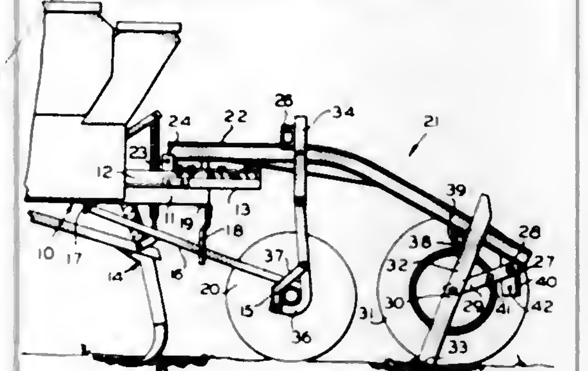
A phonograph tone support includes a shaft having a base with a pair of spaced apart projections. The tone arm has a base with a pair of flanges in spaced relation to the projections. A pivot pin rigidly carried by one of the flanges extends loosely through one of said projections and a screw tightly threaded in the other flange of the tone arm is loosely threaded through the other of said projections on the base. In addition, a base member on the shaft is formed with a pair of shoulders on opposite sides and a headed pin extends upward through a triangular opening in a base plate with a spring forcing the base plate against the pin whereby the base plate may be moved in relation to the base member.

3,402,937
FACE-TYPE SHAFT SEAL WITH MEANS FOR OPTIMIZING FACE SEAL LOADING AT VARIOUS SPEEDS
Jerald L. Park, Stratford, and Normand L. Lagasse, Bridgeport, Conn., assignors to Avco Corporation, Stratford, Conn., a corporation of Delaware
Filed Sept. 1, 1965, Ser. No. 484,283
3 Claims. (Cl. 277—41)



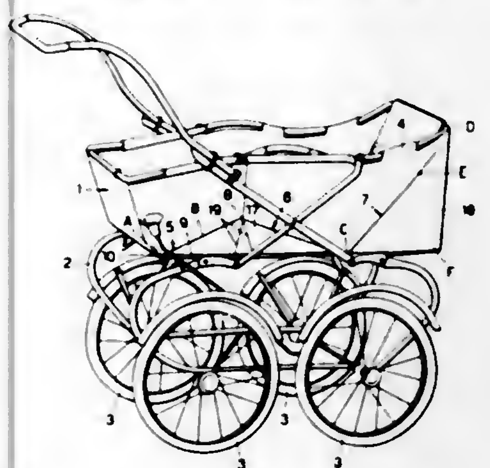
A seal utilizing a split rotor is disclosed. The two sections of the split rotor are axially movable, and their seal face contact pressure is provided by the wedging action of a garter-type spring.

3,402,938
TRANSPORT ATTACHMENT FOR IMPLEMENT
Donald A. McCallum, Burlington, Ontario, Canada, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 10, 1966, Ser. No. 585,349
3 Claims. (Cl. 280—43.17)



A transport attachment for an implement such as a grain drill having earth-working tools and including a supporting structure connectible to the implement frame and having a ground-engaging wheel unit mounted thereon for swinging in an arc with respect to the frame when the implement is propelled forwardly, to force the frame upwardly until the earth-working tools are elevated above the ground.

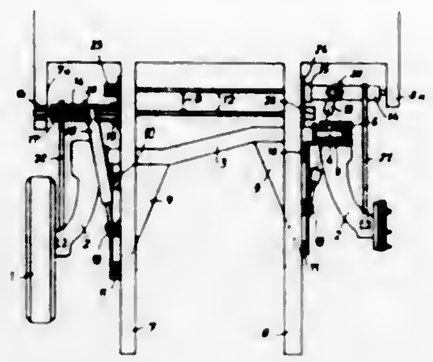
3,402,939
PERAMBULATOR ADAPTED TO BE CONVERTED INTO A STROLLER AND CAPABLE OF ALLOWING SEVERAL ATTITUDES FOR THE BABY'S BODY
Nicola De Falco, Via Tiziano 18, Milan, Italy
Filed Sept. 9, 1966, Ser. No. 578,224
Claims priority, application Italy, Dec. 2, 1965, 11,865
3 Claims. (Cl. 280—47.38)



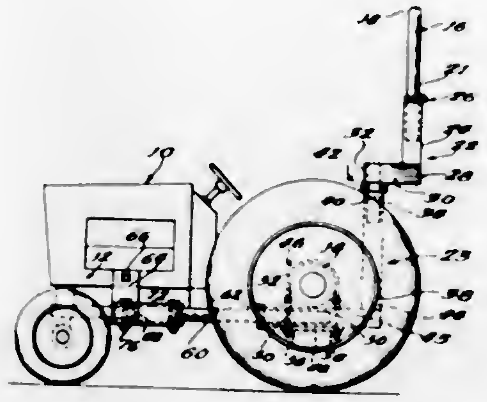
A perambulator having a pliable body with a zipper in its sidewalls extending along a broken line such that when the zipper is closed the bottom of the body is caused to be articulated about a transverse axis to produce a configuration in which a baby can sit in erect position or lie in a semi-recumbent position in the body. When the zipper is open, the bottom is flat and the baby can be placed in the body in a lying position.

3,402,940
REAR WHEELS SUSPENSION SYSTEMS FOR MOTOR VEHICLES
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Mar. 7, 1966, Ser. No. 532,227
Claims priority, application France, Mar. 22, 1965, 10,211
5 Claims. (Cl. 280—124)

A rear wheel suspension system for motor vehicles comprising two independent longitudinal wheel suspension arms adapted to oscillate about pivots arranged transversely to the vehicle and carried by a cross-member elastically connected to the vehicle chassis. The elastic connection between the cross-member and chassis is effected in the vicinity of the wheels by means of elastic pads mounted to work in shear in vertical planes parallel to the longitudinal axis of the vehicle. Each wheel suspension arm is connected, by means of a substantially vertically orientated link, to a longitudinal lever articulated on the chassis and cooperating with an elastic suspension member adapted to accept the load of the corresponding wheel.



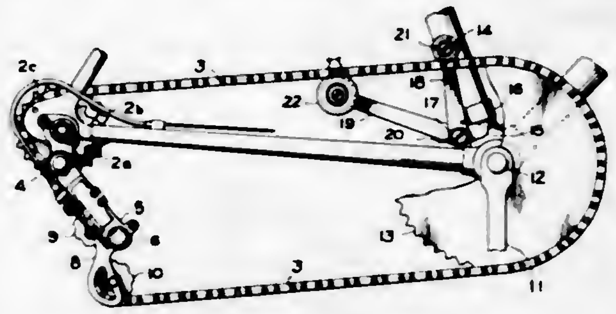
3,402,941
ADJUSTABLE ROLL BAR FOR TRACTORS
Werner W. Martinmaas, 835 10th Ave., Watertown, S. Dak. 57201
Filed May 5, 1967, Ser. No. 636,413
7 Claims. (Cl. 280—150)



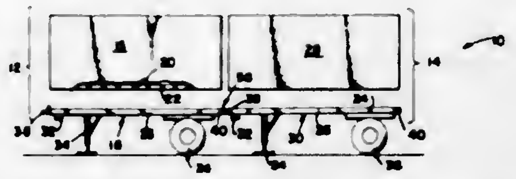
A tractor roll bar assembly which includes a multiple member frame having a plurality of rotatable and slidable locking connections between frame members to permit adjustment of the length and span of the assembly for installation on a wide variety of different makes and models of tractors.

3,402,942
DEVICE FOR TENSIONING THE DRIVING CHAIN IN A BICYCLE EQUIPPED WITH COASTER BRAKE AND EXPOSED SPEED CHANGE GEAR
Keizo Shimano and Masashi Nagano, Sakai, Japan, assignors to Shimano Kogyo Kabushiki Kaisha, Sakai, Japan
Filed June 12, 1967, Ser. No. 645,417
Claims priority, application Japan, June 17, 1966, 41/39,470
4 Claims. (Cl. 280—236)

A device for tensioning the upper run of the driving chain of a bicycle equipped with built-in coaster brake adapted to be applied by rotating the front sprocket in the reverse direction, and equipped with an exposed speed change gear, in which the upper run of the driving chain would be slackened when it runs in the reverse direction upon applying the coaster brake, if there were not provided any chain tensioning device.

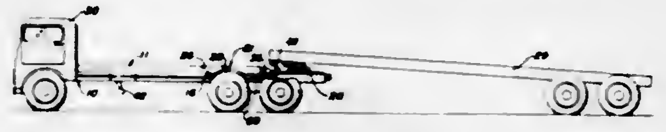


3,402,943
CHASSIS COUPLING ARRANGEMENT
John J. Martin, Weatherly, Pa., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed May 19, 1966, Ser. No. 551,271
10 Claims. (Cl. 280—415)



A chassis coupling arrangement for a pair of tandem semi-trailer chassis comprising, a coupler means for one chassis, a coupler receiving means for the other chassis, means for interlocking the coupler means and the coupler receiving means comprising a handle and lock assembly having a handle means adapted for pivotal attachment to one chassis and lock means axially and rotatably movable on the handle means, latch means on the handle means receivable with the coupler receiving means and means on the lock means receivable with the coupler means and cooperative therewith for retaining the latch means with the coupler receiving means for interlocking the coupler means and the coupler receiving means, and means for coupling and uncoupling the coupler means and the coupler receiving means comprising biasing means adapted for attachment to one of the chassis for urging handle means to the locked position, and further biasing means on the handle means urging the lock means to a locked position.

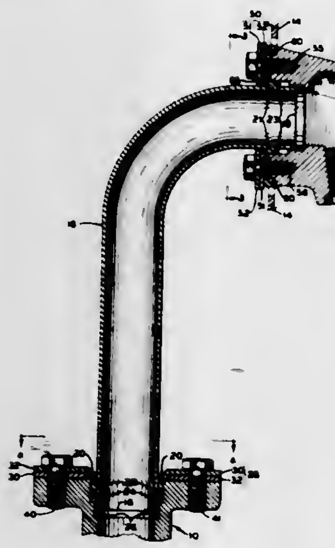
3,402,944
SLIDE BED FOR TRUCKS
Ronald L. Day, 856 34th Ave., Oakland, Calif. 94601
Filed Mar. 29, 1967, Ser. No. 626,836
9 Claims. (Cl. 280—423)



A slide bed having rollers thereunder and releasably securable in an inoperative position on the main bed of the truck of a tractor trailer vehicle. The main bed being provided with a track for guiding the slide bed to its operative position in mating engagement with the rear end of the main bed to serve as an extension thereof. A fifth wheel coupler releasably securable to the rear of the slide bed and slidably mounted on the main bed to permit selective elongation of the tractor trailer vehicle simultaneously with the extension of the main bed.

3,402,945
ADJUSTABLE LIQUID CONNECTOR

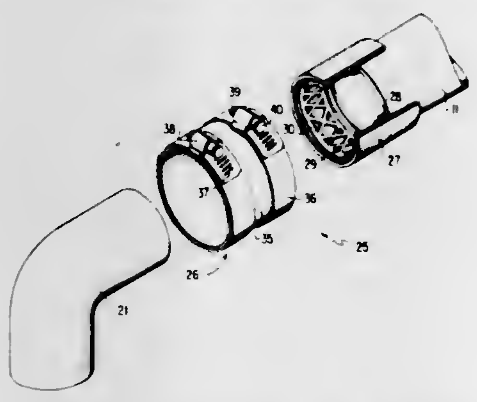
Howard Earl Rittenhouse, Greeneville, Tenn., assignor to Bowser, Inc., Greeneville, Tenn., a corporation of Indiana
Filed Apr. 24, 1967, Ser. No. 633,084
3 Claims. (Cl. 285—192)



An adjustable liquid connector is provided by a pipe having a bead or flange near one end. An O-ring is placed on the pipe between the bead and the one end, and the one end is inserted in a pipe receptacle and adjusted to the desired position. The pipe is firmly held in the desired position by clamps which are bolted to the pipe receptacle and which bear against the bead. The pipe and receptacle may rotate relative to each other if desired.

3,402,946
THREADLESS PIPE CONNECTION SYSTEM

Charles Dedian, 203 Desota Drive, Richmond, Va. 23229
Filed Oct. 3, 1966, Ser. No. 583,582
3 Claims. (Cl. 285—236)

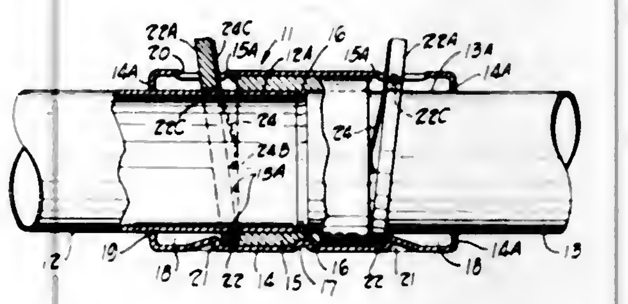


A connection for unthreaded pipe sections consisting of an elastomeric sleeve having internal criss-cross sealing ribs and spaced annular seating rings to limit pipe insertion, and a metal band having tightening means thereon to tightly compress the sleeve on the pipe ends.

3,402,947
CONNECTOR

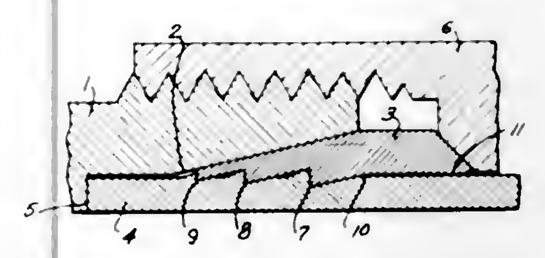
Alvan D. Lewis, Cleveland, Ohio, assignor of one-half to John A. Donato
Filed June 20, 1966, Ser. No. 558,896
12 Claims. (Cl. 285—317)

A connector for tubes and the like, the connector having a cylindrical body, an angularly tiltable plate therein for engaging the tube inserted through an opening in the plate having teeth formed therein for tapping and threadably engaging the tube in the opening upon turning the tube, a shoulder in the body, the body having a longitudinally extending elongated slot, the plate having a projection extending through the slot for guiding tilting action of the plate, the plate being fulcrumed on the shoulder on a side of the bore diametrically opposite of the slot, and a spring member secured to the plate adjacent the projection and having side portions biased away from the plate and extending on both sides of the bore to engage the shoulder at spaced points on opposite sides of the bore to provide a balanced resilient action in urging the plate on the side of the projection away from the shoulder and thus tilt the plate angularly to the axis of the bore, the plate being provided with a plurality of teeth or serially arranged edge portions, the teeth being generated around the axis of the bore upon the plate being in tilted position.



3,402,948
CONICAL SEALING RING HAVING A CIRCULAR EDGE FOR TUBE CONNECTIONS

Hans Kreidel, Sr., and Hans Kreidel, Jr., Wiesbaden, Germany, assignors to Inventex G.m.b.H., Baden, Aargau, Switzerland, a company of Switzerland
Filed May 25, 1966, Ser. No. 552,932
Claims priority, application Germany, May 26, 1965, K 56,227
3 Claims. (Cl. 285—341)

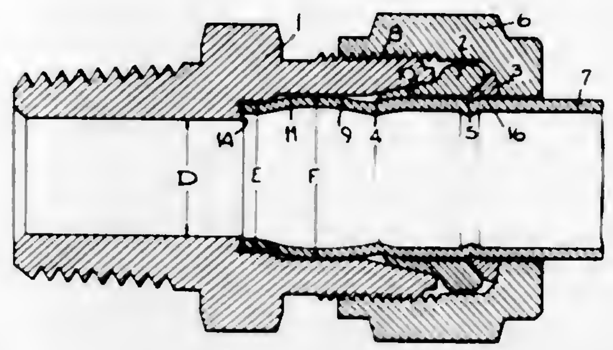


A conical sealing sleeve used in a tube connection comprising a connecting nipple and a pressure applying nut. The sleeve has a plurality of circular cutting edges spaced along an inner surface from one of the sleeve. The diameter of the circular edges is progressively decreasing as their distance from the one end increasing. During the connecting operation, the edges cut into the tube successively with decreasing penetration depths beginning with the edge most remote from the one end of the sleeve to provide a firm connection between the tube and the connecting nipple.

3,402,949
STEPPED CONNECTOR BODY

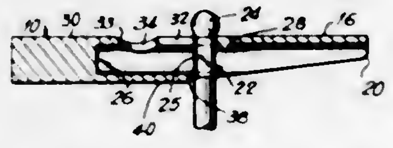
John R. Mahoney, Norwood, N.J., assignor to Hoke Manufacturing Company, Inc., Cresskill, N.J., a corporation of New Jersey
Filed June 6, 1966, Ser. No. 555,376
5 Claims. (Cl. 285—341)

An improvement in tube couplings for the purpose of facilitating reuse of the coupled tube in subsequent connections using a similar connector. The coupling is of the type wherein a tube is received into a body portion and is attached thereto with the addition of one or more ring-like ferrules which are wedged between the tube and the body by a coupling nut. The improvement is in the shape of the tube receiving bore in the body. This bore is made having two adjacent sections of differing diameters connected together by a slanted or flared step. This shaping of the bore causes the tube when initially attached to the body to have a bulged and consequently inwardly flared end whose reduced end diameter will easily fit into other bodies regardless of small dimensional variations in the body size.



3,402,950
ROD ASSEMBLY

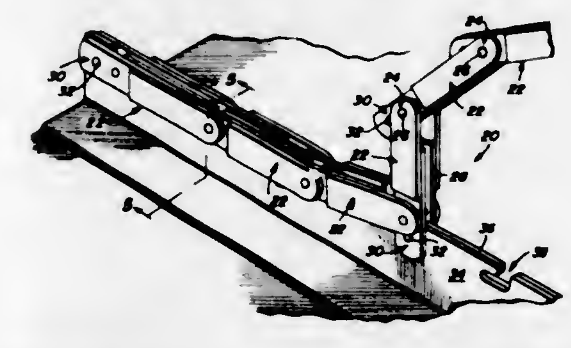
Ira Hertzberg, 1 Lincoln Ave., Goshen, N.Y. 10924
Filed Apr. 25, 1967, Ser. No. 633,474
4 Claims. (Cl. 287—3)



A two part rod assembly for cleaning rifles and the like, has handle and rod portions which can be arranged in three positions. In one position the handle and rod are coaxially arranged for storage purposes. In the first operative position, the rod and handle are in T-formation with the handle being rotatable relative to the rod, and in the second operative position the rod and handle are in T-formation and interlocked for rotation in unison.

3,402,951
FASTENING DEVICE

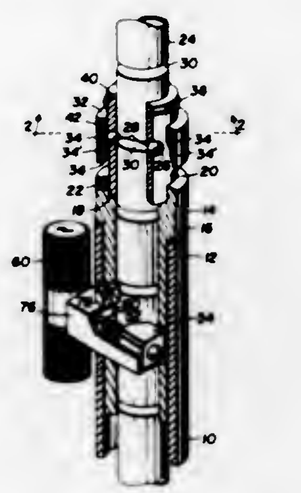
Oscar Kleb, 77 S. Broadway, Aurora, Ill. 60504
Filed Oct. 25, 1966, Ser. No. 589,268
8 Claims. (Cl. 287—189.36)



A fastening device for releasably fastening edge and/or surface aligned sheet material which device comprises a plurality of rigid clamping links, joined in chain-like fashion, and adapted to coact with slots provided in the edge and/or surface aligned sheet members to releasably clamp the members together and wherein each link of the fastening device is engageable into its associated slot in the aligned members when the link is generally normal to the members and whereby when the link is pivoted into the general plane of the members it is in tight engagement with the slots thus fastening the aligned members together.

3,402,952
ADJUSTABLE SUPPORTS FOR GYMNASTIC APPARATUS

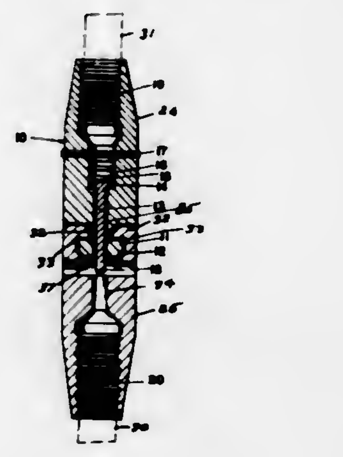
George P. Nissen and Emil C. Stuckenschneider, Cedar Rapids, Iowa, assignors to Nissen Corporation, Cedar Rapids, Iowa, a corporation of Iowa
Filed Feb. 17, 1966, Ser. No. 528,221
6 Claims. (Cl. 287—58)



An adjusting device for gymnastic apparatus employing upright telescoping members. The invention provides, in addition to the usual lock-up clamp, wholly independent adjusting means for each pair of members which positively maintains their relative telescopic position, even when the lock-up clamp is released, and yet permits quick and ready adjustments thereof over equally spaced intervals. The inner member may be rotated with respect to the outer while their selected telescopic adjustment is maintained. In the preferred form, a series of ball detents carried by the outer column releasably engages one of a number of equally spaced annular grooves in the inner telescoping piston, the detents being so engaged by means of a suitable ramp on a weighted collar axially movable on the column.

3,402,953
DISCONNECTABLE COUPLING

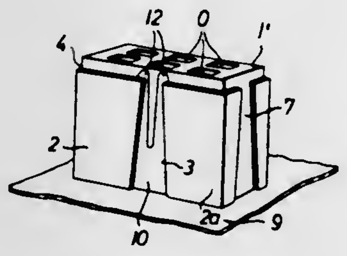
Karl J. Kollmann, 3615 Sassafras St., Erie, Pa. 16508
Filed Oct. 23, 1965, Ser. No. 503,411
1 Claim. (Cl. 287—103)



The present invention involves a coupling for a sewer snake wherein the T-shaped female slot is formed in one coupling member and a T-shaped male headed member is attached to the other coupling member. The T-shaped head is adapted to fit in the female slot. The female slot has overlying flanges which overlie the head on the male member and the sides of the flanges that engage the male member incline toward the center of the slot and toward the coupling member in which the female member is attached. The bottom of the female slot has surfaces that incline outward and away from the member having the female slot in it and these surfaces cooperate with the surfaces on the overlying flanges and prevent the flanges from spreading away from each other when a tensile stress is imposed between the two coupling members.

3,402,954
DEVICE FOR FASTENING BODIES IN THE SHAPE OF SQUARE PRISMS AND PROVIDED AT OPPOSITE SIDE FACES RESPECTIVELY WITH GROOVES AND RIDGES ON A PLATE OR THE LIKE

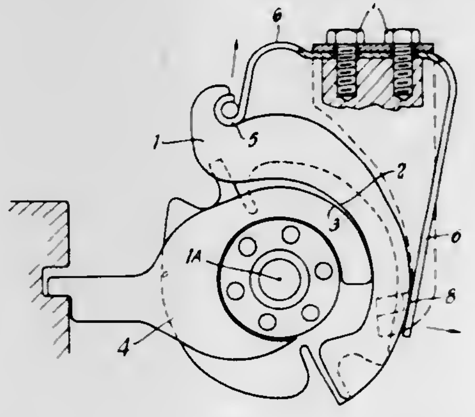
Hans Simon, Bruchhausener Strasse,
Unkel (Rhine), Germany
Filed Dec. 8, 1965, Ser. No. 512,473
Claims priority, application Germany, Dec. 10, 1964,
S 50,950
14 Claims. (Cl. 287—189.36)



A holding device for releasably holding a body, which may be substantially in the form of square prisms and provided at opposite side faces thereof respectively with dove-tail shaped grooves and ridges which end at a short distance from opposite end faces of the body, in a cut-out of a plate or the like.

3,402,955
KNOTTERS FOR BALERS AND LIKE INSTRUMENTS

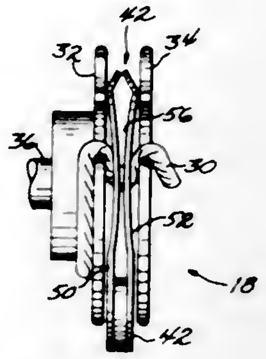
Kenneth Evans, Bessacarr, Doncaster, England, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Dec. 15, 1966, Ser. No. 627,276
6 Claims. (Cl. 289—13)



1. A knotter for a baler or like automatic packaging device, of the type having a strickle plate with a convex arcuate outer edge and a clamping plate movable relative to the strickle plate and having a corresponding concave arcuate inner edge, the strickle plate riding between the flanks of a spool-like element characterized in that the clamping plate is resiliently mounted in such a manner as to be movable against such resilience in any sense in the plane of rotation of the spool-like element.

3,402,956
SPRING KEEPER BLADE

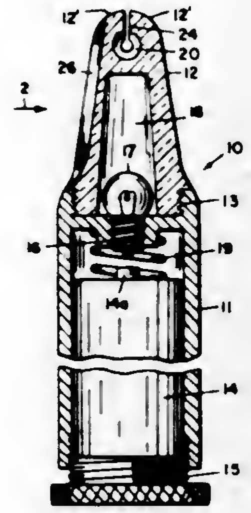
Homer N. Grillot, Naperville, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 3, 1966, Ser. No. 583,813
2 Claims. (Cl. 289—14)



A cord holder for use with a baler knotter mechanism, and comprising a pair of axially spaced, slotted cord holder discs, and a keeper blade cooperatively arranged therewith for holding cord carried by said discs. The keeper blade includes a pair of resilient plate members interposed between said discs and adapted to forcibly hold the cord against said discs.

3,402,957
FISHHOOK THREADING AND TYING DEVICES

Norman C. Peterson, 830 Loop St.,
San Marcos, Tex. 78666
Filed Feb. 24, 1966, Ser. No. 529,856
4 Claims. (Cl. 289—17)

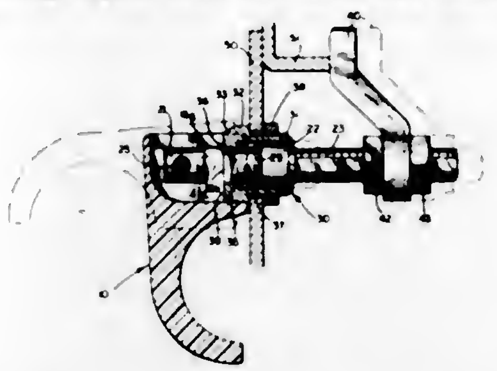


A mandrel provided with a funnel-shaped socket for receiving the eye of a fishhook and guiding a line through the eye before the line is wound around the mandrel. The mandrel also has a groove at one side thereof, through which an end portion of the line may be passed to form a knot when the wound line is slipped off the mandrel. The socket is slit and resiliently yieldable to frictionally hold the fishhook in place. A battery and lamp are provided in the mandrel for illuminating the same.

3,402,958
DOOR OR PANEL FASTENER

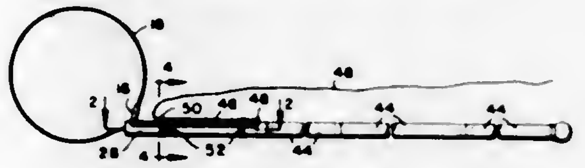
John K. Barry, Springfield, Pa., assignor to Southco, Inc., Lester, Pa., a corporation of Delaware
Filed Mar. 28, 1967, Ser. No. 626,604
6 Claims. (Cl. 292—62)

A rotary operated latch is disclosed having a cam action in the lever or handle providing a pull-up on the pawl to compress the door or panel against the frame or gasket to provide a tight seal. An over-center action prevents accidental release. The latch has a positive feel providing an indexing signal that the latch has been rotated 90° from the latched to the unlatched position (or vice-versa) with automatic or self-alignment. A tamper-proof feature is also disclosed.



3,402,959
TORPEDO RETRIEVING SNARE

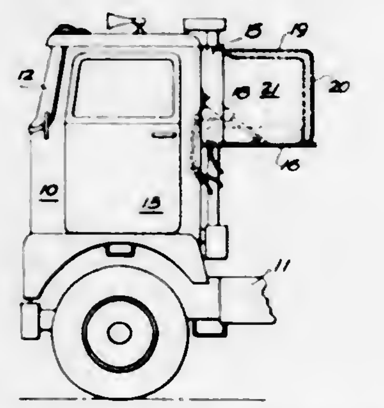
Jack Harris, 5102 Bluejay Circle,
Huntington Beach, Calif. 92646
Filed Jan. 13, 1967, Ser. No. 609,725
6 Claims. (Cl. 294—19)



A snare for attachment to a floating object, such as a torpedo, comprising a cable loop urged toward closed position by an extensible spring, and a removable pole having abutments for retaining the spring compressed until the loop is disposed around the object.

3,402,960
COLLAPSIBLE SLEEPER CAB FOR TRUCKS

Frederick C. Erke, 706 Perkinswood SE.,
Warren, Ohio 44483
Filed Dec. 21, 1966, Ser. No. 603,663
4 Claims. (Cl. 296—23)

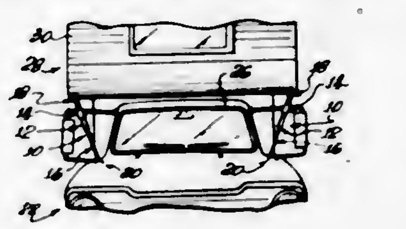


A collapsible inflatable sleeper cab for a truck body, having a downwardly swingable bed portion and an enveloping space defining double walled inflatable member thereon, forming an enclosure thereabove.

3,402,961
COMBINATION STABILIZING AND SHOCK ABSORBING DEVICE FOR CAMPER VEHICLES

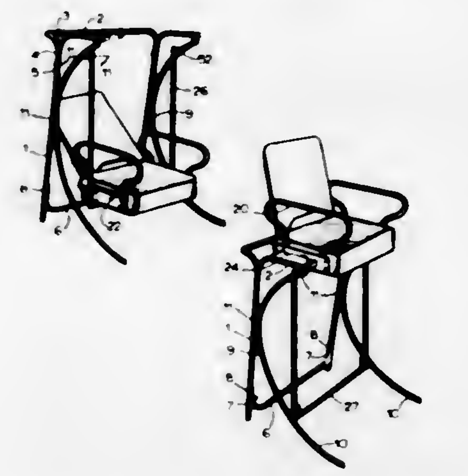
Loren V. Larson, 18823 Groverdale,
Covina, Calif. 91722
Filed Dec. 7, 1967, Ser. No. 688,841
7 Claims. (Cl. 296—23)

A combination stabilizing and shock absorbing device for a camper vehicle including a camper body supported of the rear cargo section of a pickup truck and having a forward cantilevered extension projecting over the cab truck, the stabilizing device having a telescoping energy absorbing strut with quick release end couplings for connecting the struts between the body extension and the truck body in such a way that the strut is effective to eliminate sway and bounce of the camper relative to the truck.



3,402,962
ADJUSTABLE CHILD'S CHAIR

Fred J. Ellis, 2650 Elmwood Drive SE. 49506, and George Skaff, 301 Grandville Ave. SW. 49503, both of Grand Rapids, Mich.
Filed Nov. 21, 1966, Ser. No. 595,879
10 Claims. (Cl. 297—130)



A child-supporting structure including a seat releasably mounted on a frame and having side members which serve as arms and a back for a high chair when the seat is mounted on the frame in an upright position. The seat can be inverted on the frame to form a high stool. The frame includes a depending pivotable unit on which the seat can be releasably mounted to provide a swing. The seat can be removed from the frame and the back member pivoted to the opposite side of the seat, thereby providing a low, self-supported stool with the side members serving as legs.

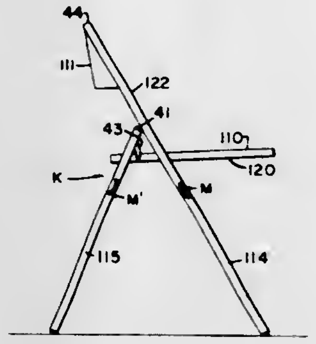
3,402,963
CHAIR TIERING ATTACHMENTS

Robert K. Fujioka, Los Angeles, and Tim M. Uyeda, South San Gabriel, Calif., assignors to Samsonite Corporation, Denver, Colo., a corporation of Colorado
Continuation of application Ser. No. 461,848, June 7, 1965. This application May 22, 1967, Ser. No. 640,422
11 Claims. (Cl. 297—248)

1. A chair tiering device adapted to join a plurality of chairs of duplicate construction together side by side, with portions of the right side of a chair adjoining corresponding portions of the left side of an adjacent chair, including a pair of male members and a pair of female members, with one pair of members being mounted upon the left side of a chair at selected, spaced locations on the said adjoining portions and with the other pair of members being mounted upon the right side of a chair at corresponding locations on the said adjoining portions, whereby the male members on one side of a chair are adapted

to interlock with the female members on the other side of an adjacent duplicate chair, the improvement wherein:

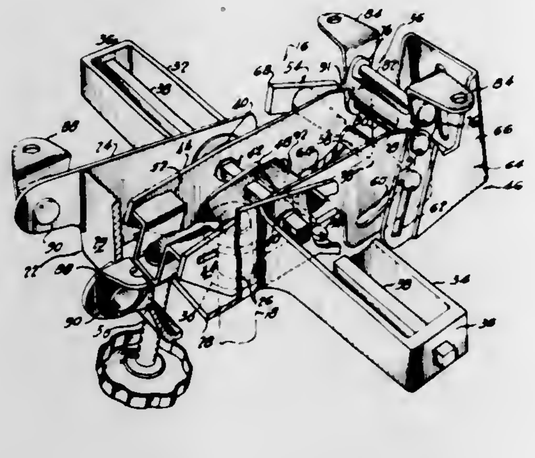
each female member includes a crossbar spaced from the surface of a chair in a plane substantially parallel to said surface; and



each male member includes a flat, V-shaped hook spaced from the surface of a chair and in a plane substantially parallel to said surface, with the axis of the V-shaped hook being substantially normal to said crossbar.

3,402,964
TORSION BAR CHAIR CONTROL

Philip J. Williams, Bridgeport, Conn., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Dec. 30, 1966, Ser. No. 606,222
8 Claims. (Cl. 297—304)

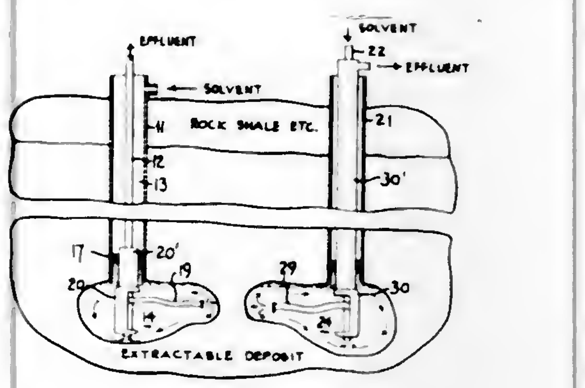


The disclosure of this application relates to a torsion bar chair control having pivotable seat and back supports with the seat and back supports interconnected by a pivotable toggle link at the rear of the seat. The front end of the seat is pivotally connected to a stationary support body carrying the torsion bar on which the back support is rotatably mounted.

3,402,965
METHOD OF INCREASING INJECTION AND WITHDRAWAL POINT IN A SOLUTION MINING CAVITY

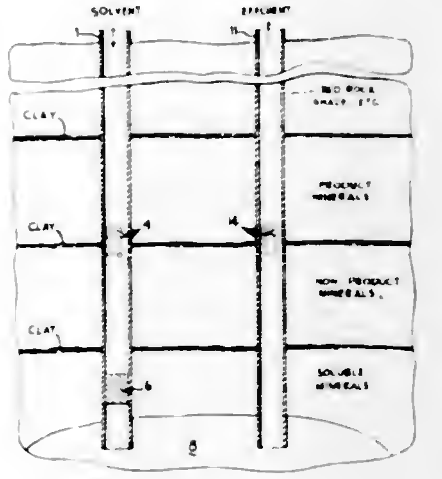
James B. Dahms, New Martinsville, W. Va., and Byron P. Edmonds, Regina, Saskatchewan, Canada, assignors to PPG Industries, Inc., a corporation of Pennsylvania
Filed Mar. 11, 1966, Ser. No. 533,489
15 Claims. (Cl. 299—4)

A solution mining method is described in which a flexible tube is utilized to provide a large travel path for incoming solvent and outgoing effluent from a solution mining cavity. The flexible tube is attached to a solvent supply system and extended in the cavity a substantial distance by the introduction of solvent. The flexible tube is positioned in the solution of the cavity above the floor and below the ceiling and is positioned substantially horizontally to both the floor and ceiling.



3,402,966
FORMING SOLUTION MINING SURFACE AT INTERFACE ABOVE CAVERN

James B. Dahms, New Martinsville, W. Va., and Byron P. Edmonds, Regina, Saskatchewan, Canada, assignors to Kalium Chemicals Limited, Regina, Saskatchewan, Canada, a corporation of Canada
Continuation of application Ser. No. 570,362, Aug. 4, 1966. This application June 9, 1967, Ser. No. 645,060
24 Claims. (Cl. 299—4)



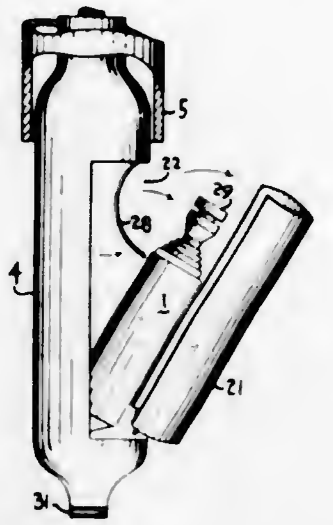
A plurality of conduits are provided in communication with an interface above a substantial subterranean cavity. Fluid is introduced through one such conduit at low pressures to establish communication along the interface between a pair of conduits. In this fashion, substantial extraction surface is provided in a very short time.

3,402,967
METHOD AND APPARATUS FOR CONTROLLING THE DEVELOPMENT OF A SOLUTION MINING CAVITY

Byron P. Edmonds, Regina, Saskatchewan, Canada, and Joy Elledge, Gillette, Wyo., assignors to Kalium Chemicals Limited, Regina, Saskatchewan, Canada, a corporation of Canada
Filed Mar. 11, 1966, Ser. No. 533,518
21 Claims. (Cl. 299—5)

A method and apparatus for developing a solution mining cavity is disclosed in which there is provided in a cavity a collapsed nest of tubes connected to a solvent supply system. The nested tubes are positioned in a cavity below a bore hole and then extended therein in a lateral

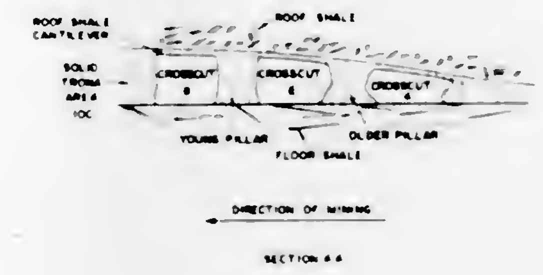
direction a substantial and variable distance to position the end of the nest of tubes adjacent the wall of the solution mining cavity. The end of the tubes can be extended as



the cavity develops in a lateral direction and can be rotated in circular fashion to develop the cavity laterally around a central axis. Provision for using several nests of tubes simultaneously is also made.

3,402,968
METHOD FOR MINING TRONA

William G. Fischer, Green River, Wyo., assignor, by mesne assignments, to Intermountain Research and Development Corporation, Cheyenne, Wyo., a corporation of Wyoming
Filed Dec. 20, 1966, Ser. No. 603,236
3 Claims. (Cl. 299—11)

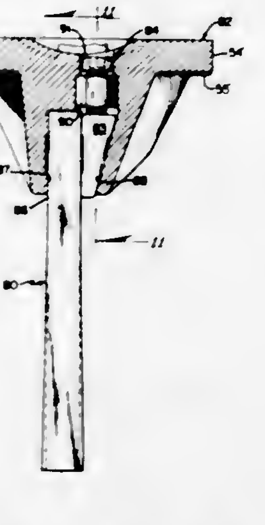


In the mining of a horizontal bed of trona located between earth formations that are not as strong as the trona, roof supporting pillars of trona are left behind, which gradually yield, as a function of time and load, and eventually crush out. This allows the mine roof to bend downward as an integral layer towards the previously mined areas and finally to completely cave the previously mined areas in a controlled manner without localized caving of the roof of the mine.

3,402,969
IMPACT TOOL ASSEMBLY

Kenneth H. Hoen, 2396 Orchard Lane,
Littleton, Colo. 80120
Original application Feb. 14, 1964, Ser. No. 345,006, now Patent No. 3,318,392, dated May 9, 1967. Divided and this application Mar. 28, 1967, Ser. No. 626,529
4 Claims. (Cl. 299—93)

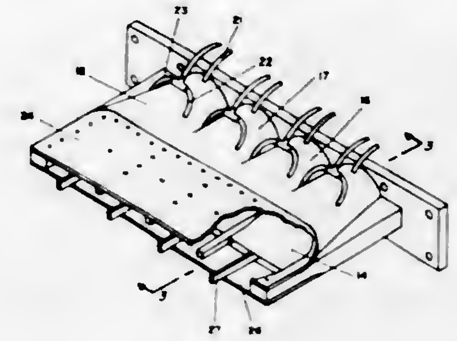
The rectangular connecting end of an impact tool is releasably clamped within the slot of an attaching head by one or more wedges disposed in guide slots along one side of the blade-receiving slot, and a locking member is removably positioned behind each wedge and is



adjustable to tigthen each wedge against one side of the connecting end of the tool.

3,402,970
VENTURI LOADING SYSTEM

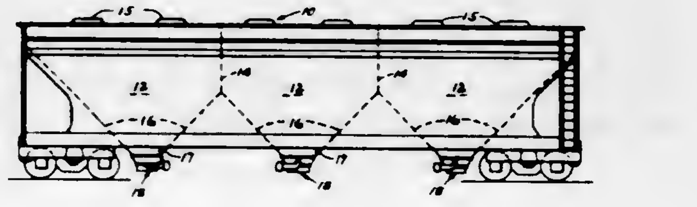
Harold F. Shroyer, Barrington, Ill., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Filed Aug. 22, 1967, Ser. No. 662,509
4 Claims. (Cl. 302—27)



An apparatus for feeding polymeric beads into a board forming apparatus. It consists of a venturi chamber with directional air inlet nozzles and has a rectangular discharge end adapted to fit into the forming apparatus.

3,402,971
APPARATUS FOR FLUIDIZING BULK MATERIALS

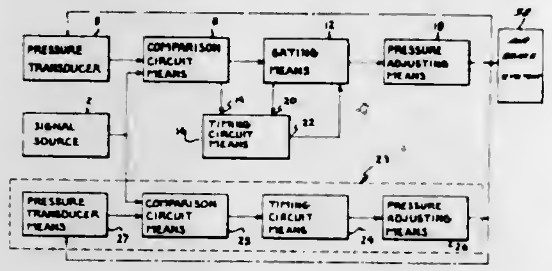
Eric S. Stevens, St. Charles, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Apr. 25, 1966, Ser. No. 545,078
4 Claims. (Cl. 302—52)



A hopper outlet for fluidizing or aerating granular or pulverulent materials and having a pair of opposed bottom walls connected to a pair of opposed side walls with the side walls being of a relatively steep slope and the bottom walls being of a relatively shallow slope. A vertically extending tubular discharge conduit defines a central opening for the outlet and has a butterfly valve mounted therein for controlling the flow of lading from the hopper outlet. A fluid permeable member is secured over the bottom walls between the side walls and extends about the entire periphery of the tubular conduit to form a plenum chamber thereabout.

3,402,972
CONTINUOUS PRESSURE CONTROL SYSTEM

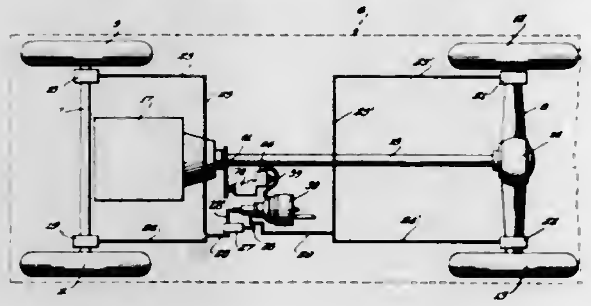
David Cooper and Richard C. Lenz, Erie, Pa., assignors to General Electric Company, a corporation of New York
Filed Aug. 11, 1966, Ser. No. 571,937
12 Claims. (Cl. 303—20)



A fluid brake control system wherein electrical signals representative of actual and desired fluid pressure are compared to provide an error signal which upon exceeding a predetermined threshold actuates for a controlled time period a power amplifier which in turn regulates a pressure adjusting valve.

3,402,973
ANTI-SKID MODULATED BRAKE SYSTEM RESPONSIVE TO ROTATIONAL AND LINEAR DECELERATION

Harold R. Scibbe, Chardon, Ohio, assignor to TRW, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Mar. 24, 1966, Ser. No. 537,080
12 Claims. (Cl. 303—21)

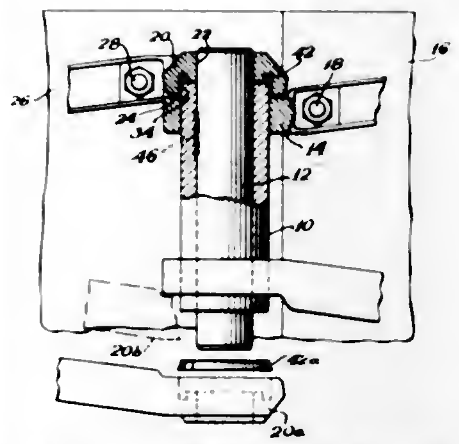


An anti-skid brake control including a cylindrical mass mounted in a housing for rotary and linear motion and being driven into rotation at a speed which is a function of the speed of the wheels of the vehicle. The mass has a cam surface, and the rotary drive member associated therewith has a cam follower which makes the unit sensitive to the difference between angular and linear deceleration of the vehicle. The difference between the angular and linear deceleration of the vehicle is then detected, applied to a servo amplifier system and to an actuator for closing off the hydraulic lines leading from the master cylinder to the wheel brakes to release the same, thereby preventing an impending vehicle skid.

3,402,974
TRACK JOINT HAVING FLOATING SEAL

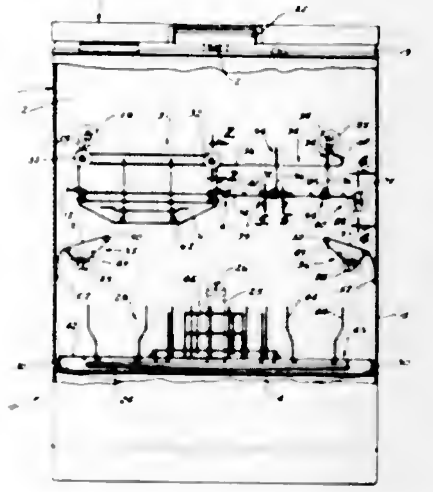
Jack M. Deli, Wheaton, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 30, 1966, Ser. No. 576,152
5 Claims. (Cl. 305—11)

Interlocked track joint having a floating seal. The joint includes, in combination with a bushing and a pin therein and projecting therefrom at one end, a link on the projecting end of the pin. The link has a counterbore in which the bushing is piloted at the thrust end of the bushing, a floor in the counterbore engaging the bushing end in an inner ring of thrust transmitting pressure contact, and a seal recess intersecting the floor so as to form a prolongation of the counterbore. The floating seal, having a unitary construction of Belleville shape, is a composite structure fitting in the recess and provided with a backup body part which carries a flat metal ring part. The ring part engages the bushing end in an outer ring of pressure contact to form a metal-to-metal seal.



3,402,975
DISHWASHER RACKING SYSTEM

Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed June 16, 1967, Ser. No. 646,661
11 Claims. (Cl. 312—311)

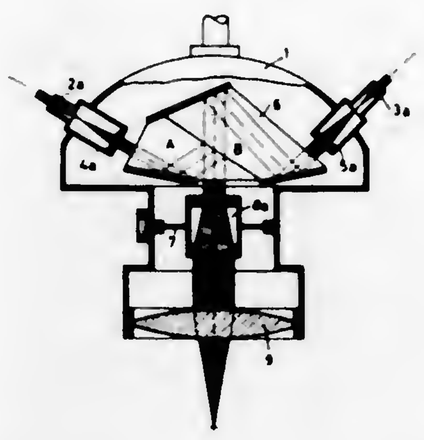


A racking system for a top loading dishwashing appliance including a lower rack resting on the bottom wall of the washing enclosure, intermediate cup racks pivotally mounted on the sidewall of the enclosure, an upper rack mounted on rollers and movable between first and second positions, and a hinged shelf pivotally supported at one edge by the sidewall of the enclosure and supported on the opposite edge by the roller mounted upper rack. The hinged shelf includes dividers pivotally mounted on the shelf for movement from a detented upright position to a folded position to facilitate movement of the hinged shelf out of the article-receiving position and into a retracted position against the sidewall of the washing chamber enclosure.

3,402,976
STEREOSCOPIC DOUBLE-MICROSCOPE

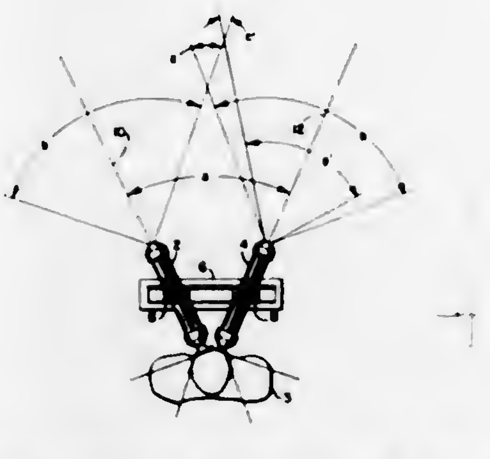
Hans Littmann, Heidenheim (Brenz), Germany, assignor to Carl-Zeiss-Stiftung, Wurttemberg, Germany
Filed July 1, 1965, Ser. No. 468,846
Claims priority, application Germany, July 24, 1964, Z 10,987
1 Claim. (Cl. 350—33)

A double stereomicroscope is provided with a light beam splitting device which enables two observers to simultaneously view identical images of the object being viewed. The beam splitting device, consisting of two prisms cemented together, is located centrally between two angularly mounted binocular tubes with associated eyepieces and above a double magnification changer and a main objective.



3,402,977
WIDE ANGLE BINOCULAR TELESCOPIC INSTRUMENT HAVING THE AXES OF THE TELESCOPES CONVERGING TOWARDS THE OBSERVER

Joseph La Russa, Yonkers, and Martin Shenker, Monsey, N.Y., assignors to Farrand Optical Co., Inc., New York, N.Y., a corporation of New York
Filed Apr. 18, 1962, Ser. No. 188,347
6 Claims. (Cl. 350—36)



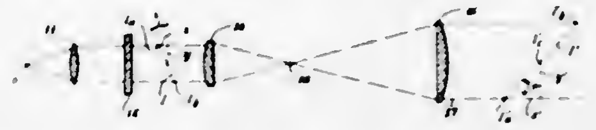
1. A visual telescopic instrument for the observation of a wide field of view, said instrument comprising two telescopes of substantially the same angular magnification M each including an objective and an eyepiece, and means to support said telescopes with the axes of their objectives inclined to each other at an angle which is greater than zero and less than the arithmetic average of the angular fields of the two telescopes and with the exit pupils of the two telescopes separated substantially by the human interpupillary distance, said telescopes having the axes of their eyepieces inclined to each other by an angle which is substantially proportional to the angular separation of the axes of said objectives multiplied by M, each of said telescopes conforming to the relation:

$$50^{-1}\Phi_I<(\Phi_{III}+\Phi_{IV}+M\Phi_{II})<50\Phi_I$$

wherein Φ_I is the power of the objective, Φ_{II} is the power of the eyepiece, and, in telescopes including spaced focal planes, Φ_{III} is the power of the lenticular elements between the first of said planes and an aperture stop located between the first and last of said planes, and Φ_{IV} is the power of the lenticular elements between said aperture stop and the last of said planes.

3,402,978
OPTICAL SYSTEM, SIMULATING A CONICAL LENS

Abe Offner, Darien, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed June 23, 1966, Ser. No. 559,878
9 Claims. (Cl. 350—40)



1. An optical system having the properties of a large conical lens comprising the following, centered along a single common optical axis:
  an astigmatic optical system for forming a first line image which is tilted at a non-zero angle, *i*, from perpendicularity relative to said optical axis;
  a pair of optical components having dioptric power arranged with a pair of their principal focal points in coincidence, so as to be in telescopic arrangement relative to each other;
  said pair of optical components being so positioned behind said first tilted image that said pair of components form a second tilted line image,
  said second tilted image being tilted relative to the optical axis at an angle, *i'*, having a value given by:

$$\frac{\tan i'}{\tan i}=\frac{M}{m}$$

wherein M is the effective longitudinal magnification of the telescopic system formed by said pair of optical components, and *m* is the effective lateral magnification of said telescopic system formed by said pair of components,
  whereby said second tilted image is, in general, larger in extent and at a different, usually greater, angle of tilt than the first tilted line image.

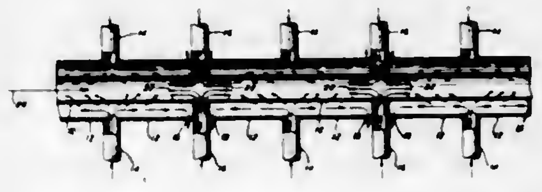
3,402,979
LIGHT POLARIZER

Yoh-Han Pao, Chatham, and Peter M. Rentzepis, Bernardsville, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
No Drawing. Filed Mar. 30, 1965, Ser. No. 444,028
1 Claim. (Cl. 350—147)

The specification describes a polarizer structure employing a transparent single crystal in which periodic bands of a diffusant such as gold or silver are produced as the result of the Liesegang effect. Structures having a uniform grid of several thousand lines per inch can be produced.

3,402,980
GAS LENS USING TWO GASES HAVING UNEQUAL REFRACTIVE INDICES

Andrew R. Hutson, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 19, 1964, Ser. No. 390,659
4 Claims. (Cl. 350—179)

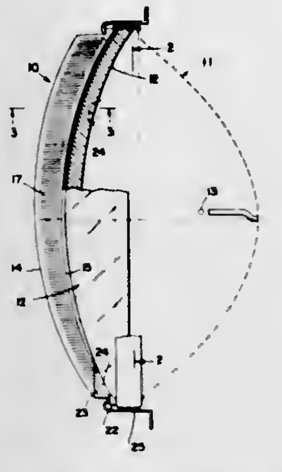


This application discloses a gas lens in which focusing action is produced by the use of two transparent gases having unequal refractive indices. The structure comprises an inner, porous conduit, which provides an enclosed path for an electromagnetic beam, surrounded by an outer, nonporous conduit. One of the gases is introduced directly into the inner conduit by means of a set of ports. The second gas is introduced between the conduits, and enters the inner conduit through its porous wall. The resulting curved interface formed between the two gases in the inner conduit produces a focusing effect upon the beam.

3,402,981

GLARE REDUCED LIGHT RAY SCREEN

Vincent P. Cardone, Levittown, N.Y., assignor of forty-nine percent to Stuart Mikelberg, Brooklyn, N.Y.
Filed Dec. 17, 1963, Ser. No. 331,173
4 Claims. (Cl. 350—276)

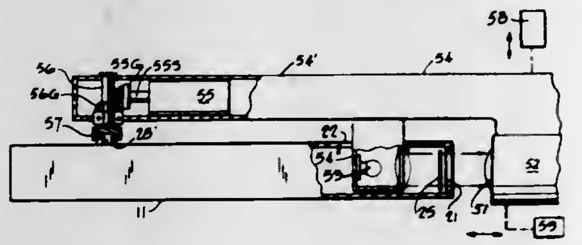


A glare reduced light ray screen particularly suited for use as vehicle headlights wherein the transparent light transmitting material is defined between a convex outer and a concave inner layer of substantial radius, flat parallel veins of a translucent color arranged in the light transmitting material, the veins having curved outer edges spaced from and substantially parallel with portions of the convex outer surface.

3,402,982

ELECTRO-OPTICAL SYSTEM

Jerome H. Lemelson, 85 Rector St.,
Metuchen, N.J. 08840
Continuation-in-part of applications Ser. No. 170,198, Jan. 31, 1962, Ser. No. 142,748, Aug. 28, 1961, and Ser. No. 515,417, June 14, 1955. This application Sept. 30, 1965, Ser. No. 505,086
28 Claims. (Cl. 352—27)



1. Apparatus for imaging frames from a film strip comprising:

(a) a film cartridge for containing an endless motion picture film portion defined by a spiral coil formation thereof having an interior and exterior thereof,

(b) rotor means for taking such film off the interior of the spiral coil formation and for feeding it onto the exterior thereof,

(c) an end wall in the cartridge having a single opening therein,

(d) means for guiding a portion of the film past the opening,

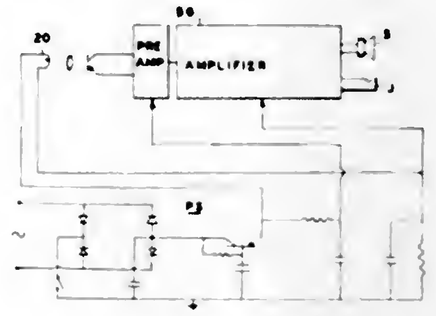
(e) an optical projection means for directing a source of light through said film, said projection means mounted on a support, and

(f) means for moving the support along a predetermined path toward and away from said cartridge so as to position the optical projection means directly behind the film in alignment with the opening in the end wall of the cartridge for projecting light through the film and the opening in the end wall.

3,402,983

MOTION PICTURE FILM READER

Marvin I. Mindell, Great Neck, William J. Reusch, Jr., Huntington, George Wechsler, North Bellmore, and Karl Rudzitis, West Babylon, N.Y., assignors to Viewlex, Inc., Holbrook, N.Y.
Filed Aug. 3, 1965, Ser. No. 476,965
3 Claims. (Cl. 352—109)



A motion picture film reader in which a mirror is pivotally mounted in front of a projection lamp. The mirror is mounted to oscillate in synchronism with the horizontal movement of the film. Additional mirrors receive the image from the pivotal mirror and transmit the image to a screen. A sound pickup and an amplifier are provided, the sound pickup having an exciter lamp connected in series with the power supply of the amplifier such that it acts as a fuse.

ERRATA

For Class 356—30 see:
Patent No. 3,402,632

For Class 356—36 see:
Patent No. 3,402,634

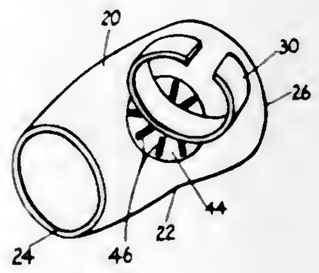
For Class 356—106 see:
Patent No. 3,402,633

For Class 356—118 see:
Patent No. 3,402,631

3,402,984

WRITING IMPLEMENT HOLDER

Joseph R. Zazzara, 302 Albert Road, Syracuse, N.Y. 13214
Filed June 9, 1967, Ser. No. 644,996
1 Claim. (Cl. 401—8)



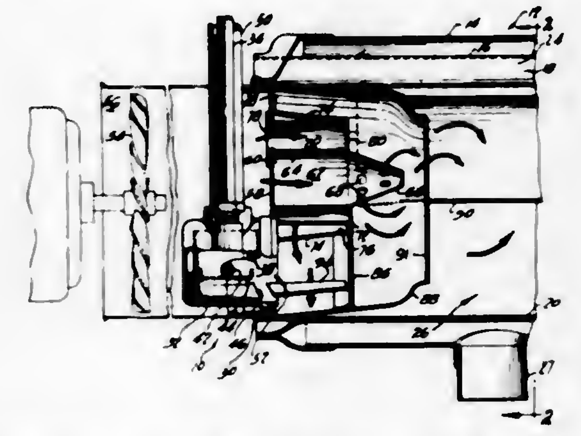
Holder for a pen or pencil comprising a resilient C clamp swivelly mounted on a sleeve adapted to be slid on a finger. The C clamp is locked in any one of several swivel positions, by the spreading of the C clamp when a writing instrument is frictionally held in the clamp.

3,402,985

BURNER RECIRCULATING CHAMBER CONSTRUCTION

Ralph B. Galvin, Indianapolis, Ind., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Feb. 25, 1966, Ser. No. 530,233
3 Claims. (Cl. 431—116)

A recirculating chamber for a vaporizing combustion type heater utilizing a scroll-shaped nozzle for driving combustion air in an arcuate path past a portion of an opening formed in a wall through which vaporized fuel exits. An arcuate baffle projecting from the wall having an edge terminating in the air stream and circumscribing another portion of the opening in a direction transverse to the air path for dividing the air into a main stream and a recirculated part. The recirculated part thereby being caused to move past the other opening portion for entrainment of fuel in the air stream. A target baffle at the end of the arcuate baffle and perpendicular thereto confining and controlling both the recirculating air and the main stream.



CHEMICAL

3,402,986

DYEING LIVE HUMAN HAIR WITH DIRECT DYES AND ALCOHOL SOLVENTS

Charles Zviak, La Garenne, and Giuliana Ghilardi, Paris, France, assignors to Societe Anonyme dit: Societe Monsavon l'Oreal, Paris, France, a corporation of France
No Drawing. Continuation of application Ser. No. 689,267, Oct. 10, 1957. This application Mar. 10, 1966, Ser. No. 533,239
5 Claims. (Cl. 8—10.1)

Method of dyeing hair at ambient temperature using a direct dye dispersed in an aqueous medium containing not more than 10% by weight of any water miscible alcohol selected from the group consisting of thioether alcohols, keto alcohols, saturated carbocyclic alcohols and heterocyclic alcohols that are colorless, non-toxic and chemically indifferent to the dye and hair.

3,402,987

DYEING OF POLYMERIC ARTICLES TREATED WITH A GRAFT COPOLYMER OF AN N-VINYL LACTAM POLYMER

Philip B. Dalton, Franklin Square, N.Y., and Marvin R. Leibowitz, Edison, N.J., assignors to GAF Corporation, a corporation of Delaware
No Drawing. Filed Jan. 20, 1964, Ser. No. 338,608
12 Claims. (Cl. 8—31)

A method for improving the dye receptivity of cellulosic and synthetic polymeric articles by inclusion therein or treatment thereof with a graft copolymer of a non-aqueous vinyl monomer on an N-vinyl lactam polymer substrate. A method of dyeing the resulting graft copolymer-treated articles.

3,402,988

CHEMICAL DEACTIVATION OF CATALYST AT BOTH FACES OF A CELLULOSIC FABRIC IMPREGNATED WITH A RESIN-CATALYST SYSTEM TO IMPROVE ABRASION RESISTANCE OF FABRIC AFTER CURING

Wilson A. Reeves and Albert S. Cooper, Jr., Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Apr. 2, 1965, Ser. No. 445,281
3 Claims. (Cl. 8—116)

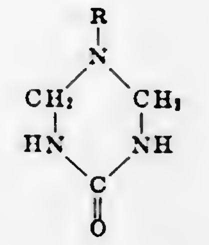
This invention relates to a method for producing wrinkle and abrasion-resistant cellulosic textiles. More particularly, this invention relates to a method for producing wrinkle and abrasion-resistant cellulosic textiles that are essentially free of cross-linked cellulose molecules in selected portions of the textile but contain cross-linked cellulose molecules throughout the interior of the textile structure.

3,402,989

CELLULOSE MODIFICATION WITH SOLUTION COMPRISING A METHYLOLATED CARBAMATE AND A METHYLOLATED TRIAZONE

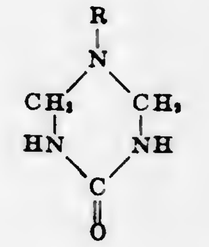
William B. Canter, Danville, Va., and Roger N. Suiter, Syracuse, N.Y., assignors to Dan River Mills, Incorporated, Danville, Va., a corporation of Virginia
No Drawing. Filed June 9, 1964, Ser. No. 373,831
12 Claims. (Cl. 8—116.3)

1. Novel composition for treating cellulosic fabrics comprising an aqueous solution containing an alkyl N,N-dimethylol-carbamate wherein said alkyl group contains 1 to 4 carbon atoms and 0.05 to 1.5 weight parts of a condensate of formaldehyde and a triazone of the formula:



wherein R is selected from the class consisting of alkyl or hydroxyalkyl having 1 to 4 carbon atoms per weight part of said alkyl N,N-dimethylolcarbamate.

7. Method of treating cellulosic fabric comprising the steps of applying to said fabric an aqueous solution containing crease-proofing chemicals comprising an alkyl N,N-dimethylolcarbamate wherein said alkyl group contains 1 to 4 carbon atoms and 0.05 to 1.5 weight parts of a condensate of formaldehyde and a triazone of the formula:



wherein R is selected from the class consisting of alkyl or hydroxyalkyl having 1 to 4 carbon atoms per weight part of said N,N-dimethylolcarbamate; and thereafter heating said fabric to dry and cure said crease-proofing chemicals.

3,402,990

TREATMENT OF KERATINIC FIBERS WITH A REDUCING AGENT AND AN AMINO ACID

Bradley Dewey, New London, N.H., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware

No Drawing. Filed Jan. 14, 1964, Ser. No. 337,523

11 Claims. (Cl. 8—127.6)

1. A process for eliminating the characteristic odor from a wool fiber which has been treated with a reducing agent comprising contacting said fibers with an amino acid compound.

3,402,991

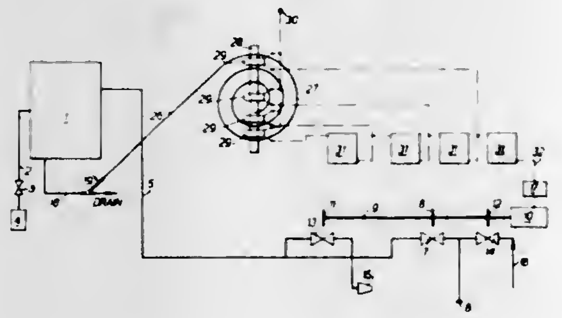
STERILIZER AND CONTROL APPARATUS

Kenneth Marden Henfrey, Pyrford Woods, near Woking, Surrey, England, assignor to Drayton Castle Limited, West Drayton, Middlesex, England, a British company

Filed Aug. 23, 1963, Ser. No. 304,065

Claims priority, application Great Britain, Aug. 23, 1962, 32,467/62

4 Claims. (Cl. 21—94)



I provide a device for simulating air entrapment conditions in a load within a sterilizer vessel, which device includes an elongated static chamber formed from a length of tubing **20**. There is a temperature sensitive bulb **24** in the static air chamber responsive to temperature conditions indicating relative air and steam proportions in the closed end of the static air chamber for controlling the sterilizing time.

3,402,992

METHOD FOR RECOVERING CHEMICALS FROM WASTE LIQUOR OBTAINED DURING THE PRODUCTION OF CELLULOSE

Nils Knut Gabriel Ahlborg, Falun, Sweden, assignor to Stora Kopparbergs Bergslags Aktiebolag, a corporation of Sweden

Filed Feb. 1, 1965, Ser. No. 430,790

Claims priority, application Sweden, Feb. 7, 1964, 1,504/64

4 Claims. (Cl. 23—48)

1. A method for recovering chemicals from waste liquor obtained by cooking cellulose containing fiber materials with a cooking liquor containing alkali metal salts of sulphurous acid and alkali metal salts of carbonic acid in one cooking stage which comprises the steps of (a) evaporating and burning the waste liquor from the cooking stage and dissolving the smelt soda thereby produced in water to form a smelt soda solution which contains alkali metal sulfide and alkali metal carbonate, (b) reacting said smelt soda solution with substantially pure carbon dioxide gas whereby a substantially sulfide free alkali metal bicarbonate-carbonate solution and a gas mixture of carbon dioxide and hydrogen sulfide are formed, (c) drawing off a portion of said solution for use in the preparation of a cooking liquor for the cooking stage, (d) decarbonizing the remaining portion of the said solution with a sulfiting agent of the group consisting of alkali metal bisulfite solution and SO_2 thereby forming a solution of alkali metal salts of sulphurous acid which is used in the preparation of cooking liquor for the cooking stage, and gaseous carbon dioxide which is used in step (b), (e) converting the hydrogen sulfide relieved with the carbon dioxide in step (b) by converting it in a contact furnace with substantially pure SO_2 to elementary sulphur which is separated and using the carbon dioxide relieved from the hydrogen sulfide together with the carbon dioxide formed in step (d) in step (b), and (f) compensating the loss in carbon dioxide in the recovery system caused by drawing off said portion of the substantially sulphur free alkali metal bicarbonate-carbonate solution in step (c) by addition of CO_2 into the system.

3,402,993

GROWTH OF FERROUS-FREE COBALT FERRITE SINGLE CRYSTALS

August Ferretti, Cambridge, and Walter Kunnmann, Needham, Mass., and Aaron Wold, Barrington, R.I., assignors to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

No Drawing. Filed Nov. 29, 1963, Ser. No. 327,119

2 Claims. (Cl. 23—51)

1. A method of making ferrous-free cobalt ferrite single crystals comprising the steps of: decomposing cobalt pyridinate; fusing an equimolar mixture of sodium carbonate and ferric oxide in an appropriate furnace; combining one part by weight of said decomposed cobalt pyridinate with nineteen parts by weight of said fused sodium carbonate and ferric oxide in a platinum crucible; heating said combination in an oxygen atmosphere maintained at 165 p.s.i.g. to a temperature of about 1600° C.; holding said temperature for a period of about two hours permitting all extraneous nuclei to dissolve; cooling said heated combination at a rate of about 6° C. per hour for sixteen hours, than 10° C. per hour for the next ten hours, and finally 40° C. per hour until room temperature is achieved; and removing said oxygen atmosphere.

3,402,994

ALKALI METAL CYANIDE PREPARATION

Eric Lois Tollefson and Donald J. McGirr, Edmonton, Alberta, Canada, and John C. Clunie, Summit, N.J., assignors to Chemcell (1963) Ltd., Montreal, Quebec, Canada, a corporation of Canada

No Drawing. Filed Mar. 1, 1965, Ser. No. 436,307

4 Claims. (Cl. 23—79)

Disclosed herein is an improved method of preparing alkali metal cyanides. The method comprises reacting an alkali metal alcoholate with HCN in an anhydrous alcohol reaction medium. This method obviates the separation problems encountered when an aqueous system was employed.

3,402,995

METHOD OF PREPARING ALKALI METAL IODIDES

Ricardo O. Bach, Gastonia, N.C., assignor to Lithium Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 22, 1965, Ser. No. 515,748

10 Claims. (Cl. 23—89)

A method of preparing alkali metal iodides which comprises forming a reaction mixture of elemental iodine and an alkali metal hydroxide in substantially stoichiometric proportions, and reacting the iodine with the hydroxide in the presence of hydrogen sulfide while agitating the reaction mixture. The resulting reaction mixture comprises an essentially pure aqueous solution of the desired alkali metal iodide and an elemental sulfur precipitate which can readily and easily be separated.

3,402,996

ION EXCHANGE OF CRYSTALLINE ZEOLITES

Philip K. Maher, Baltimore, and Carl V. McDaniel, Laurel, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Continuation-in-part of application Ser. No. 481,669, Aug. 23, 1965. This application Dec. 19, 1966, Ser. No. 602,766

10 Claims. (Cl. 23—112)

Method of cation exchanging zeolites comprising a conventional ion exchange step, whereby the more easily exchangeable cations are ion exchanged, followed by a calcination step at 400 to 1500° F., whereby the difficult to exchange cations are redistributed, the redistributed cations are then ion exchanged by an additional conventional ion exchange step. One or more calcinations and additional ion exchange steps may be used. This method is particularly applicable to the ion exchange removal of sodium ions from crystalline zeolites.

3,402,997

CONCENTRATING AND SEPARATING IMPURITY-CONTAINING PHOSPHORIC ACIDS

William R. Mustian, Jr., Lakeland, Fla., assignor to Armour Agricultural Chemical Company, a corporation of Delaware

Filed Mar. 25, 1964, Ser. No. 354,670

5 Claims. (Cl. 23—165)

A process for concentrating wet process phosphoric feed acid containing metal impurities to form polyphosphoric acid and recovering a concentrated fraction having a reduced content of metal impurities in which the feed acid is passed in finely-divided form in a stream of combustion gases for the production of metaphosphoric acid which reacts with metal impurities to form metaphosphate metal salts, the combined stream being passed tangentially into a cylindrical zone at a velocity to form a rotating annulus, purified phosphoric acid being recovered from the central portion of the annulus and the fraction containing the greater portion of the salts being withdrawn from the periphery of the annulus.

3,402,998

PROCESSES FOR DESULFURIZING FUELS

Arthur M. Squires, 245 W. 104th St., New York, N.Y. 10025

Continuation-in-part of application Ser. No. 337,900, Jan. 15, 1964. This application June 9, 1966, Ser. No. 556,434

19 Claims. (Cl. 23—181)

There is provided a process for recovering elemental sulfur from sulfurized calcined dolomite, such as is formed when either fully calcined dolomite or "half-burnt" dolomite is used to desulfurize a sulfur-bearing fuel. The sulfurized calcined dolomite is reacted with steam and carbon dioxide at elevated temperature and elevated pressure to yield hydrogen sulfide and half-burnt dolomite. Hydrogen sulfide may be converted to sulfur in a system of the Claus type, preferably operating at substantially the same elevated pressure. The solid resulting from the reaction with steam and carbon dioxide is suitable for re-use in a fuel-desulfurization step, either directly or after calcination. Examples are discussed in which the invention is used in conjunction with the desulfurization of a fuel undergoing gasification, cracking, hydrogasification, or hydrocracking; also, in conjunction with the desulfurization of a gas containing carbon monoxide undergoing shift over calcined dolomite.

3,402,999

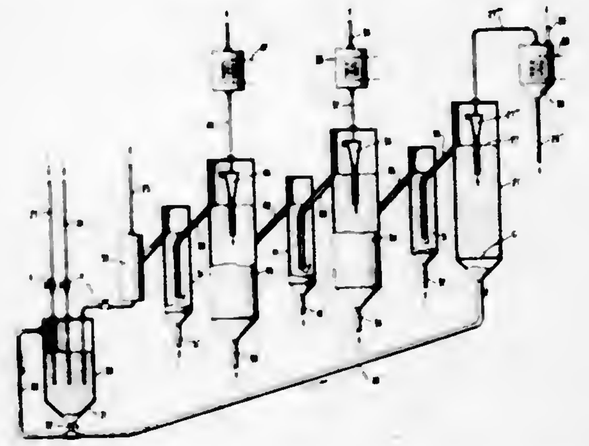
PROCESS AND APPARATUS FOR THE PREPARATION OF AMMONIA AND CHLORINE FROM AMMONIUM CHLORIDE

Roger Botton, Paris, and Adrien Delcoigne, Chantilly, France, assignors to Produits Chimiques Pechiney-Saint Gobain, Paris, France

Filed Mar. 2, 1965, Ser. No. 436,563

Claims priority, application France, Mar. 3, 1964, 965,896; June 22, 1964, 979,153

5 Claims. (Cl. 23—193)



Process and apparatus for production of NH_3 and Cl from NH_4Cl, either by continuous or by intermittent procedures, using particulate reactive masses fluidified by reactive gases, assisted by inert gas. (1) NH_4Cl is sublimed at 350° to 500° C. in presence of partly reduced Fe_2O_3 and/or Mn_2O_3 as catalyst, and the resulting ammonia is separated and collected. (2) Resulting $FeCl_2$ is mixed at 450° to 650° C., with O_2 to liberate Cl, which is collected. (3) Resulting Fe_2O_3 and/or Mn_2O_3 is partially reduced at 400° to 700° C., by CO or like gas, to FeO and/or MnO and reused in (1). Nitrogen is preferred for fluidification of the reactive masses and in one form of apparatus also acts as a fluid valve or seal to confine and direct the evolved gases to their proper exits.

3,403,000

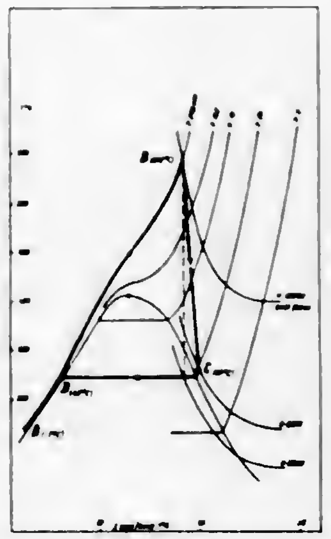
PROCESS FOR AMMONIA SYNTHESIS AND EQUIPMENT FOR THIS PROCESS

Waclaw Hennel, Swierczewskiego 7, Kedzierzyn, Poland

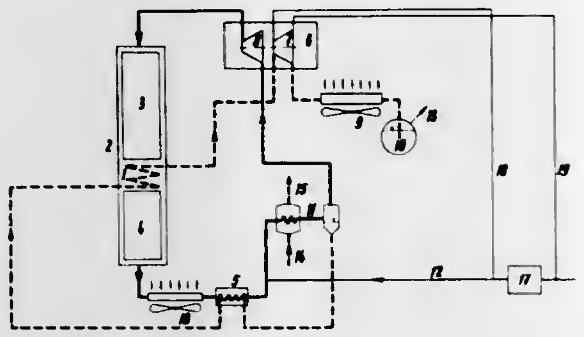
Filed July 6, 1965, Ser. No. 469,612

Claims priority, application Poland, Sept. 18, 1964, 105,760

2 Claims. (Cl. 23—199)

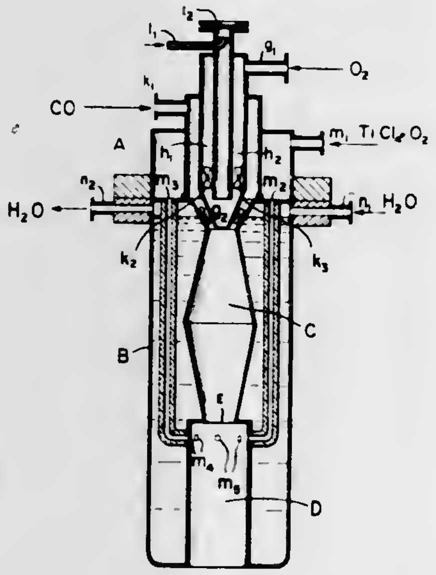


The process of utilizing the heat of reaction in the course of synthesis of ammonia by vaporizing previously produced and liquefied ammonia by heating the liquefied ammonia by means of the output stream from the synthesis reaction zone, then superheating the vaporized ammonia. The superheated ammonia is used as driving means in a turbine which drives a compressor for pressurizing the reaction gases prior to introduction into the reaction zone.



3,403,001
PROCESS AND APPARATUS FOR THE PRODUCTION OF METAL OXIDES

Robert Jean Mas and André L. Michaud, Thann, France, assignors to Fabriques de Produits Chimiques de Thann et de Mulhouse, Thann, France, a French body corporate
Filed July 16, 1963, Ser. No. 295,489
Claims priority, application Great Britain, July 17, 1962, 27,499/62; Feb. 8, 1963, 5,317/63
23 Claims. (Cl. 23—202)



1. A process for the production of finely divided metal oxide, which comprises continuously forming hot burned gases in a combustion chamber by substantially completely burning a flammable fuel gas with oxygen-containing gas therein, continuously passing said hot burned gases from said chamber in a stream thereof directed rectilinearly through a constriction substantially increasing its velocity, and continuously injecting into said stream, in a region thereof of increased velocity produced by said constriction, a gaseous mixture of metal chloride vapor and oxygen containing at least the amount of oxygen theoretically required for complete oxidation of said vapor, thereby continuously obtaining at the downstream side of said constriction a reaction mixture composed of said burned gases and said gaseous mixture, in which said metal oxide is produced by a steady flaming reaction.

ERRATUM

For Class 23—203 see:
Patent No. 3,403,144

3,403,002
RARE EARTH METAL COMPOUNDS AND THEIR PROCESS OF PREPARATION

Fritz Hulliger, Uerikon, Switzerland, assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Dec. 30, 1963, Ser. No. 334,643
6 Claims. (Cl. 23—204)

This invention relates to a novel process for the preparation of rare earth phosphides and arsenides in crystalline form and to the novel crystalline material themselves.

3,403,003
METHOD OF REMOVING BORON FROM SILICON TETRACHLORIDE

Lawrence Philip Morgenthaler, Washington, D.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 23, 1966, Ser. No. 604,121
10 Claims. (Cl. 23—205)

Boron is quantitatively removed from silicon tetrachloride by using phenol as an extraction agent.

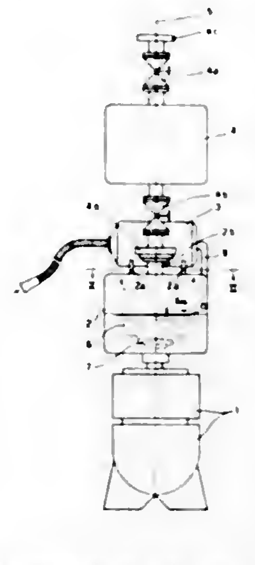
3,403,004
MEANS AND METHOD FOR THE DETECTION OF URANIUM

Ervin Jungreis and Lina Ben-Dor, Jerusalem, Israel, assignors to Yissum Research Development Company, Jerusalem, Israel, a company of Israel
No Drawing. Filed Nov. 20, 1964, Ser. No. 412,830
Claims priority, application Israel, Nov. 29, 1963, 20,351
6 Claims. (Cl. 23—230)

Detection of uranium in various materials, such as ores, earth, etc. The uranium is detected by a reagent which is prepared by reacting p-dimethylaminoaniline hydrochloride and salicylaldehyde which is then reacted with ammonia, the product being yellow. Uranyl ions added to the yellow product give a color change from yellow to red.

3,403,005
APPARATUS FOR THE PURIFICATION OF AN ENCLOSED INERT ATMOSPHERE

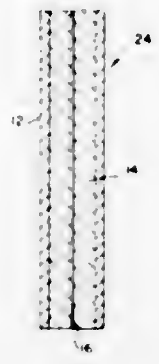
Marcel L. Portal, Brebbia, Italy, assignor to European Atomic Energy Community—Euratom, Brussels, Belgium
Filed Apr. 30, 1965, Ser. No. 452,124
Claims priority, application Belgium, May 11, 1964, 520,136, Patent 647,721
7 Claims. (Cl. 23—252)



1. A portable apparatus for the purification of an inert atmosphere enclosed in a gas tight container by the removal of oxygen and water vapor by reaction with a liquid metal reagent comprising; a unitary assembly of three movable and separable units including, a purification chamber having orifices for the escape of the purified gas and containing the reagent in the form of a bath, a magnetic agitator for stirring the reagent bath, and a suction extractor feeding the atmosphere to be purified into the purification chamber, said purification chamber including an inlet for said reagent.

3,403,006
REINFORCED CAPILLARY STRUCTURE

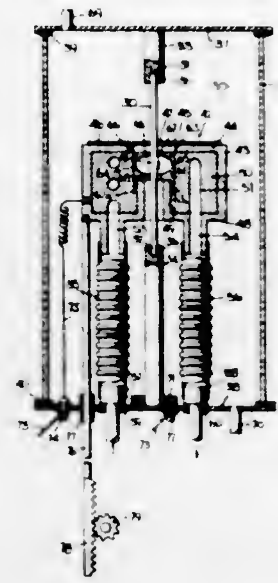
Paul A. Hersch, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed June 30, 1965, Ser. No. 468,267
7 Claims. (Cl. 23—292)



1. A reinforced capillary structure comprising:
at least one capillary tube embedded in a body of metal having two ends with the ends of said tube opening at the ends of said body;
said metal having a melting point below the temperature at which said capillary tube substantially deforms; and
said metal having the property of expanding upon solidification.

3,403,007
HOLLOW CATHODE FLOATING ZONE MELTER AND PROCESS

Irwin Drangel, Yonkers, Patrick J. McMahon, New Rochelle, and Walter Class, Yonkers, N.Y., assignors to Materials Research Corporation, Orangeburg, N.Y., a corporation of New York
Filed Apr. 20, 1966, Ser. No. 543,830
14 Claims. (Cl. 23—301)



Zone refining a body of crystalline material is carried out by positioning said body in a plasma region of a hollow cathode discharge tube having an anode independent of the material, and a plurality of spaced cathodes defining a hollow space whereupon an impressed high potential establishes a high temperature plasma producing a molten zone in said material which zone is moved in an axial direction along said material.

3,403,008
PROCESS FOR PRODUCING METAL CARBIDE FIBERS, TEXTILES AND SHAPES

Bernard H. Hamling, Warwick, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Continuation-in-part of applications Ser. No. 451,326, Apr. 27, 1965, Ser. No. 522,380, Jan. 24, 1966, Ser. No. 523,549, Jan. 28, 1966, and Ser. No. 576,840, Sept. 2, 1966. This application Dec. 19, 1966, Ser. No. 602,571
8 Claims. (Cl. 23—344)

There is disclosed a process for producing metal carbide fibers, textiles, and shaped articles. The process involves the steps of:

(a) Impregnating a preformed organic polymeric material with a solution of a metal compound,

(b) Heating the impregnated material to evolve volatile decomposition products and to leave a carbonaceous relic containing the metal in finely dispersed form, and

(c) Further heating the relic to 1000°-2000° C. in a non-oxidizing atmosphere to form the metal carbide. Boron carbide and silicon carbide yarns produced by this process are attractive for high temperature structural applications.

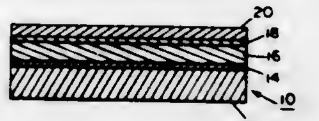
3,403,009
REFRACTORY METAL STRUCTURES

Theodore R. Bergstrom, Little Canada, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 388,614, Aug. 10, 1964. This application June 9, 1967, Ser. No. 644,820
6 Claims. (Cl. 29—182.7)

Articles made by sintering powdered refractory metals preformed into a desired shape with the aid of a film-forming, essentially non-volatile organic binder polymer which thermally degrades on heating to form carbon, sufficient amounts of said binder being present to coat the powder particles and to leave about 0.04 to 0.8 percent of carbon in the metal after firing. An unworked, sintered refractory metal article is thus formed, which has improved ductility and/or fine grain size. The fine grain size is retained even after the article has been reheated to say 2000° C.

3,403,010
MULTILAYER BEARING HAVING A BASE OF STEEL AND A SURFACE LAYER OF A LEAD ALLOY

Robert J. MacDonald, Moreland Hills, and James F. Ward, Cleveland, Ohio, assignors to Clevite Corporation, a corporation of Ohio
Filed Feb. 14, 1966, Ser. No. 527,130
8 Claims. (Cl. 29—183.5)



A multilayer bearing comprising a steel backing member bonded to a surface layer of lead alloy containing tin and copper through means of intermediate layers. One of the intermediate layers is composed of silver or copper and a minor amount of lead oxide or silicon oxide.

3,403,011

MIDDLE DISTILLATE FUEL COMPOSITION

William M. Sweeney, Wappingers Falls, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 20, 1967, Ser. No. 647,342
8 Claims. (Cl. 44—62)

There is disclosed a novel middle distillate mineral oil composition having a reduced pour point and improved rust-inhibiting properties due to the incorporation in the oil of a minor amount of an additive obtained by reacting an ethylene-propylene-terpolymer with maleic anhydride.

3,403,012

GASOLINE ADDITIVE

Ernest Mueller, New York, N.Y., assignor to Kimco, Inc., Miami, Fla., a corporation of Florida

No Drawing. Filed Sept. 11, 1967, Ser. No. 666,961
9 Claims. (Cl. 44—64)

Diphenyldiazo-bis-naphthylamine sulfonate as an additive for a hydrocarbon fuel of the gasoline boiling range. The additive is present in the fuel in amounts of about 2.9×10^{-4} to 4.3×10^{-3} percent based on the total volume.

3,403,013

METHOD OF OPERATING AN INTERNAL COMBUSTION ENGINE AND MOTOR FUEL THEREFOR

George W. Eckert, Wappingers Falls, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 11, 1967, Ser. No. 629,897
12 Claims. (Cl. 44—71)

There is disclosed a method for operating an internal combustion gasoline engine and a novel motor fuel composition for said process comprising a mixture of hydrocarbons in the gasoline boiling range and a substituted urea.

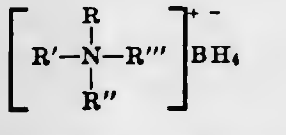
3,403,014

MOTOR FUEL COMPOSITION

Ronald W. Von Allmen, Hopewell Junction, and Stanley R. Newman, Fishkill, N.Y. (both % Texaco Inc., P.O. Box 509, Beacon, N.Y. 12508)

No Drawing. Filed Nov. 5, 1965, Ser. No. 506,575
5 Claims. (Cl. 44—72)

1. A motor fuel composition comprising a mixture of hyprocarbons in the gasoline boiling range and containing 0.001 to 0.1 weight percent of a quaternary ammonium borohydride having the formula:



$$\left[\begin{array}{c} R \\ | \\ R'-N-R''' \\ | \\ R'' \end{array}\right]^{+} \overset{-}{BH_4}$$

in which R, R′, R″ and R‴ are hydrogen or a hydrocarbyl radical having from 1 to 24 carbon atoms and the sum of the carbon atoms in R, R′, R″ and R‴ is at least 18.

3,403,015

METHOD OF TREATING GLASSWARE

Everett F. Grubb, Friedrich W. Hammer, and Joseph R. Monks, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed May 25, 1965, Ser. No. 458,780
8 Claims. (Cl. 65—29)

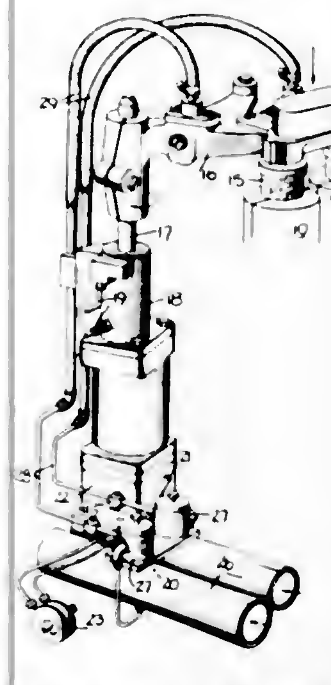
A method for determining the extent to which a transparent metallic oxide coating has been applied to a sodium-containing glass surface comprising exposing the glass surface to a lithium containing bath at temperatures below about 400° C. and thereby producing a pattern on that portion of the glass surface which has not been provided with a metallic oxide coating.

3,403,016

GLASSWARE FORMING APPARATUS WITH BLOW HEAD CONTROL

Wendell Stout Smith, Connellsville, Pa., assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware

Filed Apr. 15, 1965, Ser. No. 448,501
4 Claims. (Cl. 65—261)



1. In a glass making machine for forming blown glass articles and having a blow mold with a plurality of blowing cavities and having a plurality of individual blowheads and means for moving a blowhead into registry with each mold cavity and having means for delivering a glass parison to each cavity in the blow mold for being blown into a glass article the improvement which comprises, a plurality of separate sources of gas under pressure, separate conduits connecting each of said blowheads with a separate one of said sources of gas, a cutoff valve in each of said conduits for stopping and starting a puff of blowing gas in the connected blowing cavity, a cut-off valve operating means including an individual timer for each of said cut-off valves whereby the duration of the blowing puff for the parison in each cavity is individually controlled, and a separate pressure regulator and gas volume flow control valve in each of said conduits for individually controlling the gas pressure and gas flow for the blowing puff for the parison in each cavity.

3,403,017

HERBICIDAL COMPOSITION AND METHOD COMPRISING 1 - (TETRAHYDRODICYCLOPENTADIENYL)-3,3-DIMETHYL UREA AND A SALT OF METHYL ARSONIC ACID

James W. Rawson, Tarleton, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Sept. 23, 1965, Ser. No. 489,721
4 Claims. (Cl. 71—97)

Weeds in cotton fields are inhibited in growth by applying a mixture of 1-(tetrahydrodicyclopentadienyl)-3,3-dimethyl urea and a salt of methyl arsonic acid in the ratio of 1:3 to 1:1 to the weeds at a rate of 1 to 6 pounds of said mixture per acre.

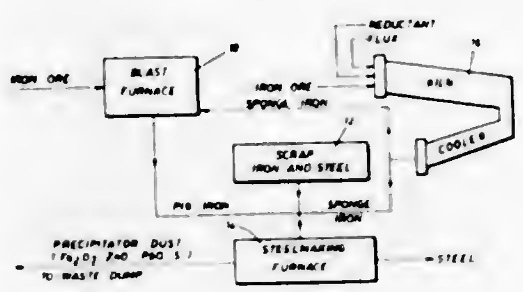
3,403,018

METHOD OF TREATING PRECIPITATOR DUST

Gene Gee Wing Thom, Hamilton, Ontario, Canada, assignor to The Steel Company of Canada, Limited, Hamilton, Ontario, Canada, a Canadian company

Filed Aug. 31, 1965, Ser. No. 483,919
11 Claims. (Cl. 75—25)

Sponge iron is produced from precipitator dust from steel furnaces, which dust contains iron oxide and zinc and lead values, by pelletizing the dust and heating the pellets in a reducing atmosphere in the presence of particulate carbonaceous material and flux at a temperature sufficiently high to reduce the iron oxide to sponge iron and to vaporize the zinc and lead values.



3,403,019

PHOTOCONDUCTIVE ELECTROSTATIC ELEMENTS CONTAINING POLYURETHANES IN THE PHOTOCONDUCTIVE LAYER

Frederick A. Stahly and Richard A. Weltzel, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 15, 1965, Ser. No. 432,830
5 Claims. (Cl. 96—1.5)

The adhesion of photoconductive compositions to conducting substrates in electrophotographic elements is improved by incorporating a small amount of a polyurethane containing reactive isocyanate end groups in the photoconductive composition.

3,403,020

LEACHING OF COPPER FROM ORES WITH CYANIDE AND RECOVERY OF COPPER FROM CYANIDE SOLUTIONS

George William Lower, Bethel, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 14, 1964, Ser. No. 418,324
13 Claims. (Cl. 75—106)

Copper is recovered from ores and ore fractions containing cuprous and cupric sulfides, oxides, carbonates and other copper bearing minerals by leaching with an alkaline solution containing 3 to 4.5 moles of cyanide per mole of extractable copper, which reduces divalent copper to monovalent copper, and solubilizes the copper as cuprocyanide. Air need not be excluded. The major proportion of cyanide is recycled, by separating the copper in solution from residues, acidifying the solution to below about pH 5 in the presence of sulfide plus thiocyanate plus ferrocyanide ions, to precipitate the copper and free HCN, and stripping the HCN from the slurry by steam, or other gas without filtering the slurry, and recovering and recycling the cyanide.

Alternatively, the leached solution can be acidified, without separating the leached solids, to precipitate copper in readily froth floatible form, stripping HCN from the slurry, for recovering and recycling; the copper is then froth floated from the ore, the copper being in readily separable form.

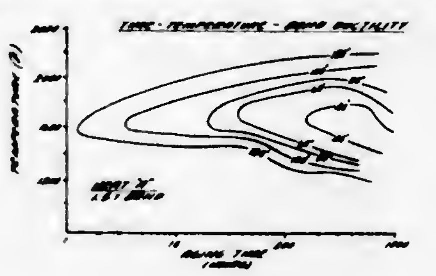
3,403,021

COBALT BASE ALLOY

Stanley T. Wlodek, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

Filed Aug. 31, 1964, Ser. No. 393,328
4 Claims. (Cl. 75—171)

1. An improved cobalt base alloy consisting essentially of, by weight, the elements Cr, W and Ni in a total amount of 42–48%; elements selected from the group consisting of Si and Zr being present only in amounts such that the Si when included is no more than 0.5% and the Zr when included is of no more than 0.2%; 0.05–0.15% C; 2–5% Fe; about 1–2% Mn; with the balance cobalt.

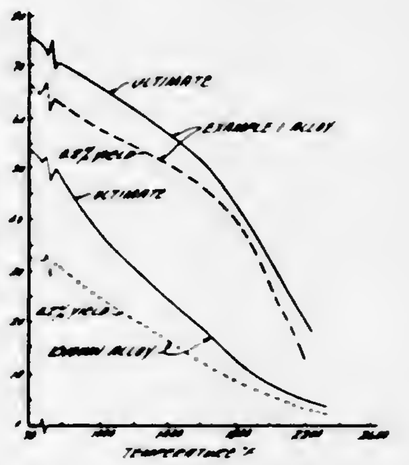


3,403,022

CHROMIUM BASE ALLOY

Winston H. Chang, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

Filed Oct. 14, 1965, Ser. No. 495,998
2 Claims. (Cl. 75—176)



1. A chromium base alloy of improved strength consisting essentially of, by weight, 0.5–1.5% Cb; 0.05–0.15% C; 0.05–0.2% Y; 0.05–0.2% Th; up to about 0.2% Zr; with the balance chromium and incidental impurities.

ERRATUM

For Class 96—1.5 see:
Patent No. 3,403,019

3,403,023

DYE SENSITIZATION OF ZINC OXIDE PHOTOCONDUCTORS

Hugh R. Carrington, Binghamton, and Frank M. Gaesser, Jr., Endicott, N.Y., assignors to GAF Corporation, a corporation of Delaware

No Drawing. Filed May 14, 1965, Ser. No. 455,971
12 Claims. (Cl. 96—1.7)

Sensitization of photoconductive zinc oxide by the utilization of dye blends having dye components capable of absorbing for each of the primary colors, and including components designed to overcome the tendency of the background to yellow.

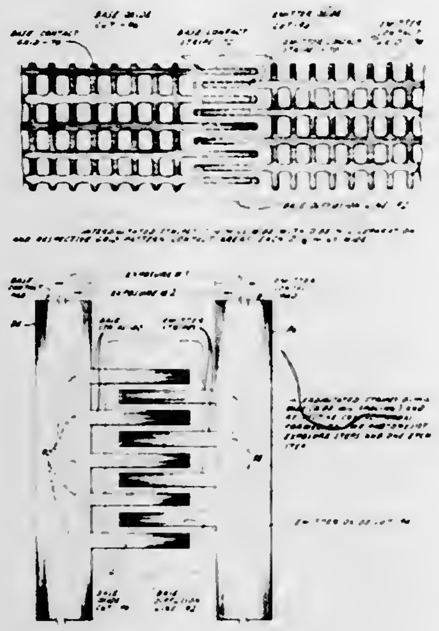
3,403,024

PHOTOLITHOGRAPHIC ETCHING OF EXTREMELY DETAILED PATTERNS

Robert L. Luce, North Wales, Pa., assignor to Philco-Ford Corporation, a corporation of Delaware

Filed Mar. 22, 1965, Ser. No. 441,690
13 Claims. (Cl. 96—36)

Photolithographic etching of extremely detailed patterns using positive photoresist and contact photomask having opaque areas of uniform dimensions to produce uniform swelling to avoid loss of contact of any opaque area. Either single photomask, with detailed portions of opaque areas formed of isolated lines and large opaque areas formed of gridwork of lines; or two photomasks, with detailed opaque areas in first mask and large opaque areas in second mask, may be used.



3,403,025

DESENSITIZATION OF SILVER HALIDES TO VISIBLE RADIATION WITH THIURAM DISULFIDES

William W. Rees and William H. Russell, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 25, 1965, Ser. No. 482,632

20 Claims. (Cl. 96—101)

The photographic sensitivity of silver halides to visible radiation with a combination of a thiuram disulfide silver halide desensitizer and a piazine is disclosed. X-ray sensitive materials employing such silver halides exhibit improved room-light handling characteristics.

3,403,026

PHOTOGRAPHIC SILVER HALIDE EMULSIONS CONTAINING N,α-ALKYLENE BRIDGED MEROCYANINE SENSITIZING DYES

Gene L. Oliver, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,661

7 Claims. (Cl. 96—105)

Novel merocyanine dyes containing an N,α-alkylene bridge, useful as spectral sensitizers for photographic silver halide emulsions, are obtained by reacting a pyrroloindolium or benzopyrroloindolium cyclammonium salt, such as 1-anilinomethylene-9,9-dimethyl-2,3-dihydro-1H, 9H-pyrrolo[1,2-a]indolium bromide, for example, with a 5- or 6-membered heterocyclic ketone, such as 3-ethylrhodanine, 3-methyl-1-phenyl-2-pyrazolin-5-one or 1-ethyl-2-thiobarbituric acid, for example. 5-(9,9-dimethyl-2,3-dihydro 9H-pyrrolo[1,2-a]-indol-1-ylmethylene-3-ethylrhodanine and 5-(9,9-dimethyl-2,3-dihydro-9H-pyrrolo[1,2-a]-indol-1-ylmethylene-1-ethyl-2-thiobarbituric acid, for example, are illustrative of the merocyanine dye compounds.

3,403,027

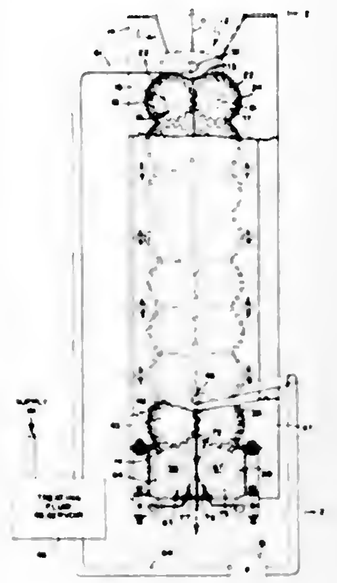
METHOD FOR PROCESSING PROTEIN FIBERS

John A. Page, Minneapolis, and Walter G. Bauer, Hopkins, Minn., assignors to General Mills, Inc., a corporation of Delaware

Filed May 6, 1965, Ser. No. 453,695

10 Claims. (Cl. 99—17)

1. A process for impregnating a tow of fibrous protein material tow with a treating fluid which comprises the steps of combining a continuous tow of said material with said fluid, conveying the tow in a first direction, kneading the tow and fluid for a period of time sufficient to impregnate said tow with said fluid by passing said tow between relatively moving surfaces which exert mechanical pressure on said tow, pumping said fluid in a direction counter to the direction of movement of said tow during said conveying and kneading steps, separating said tow from said fluid and then discharging the fluid impregnated tow.



3,403,028

SOLUBLE SOLID PARTICULATE COMPOSITION FOR STABILIZED CHOCOLATE DRINK AND MAKING OF SAME

Dimitri J. Stancloff, Camden, and David L. Cassens, Rockland, Maine, assignors to Marine Colloids, Inc., Springfield, N.J., a corporation of Delaware

No Drawing. Filed Jan. 6, 1966, Ser. No. 518,992

7 Claims. (Cl. 99—26)

1. A method of making a solid particulate composition that is readily dispersible in an aqueous liquid to provide a chocolate-flavored beverage, which method comprises providing a concentrated fluid sugar syrup contained dissolved carrageenan dispersed therein, and working into said syrup additional material which includes additional sugar and which is sufficient in quantity to convert said fluid syrup into a friable particulate solid containing said carrageenan in the dissolved state, and adding cocoa so as to be commingled with said friable particulate solid, said carrageenan being dissolved in said syrup in the presence of at least about four times its weight of dissolved sugar prior to the addition of said cocoa.

3,403,029

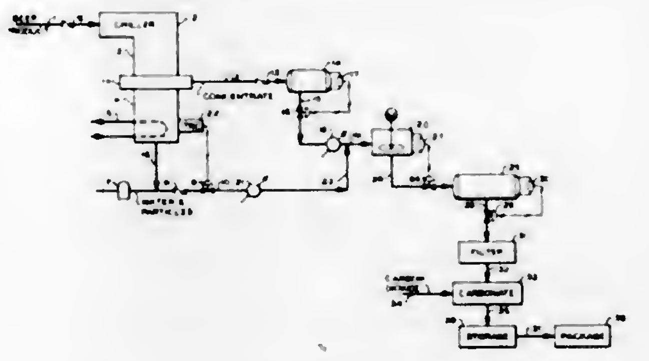
RECONSTITUTED BEER PROCESS USING FRACTIONAL CRYSTALLIZATION

Emil A. Malick, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 6, 1964, Ser. No. 409,424

3 Claims. (Cl. 99—31)

Reconstituted beer is formed by fractionally crystallizing a beer product to form a concentrate containing some precipitate and a separate precipitate containing fraction, holding at least the concentrate at the temperature of the fractional crystallization process to allow additional precipitation to take place, heating at least the concentrate to allow redissolving of flavor bodies and the like from the precipitate, combining the heated concentrate and separate precipitate containing fraction, and separating precipitate from the combination.



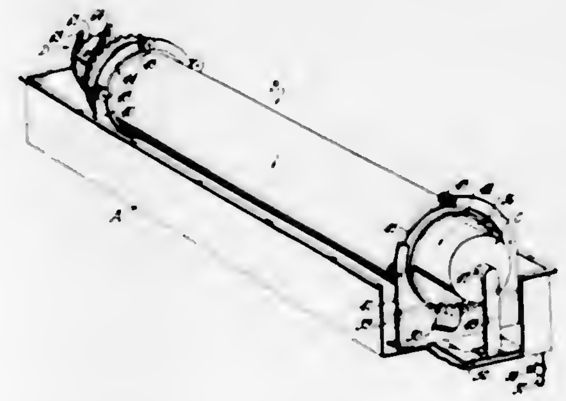
3,403,030

METHOD FOR PROCESSING CHEESE CURD INTO PLASTICIZED CHEESE OF THE MOZZARELLA TYPE

Nicholas E. Pontecorvo, Tarzana, and Wilfred A. Shaffer, Los Angeles, Calif., assignors, by mesne assignments, to Nicholas E. Pontecorvo, Tarzana, Calif.

Filed Sept. 24, 1965, Ser. No. 489,833

16 Claims. (Cl. 99—116)



1. Steps in the processing of cheese curd into plasticized cheese, comprising: feeding cheese curd in a continuous stream through a restricted pass defined between a spaced kneading surface and an opposed supporting surface; causing said kneading surface to penetrate said curd stream with a kneading action while moving with said stream; releasing said curd from said kneading action so as to effect breathing action of the curd by elastic expansion; and adding water to the expanding curd so as to effect absorption of moisture into the curd by said breathing action.

3,403,031

HOMEMADE ICE CREAM PREPARATION

Allie B. Holmes, Box 698, Mathis, Tex. 78368

No Drawing. Filed Dec. 29, 1965, Ser. No. 517,452

3 Claims. (Cl. 99—136)

Process for making homemade ice cream by mixing ice cream ingredients and, without soft freezing, hard freezing into storage blocks and thereafter confinably crushing and pressure churning the storage blocks.

3,403,032

PURE CULTURE FERMENTATION PROCESS FOR PICKLED CUCUMBERS

John L. Etchells and Thomas A. Bell, Raleigh, N.C., and Ralph N. Costilow, Okemos, Mich., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Continuation of application Ser. No. 493,936, Oct. 7, 1965, which is a continuation-in-part of application Ser. No. 324,898, Nov. 19, 1963. This application Oct. 4, 1967, Ser. No. 672,722

10 Claims. (Cl. 99—156)

A process for pickling cucumbers to produce a firm-textured, essentially acetic-acid free, fermented cucumber material containing lactic acid. The process involves heat-shocking cucumbers to destroy asporogenous microorganism on the surface of the cucumbers as well as to inactivate deleterious heat-labile enzyme systems of plant or microbial origin, packing the heat-shocked cucumbers in aseptic containers and covering them with brine of a strength to give an equilibrated salt concentration of about 1.6% to 10% by weight, inoculating the containers with a selected species of pure culture lactic acid fermentation-inducing micro-organisms, sealing the containers, and incubating them at a temperature favorable for growth of the introduced pure culture microorganisms until the fermentation has progressed to completion.

3,403,033

METHOD OF PACKAGING ARTICLES

Arthur J. Griner, Wyckoff, N.J., assignor to National Biscuit Company, New York, N.Y., a corporation of New Jersey

Continuation of application Ser. No. 310,532, Sept. 19, 1952. This application June 21, 1966, Ser. No. 559,242

17 Claims. (Cl. 99—171)

Packaging articles by continuously advancing a closed column of articles, dividing the advancing column into spaced units and progressively applying a completely sealed wrapper about each article as it continues to move in open column formation.

3,403,034

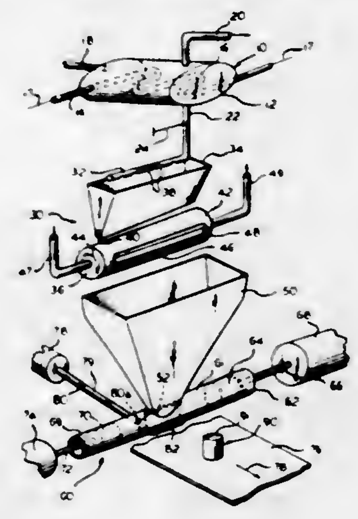
METHOD OF PROCESSING AND PACKAGING MILK

Ralph P. Ogden, Hammond, Ind. (19 Bender St., Park Forest, Ill. 60466), and William P. Lawson, 7522 Walnut St., Hammond, Ind. 46324

Continuation-in-part of application Ser. No. 507,623, Oct. 22, 1965, which is a continuation-in-part of application Ser. No. 167,694, Jan. 22, 1962. This application Jan. 9, 1967, Ser. No. 608,122

The portion of the term of the patent subsequent to Jan. 10, 1984, has been disclaimed

2 Claims. (Cl. 99—200)



The disclosure pertains to a method of processing and packaging milk which involves partially concentrating the milk, flash freezing said milk to form a film of solid concentrate, fragmenting the frozen film, compacting the solid concentrate fragments into cakes, and packaging one or more of the cakes in a container.

3,403,035

PROCESS FOR STABILIZING AUTOCATALYTIC METAL PLATING SOLUTIONS

Frederick W. Schneble, Jr., Oyster Bay, Rudolph J. Zeblisky, Hauppague, John F. McCormack, Roslyn Heights, and John Duff Williamson, Miller Place, N.Y., assignors to Process Research Company, Glen Cove, N.Y., a partnership of New York

No Drawing. Filed June 24, 1964, Ser. No. 377,471

11 Claims. (Cl. 106—1)

1. A process for increasing the useful life of autocatalytic metal plating solution used to electrolessly deposit metal onto catalytic surfaces, in which the solution comprises water, a metal ion selected from the group consisting of cobalt, nickel and tin, a complexing agent and a reducing agent for said ion, said process comprising maintaining in said solution a small effective amount of a water-soluble cyanide compound in a concentration of 5 micrograms to 500 milligrams per liter.

3,403,036

POLYMERS AND COATINGS RENDERED FLAME RETARDANT BY THE ADDITION OF HALOGENATED-CYCLOPENTADIENE ADDUCTS

Raymond R. Hindersinn, Lewiston, N.Y., and John F. Porter, Durham, N.C., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 390,220, Aug. 17, 1964. This application Mar. 24, 1967, Ser. No. 625,594

24 Claims. (Cl. 106—18)

Polymeric materials and coatings are rendered fire retardant by incorporating therein a Diels-Alder adduct of a halogenated cyclopentadiene and a polyunsaturated cycloaliphatic compound. Typical compounds include the adducts of hexachlorocyclopentadiene with 1,5-cyclooctadiene, dicyclopentadiene, cyclopentadiene, and the like. The fire retardance of the compositions can be further enhanced by the incorporation therein of a metallic compound, particularly a compound of antimony, arsenic or bismuth. A preferred metallic compound is antimony oxide.

3,403,037

FOUNDRY CORE AND MOLDING SAND COMPOSITION

Jack C. Cowan, Augustus Earl Beasley, Jr., and Hugh G. Gainey, Houston, Tex., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 19, 1966, Ser. No. 521,511

9 Claims. (Cl. 106—38.6)

The invention provides a novel molding and core sand composition for the casting of metals, comprising sand as a major ingredient, and a binder for the sand consisting of a long-chain alkyl ammonium lignosulfonate in an organic liquid such as diesel oil, higher aliphatic alcohols, and the like, with an optional inclusion of organophilic montmorillonite or organophilic attapulgite or mixtures thereof. The inventive sand mixtures give high green strengths and good baked core strengths, so that they are useful both as molds and as cores.

3,403,038

ASBESTOS-PHOSPHORIC ACID MOLDING COMPOSITION

Visvaldis Abolins, Pittsfield, Mass., and Robert M. Lukes, Louisville, Ky., assignors to General Electric Company, a corporation of New York

Filed Jan. 12, 1966, Ser. No. 520,259

2 Claims. (Cl. 106—63)

Preparation of a thermosetting molding composition by first gently mixing phosphoric acid with diatomaceous earth material to provide a dry, free-flowing acid containing powder, and then gently dry blending this powder with asbestos fibers.

3,403,039

BETA-KETOETHYL ONIUM SALTS AS GELATIN HARDENERS

Burton D. Wilson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application June 29, 1964, Ser. No. 378,949, now Patent No. 3,345,177, dated Oct. 3, 1967. Divided and this application Aug. 9, 1967, Ser. No. 659,316

10 Claims. (Cl. 106—125)

Gelatin coating compositions containing a hardening amount of a beta-ketoethyl onium salt, such as 3,8-decanedione-1,10-bis-(pyridinium perchlorate), 3,8-decanedione - 1,10 - bis(triphenylphosphonium perchlorate) and 3-pentanone-1,5-bis(pyridinium perchlorate), for example.

3,403,040

COATING COMPOSITION ADAPTED FOR OVERCOATING A WAX SURFACE

Lloyd I. Osipow, New York, N.Y., and Dorothea C. Marra, Summit, N.J., assignors to Fannie Roberts Heyman

No Drawing. Filed July 6, 1964, Ser. No. 380,629

10 Claims. (Cl. 106—173)

6. A coating composition adapted for the overcoating of a wax surface which consists essentially of a solution of about 1%, by weight, to about 10%, by weight, of ethyl cellulose, and a resin selected from the group consisting of copal gum, shellac, wood rosin, hydrogenated rosin, alkyd resins, coumarone resins and phenolic resins in an organic solvent mixture of ethanol and a volatile, completely halogenated fluoro-chloro hydrocarbon which is a liquid at 25° C. when under atmospheric pressure.

3,403,041

ALUMINO-SILICATE PIGMENT AND METHOD OF MAKING SAME

Sanford C. Lyons, Bennington, Vt., and John H. Chapman, Jeffersonville, Ga., assignors to Georgia Kaolin Company, Elizabeth, N.J., a corporation of New Jersey

Filed Oct. 22, 1965, Ser. No. 501,207

2 Claims. (Cl. 106—288)

An alumino-silicate pigment is prepared by (a) delaminating washed coarse kaolin and recovering the delaminated fraction up to 10 microns (E.S.D.), (b) mixing an aqueous slurry of the delaminated fraction with an aqueous slurry of aluminum hydrate in the proportion of about 10 to 1, dry weights and in the absence of any dispersing agent, (c) drying the blend and heating to about 800° C., and (d) cooling and pulverizing the mass.

3,403,042

PROCESS OF COATING ELECTRICALLY NONCONDUCTING FILMS WITH AN ORGANIC HEAT-SEALABLE POLYMER COATING CONTAINING AN ETHANOLAMINE SALT AND THE COATED FILM

Brian Douglas Stead, St. Albans, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Apr. 23, 1965, Ser. No. 450,524

Claims priority, application Great Britain, Apr. 12, 1965, 18,640/65

15 Claims. (Cl. 117—7)

An electrically non-conducting film coated with an organic thermoplastic heat-sealable homopolymer or copolymer of a monoethylenically unsaturated monomer, the coating containing an ethanolamine salt of a fatty alcohol sulphate present in sufficient amount whereby the surface resistivity of the coated film is no greater than 1×10^{14} ohm cm./cm. The film may be, for example, polypropylene or polyethylene terephthalate and the polymer may be a copolymer of vinylidene chloride and acrylonitrile. The salt may be, for example, a mono-, di- or tri-ethanolamine salt of a sulphuric acid ester of an alkanol containing from 8–22 carbon atoms.

3,403,043

CERAMIC-METAL SEALS

Stewart Philip Thompson, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 23, 1965, Ser. No. 444,100

Claims priority, application Great Britain, Apr. 14, 1964, 15,340/64

8 Claims. (Cl. 117—22)

A fired metallic coating on cereamic material includes a mixture of metal oxides, having distinct melting temperatures below that of the ceramic, and a metallising powder. The mixture does not chemically react with the ceramic and permits brazing of metal articles thereto with a hermetic seal therebetween and without melting the coating.

3,403,044

PROCESS FOR FLAMEPROOFING CELLULOSIC MATERIAL

Leon H. Chance, New Orleans, and George L. Drake, Jr., and Wilson A. Reeves, Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Mar. 26, 1965, Ser. No. 443,113

6 Claims. (Cl. 117—62.2)

Flame retardant cotton fabric, durable to laundering, was prepared by treatment with aqueous precondensates of tetrakis(hydroxymethyl)phosphonium chloride (THPC) and phosphoroxytriamide (PTA) or dimethylamidophosphoroxydiamide (DPDA) in mole ratios of THPC to PTA or DPDA of 0.5:1 to 6:1.

3,403,045

COATED RELEASE PAPER

Richard C. Erickson and Robert C. Williams, Richmond, Va., assignors to Albemarle Paper Company, Richmond, Va., a corporation of Virginia

No Drawing. Continuation-in-part of application Ser. No. 286,453, June 10, 1963. This application Mar. 3, 1967, Ser. No. 620,252

7 Claims. (Cl. 117—68)

This invention is concerned with the provision of paper sheets having markedly enhanced release properties by virtue of having a highly effective lamellar coating affixed thereto, said coating consisting of a silicone polymer coating which is carried by a polyethylene or other comparable plastic undercoating.

3,403,046

METHOD OF FORMING A WATER VAPOR PERMEABLE FILM AND COATING ON A SUBSTRATE

Frederick H. Schwacke, Jr., Farmingdale, and Charles Giannone, Brooklyn, N.Y., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Oct. 8, 1965, Ser. No. 494,250

8 Claims. (Cl. 117—102)

1. A method of forming a tough water vapor permeable film which comprises

(1) casting onto a support a coating comprising a thermoplastic elastomeric polyurethane dissolved in a volatile solvent, having a solidification point between 20 and 150° F.

(2) cooling the coating until said coating solidifies and

(3) then removing the solvent by sublimation at reduced pressure.

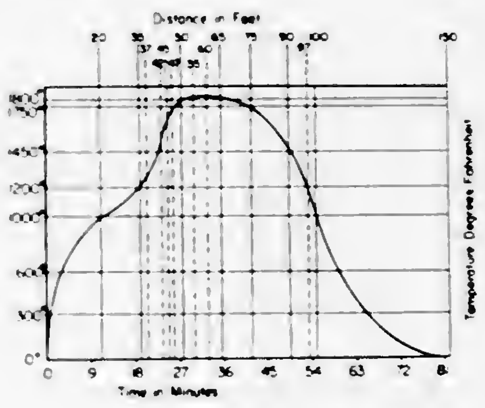
3,403,047

PROCESS OF MANUFACTURING CERAMIC ARTICLES AND TO THE PRODUCTS OF SUCH PROCESS

Howard B. Cummings and Ralph Gibson, New Castle, Pa., assignors, by mesne assignments, to Interpace Corporation, Parsippany, N.J., a corporation of Delaware

Continuation-in-part of application Ser. No. 231,714, Oct. 19, 1962. This application Nov. 23, 1965, Ser. No. 509,331

22 Claims. (Cl. 117—125)



1. A process of manufacturing articles within the category of chinaware, including the steps of preparing a mixture of components including quartz as ingredients introduced into the body and an ingredient for interaction with the quartz to reduce the amount of phase change of the quartz during heating and cooling, the ingredients including a silicate flux and a nonsilicate flux, where the sum of said introduced silicate and nonsilicate fluxes is a very small proportion of the total weight of the ingredients making up the body for the bisque firing, and forming a body from that mixture in order that the bisque body after bisque firing will have above normal thermal expansion during glost fire and contraction after attaining glaze maturing temperature; bisque firing the formed body; applying to the bisque fired body glaze components which will impart thermal expansion to the glaze during glost firing and contraction after heating at maturing temperature in the range of the thermal expansion and contraction of the bisque body during and after such firing; and fast firing

the bisque body with the glaze components applied thereto to maturing temperature and thereafter cooling the body and the matured applied glaze components.

3,403,048
HEAT-SEALABLE, MOISTUREPROOF COATING COMPOSITIONS AND COATED PACKAGING MATERIAL INCORPORATING SAME

James H. Grimm, Milford, N.J., and Francis J. Wieloch, Penfield, N.Y., assignors to Riegel Paper Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 336,885, Jan. 10, 1964. This application May 3, 1967, Ser. No. 635,667

6 Claims. (Cl. 260—3)

The invention is directed to coated packaging materials, including substrates such as glassine, kraft paper, and various films, which have been coated with a new and improved composition for imparting thereto gloss, high resistance to water vapor transmission, heat sealability, hot tack and jaw release. The new compositions generally include 40–75% by weight, highly saturated (iodine number less than 95) cyclicized rubber as a principal film-forming constituent, with the balance made up of 18–65%, by weight, high melting point paraffin wax and 3–65%, by weight, of a copolymer of vinyl acetate and ethylene.

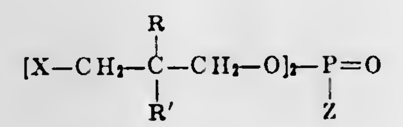
3,403,049
FLAME-RESISTANT ORGANIC MATERIAL

Sammy Carpenter, New City, N.Y., and Enrique R. Witt, Corpus Christi, Tex., assignors to Celanese Corporation, a corporation of Delaware

No Drawing. Original application Mar. 5, 1963, Ser. No. 262,833, now Patent No. 3,324,205. Divided and this application Aug. 22, 1966, Ser. No. 596,355

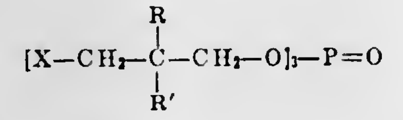
4 Claims. (Cl. 117—136)

A flame-resisting material comprising flammable organic material with a coating of



$$[X{-}CH_2{-}\overset{\overset{\displaystyle R}{|}}{\underset{\underset{\displaystyle R'}{|}}{C}}{-}CH_2{-}O]_2{-}\underset{\underset{\displaystyle Z}{|}}{P}{=}O$$

or



$$[X{-}CH_2{-}\overset{\overset{\displaystyle R}{|}}{\underset{\underset{\displaystyle R'}{|}}{C}}{-}CH_2{-}O]_3{-}P{=}O$$

wherein X is a halogen selected from the group consisting of chlorine and bromine, Z is selected from the group consisting of alkyl and aryl radicals; R and R′ are each selected from the group consisting of saturated and unsaturated aliphatic hydrocarbon radicals having from 1 to 18 carbon atoms, halogenated saturated aliphatic hydrocarbon radicals having from 1 to 18 carbon atoms, aromatic hydrocarbon radicals having up to 10 carbon atoms, and halogenated aromatic hydrocarbon radicals having up to 10 carbon atoms.

3,403,050
WATER REPELLENT COMPOSITIONS FOR POROUS SUBSTRATES

Rajendra N. Chadha, Tecumseh, Mich., assignor to Stauffer Chemical Company

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,715

3 Claims. (Cl. 117—161)

This invention concerns a water repellent comprising the reaction product of an allyl alkoxysilane, a tetraalkoxysilane and water.

3,403,051
SHEATHING COMPOSITION CONTAINING FERROSILICON PARTICLES FOR WELDING ELECTRODES

Klaus Frank, Hans Ebert, and Helmut Klee, Knapsack, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

Continuation-in-part of application Ser. No. 144,113, Oct. 10, 1961. This application Dec. 17, 1963, Ser. No. 331,144

Claims priority, application Germany, Oct. 11, 1960, K 41,859; Aug. 16, 1961, K 44,515

9 Claims. (Cl. 117—206)

1. A welding electrode comprising a core wire, and a sheathing material surrounding and adhered to said core wire, the sheathing material containing as an additive ferrosilicon particles with 40 to 80 percent by weight silicon, in finely divided round form and with a smooth surface, at least 25 percent by weight of the ferrosilicon particles having a grain size of less than 0.06 mm.

3,403,052
METHOD FOR BONDING CONTACTS TO SEMICONDUCTOR OSCILLATOR CRYSTALS

Michael J. Brienza, Vernon, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Sept. 3, 1965, Ser. No. 485,028

6 Claims. (Cl. 117—212)

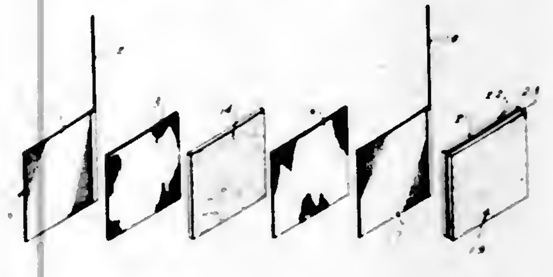
A method of bonding tin contacts on to a gallium arsenide semiconductor crystal which comprises simultaneous deposition of tin through holes in masks which cover opposite sides of said crystal.

3,403,053
ENZYME ACTIVATED BIOCHEMICAL BATTERY

Michael G. Del Duca, Rocky River, Ohio, assignor to TRW Inc., a corporation of Ohio

Filed July 9, 1962, Ser. No. 208,243

4 Claims. (Cl. 136—86)



1. An electrochemical cell comprising a laminated structure including an electrode comprising a porous backing coated with an organic material, a dry layer of enzyme containing material pressed into said organic material, the enzyme being one which is capable of decomposing said organic material to yield a fuel gas for a fuel cell reaction, a first liquid impervious ion exchange membrane sealing off one face of said electrode, a porous pad saturated with an inorganic salt electrolyte solution, a second liquid impervious ion exchange member of a conductivity type opposite to that of said first membrane spaced from said first membrane with said porous pad being confined therebetween, and a non-consumable electrode in face to face contact with said second ion exchange membrane.

3,403,054
FUEL CELL WITH ION-PERMEABLE MEMBRANE

Daniel Wood Puffer, Melrose, Russell Mason Dempsey, South Hamilton, and Arnold Perry Fickett, Lynn, Mass., assignors to General Electric Company, a corporation of New York

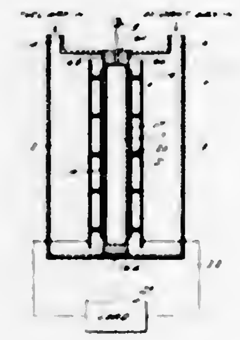
Filed Aug. 18, 1961, Ser. No. 132,462

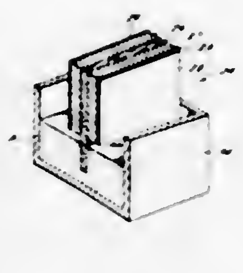
23 Claims. (Cl. 136—86)

1. A fuel cell comprising: a pair of spaced electrodes, a hollow imperforate ion exchange membrane system disposed between and in contact with said electrodes, said ion exchange membrane system defining and enclosing a compartment serving as a container for supernatant humidifying electrolyte, means for introducing said humidifying electrolyte within said compartment, and means for supplying a fuel to one of said electrodes and an oxidant to the other of said electrodes.

3. A fuel cell comprising: a pair of spaced electrodes, a pair of membranes formed of ion exchange resin disposed between and in contact with said electrodes, an absorbent wick material, wettable with a humidifying electrolyte, disposed between and in contact with said ion exchange membranes, and means for supplying a fuel to one of said electrodes and an oxidant to the other of said electrodes.

8. A fuel cell of the character described comprising a pair of spaced porous electrodes; a first ion-permeable membrane in contact with one of said electrodes; a second ion-permeable membrane in contact with the second of said electrodes, said ion-permeable membranes further characterized in that they substantially preclude passage of gas; water between and in intimate contact with each of said ion-permeable membranes; and ion-exchange means traversing said solution and being in intimate contact with said ion-permeable membranes on either side of said water.





19. A fuel cell of the character described comprising a pair of spaced porous electrodes; a first ion-permeable membrane on one side of one of said electrodes; a spaced second ion-permeable membrane on one side of the second of said electrodes, said ion-permeable membranes further characterized in that they substantially preclude passage of gas; and a solution of electrolyte between and in intimate contact with each of said ion-permeable membranes.

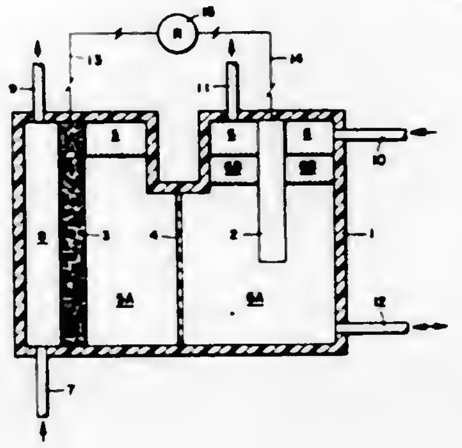
3,403,055
METHOD OF ADDING ORGANIC SURFACE ACTIVE AGENT TO FUEL CELL ELECTROLYTE

Malcolm A. Weiss, Union, Charles H. Worsham, Fanwood, and Hugh H. Horowitz and Manfred J. Prager, Elizabeth, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Continuation-in-part of application Ser. No. 204,135, June 21, 1962. This application Dec. 31, 1964, Ser. No. 422,609

8 Claims. (Cl. 136—86)

1. In a process of anodically oxidizing an immiscible liquid carbonaceous fuel at the anode of a fuel cell while in contact with an aqueous electrolyte, said fuel being immiscible with said electrolyte, the improvement which comprises positioning said anode so as to extend through the resulting fuel-electrolyte interface and introducing about 0.001 wt. percent to 1.0 wt. percent of an organic surface-active agent comprising in combination a lipophilic component and a hydrophilic component into said electrolyte, said organic surface-active agent being selected from the group consisting of anionic and cationic surface-active agents.



3,403,056
METHOD OF OPERATING A FUSED ALKALI CARBONATE FUEL CELL

René Barde, Villeneuve-Saint-Georges, René Buvet, Cachan, Jacques Millet and Jacques Dubois, Paris, Solange Palous, Clamart, and Nicole Busson, Antony, France, assignors to Electricite de France-Service National, Paris, France, a corporation of France

Filed June 24, 1965, Ser. No. 466,694

Claims priority, application France, Oct. 1, 1964, 990,071; Feb. 19, 1965, 6,279 (addition)

3 Claims. (Cl. 136—86)

A method of operating a fuel cell using an electrolyte consisting of at least one fused alkali carbonate into which is placed a pair of electrodes and in which an oxidant is supplied to one electrode and a fuel is supplied to the other electrode, in which there is added to the fused electrolyte from outside the fuel cell at the beginning of the operation thereof a member selected from the group consisting of (1) alkali oxides, (2) alkali hydroxides, (3) a mixture of an alkali oxide and a compound selected from the group consisting of weak acids and alkali salts of weak acids, and (4) water, the member being distributed substantially uniformly throughout the electrolyte and the concentration thereof being maintained at a suitable level throughout the operation of the cell in order to minimize polarization by maintaining the acidity potential of the electrolyte substantially uniform throughout the entire volume thereof.

3,403,057
METHOD OF FORMING A FUEL ELECTRODE CONTAINING A RANEY CATALYST

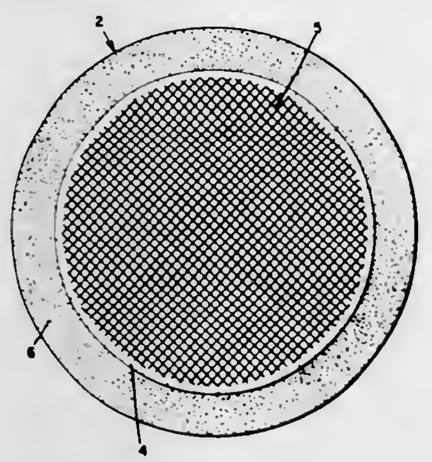
Anthony J. Stankavich, Syracuse, and Thomas E. Geckle, Liverpool, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed May 12, 1965, Ser. No. 455,081

5 Claims. (Cl. 136—120)

1. In the method of forming a fuel electrode for a fuel cell, the steps which consist in spraying a powdered Raney alloy upon a metal base to form at least a mechanical bond with the base, said alloy containing an active

component and an inactive component, compacting at least a portion of the peripheral portion of the coated



base, and leaching the inactive component from the alloy to provide a catalytically active surface upon the base.

3,403,058

PROCESS FOR PREVENTING BLISTERING OF NICKEL METAL CONTAINING DISPERSED REFRACTORY OXIDE PARTICLES

Warren I. Pollock, Brandywine Hundred, Del., assignor, by mesne assignments, to Fansteel Metallurgical Corporation, a corporation of New York

No Drawing. Filed Dec. 2, 1964, Ser. No. 415,449

5 Claims. (Cl. 148—20.3)

Blistering, on high temperature exposure to air, of nickel strengthened with dispersed refractory oxide particles, is prevented by exposing the dispersion-modified nickel at elevated temperature to an atmosphere of humid hydrogen prior to such high temperature exposure to air.

3,403,059

NICKEL BASE ALLOY

James F. Barker, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

No Drawing. Filed June 24, 1965, Ser. No. 466,850

3 Claims. (Cl. 148—32.5)

A wrought Ni-Cr-Co base alloy provides improved strength through a balance of the precipitation hardening elements Al, Ti and Cb and the solution strengthening elements Mo and W. A Cb-rich gamma prime phase preferentially is formed.

3,403,060

WELDABLE HIGH TENSILE STRENGTH STEEL CAPABLE OF GIVING WELD HEAT-AFFECTED ZONE HAVING HIGH TOUGHNESS AND JOINT STRENGTH

Teiji Ito, Makoto Sato, Hajime Nakasugi, and Teluo Umeda, Kitakyushu, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan

Filed June 15, 1965, Ser. No. 464,005

Claims priority, application Japan, June 18, 1964, 39/34,574

5 Claims. (Cl. 148—36)

Weldable high tensile strength steel which when it is welded has a high toughness in the whole heat-affected zone and which produces a welded joint of high joint strength, consisting essentially of C in an amount less than 0.10% by weight, 0.10–0.75% by weight of Si, 1.10–2.50% by weight of Mn, 0.10–1.50% by weight of Cr, 0.20–0.80% by weight of Mo, 0.02–0.15% by weight of V, 0.003–0.20% by weight of Al, the balance being Fe and unavoidable impurities.

3,403,061

PROCESS OF CONDITIONING PARTICULATE MATERIALS FOR USE IN ORGANIC EXPLOSIVES

Louis McDonald, Inyokern, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Feb. 1, 1950, Ser. No. 141,840

6 Claims. (Cl. 149—7)

1. In a process for preparing composite explosive slurries of adequate stability and flow characteristics and suitably high additive concentration, the steps which comprise treating solid pulverulent additives before dispersion in fused organic explosives with at least one organosilicon compound, in the liquid phase, of the formula

$$(R_1R_2R_3R_4)Si$$

where Si represents a silicon atom and where at least one but not more than three of the four substituents on the silicon atom, namely, R_1, R_2, R_3, and R_4, is chosen from the materials of the class consisting of alkyl, aryl, alkoxy and aryloxy groups, and the remainder of the four substituents comprising at least one of said four substituents is chosen from the materials of the class consisting of halide, amino, hydroxy, alkoxy and aryloxy groups, at a temperature between about the temperature of melting ice and a temperature below the destructive thermal decomposition temperature of both the organosilicon starting materials and the pulverulent additive materials, for a period of time between about one-quarter hour and about six hours, said organosilicon compounds being employed in a liquid vehicle chosen from the materials of the class consisting of liquid said organosilicon compounds and liquid organosilicon oxide polymers, said silicon compounds having viscosities not substantially greater than about ten times the viscosity of water, and carbon tetrachloride, removing byproducts and excess materials including solvents from said treated additives, and dispersing said additives in fused organic explosive materials.

3,403,062

PLASTISOL BINDER COMPOSITION FOR ROCKET PROPELLANTS CONTAINING AZIDE AND HYDRAZINE COMPOUNDS

Calvin E. Pannell, Walnut Creek, and Eric D. Lund, Pleasant Hill, Calif., assignors to The Dow Chemical Company, Midland, Mich.

No Drawing. Filed Nov. 30, 1965, Ser. No. 510,714

4 Claims. (Cl. 149—36)

The invention is a plastisol composition comprising a polymeric triaminoguanidinium azide based source material, a high molecular weight hydrophilic polymer containing functional anhydride groups and a liquid organic compound having a carbon to nitrogen ratio of at least one and having at least two

$$-\underset{\displaystyle H}{N}-$$

groups. This plastisol has a reducing character, possesses a higher energy than conventionally employed binders and serves to provide excellent strength and structural characteristics in the fabricated propellant grain.

3,403,063

PROCESS OF CHARGING HEAVY GAS INTO A GAS-FILLED CABLE

James J. Walker, White Plains, N.Y., assignor to Anaconda Wire and Cable Company, a corporation of Delaware

Filed Apr. 22, 1965, Ser. No. 449,936

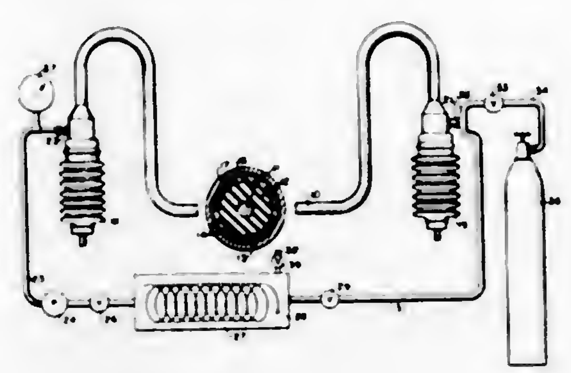
9 Claims. (Cl. 156—48)

1. The process of introducing a heavy gas into a gas-filled cable having a gas permeable wall of insulation and containing relatively light gas under pressure, comprising the steps of:

(A) reducing the gas pressure in said cable to a value slightly above atmospheric pressure,

(B) holding said cable slightly above atmospheric pressure until the pressure within said cable is substantially uniform, both longitudinally and radially,

(C) introducing heavy gas into said cable until the pressure within said cable is substantially greater than atmospheric pressure,



(D) holding said cable at substantially greater than atmospheric pressure until the pressure within said cable is substantially uniform, both longitudinally and radially, and

(E) repeating the foregoing steps until said heavy gas has saturated said wall of insulation.

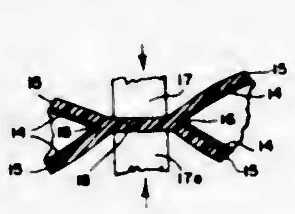
3,403,064

METHOD OF FORMING A COMPOSITE PLASTIC CONTAINER WITH AN INNER AND OUTER SEAL

David Bellamy, Glenview, Ill., assignor to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware

Original application Sept. 12, 1963, Ser. No. 308,528, now Patent No. 3,298,597, dated Jan. 17, 1967. Divided and this application Dec. 14, 1966, Ser. No. 646,762

6 Claims. (Cl. 156—273)



An inner heat sealed plastic container and a thereabout heat sealed outer plastic container for a therapeutic substance are formed from a pair of sheets each of which comprises a first layer for forming the inner container and a second layer for forming the outer container by placing the first layers together and with a die heat softening the layers while applying pressure in the direction of the sheets for pushing the second layers through the first layers.

3,403,065

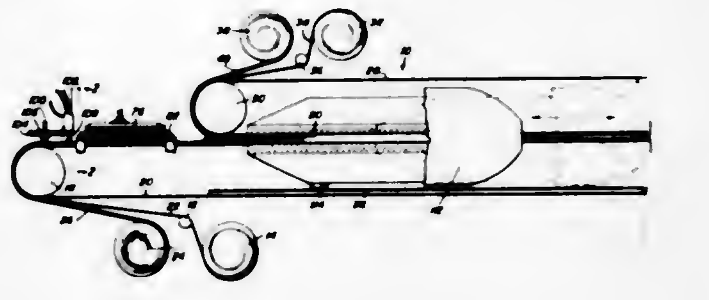
WALLBOARD AND APPARATUS FOR MANUFACTURE THEREOF

William C. G. Van Welderen Rengers and James McColl, Portsmouth, Va., assignors of thirty percent each to Donald L. Mason and Charles Lydon Harrell, Jr., Norfolk, Va.

Filed July 10, 1964, Ser. No. 381,694

5 Claims. (Cl. 156—555)

A wallboard with an insulation core of expanded foam plastic and tubular cells forming a reinforcement for the foam plastic and having an insulation value at least equal to the foam plastic. An apparatus for making wallboard including a conveyor on which a layer of tubular member is placed and foam-type plastic material with facing sheets associated therewith together with a movable press



for moving the laminated wallboard longitudinally at the speed of formation thereof and for heating and pressing the components of the wallboard into final configuration.

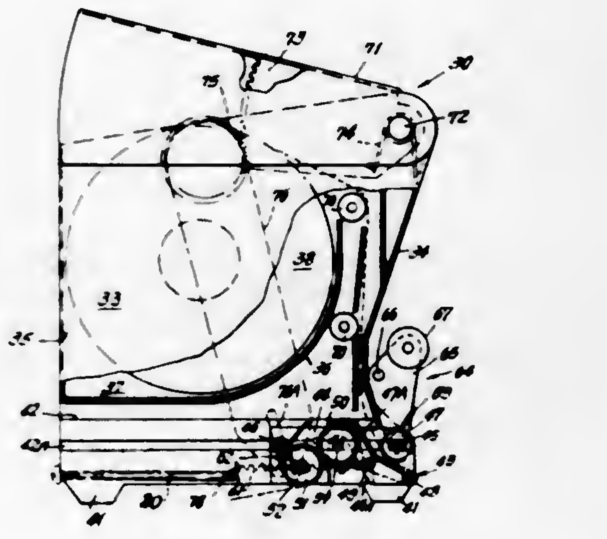
3,403,066

LABEL OR TAPE DISPENSER AND APPLICATOR

Gerald S. Ikelheimer, 333 W. 56th St., New York, N.Y. 10019

Filed July 15, 1964, Ser. No. 382,915

29 Claims. (Cl. 156—577)



A device for dispensing and applying adhesive strips attached to a backing strip wherein the device has a housing containing a supply of the backing strip with adhesive thereon. A carriage is movably mounted in the housing to effect the feeding and supplying of the backing strip. In addition, peeling means is provided on the carriage and the backing strip is threaded past the peeling means to separate the adhesive strips from the backing strip. Further actuating means is provided attached to the housing to move the carriage in one direction relative to the housing to separate the backing strip from the adhesive strips.

3,403,067

AUTOMATIC REPEATING APPARATUS

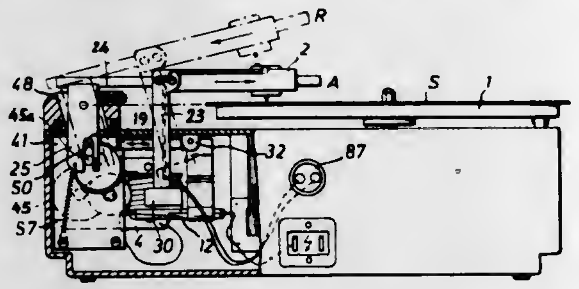
Alois Aregger, St. Niklausen, Lucerne, Switzerland, assignor to Nahma AG, Unteragerl, Zug, Switzerland

Filed Aug. 10, 1965, Ser. No. 479,058

Claims priority, application Switzerland, Aug. 12, 1964, 10,567/64

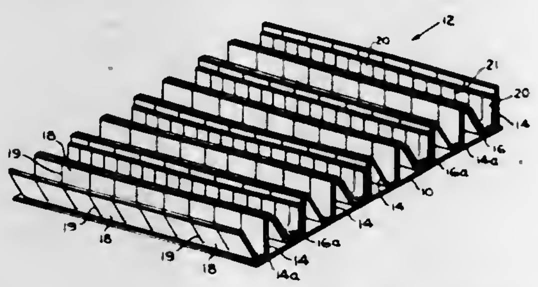
9 Claims. (Cl. 274—15)

A record player is provided with a tone arm carrying a stylus. In a selected position of the tone arm, a switch is actuated to start a motor which raises the tone arm and causes return of the same by gravity to a selected start position so that the same part of the record can be automatically played several times.



3,403,068
MATERIAL ARRANGEMENT FOR USE AS A FLOOR COVERING

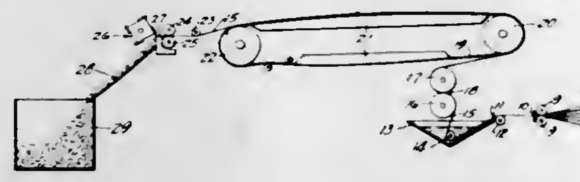
Philipp Ross Yost, 1324 Broadway,
San Francisco, Calif. 94109
Filed June 29, 1964, Ser. No. 378,788
11 Claims. (Cl. 161—130)



This is a fabric material arrangement particularly useful as a floor covering. A three-dimensional color varying effect is achieved by attachment of fabric, preferably of multicolored felt strips to a backing.

3,403,069
RESIN COATED SINGLE FIBERS FOR MOLDING COMPOSITIONS

Burton A. Benson, Richfield, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Continuation-in-part of application Ser. No. 788,461, Jan. 22, 1959. This application Mar. 9, 1966, Ser. No. 551,816
4 Claims. (Cl. 161—170)

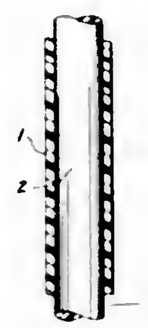


Filament-reinforced molding composition comprising a mass of scattered, discrete, flat, resin-coated, mono-yarn and multi-yarn fiber segments. The fiber segments, which are generally between about ⅛ and 2 inches in length, are formed by arranging continuous yarns in a compact single-layer web, coating the web with a thermosetting organic resin composition, bringing the resin to a tack-free, brittle state, and then chopping the web.

3,403,070
UNORIENTED POLYOLEFIN FILAMENT WITH POLYURETHANE FOAM CORE

John C. Lewis, Jr., Middlebury, Vt., assignor to Polymers, Inc., Middlebury, Vt., a corporation of Vermont
Filed Jan. 31, 1964, Ser. No. 341,704
5 Claims. (Cl. 161—175)

This invention relates to artificial filaments and more specifically to large hollow filaments made from unoriented polyolefin resins filled with a cellular-type foam useful as bristles and mop fibres. The cellular type foam forming the core of the filaments of this invention is a polyurethane foam composition.



3,403,071
LAMINATED PLASTICS AND METHOD OF MAKING SAME

John F. Perry, Maidenhead and Ian Williamson, Flackwell Heath, England, assignors to Formica International Limited, London, England, a British company
No Drawing. Continuation-in-part of application Ser. No. 414,421, Nov. 27, 1964. This application May 2, 1966, Ser. No. 546,541
Claims priority, application Great Britain, Dec. 6, 1963, 48,383/63; May 6, 1965, 19,190/65
14 Claims. (Cl. 161—189)

Phenol- and urea-formaldehyde resin laminates having exceptionally good resistance to weathering are obtained by providing a protective layer of a fluorine-containing polymer, specifically polyvinyl fluoride, which is bonded to the body of the laminate by means of a layer of an aminotriazine-aldehyde resin.

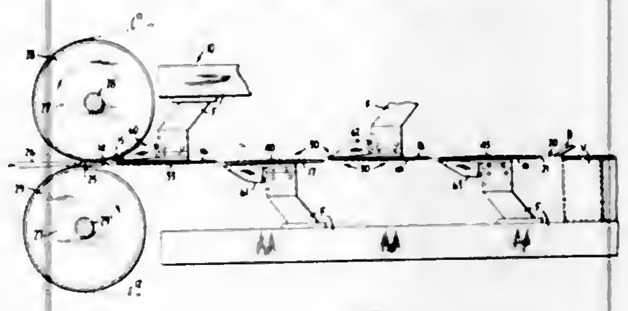
3,403,072
HYDROGENATED DIENE POLYMERS FOR BONDING ETHYLENE COPOLYMER RUBBERS TO A VULCANIZABLE RUBBER BODY

Robert C. Wheat, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Jan. 28, 1963, Ser. No. 254,495
8 Claims. (Cl. 161—253)

1. A laminated structure comprising in order (A) a rubbery polymer comprising ethylene and at least one alpha olefin having the structure $RCH{=}CH_2$, wherein R is a C_1 to C_8 alkyl radical wherein the amount of ethylene in the polymer is at least 20 percent by weight of the total polymer and wherein the polymer is at least 80 percent soluble in toluene at 30° C. and the Shore D hardness is not greater than 20, (B) a partially hydrogenated diene polymer, and (C) a vulcanizable rubbery body.

3,403,073
PAPER-FORMING METHOD AND APPARATUS

James Moran, Norwalk, Conn., assignor to Time, Incorporated, New York, N.Y., a corporation of New York
Filed May 20, 1964, Ser. No. 368,843
6 Claims. (Cl. 162—203)



1. Paper-forming apparatus comprising first and second endless forming wires, training means for training a portion of said first wire along a first reach and for training a portion of said second wire along a second reach, said first reach being opposed and substantially parallel to and closely spaced apart from said second reach and said first and second reaches extending from an upstream region to a downstream region, and drive means for driving successive portions of said first wire along said first reach and for driving successive portions of said second wire along said second reach at substantially the same speed and in substantially the same direction from said upstream region to said downstream region, said portions defining a paper-forming zone wherein water is removed from a paper stock moving with said wires between said reaches to form a paper web of given width, said training means comprising a first scraper blade mounted at said paper-forming zone adjacent to said first wire and on the side of said first wire opposite said second wire for skimming off water passing from the paper stock through said first wire, expressing through said second wire a quantity of water exceeding the quantity of water passing through said first wire, and facilitating formation of the paper web and said scraper blade presenting to said first wire a smooth and convex surface substantially impervious to water and having an extent in a direction transverse of the direction of web movement at least substantially as great as the width of the web.

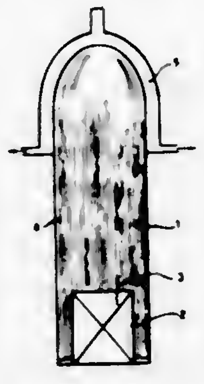
3,403,074
PROCESS OF IMPREGNATING WET BOARD WITH SULFITE LIGNIN LIQUOR AND ACID

Ralph W. Emerson, Jackson, Miss., assignor to Emerite Corporation, Jackson, Miss.
No Drawing. Filed May 11, 1965, Ser. No. 454,987
1 Claim. (Cl. 162—163)

A process for treating hardboard. The board is formed by the wet process and while it is wet it is impregnated with an aqueous solution of sulfite lignin liquor and acid such as muriatic or hydrochloric followed by drying and curing of the board.

3,403,075
NUCLEAR REACTOR

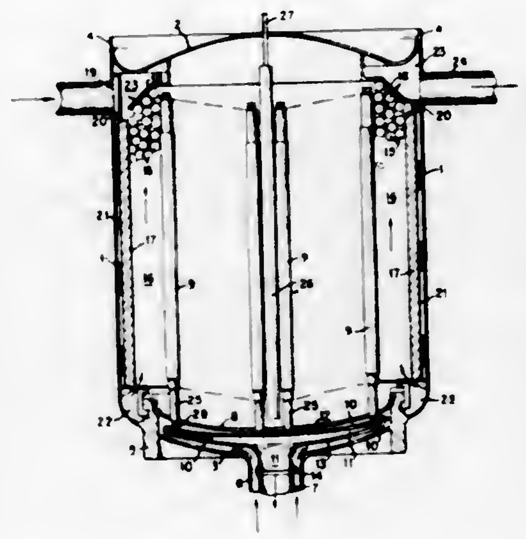
Peter Fiebelmann, Besozzo, Varese, Italy, assignor to European Atomic Energy Community (Euratom), Brussels, Belgium
Filed Aug. 11, 1966, Ser. No. 571,857
Claims priority, application Germany, Aug. 23, 1965, E 29,944; Sept. 20, 1965, E 30,136
8 Claims. (Cl. 176—57)



A nuclear reactor having evaporization cooling and in which a reactor core is mounted in the bottom of a substantially vertical gas and pressure tight vessel. The vessel has a substantially cylindrical lower end and a cupola-shaped upper end. Means are provided to cool the cupola-shaped upper end from outside of the vessel. The inner surface of the vessel is provided with a capillary structure. Adjacent the reactor core a coolant medium is evaporated to again condense at the cupola-shaped upper end and returns, via capillary action, to the core.

3,403,076
MOLTEN SALT BREEDER REACTOR AND FUEL CELL FOR USE THEREIN

Edward S. Bettis, Knoxville, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Aug. 15, 1967, Ser. No. 661,177
6 Claims. (Cl. 176—18)



A molten-salt-fueled nuclear breeder reactor comprising a multiplicity of fuel cells arranged in a bundle to form an active core region. Each fuel cell comprises a vertically oriented graphite rod anchored, in cantilever fashion, at its lower end only, leaving its upper end free to move axially in response to thermal and irradiation induced growth effects. Inner and outer flow passageways for molten salt fuel extend axially through each graphite rod, terminating in a common plenum near its upper end. The lower ends of the inner and outer flow passageways communicate with separate plenums which act as intake and exhaust manifolds for the fuel cells and provide for the separation of molten salt fuel entering the fuel cells from that leaving the fuel cells. Radial support is provided to the fuel cells by graphite spheres buoyed in the blanket region surrounding the active core region. Reactivity control is provided by selectively displacing molten salt containing fertile material from a channel in the active core region.

3,403,077
COLORIMETRIC DETERMINATION OF CREATINE PHOSPHOKINASE

Louis Berger, University City, Daniel Broida, Ladue, and Leo F. Bressler, University City, Mo., assignors to Sigma Chemical Company, St. Louis, Mo., a corporation of Missouri
Filed Sept. 29, 1965, Ser. No. 491,196
7 Claims. (Cl. 195—103.5)

The level of creatine phosphokinase in serum or other fluids is determined by its action as a catalyst in the reaction of adenosine triphosphate (ATP) with creatine to form adenosine diphosphate (ADP) and phosphocreatine, using a magnesium sulfate-tris hydroxy methyl amino methane buffer to maintain a pH of about 9.0, and adding at least 0.0005 molar sulfhydryl compound.

3,403,078
PROCESS FOR THE PRODUCTION OF NOTOMYCIN A_1

Charles A. Claridge, Manlius, and Alexander Gourevitch, De Witt, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 11, 1964, Ser. No. 366,629
3 Claims. (Cl. 195—114)

In the process of fermenting a strain of Streptomyces, e.g., *S. rishiriensis*, which normally produces an antibiotic mixture containing substantial amounts of both notomycin A_1 and notomycin A_2 (also called coumermycin A_1 and coumermycin A_2, see U.S. Patent 3,201,386) the production of notomycin A_2 is suppressed in favor of notomycin A_1 by the addition to the fermentation medium of at least 0.02, and less than 400, parts per million parts of medium of a nontoxic source of ionic cobalt before, at or near the beginning of the period of fermentation.

3,403,079

RECOVERY OF ORGANIC LIQUID FROM A CLOSE BOILING ANHYDRIDE BY DISTILLATION IN PRESENCE OF AN ORGANIC ACID

Kenneth L. Olivier, Placentia, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Dec. 14, 1964, Ser. No. 418,271

6 Claims. (Cl. 203—38)

The invention comprises a method for the separation by distillation of a liquid mixture of the anhydride of a carboxylic acid and an organic liquid having a boiling point substantially the same as the anhydride. The invention comprises the addition of a high-boiling carboxylic acid to the mixture prior to distillation which permits fractionation of the mixture into the acid of the anhydride initially present, a distillate comprising the organic compound free of any contamination of the anhydride and the anhydride of the high-boiling acid. The high-boiling acid added to the mixture forms an anhydride with the resulting hydration of the low-boiling acid anhydride, thereby permitting distillation of the mixture to recover the low-boiling acid as the most volatile distillate.

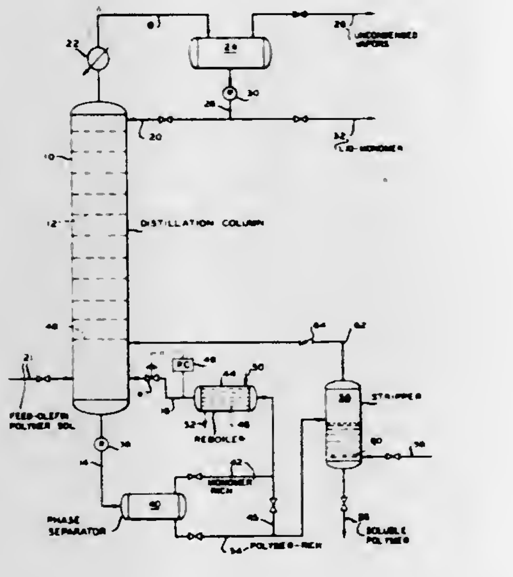
3,403,080

PROCESS FOR RECOVERING OLEFIN MONOMER FROM CATALYST WASHING RESIDUES CONTAINING SOLUBLE POLYMER OF THE OLEFIN

Harris A. Clay, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Mar. 24, 1965, Ser. No. 442,418

9 Claims. (Cl. 203—98)



Solvent such as monomer used in washing solid olefin polymer to remove soluble polymer is recovered from the wash solution containing the soluble polymer by distillation in a distillation column to recover solvent overhead and solution rich in the soluble polymer as bottoms, the bottoms being passed to a phase separation zone at a temperature at least 10° F. above the upper cloud point of the solution to recover an upper phase of low polymer concentration and a lower phase of high polymer concentration, the upper phase of low polymer concentration is passed to the column reboiler containing heat exchange tubes to prepare reboil liquid, thereby reducing or eliminating fouling of the tubes by polymer deposition which occurs with use of total bottoms as reboil liquid. The phase separation at a temperature above the upper cloud point is novel and unexpected.

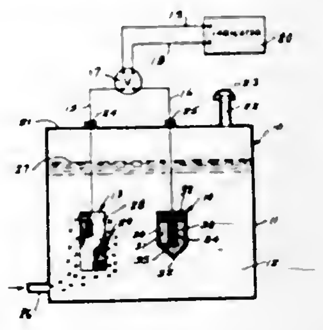
3,403,081

BIO-CHEMICAL SENSOR AND METHOD OF USING SAME

Gilson H. Rohrback, Whittier, and Willard R. Scott, Jr., Fullerton, Calif., assignors to TRW Inc., a corporation of Ohio

Continuation of application Ser. No. 136,370, Sept. 6, 1961. This application Feb. 6, 1967, Ser. No. 614,358

8 Claims. (Cl. 204—1)



This invention relates to a bio-sensor device comprising a reference electrode, such as a Calomel electrode, and a non-consumable electrode infected with microorganisms or enzymes immersed in an electrolyte. When a contaminant is passed through the electrolyte the microorganisms or enzymes are rendered inactive thereby producing a change in the electric potential relative to the reference electrode.

3,403,082

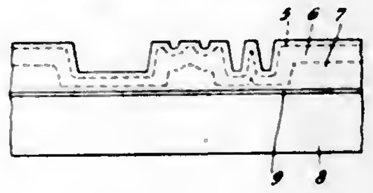
METHOD OF BACKING ELECTROTYPES

Roy Clifford Blackmore, Esher, England, assignor to Nickeloid Limited, London, England, a British company

Filed June 21, 1965, Ser. No. 465,562

Claims priority, application Great Britain, June 22, 1964, 25,762/64

9 Claims. (Cl. 204—6)



1. A method of backing an electrotype shell, which comprises electrodepositing lead or a lead alloy directly on to the back of the shell, shaving the plated back to remove the bulk of the electrodeposited backing metal from the non-printing areas of the shell and electrodepositing a second backing layer of lead or lead alloy on the partially backed shell, such operations being carried out whilst the shell is still on its mould.

3,403,083

OPERATION OF CHLOR-ALKALI CELLS

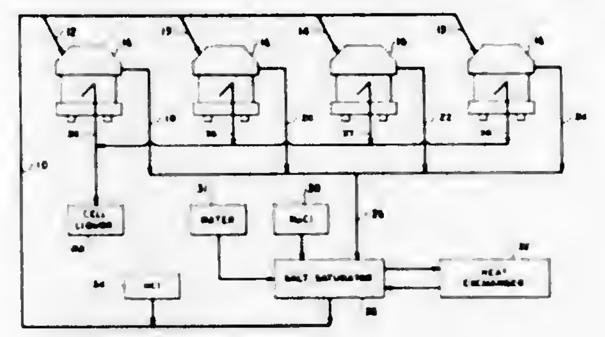
John E. Currey, Niagara Falls, N.Y., John Rutherford, Luling, La., Dudley P. Fernandes, Montague, Mich., and Robert J. Leonard, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed Nov. 29, 1965, Ser. No. 510,225

20 Claims. (Cl. 204—98)

1. A process for operating a group of chlor-alkali diaphragm cells comprising imposing a decomposition voltage across the electrodes of said chlor-alkali diaphragm cells,

feeding a solution of brine to the anolyte compartment of each of said cells at a rate in excess of the amount which flows through the diaphragm of said cells, withdrawing the excess brine feed solution from the anolyte compartments of said cells, combining and replenishing the withdrawn solutions with additional amounts of a chloride selected from the group consisting of an alkali metal chloride, hydrogen chloride and mixtures thereof, and returning the replenished brine solution to the anolyte compartments of said cells.



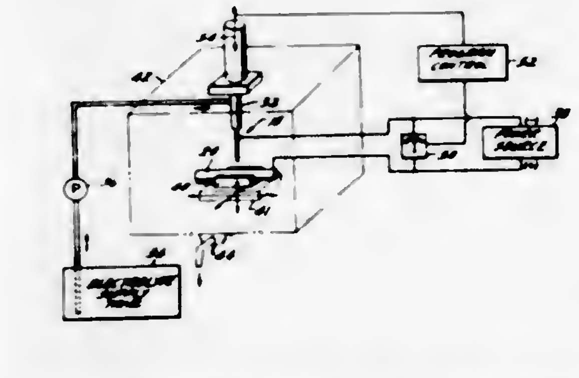
3,403,084

ELECTROLYTIC MATERIAL REMOVAL WHEREIN THE CURRENT-VOLTAGE RELATIONSHIP IS IN THE "KELLOGG REGION"

James D. Andrews, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

Filed July 26, 1965, Ser. No. 474,833

5 Claims. (Cl. 204—143)



1. An electrolytic method for removing material from an anodic workpiece through the use of a hollow tool having a dielectric wall encasing an electrical cathode, the tool terminating in an electrolyte directing nozzle, comprising the steps of:

positioning the tool and the workpiece one opposite the other;

contacting the cathode with an electrolyte;

directing the electrolyte from the cathode through the nozzle in a charged electrolyte stream toward and in contact with the anodic workpiece across an equilibrium gap;

concurrently applying an electrical potential of sufficient intensity through the electrolyte stream so that the current passed between the cathode and the workpiece by the potential produces in the electrolyte stream a condition at least an incipient glow wherein the current-voltage relationship in the electrolyte is at least in the "Kellogg region"; and then

moving the tool and the workpiece one toward the other at a rate effective to maintain at least an incipient glow, thereby removing material progressively from the workpiece and the region against which the stream of electrolyte is directed.

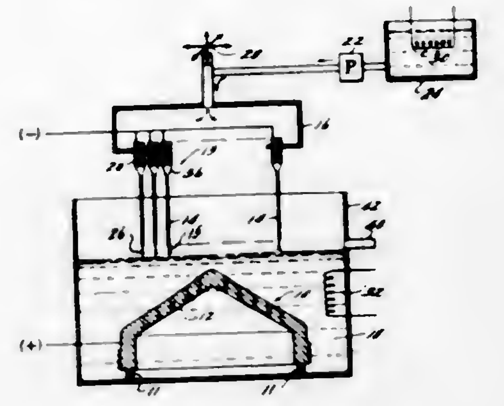
3,403,085

ELECTROLYTIC MATERIAL REMOVAL WHEREIN THE CHARGE IN THE ELECTROLYTE IS PARTIALLY DISSIPATE

Elmer Joseph Berger, Cincinnati, and David Clemens Perin, Madeira, Ohio, assignors to General Electric Company, a corporation of New York

Filed Dec. 20, 1965, Ser. No. 515,296

6 Claims. (Cl. 204—143)



1. An electrolytic method for removing material from an anodic workpiece through the use of a hollow tool having a dielectric wall encasing an electrical cathode, the tool terminating in an electrolyte directing nozzle, comprising the steps of: directing the electrolyte from the cathode through the nozzle in a charged electrolyte stream toward and in contact with the anodic workpiece across an equilibrium gap; concurrently applying an electrical potential of sufficient intensity through the electrolyte stream so that the current passed between the cathode and the workpiece by the potential produces in the electrolyte stream at least an incipient glow wherein the current-voltage relationship in the electrolyte is at least in the "Kellogg region"; while at the same time charged electrolyte stream toward and in contact with the anodic workpiece across an equilibrium gap; while at the same time applying between the cathode and the workpiece an electrical potential; contacting the stream of charged electrolyte with means to dissipate a sufficient amount of the charge from the electrolyte stream to inhibit electrolytic material removal from the workpiece at gaps greater than the equilibrium gap.

3,403,086

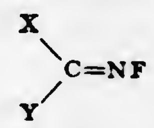
PHOTOCHEMICAL PROCESS FOR PRODUCING FLUOROIMINO COMPOUNDS

Douglas H. Dybvig, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

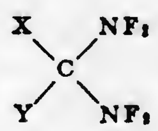
No Drawing. Filed Mar. 30, 1966, Ser. No. 539,612

5 Claims. (Cl. 204—158)

Fluoroimino compounds having the formula



are produced by subjecting a bis-difluoroamino compound having the formula



to the action of ultra-violet light, *x* and *y* being chlorine or fluorine. Nitrous oxide may be used as a free radical scavenger.

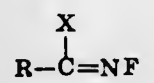
3,403,087
PHOTOCHEMICAL PROCESS FOR THE PRODUCTION OF HALOGENATED FLUORIMINO COMPOUNDS

Douglas H. Dybvig, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Mar. 30, 1966, Ser. No. 539,613

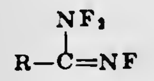
6 Claims. (Cl. 204—158)

1. Process for the production of compounds of the formula



$$R{-}\overset{\overset{\displaystyle X}{|}}{C}{=}NF$$

wherein X is chlorine or fluorine, R is chlorine, fluorine, difluoramino or perfluoroalkyl having 1 to 18 carbon atoms, which consists essentially in subjecting a compound of the formula



$$R{-}\overset{\overset{\displaystyle NF_2}{|}}{C}{=}NF$$

wherein R is the same as set forth hereinabove, to the combined action of ultraviolet light and chlorine, to replace a difluoramino group thereof with chlorine.

3,403,088
ELECTRODEPOSITION OF WATER-DISPERSED ACRYLIC INTERPOLYMERS

Donald P. Hart, Allison Park, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania

No Drawing. Filed May 18, 1964, Ser. No. 368,394

8 Claims. (Cl. 204—181)

Water-dispersed coating compositions which can be applied by electrodeposition contain an at least partially neutralized acrylic interpolymer and an amine-aldehyde condensation product or a polyepoxide or both. The acrylic interpolymer is comprised of a hydroxyalkyl ester of an unsaturated carboxylic acid, an unsaturated carboxylic acid, and at least one other ethylenically unsaturated monomer. These compositions are easily and efficiently applied by electrodeposition and provide uniform, hard, adherent coatings having high dielectric strength, suitable as insulating coatings for metallic conductors.

3,403,089
REPAIRING INSULATION OF ELECTRICAL CONDUCTORS BY ELECTRODEPOSITION

William H. Joyce, Somerset, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 5, 1965, Ser. No. 445,788

13 Claims. (Cl. 204—181)

1. Method for repairing defects in insulation of insulated electrical conductors which comprises:

(a) contacting the insulated conductor at a point of insulation fault with a bath comprising an admixture of water and a salt of a carboxyl containing α-olefin polymer having monovalent cations, the α-olefin content of said polymer salt being at least 50 mole percent of the total polymer salt;
(b) connecting said bath to ground;
(c) connecting a direct current source in an electrical circuit containing the insulated conductor, bath, and ground, said insulated conductor being connected to the positive side of the direct current source; and
(d) applying a voltage of at least about 5 volts D.C. for a length of time sufficient to electrodeposit carboxyl containing α-olefin polymer on the insulated conductor.

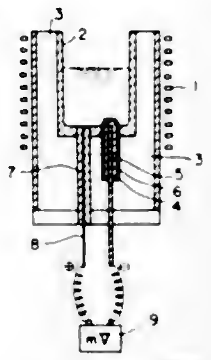
3,403,090
VESSEL FOR MEASURING OXYGEN CONTENT OF A MOLTEN METAL

Iichi Tajiri, Siro Watanabe, and Noriyuki Tanaka, Kitakyushu, and Koji Sanbongi and Masayasu Ohtani, Sendai, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan

Filed May 4, 1965, Ser. No. 453,083

Claims priority, application Japan, May 6, 1964, 39/25,468

5 Claims. (Cl. 204—195)



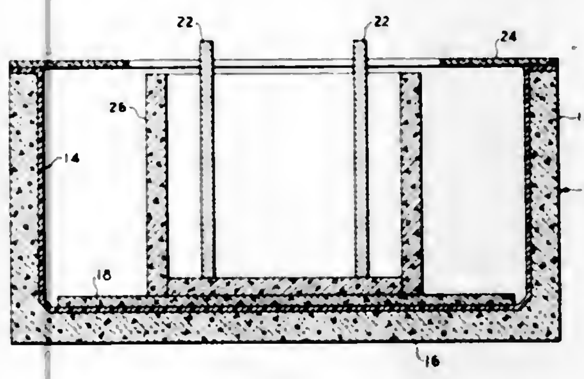
1. A molten metal vessel for measuring the oxygen content in a molten metal in the vessel, comprising at least one standard electrode consisting of a refractory shell of intermediate electrolyte of an oxide selected from the group consisting of magnesia, zirconia, alumina, silica, beryllia and thoria, said shell being filled with powdered material of low oxygen potential selected from the group consisting of graphite and silicon carbide and a conducting body material selected from the group consisting of graphite, tungsten and nickel, said standard electrode being so inlaid in the vessel wall that one end of said standard electrode is exposed to the inner surface of the vessel through the vessel wall and the other end thereof is connected with a balance-type electron tube automatic recorder.

3,403,091
PLASTICIZED RESIN LINED ELECTROLYTIC CELL FOR CHLORATE AND PERCHLORATE PRODUCTION

John E. Currey, Niagara Falls, and Alvin T. Emery, North Tonawanda, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed Nov. 25, 1964, Ser. No. 413,725

9 Claims. (Cl. 204—242)



Electrolytic cells employed in the manufacture of alkali metal-chlorates and perchlorates are internally sealed from attack on the container by the chlorate, perchlorate and intermediates therefor by providing an impervious, thermoplastic, nonconductive, inert organic liner which is a plasticized resin. The plasticized resin liner prevents any influx into the cell liquors of adverse inorganic materials from the siliceous cell container or the reinforcing members of the cell container and effectively insulates the cell contents from electrical current loss through the cell container.

3,403,092
SOLVENT EXTRACTION, SOLVENT DEWAXING AND HYDROTREATING A LUBE OIL

Maurice K. Rausch, Homewood, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 14, 1965, Ser. No. 447,955

6 Claims. (Cl. 208—36)

Oxidation inhibitor susceptibility of distillate mineral lubricating oils is enhanced by the steps of treating a distillate lubricating oil fraction by solvent extraction to remove aromatic constituents, solvent dewaxing the raffinate to remove waxy components, and then hydrotreating the dewaxed material over a nickel-molybdenum-activated alumina catalyst at about 550 to 775° F. and about 800 to 5000 p.s.i.g. hydrogen partial pressure, and preferably at about 625 to 725° F. and about 0.5 to 2 WHSV. The catalyst can be sulfided. Oils obtained by this process have great inhibitor susceptibility and as a result can be protected against oxidation breakdown for a long period of time. Conventional antioxidants, such as sulfur compounds, phosphorous compounds, and amine and phenol derivatives, are effective in the oils.

3,403,093
PRODUCTION OF POWDERED ASPHALT

King L. Mills, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 30, 1965, Ser. No. 483,762

8 Claims. (Cl. 208—39)

Powdered asphalt is produced from a feed of heavy hydrocarbon material containing asphalt by solvent extracting the feed material under an elevated pressure to form a solvent-rich extract phase consisting of solvent, oil, and resins and a raffinate phase consisting of high melting point residual asphaltic materials containing dissolved solvent, recovering the asphaltic residue containing a substantial amount of solvent under a pressure of at least 300 p.s.i.g., and suddenly releasing the pressure on the recovered asphaltic residue to about atmospheric so as to explode same with instantaneously evaporating solvent.

3,403,094
CATALYST SUPPORT, HYDROCRACKING CATALYST, AND HYDROCRACKING PROCESS

Ralph J. Bertolacini, Chesterton, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed July 13, 1966, Ser. No. 564,729

11 Claims. (Cl. 208—111)

The support for a hydrocarbon-conversion catalyst comprises fluorine and a promoting member selected from the group consisting of the alkali metals and the alkaline-earth metals on a silica-alumina cracking catalyst. The promoting member is present in an amount to provide a fluorine-to-promoting-member ratio between about 0.1 and about 5. The catalyst comprises a hydrogenating component and the support. The process for the hydrocracking of petroleum hydrocarbons employs the catalyst under suitable hydrocracking conditions.

3,403,095
SEWAGE TREATMENT PROCESS AND APPARATUS

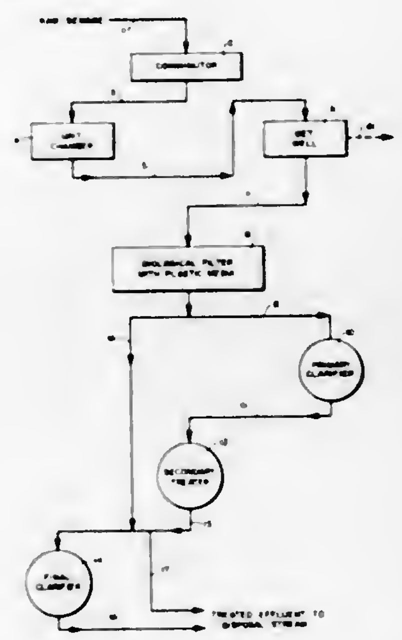
Philip N. J. Chipperfield, Brixham, England, and Joseph H. Benton, Baton Rouge, La., assignors of one-half each to Ethyl Corporation, New York, N.Y., a corporation of Virginia, and Imperial Chemical Industries Limited, London, England, a company of Great Britain

Filed Oct. 24, 1966, Ser. No. 596,714

10 Claims. (Cl. 210—17)

1. In a method of treating flowable organic-containing waste material the improvement comprising:

(a) passing the total flow of said waste material through a chamber containing a grid of plastic material having on its contacting surface a biological growth;
(b) passing one portion of the discharge stream from said chamber through a primary clarifier to remove a portion of the solids therefrom;
(c) passing the discharge stream from said primary clarifier through a secondary treater containing a biological growth;



(d) passing the total discharge stream from said secondary treater to the final disposal stream;
(e) passing the other portion of the discharge stream from said chamber containing a grid of plastic material through a final clarifier to remove a portion of the solids therefrom; and
(f) passing the discharge stream from said final clarifier to said final disposal stream.

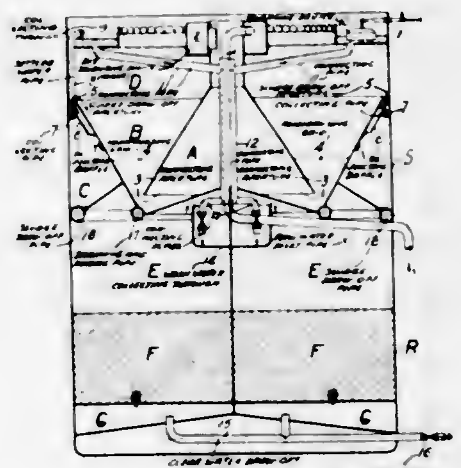
3,403,096
METHOD AND DEVICE FOR SEPARATION OF A SUSPENSION

Svatopluk Mackrle, Brno, Vladimír Mackrle, Prague, and Oldřich Dračka, Vladimír Selzer, and Bohumír Halámek, Brno, Czechoslovakia, assignors to Ceskoslovenská akademie věd, Prague, Czechoslovakia, a corporation of Czechoslovakia

Filed Sept. 24, 1964, Ser. No. 398,956

Claims priority, application Czechoslovakia, Oct. 2, 1963, 5,385/63; Oct. 3, 1963, 5,418/63

3 Claims. (Cl. 210—20)



A device for water treatment in which sludge blanket and clarified water zones of a clarifier are located above filtration, expansion and underdrainage zones of a rapid filter, resulting in a single compact unit.

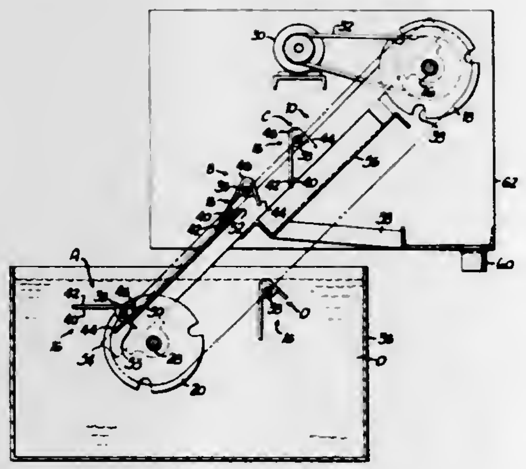
3,403,097
PROCESS FOR REGENERATION OF CATION EXCHANGE RESIN

Takashi Yamashiki, Yokohama, and Hiroshi Ono, Kawasaki-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
No Drawing. Filed Mar. 3, 1966, Ser. No. 531,380
Claims priority, application Japan, Mar. 5, 1965, 40/12,422
2 Claims. (Cl. 210—33)

A process for regeneration of a cation exchange resin in a continuous ion exchange operation, wherein the resin is regenerated by sulfuric acid which contains 20–100 p.p.m. of sodium phosphate glass.

3,403,098
OIL SKIMMERS

Gene Hirs, Birmingham, Mich., assignor to Hydromation Engineering Company, Livonia, Mich., a corporation of Michigan
Filed June 30, 1966, Ser. No. 561,816
11 Claims. (Cl. 210—40)

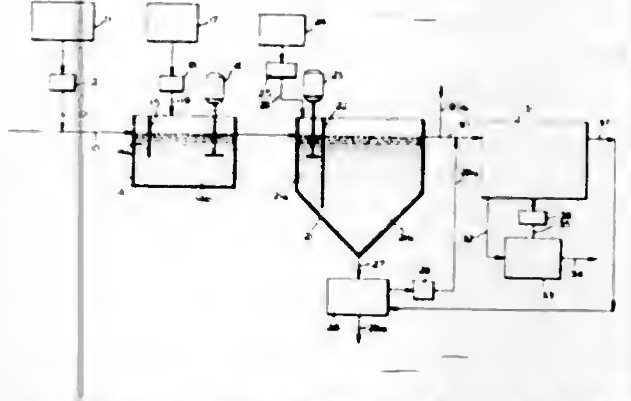


A method and device for separating a liquid bath having two liquids of different densities by immersing a flat imperforate plate preferentially wettable by the less dense liquid, moving the plate toward the surface of the bath while maintaining the plate horizontal so that the less dense liquid will adhere to the plate when the plate breaks the surface of the bath, including the plate slightly to drain all of the more dense liquid from the plate surface and then turning the plate vertically so that the gravitational forces will remove the less dense liquid from the plate. The device for moving the plate includes an endless conveyor carrying the plate with means for maintaining the plate horizontal and included through selected portions of the conveyor pattern.

3,403,099
PROCESS OF TREATING COAL MINE ACID DRAININGS

John Wilbur Dixon, 541 Pine St., Johnstown, Pa. 15902
Filed Mar. 15, 1966, Ser. No. 534,492
7 Claims. (Cl. 210—53)

1. A continuous process of treating coal mine acid drainings which comprises mixing therewith a cationic electrolytic polymer diluted to a viscosity substantially equal to that of the drainings, thereafter agitating said mixture with a base material, adding an anionic electrolytic polymer to said mixture of drainings, cationic polymer and base material, removing precipitated material from said mixture to thereby obtain neutralized drainings suitable for discharge into streams and rivers whereby no pollution thereof results.



3,403,100
METHOD OF GREASE MANUFACTURE

William R. Coons, Jr., Port Arthur, and William R. Hencke, Groves, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 31, 1963, Ser. No. 334,731
14 Claims. (Cl. 252—41)

1. A continuous process for preparing lubricating greases thickened with a lithium hydroxy fatty acid soap which comprises continuously forming a molten homogeneous soap concentrate by rapidly heating in less than one minute a mixture of lithium soap comprising at least a major proportion of lithium hydroxy fatty acid soap and a portion of the lubricating oil employed in the grease to a temperature in the range from about 10° F. to about 100° F. above the solution temperature of the soap, continuously introducing the so-heated mixture together with additional cooled lubricating oil at a temperature in the range of 25–150° F. into a blender operating under substantially nonshearing conditions, said mixture and said additional lubricating oil being in a ratio in about the range 3:1–7:1, the additional lubricating oil being continuously added in amount within the said range sufficient to rapidly cool the heated mixture in less than 2 minutes to between 10° F. and 100° F. below the solution temperature of the soap, and thereafter passing the resulting grease mixture through a cooling means wherein it is cooled rapidly in less than 1 minute with shearing to a temperature below about 250° F.

3,403,101
SULPHUR- AND CHLORINE-CONTAINING E.P. ADDITIVES FOR LUBRICANTS

Keith George Allum, Bagshot, Surrey, and John Frederick Ford, Camberley, Surrey, England, assignors to The British Petroleum Company Limited, London, England, a corporation of Great Britain
No Drawing. Filed Mar. 24, 1965, Ser. No. 442,543
Claims priority, application Great Britain, Apr. 9, 1964, 14,682/64
5 Claims. (Cl. 252—48.4)

1. A method of preparing a sulphur- and chlorine-containing additive for lubricating oils to improve the extreme pressure properties thereof which comprises reacting, under non-polymerizing conditions, an olefinically unsaturated compound having 4–35 carbon atoms and no free hydroxyl groups, said compound being selected from the group consisting of olefins and aliphatic esters, with thionyl chloride in the presence of a Friedel-Crafts catalyst at a temperature within the range 50° C. to —50° C.

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and employing 0.1 to 10 moles of olefinically unsaturated compound per mole of thionyl chloride and a molar amount of thionyl chloride which is not less than the molar amount of Friedel-Crafts catalyst.

2. A lubricating composition having improved extreme pressure properties consisting essentially of a major amount of lubricating base oil and from 0.1 to 10% by weight of the total composition of a sulphur- and chlorine-containing additive prepared in accordance with claim 1.

3,403,102
LUBRICANT CONTAINING PHOSPHORUS ACID ESTERS

William M. Le Suer, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio
No Drawing. Original application May 17, 1963, Ser. No. 281,329, now Patent No. 3,325,567, dated June 13, 1967. Divided and this application Mar. 7, 1967, Ser. No. 621,136
14 Claims. (Cl. 252—49.8)

Lubricants, especially lubricants for internal combustion engines and gears, are prepared by blending a lubricating oil and a phosphorus-containing ester. Such lubricants have improved oxidation resistance and detergent properties. The phosphorus-containing ester is prepared by reacting a polyhydric alcohol with both a high molecular weight substituted succinic reactant having at least about 50 aliphatic carbon atoms in the substituent and a phosphorus reactant which may be phosphorus pentoxide, phosphoric acid, or an alkyl ester of phosphoric acid. The preferred phosphorus-containing ester is illustrated by the product formed by reacting pentaerythritol first with a polyisobutene-substituted succinic anhydride and then with triphenylphosphite.

ERRATUM

For Class 252—62.3 see:
Patent No. 3,403,133

3,403,103
PIEZOELECTRIC CERAMIC COMPOSITIONS

Hiromu Ouchi, Toyonaka-shi, Osaka-fu, and Masamitsu Nishida, Osaka-shi, Osaka-fu, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan
Filed Jan. 17, 1966, Ser. No. 520,994
Claims priority, application Japan, Oct. 22, 1965, 40/65,161
4 Claims. (Cl. 252—62.9)

1. As a novel ferroelectric ceramic composition of matter, a solid solution consisting essentially of a material selected from the area bounded by lines connecting points A, B, C, D, E, in FIG. 2, wherein A, B, C, D, E have the following formulae

A	$Pb(Zn_{1/3}Nb_{2/3})_{0.010}Ti_{0.625}Zr_{0.365}O_3$
B	$Pb(Zn_{1/3}Nb_{2/3})_{0.125}Ti_{0.750}Zr_{0.125}O_3$
C	$Pb(Zn_{1/3}Nb_{2/3})_{0.500}Ti_{0.375}Zr_{0.125}O_3$
D	$Pb(Zn_{1/3}Nb_{2/3})_{0.500}Ti_{0.125}Zr_{0.375}O_3$
E	$Pb(Zn_{1/3}Nb_{2/3})_{0.010}Ti_{0.125}Zr_{0.865}O_3$

3,403,104
BORATE CORROSION INHIBITORS

Patrick B. Sullivan, Peekskill, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed July 21, 1966, Ser. No. 566,756
4 Claims. (Cl. 252—74)

The reaction product of an alkaline borate such as a sodium borate and hexanetriol is used as a corrosion inhibitor in hydraulic fluids.

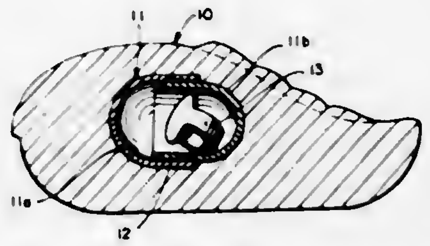
3,403,105
TRANSAXLE FLUID

Joseph M. Sandri, Chicago Heights, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Original application Dec. 27, 1963, Ser. No. 334,018, now Patent No. 3,342,843. Divided and this application Jan. 25, 1967, Ser. No. 627,280
4 Claims. (Cl. 252—75)

Lubricating oil compositions consisting essentially of a petroleum base automatic transmission fluid and oil-soluble dithiophosphoryl derivatives of the allyl alcohol and 2-butane-1,4-diol adducts of hexachlorocyclopentadiene useful as transaxle lubricants.

3,403,106
BUOYANT SOAP CAKE AND PREPARATION THEREOF

Julian R. Story, Wheaton, Michael G. Norman, Cicero, and Eric Jungermann, La Grange, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed July 12, 1965, Ser. No. 471,374
2 Claims. (Cl. 252—92)



1. In combination, a buoyant cake of soap contoured to simulate a mobile object with a distinctive top side visible when the cake is floating in water, an elongated plastic hollow capsule mounted within said cake and having its center of volume above the center of volume of said soap cake to maintain said distinctive top of the mobile uppermost, and a movable object within said capsule and freely slidable from one end of the capsule to the other to tilt the mobile object while floating in the water.

3,403,107
PRODUCTION OF NON-IONIC SURFACTANT COMPOSITIONS

Richard C. Myerly, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 478,857, Aug. 11, 1965. This application Aug. 21, 1967, Ser. No. 661,834
17 Claims. (Cl. 252—137)

Non-ionic detergents containing a straight chain, non-ionic surfactant are spray dried in the presence of a phenolic or amine compound to reduce smoke formation in the spray drier.

3,403,108
ALUMINOSILICATE CATALYST CONTAINING A GROUP VIII METAL COMPOUND AND A METAL HALIDE

Harry P. Leftin, Livingston, and Oleg K. Kononenko, Boonton, N.J., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
No Drawing. Filed June 24, 1964, Ser. No. 377,469
9 Claims. (Cl. 252—429)

1. A composition of matter consisting of an alkaline metal aluminosilicate, between about 0.1 and about 15 weight percent of a compound of a metal of Group VIII of the Periodic Table having an atomic number of at least 44 and between about 1 and about 30 weight percent of a halide of a dissimilar metal having a variable valence and present in its highest oxidation state, said halide of

the dissimilar metal being selected from the group consisting of ferric, cupric, chromic and tungstic halides.

3,403,109
SILICA-ALUMINA CATALYST SUPPORT

Joseph Dennis Colgan, Ozone Park, N.Y., and William Eugene Sanborn, Wilton, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Continuation-in-part of application Ser. No. 482,165, Aug. 24, 1965. This application Oct. 15, 1965, Ser. No. 496,633

20 Claims. (Cl. 252—451)

A process for preparing a silica-containing gel characterized in that a xerogel derived therefrom has a pore volume of from about 1.3 to about 2.0 cc./g. when measured after calcining said xerogel, said process comprising: (1) reacting (a) an alkali metal silicate with (b) mineral acid, (c) in a water heel of a pH of between about pH 1.0 and pH 4.5, said silicate and said acid being added in an amount sufficiently to raise pH to at least about pH 9, and sufficiently to form a gel reaction product, (2) adding to said reaction product a mineral acid in an amount sufficient to lower the pH within a range of at least about pH 7.75 and about pH 8.75, and (3) thereafter aging said reaction product for a period of at least about 15 minutes, at a temperature of at least about 100° F.

3,403,110
PROCESS FOR PREPARING A CRYSTALLINE ZEOLITE CATALYST COMPOSITE

William Eugene Sanborn, Wilton, and John Francis Lindsley, Glenbrook, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Sept. 14, 1964, Ser. No. 396,364

6 Claims. (Cl. 252—455)

A process is disclosed for combining inorganic oxide hydrogels and crystalline aluminosilicates, whereby when the composite is activated by the application of heat the destruction of the crystalline aluminosilicate is minimized. The process specifies that this result may be accomplished by reacting with an inorganic oxide hydrogel and inorganic metal oxide or hydroxide such as calcium oxide and thereafter intimately associating the so reacted hydrogel with crystalline aluminosilicates. The intimate associated mixture is thereafter converted to a catalyst material by the application of heat, as by spray drying.

3,403,111
PREPARATION OF AN ALUMINA CATALYST SUPPORT

Joseph Dennis Colgan and Norman Ostroff, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Oct. 8, 1965, Ser. No. 494,143

3 Claims. (Cl. 252—465)

A method for obtaining a molybdenum promoted alumina base extruded catalyst having improved crush strength after regeneration which comprises treating a hydrous alumina slurry with nitric acid, forming an extrusion mixture of said treated alumina and a molybdenum promoter and extruding said mixture.

3,403,112
PROCESS FOR PRODUCING A MIXED OXIDE OXIDATION CATALYST HAVING IMPROVED SELECTIVITY

Morgan C. Sze, Garden City, N.Y., and Adolf W. Gessner, Montclair, N.J., assignors to The Lummus Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 20, 1965, Ser. No. 481,414

3 Claims. (Cl. 252—470)

A process for producing a mixed oxide oxidation catalyst of improved selectivity wherein a mixed oxide catalyst, such as iron molybdate, having a surface area above about 5.5 m.^{2}/gm. is heated to a temperature above 940° F. and the heating continued until the surface area is between 2.0 and 5.5 m.^{2}/gm.

3,403,113
CURABLE NITROGEN-CONTAINING CONDENSATION PRODUCTS

Hermann Diethelm, Aesch, Basel-Land, and Willy Fisch and Ewald Forster, Binningen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Mar. 18, 1966, Ser. No. 535,361

Claims priority, application Switzerland, Mar. 26, 1965, 4,208/65

9 Claims. (Cl. 260—2)

1. A new resinous nitrogen-containing condensation product which is obtained by condensing in a first stage (a) an amide selected from the group consisting of dicyandiamide and cyanamide with (b) a polyamine containing at least three amino groups selected from the group consisting of primary amino group and secondary amino group, and reacting the resulting polycondensate in a second reaction stage with (c) an epihalohydrin, both operations being performed at an elevated temperature.

3,403,114
POLYMERS OF AMINO EPOXIDES

Edwin J. Vandenberg, Foulk Woods, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 369,322, May 21, 1964. This application Feb. 17, 1967, Ser. No. 616,781

12 Claims. (Cl. 260—2)

Polymers of amino epoxides, including homopolymers, and copolymers with other epoxides, such as alkylene oxides, and the quaternary salts of these amino epoxide polymers, which polymers are useful as flocculating agents.

3,403,115
PROCESS FOR DEPOLYMERIZING POLYETHYLENE-TEREPHTHALATE TO TEREPHTHALIC ACID DIMETHYL ESTER

Hans Gruschke, Neuenhain, Taunus, Walter Hammerschick, Bad Nauheim, and Heinz Medem, Offenbach (Main), Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany

Filed Feb. 16, 1965, Ser. No. 432,949

Claims priority, application Germany, Feb. 18, 1964, F 42,031

1 Claim. (Cl. 260—2.3)

A process is provided for the depolymerizing of polyethylene terephthalate to terephthalic dimethyl ester in a two-stage reaction whereby in the first stage polyethylene terephthalate is heated together with an excess amount of methanol while the admixed components are being stirred during an average residence time in a reactor for 7 to 13 minutes while at a temperature of 190° to 210° C. and at a pressure of 30 to 40 atmospheres. After leaving the first reaction stage, the mixture is introduced into a second stage where it slowly ascends through a second reactor without stirring. The temperature in the second stage is at 180° to 200° C. while the pressure is about equal to that in the first stage. Thereafter, the mixture is introduced into a third reactor, the pressure released and the mixture cooled and processed in such a manner as to yield more than 99% of the theoretical amount of dimethyl terephthalate.

3,403,116
VINYLIDENE CHLORIDE-ETHYLENICALLY UNSATURATED MONOMER-ETHYLENICALLY UNSATURATED ACID-GELATIN EMULSION POLYMERIZED COATING COMPOSITION

Meyer Ream and William F. Fowler, Jr., Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 189,686, Apr. 24, 1962. This application Sept. 17, 1965, Ser. No. 492,977

6 Claims. (Cl. 260—8)

Compositions useful for subbing photographic film base are prepared by emulsion polymerization of vinylidene chloride in the presence of two other ethylenically unsaturated monomers and gelatin.

3,403,117
POLYOLEFIN CONTAINING POLYMERIC FATTY ACID OR POLYAMIDE THEREOF

Don E. Floyd, Robbinsdale, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Sept. 13, 1963, Ser. No. 308,643

13 Claims. (Cl. 260—23)

1. A normally solid polymeric composition comprising a polymer of a monoalpha-olefin of 2–4 carbon atoms and from 0.1 to about 5% by weight based on said polymer of a compound selected from the group consisting of polymeric fat acids and the polyamides thereof with a polyamine of the formula

$$H_2NR(NHR)_nNH_2$$

where R is an alkylene radical having from 2 to 6 carbon atoms and *n* is an integer from 0 to 1.

3,403,118
FIRE RETARDANT COMPOSITIONS COMPRISING A POLYOLEFIN, ORGANIC BROMINE PHOSPHATE AND DISPERSANT

Gregory Julius Listner, Kendall Park, N.J., assignor to Johnson & Johnson, a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 448,857, Apr. 16, 1965. This application June 14, 1966, Ser. No. 557,380

16 Claims. (Cl. 260—23)

The instant invention provides a polyolefin composition rendered flame retardant by a union of such polyolefin with an organic bromine phosphate.

3,403,119
POLYMERIC COATING COMPOSITION CONTAINING A METAL SALT OF AN ORGANIC CARBOXYLIC ACID

Charles I. Sullivan, Melrose, and Francis L. McCarthy, Quincy, Mass., assignors to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 404,911, Oct. 19, 1964. This application July 12, 1965, Ser. No. 471,405

18 Claims. (Cl. 260—28.5)

A polish composition comprising (1) a water dispersible polyvalent metal salt of an organic carboxylic acid having from 1 to 4 acid groups in a concentration sufficient to impart leveling and selective removability to said polish composition and (2) an aqueous emulsion of a synthetic addition polymer comprising at least one hard monomer selected from the group consisting of monovinyl aromatic compound, alpha, beta-ethylenically unsaturated nitrile and alkyl ester of alpha, beta-ethylenically unsaturated carboxylic acid, said polymer having a Tg of at least 25° C. at an emulsifier content of 5% by weight of the polymeric component.

3,403,120
MOULDING COMPOSITIONS BASED ON ELASTICALLY THERMOPLASTIC COPOLYMER MIXTURES

Karl-Heinz Ott and Karl Dinges, Cologne, Karl-Heinrich Knapp, Leverkusen, and Harry Röhr, Cologne, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Sept. 25, 1963, Ser. No. 311,312

Claims priority, application Germany, Oct. 5, 1962, F 37,971

6 Claims. (Cl. 260—33.6)

1. A cold-resistant molding composition with high impact and notched impact strength containing:

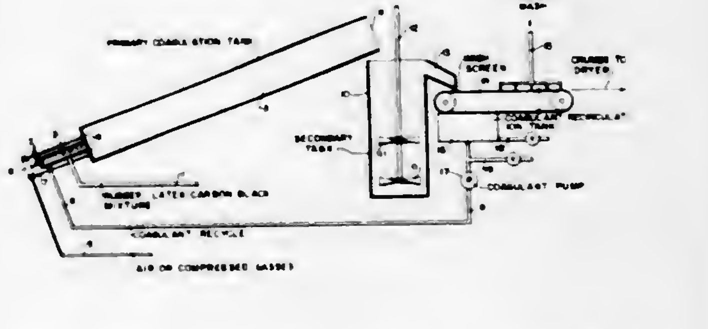
- (A) 5–97 percent by weight of a graft copolymer of
  - (a) 10–95 percent by weight of a mixture of 50–90 percent by weight of styrene and 50–10 percent by weight of a member selected from the group consisting of acrylonitrile and methacrylonitrile on
  - (b) 90–5 percent by weight of a polymer of an aliphatic conjugated diolefine having from 4 to 6 carbon atoms with at least 90 percent by weight of said conjugated diolefine incorporated by polymerization;
- (B) 10–92 percent by weight of a thermoplastic copolymer of 50–95 percent by weight of styrene and 50–5 percent by weight of a member selected from the group consisting of acrylonitrile and methacrylonitrile and
- (C) 3–30 percent by weight of a mineral oil having a viscosity-density constant between 0.820 and 1.050, the combined weight of said polymeric diolefine and said mineral oil being up to 50 percent by weight of said total molding composition.

3,403,121
METHOD FOR COMPOUNDING RUBBERS WITH CARBON BLACK

Paul Nelson Hare, Swartz, La., assignor to Columbian Carbon Company, New York, N.Y., a corporation of Delaware

Filed July 17, 1964, Ser. No. 383,290

11 Claims. (Cl. 260—33.6)



A carbon black-rubber masterbatch is produced by injecting a mixture of an aqueous acidic coagulation medium and an aqueous mixture of carbon black and rubber latex into the lower end of an elongated coagulation chamber containing a body of coagulating medium. A non-reactive gas is introduced into the lower end of the chamber from a plurality of points spaced substantially symetrically about the point at which the mixture is introduced into the coagulation chamber. The rubber latex is characterized by a density of at least about 1.2 grams per cubic centimeter at 25° C. The chamber is inclined at an angle of 10°–45°.

3,403,122

EMULSION POLYMERIZATION OF WATER INSOLUBLE OMEGA - (N - PERFLUOROALKANESULFONYL) AMINOALKYL ACRYLATES OR METHACRYLATES

Patsy O. Sherman, Bloomington, and Samuel Smith, Roseville, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 232,855, Oct. 24, 1962. This application Dec. 22, 1967, Ser. No. 692,680

The portion of the term of the patent subsequent to Nov. 6, 1979, has been disclaimed

10 Claims. (Cl. 260—29.6)

A process for the emulsion polymerization of relatively water-insoluble, high molecular weight monomers which are capable of undergoing free radical addition polymerization is disclosed. The process is carried out in an aqueous medium containing from about 5 percent to about 50 percent of a water-soluble organic solvent which is substantially inert with respect to reaction with the monomer and with respect to attack by free radicals present during the course of the process and which is capable of dissolving at least about one percent w./v. of the said water-insoluble monomer at 25° C.

3,403,123

POLYVINYL HALIDE LATICES STABILIZED WITH DIAMMONIUM PHOSPHATE AND AMMONIUM HYDROXIDE

Isadore Nathan Cooperman and Milton W. Kline, Leominster, Mass., assignors to The Borden Company, New York, N.Y.

No Drawing. Filed Sept. 17, 1965, Ser. No. 488,233

3 Claims. (Cl. 260—29.6)

This invention relates to an aqueous latex comprising the reaction product resulting from the polymerization of a vinyl halide in the presence of an agent for stabilizing the resultant latex. The reaction product is stabilized against degradation due to the presence of iron ion and from pH decay. The invention also contemplates a process for accomplishing such stabilization which comprises reacting a vinyl chloride monomer in the presence of diammonium phosphate and ammonium hydroxide.

3,403,124

PETROLEUM RESINS LIGHT AND HEAT-STABILIZED WITH FATTY ACID ESTER OF 4-HYDROXYETHYL - 2,6-DITERTIARY BUTYL PHENOL

Neville Leverne Cull, Baker, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed July 16, 1965, Ser. No. 472,667

8 Claims. (Cl. 260—29.7)

The color of petroleum resins is stabilized by the addition of .05 to 0.5 wt. percent of a fatty acid ester of 4-hydroxyethyl-2,6-ditertiary butyl phenol (e.g. the stearic acid ester) with or without 0.1 to 1.0 wt. percent of 2-hydroxy-4-n-octoxybenzophenone.

3,403,125

METHOD OF CONCENTRATING AQUEOUS LATICES OF CONJUGATED DIOLEFIN-ACRYLONITRILE COPOLYMERS

Everett Steadman Graham, Sarnia, Ontario, Canada, assignor to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate and politic

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,230

Claims priority, application Canada, Aug. 23, 1965, 938,832

13 Claims. (Cl. 260—29.7)

The excessive coagulum formation encountered when rubbery diolefin-acrylic acid nitrile copolymer latices containing more than about 20% bound nitrile monomer are subjected to concentration in the presence of agglomerating agents of the class of the product obtained by reacting a polyoxyethylene glycol with the diepoxide obtained by condensing epichlorohydrin with a polyhydric phenol, can be avoided by subjecting the latex to a heat treatment at 40° to 95° C. for a period of 48 hours to 1 minute respectively before starting the concentration step.

3,403,126

VINYL CHLORIDE PLASTIC COMPOSITIONS AND CERTAIN PLASTICIZERS THEREFOR

Robert R. Mod, Frank C. Magne, and Evald L. Skau, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Feb. 24, 1966, Ser. No. 529,652

7 Claims. (Cl. 260—30.4)

Plastic composition in which vinyl chloride resins are plasticized with certain N,N-symmetrically and unsymmetrically disubstituted amides of fatty acids, the substituents being alkyl, furfuryl, tetrahydrofurfuryl and/or 2-(3-carbohexanoxypropionyloxy)ethyl and the acids being oleic and/or 2-oleoyloxypropionic acid.

3,403,127

CURING OF FLUORO-RUBBERS WITH QUATERNARY AMMONIUM SALTS

William Flavell and Angel Nodar-Blanco, Chessington, England, assignors to Yarsley Research Laboratories Limited, Surrey, England, a British company

No Drawing. Filed Jan. 3, 1966, Ser. No. 517,989

Claims priority, application Great Britain, June 2, 1965, 23,507/65

9 Claims. (Cl. 260—41)

The present invention provides for a process of curing fluoro-rubber compositions by heating a composition comprising a copolymer of vinylidene fluoride, carbon black and other fillers and a nitrogenous curing agent, the improvement which consists in the use of a trialkyl quaternary ammonium salt in an amount of from 1% to 4% by weight of the vinylidene fluoride copolymer as the curing agent.

3,403,128

STABILIZATION OF ESTER-CONTAINING SYNTHETIC RESINS

Gerhard Berndt, Monheim, Ernst Grigat, Cologne-Stammheim, Rolf Putter, Dusseldorf, and Karl-Arnold Weber, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Aug. 18, 1966, Ser. No. 573,210

Claims priority, application Germany, Sept. 2, 1965, F 47,074

6 Claims. (Cl. 260—45.8)

A stabilized synthetic resin containing ester groups having incorporated therein a stabilizing amount of an organic cyanate having the formula $R—(OCN)_n$ wherein R is a substituted or unsubstituted aromatic group having from 6 to 24 carbon atoms and *n* is an integer of 1 to 6.

3,403,129

PARAFORMALDEHYDE STABILIZED WITH ELEMENTAL TITANIUM AND DERIVATIVES THEREOF

Valentin Alexeevich Kargin, Vladimir Nickolaevich Kotrelev, Modest Sergeevich Akutin, and Alexandr Filippovich Opolovenkov, Moscow, and Boris Vladimirovich Andrianov, Mytishchi, and Mikhail Vladimirovich Kotrelev, Moscow, U.S.S.R., assignors to Gosudarstvenny Nauchno - Issledovatelsky Institute Plasticheskikh Mass., Moscow, U.S.S.R.

No Drawing. Filed Oct. 22, 1964, Ser. No. 405,839

1 Claim. (Cl. 260—45.75)

1. A stabilized polymer compound consisting essentially of polyformaldehyde and 0.1 to 2% by weight of a stabilizer which is non-reactive with the polyformaldehyde and is selected from the group consisting of titanium dioxide, titanium hydride, and triethanolamine titanate.

3,403,130

CURING PROCESS FOR EPOXY RESINS

Harold Charles Stalter, Edwardsburg, Mich., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed May 17, 1966, Ser. No. 550,631

4 Claims. (Cl. 260—47)

Epoxy resins can be cured by a mixture of benzyldimethylamine and N-methyl-tetrahydrofurfurylamine. This curing catalyst mixture enables desirably long pot life to be attained.

3,403,131

EPOXIDE RESIN - ACID ANHYDRIDE COMPOSITIONS CONTAINING A HYDROXYALKYLATED AROMATIC AMINE ACCELERATOR

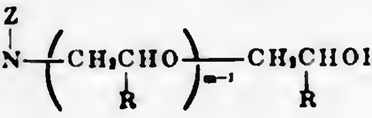
Edward William Garnish, Saffron Walden, England, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Nov. 15, 1966, Ser. No. 594,373

Claims priority, application Great Britain, Dec. 2, 1965, 51,278/65

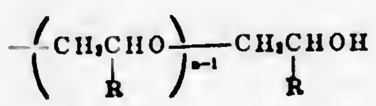
9 Claims. (Cl. 260—47)

1. A hardenable composition of matter comprising (1) an epoxide resin having a plurality of 1,2-epoxide groups, (2) a polycarboxylic acid anhydride as hardener therefor, and (3), as accelerator for the hardening action, a hydroxylated aromatic amine containing, directly attached to a benzene nucleus, at least one residue of the Formula I



$$-\overset{Z}{\overset{|}{N}}-\left(CH_2\underset{R}{\underset{|}{C}}HO\right)_{m-1}-CH_2\underset{R}{\underset{|}{C}}HOH$$

wherein each R is a member selected from the group consisting of hydrogen atom and the methyl group, *m* denotes an integer of at least 1, and Z is a member selected from the group consisting of hydrogen atom, alkyl group, and a radical of the formula



$$-\left(CH_2\underset{R}{\underset{|}{C}}HO\right)_{n-1}-CH_2\underset{R}{\underset{|}{C}}HOH$$

wherein *n* denotes an integer of at least one, with the proviso that at most two such residues of Formula I are attached to any one aromatic nucleus.

3,403,132

PROCESS OF PREPARING COPOLYESTERS

Richard C. Waller, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed June 21, 1957, Ser. No. 667,269

1 Claim. (Cl. 260—47)

1. A method of making a copolyester which comprises reacting, with the elimination of ethylene glycol, a mixture of 100 mols of bis(β-hydroxyethyl)terephthalate and from 10 to 70 mols of 2,2-bis [4-(β-hydroxyethoxy)-phenyl] propane.

3,403,133

THERMOELECTRIC COMPOSITIONS OF TELLURIUM, MANGANESE, AND LEAD AND/OR TIN

Russell E. Fredrick, White Bear Lake, and James D. Richards, Roseville, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Continuation-in-part of application Ser. No. 162,083, Dec. 26, 1961. This application July 5, 1966, Ser. No. 563,933

9 Claims. (Cl. 252—62.3)

P-type thermoelectric compositions of lead and/or tin, manganese and tellurium, part of the tellurium being replaceable by selenium and/or sulfur. The manganese, in amounts from 0.7 to 7 atomic percent of the total composition, has a highly beneficial effect on thermoelectric properties, especially as compared to metal-excess, P-type lead-tin telluride compositions of the prior art.

3,403,134

PROCESS FOR PREPARING COPOLYMERS OF TRIOXANE WITH ALICYCLIC OLEFINICALLY UNSATURATED HYDROCARBONS AND RESULTANT PRODUCT

Walter Wilson, Cambridge, England, and Herbert May, New York, N.Y., assignors, by mesne assignments, to British Industrial Plastics Limited, Asbestos House, Manchester, England

No Drawing. Continuation-in-part of application Ser. No. 640,429, May 22, 1967, which is a continuation-in-part of application Ser. No. 177,256, Mar. 5, 1962. This application July 20, 1967, Ser. No. 654,688

8 Claims. (Cl. 260—73)

This invention concerns the preparation of high molecular weight oxymethylene copolymers by the copolymerising of trioxan with alicyclic olefinically unsaturated hydrocarbons, especially those having 5 to 10 carbon atoms in the molecule.

3,403,135

ANIONIC POLYMERIZATION OF LACTAMS WITH N,N' - DIPHENYL - 1,3 - DIAZA - 2,4 - CYCLOBUTANEDIONE AS PROMOTER

George J. Schmitt, Madison, and Herbert K. Reimschuessel, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 5, 1966, Ser. No. 518,786

6 Claims. (Cl. 260—78)

N,N'-diphenyl-1,3-diaza-2,4-cyclobutanedione is used as a promoter in the anionic polymerization of lactams to form solid, linear polyamides of high molecular weight.

3,403,136

CARBOXYLIC ELASTOMERS

John C. Baker, Jr., Dover, Del., assignor to Standard Brands Chemical Industries, Inc., Dover, Del., a corporation of Delaware

No Drawing. Filed Sept. 6, 1963, Ser. No. 307,011

11 Claims. (Cl. 260—79.5)

A carboxylic rubber mix capable of being cured by heating comprising a carboxylic rubbery copolymer and a curing system for preventing precure of said copolymer, said system containing a polyvalent metal curing agent reactable with carboxyl groups of the copolymer, at least about one-fourth of which is present as a peroxide.

3,403,137

PROCESSES FOR PREPARING ETHYLENE/VINYL CHLORIDE COPOLYMERS

Harry M. Andersen, Ballwin, and James D. Gabbert and Oliver De S. Deex, St. Louis, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 8, 1963, Ser. No. 322,492

18 Claims. (Cl. 260—87.5)

1. In a process for preparing ethylene/vinyl chloride copolymers which comprises the redox polymerization of

ethylene and vinyl chloride in an aqueous emulsion system at a pH of 7 to 12 and at superatmospheric pressures up to 50,000 p.s.i. employing a persulfate oxidizing agent and a reducing agent selected from the group consisting of ammonium and alkali metal sulfites, thiosulfates, bisulfites, hydrosulfites, and formaldehyde sulfoxylates, and versivalent metal convertible between different positive valence states by oxidation and reduction reactions, the steps (1) controlling the polymerization reaction by adding the reducing agent to the remaining components of the polymerization charge both to initiate polymerization and also subsequently during the polymerization as required to maintain the desired rate of polymerization and obtain high conversion of monomers to polymer and (2) adding about 0.1 to 20 parts by weight of emulsifier and 0.01 to 10 parts by weight of protective colloid per 100 parts of combined monomers initially present.

3,403,138

POLYOLEFIN REACTION PRODUCTS

Douglas C. Edwards, Sarnia, Ontario, Canada, assignor to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate and politic of Canada

No Drawing. Filed Sept. 14, 1964, Ser. No. 396,418

Claims priority, application Canada, Sept. 18, 1963, 884,770

12 Claims. (Cl. 260—88.2)

Liquid polymers suitable for use in preparing caulking compounds, binders, cements, etc. which are vulcanizable at ambient temperatures with polyfunctional amines may be prepared by heating saturated, high molecular weight homo- or copolymers of isobutylene with a bromine-releasing agent at temperatures of at least 75° C. and preferably 110–150° C. until their viscosity average molecular weights are reduced at least 500% and preferably to a range of 5000–40,000.

3,403,139

UNSATURATED LINEAR COPOLYMERS CONSISTING OF COPOLYMERIZED UNITS OF AN ACYCLIC 1-OLEFIN AND A CYCLOOLEFIN HAVING FIVE CARBON ATOMS IN THE RING

Giulio Natta, Gino Dall'Asta, Giorgio Mazzanti, Italo Pasquon, Alberto Valvassori, and Adolfo Zambelli, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

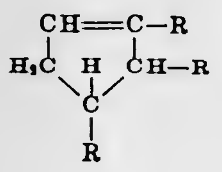
No Drawing. Continuation of application Ser. No. 358,651, Apr. 9, 1964, which is a continuation-in-part of application Ser. No. 207,598, July 5, 1962.

This application Mar. 15, 1967, Ser. No. 623,473

Claims priority, application Italy, Apr. 10, 1963, 7,420/63

23 Claims. (Cl. 260—88.2)

1. High molecular weight, substantially linear, unsaturated, vulcanizable random copolymers the macromolecules of which consist of copolymerized units of an olefin selected from the group consisting of ethylene and higher alpha-olefins of the formula $CH_2=CHR$ in which R is an alkyl group containing 1 to 6 carbon atoms, and of a cycloolefin having the formula



in which R is selected from the group consisting of hydrogen, linear alkyl groups containing 1 to 6 carbon atoms and branched alkyl groups containing 1 to 6 carbon atoms, the number of said alkyl groups bound to the ring being 0, 1 or 2, the copolymers being characterized in containing about 60 to 98 moles percent of the monoolefin and about 2 to 40 mol percent of the cyclic olefin, and being further characterized in that some of the copolymerized units of the cycloolefin are present in the copolymer chains as units having the structure of a pentenamer, and some of the units of the copolymerized cycloolefin are present in the cyclic form.

3,403,140

POLYMERIZATION PROCESS AND CATALYST

Charles W. Moberly, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 372,685, June 4, 1964. This application Jan. 25, 1965, Ser. No. 427,965

8 Claims. (Cl. 260—93.7)

1. A process which comprises polymerizing an aliphatic 1-olifin having up to 8 carbon atoms per molecule in the presence of a catalyst which forms on mixing a compound having the formula $RAlX_2$, a compound having the formula R_3M, a titanium trichloride-aluminum trichloride complex having the formula $TiCl_3 \cdot \frac{1}{3}AlCl_3$ and a compound having the formula $R_yM'X_z$, wherein R in the formulae is selected from the group consisting of alkyl, cycloalkyl, aryl, alkenyl and cycloalkenyl radials having from 1 to 20 carbon atoms per molecule and and combinations thereof, X is a halogen, M is a group V–A element, M′ is a member of the group consisting of zinc, cadmium, aluminum, gallium and lithium metals, $y+z$ is equal to the valence of M′, y is an integer from 1 to 3, and z is an integer from 0 to 1, wherein the molar ratio of the compound having the formula $RAlX_3$ to the compound having the formula R_3M is in the range of 1:5 to 5:1; the molar ratio of the compound having the formula $RAlX_2$ to titanium trichloride-aluminum trichloride complex is in the range of 0.25 to 10:1; and the molar ratio of the compound having the formula $R_yM'X_2$ to titanium trichloride-aluminum trichloride complex is in the range of 0.25:1 to 5:1.

3,403,141

POLYMERIZATION OF 1,3-BUTADIENE

Robert P. Zelinski and Floyd E. Naylor, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Sept. 28, 1964, Ser. No. 399,863

15 Claims. (Cl. 260—94.3)

High cis-polybutadiene having a relatively low Mooney value and a reduced tendency to cold flow is produced by using a catalyst system formed by mixing (1) the reaction product of an organoaluminum compound, organoaluminum hydride, or lithium aluminum hydride with either butadiene or isoprene and (2) one or more components containing titanium and iodine.

3,403,142

PROCESS FOR THE POLYMERIZATION OF OLEFINS

William J. Craven, Passaic, N.J., assignor, by mesne assignments, to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 16, 1964, Ser. No. 352,344

2 Claims. (Cl. 260—94.9)

This invention relates to improving the activity of chromium oxide on silica as a catalyst for polymerizing

ethylene by adding to the polymerization system a complex of lithium (lower alkyl) and zinc (lower alkyl)$_2$.

3,403,143

WATER-SOLUBLE BASIC MONO- AND DIS-AZO DYESTUFFS

Visvanathan Ramanathan, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland

No Drawing. Filed Nov. 8, 1965, Ser. No. 506,829

Claims priority, application Switzerland, Nov. 11, 1964, 14,524/64; Apr. 23, 1965, 5,665/65

8 Claims. (Cl. 260—158)

Water-soluble basic azo dyestuffs of the benzene thiazole- or thiadiazoleazo-o-aminonaphthalene series containing a quaternized amino group bound via an N-alkylsulfonylamino- or an alkylsulfone bridge to the coupling component.

3,403,144

PROCESS FOR THE PREPARATION OF SULFURYL FLUORIDE

Hung Kei H. Lam, San Pablo, Calif., and Harold T. Fullam, Richland, Wash., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 15, 1964, Ser. No. 337,712

2 Claims. (Cl. 23—203)

Sulfuryl fluoride is prepared by reacting the fluoride or hexafluorosilicate of either barium or strontium with sulfur trioxide vapors at an appropriate temperature and retention time. Illustrative of preparing the reactants, barium fluoride may be produced by treating an aqueous solution of barium sulfide with hydrogen fluoride, while barium hexafluorosilicate is obtainable by dissolving barium sulfide in a 5% HCl solution and reacting the filtered solution with fluosilicic acid. The sulfur trioxide vapor is provided by heating 65% oleum, and supplying said vapor with helium gas as a carrier.

3,403,145

ACETYLATION OF CELLULOSE

Dexter Edge, Jr., Michael D. Fahey, and Robert G. Rickey, all % Rayonier Incorporated, Olympic Research Division, Shelton, Wash. 98584

No Drawing. Continuation of application Ser. No. 208,916, July 10, 1962. This application June 26, 1967, Ser. No. 649,050

4 Claims. (Cl. 260—227)

A process for the partial acetylation of cellulose comprising preswelling substantially dry cellulose fiber and the acetylation of the preswelled fiber with superheated acetic anhydride vapor.

3,403,146

MONO- OR DI-SUBSTITUTED CYANURIC CHLORIDE REACTED WITH STARCH AND THE PRODUCTS THEREOF

Walter G. Hunt, Bridgeton, Mo., assignor to Anheuser-Busch Incorporated, St. Louis, Mo., a corporation of Missouri

No Drawing. Filed Mar. 24, 1965, Ser. No. 442,535

6 Claims. (Cl. 260—233.3)

A starch derivative made by reacting a mono- or di-substituted cyanuric chloride compound with starch whereby the triazine ring links a material to the starch. The reaction is under alkaline conditions and permits attaching compounds which cannot ordinarily be coupled to starch. Under extreme conditions, a mono-substituted triazine ring also can be made to cross-link the starch. In addition, a mono-substituted material can be merely attached to the starch without cross-linking under less harsh conditions. Optical bleaching agents, fungicides, insecticides, etc., are representative of the materials which can be linked to starch in this manner.

3,403,147

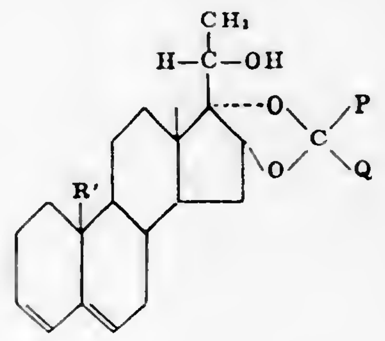
16,17-ACETONIDES OF 20 OXYGENATED PREGN-4-EN-3,16,17-TRIOLS AND PREGNA-3,5-DIEN-16,17-DIOLS

Gerald W. Krakower, Elizabeth, and Josef Fried, Princeton, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 9, 1963, Ser. No. 271,605

2 Claims. (Cl. 260—239.55)

1. A compound selected from the group consisting of steroids of the formula:



wherein R′ is hydrogen or methyl; P is selected from the group consisting of hydrogen, lower alkyl, halo lower alkyl, monocyclic cycloalkyl, monocyclic cycloalkyl lower alkyl, monocyclic aryl, monocyclic aryl lower alkyl, monocyclic heterocyclic and monocyclic heterocyclic lower alkyl; Q is selected from the group consisting of lower alkyl, halo lower alkyl, monocyclic cycloalkyl, monocyclic cycloalkyl lower alkyl, monocyclic aryl, monocyclic aryl lower alkyl, monocyclic heterocyclic and monocyclic heterocyclic lower alkyl; and together with the carbon to which they are joined P and Q is selected from the group consisting of monocyclic cycloalkyl and monocyclic heterocyclic.

2. $\Delta^{3,5}$ - pregnadiene - 16α,17α,20 - triol 16,17 - acetophenonide.

3,403,148

PROCESS FOR THE MANUFACTURE OF 3-OXO-7α-METHYL-17-ETHYLENE-DIOXY-$\Delta^{1,4}$-ANDROSTADIENE

Georg Anner, Basel, and Peter Wieland, Oberwil, Basel-Land, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 2, 1966, Ser. No. 524,497

Claims priority, application Switzerland, Feb. 22, 1965, 2,429/65

4 Claims. (Cl. 260—239.55)

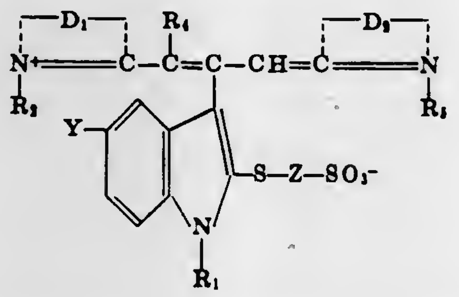
Process for the manufacture of a 3-oxo-$\Delta^{1,4}$-androstadiene by reaction of a 3-oxo-Δ^4-androstene with an oxalic acid ester, subsequent bromination and splitting off of hydrogen bromide, wherein 3-oxo-7α-methyl-17-ethylenedioxy-Δ^4-androstene is used as starting material. The compound of this invention is useful as an intermediate in the manufacture of 7α-methylestrone and its derivatives.

3,403,149

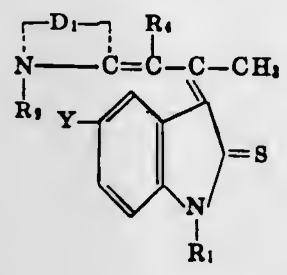
PRODUCTION OF CYANINE DYES

Geoffrey Ernest Ficken, Ilford, England, assignor to Ilford Limited, Ilford, England, a British company
No Drawing. Continuation-in-part of application Ser. No. 171,598, Feb. 7, 1962. This application May 6, 1964, Ser. No. 365,481
Claims priority, application Great Britain, May 17, 1963, 19,754/63
2 Claims. (Cl. 260—240.1)

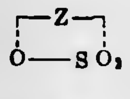
There is provided a process for the production of cyanine dyes having the formula:



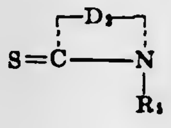
wherein R_1 is selected from the class consisting of methyl and phenyl groups, R_2 and R_5 are each selected from the class consisting of methyl and ethyl, R_4 is selected from the class consisting of hydrogen and methyl groups, Y is selected from the class consisting of hydrogen and methoxy groups, Z is a saturated alkylene group of 3 to 5 carbon atoms linking the indicated sulphur atoms, and D_1 and D_2 are each a residue selected from the residues of thiazoles, benzthiazoles, benzoxazoles, benzselenazole, naphthathiazoles and indoles, which comprises fusing a compound of the formula:



with a theoretical excess of a compound of formula:



and a compound of formula:



wherein the symbols have the meanings just assigned and refluxing the product in the presence of a tertiary amine.

3,403,150

POLYCYCLIC AROMATIC HALOGEN COMPLEXES AS ORGANIC SEMICONDUCTORS

Yoshio Matsunaga, Sapporo, Japan, assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Continuation-in-part of application Ser. No. 264,924, Mar. 13, 1963. This application June 21, 1967, Ser. No. 647,653
3 Claims. (Cl. 260—243)

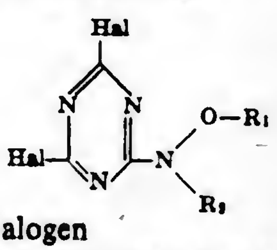
Invention relates to novel polycyclic aromatic halogen complexes and in particular thiazine-iodine complexes such as N-methylphenothiazine-iodine complexes. The aforesaid complexes are useful as organic semiconductors.

3,403,151

TRIAZINE DERIVATIVES WITH HERBICIDAL AND FUNGICIDAL PROPERTIES

Enrico Knüsli, Riehen, near Basel, and Jürg Rumpf, Binningen, near Basel, Switzerland, assignors to J. R. Geigy A.-G., Basel, Switzerland
No Drawing. Filed Jan. 31, 1962, Ser. No. 170,263
Claims priority, application Switzerland, Feb. 1, 1961, 1,153/61, 1,154/61
7 Claims. (Cl. 260—249.5)

1. A compound of the formula



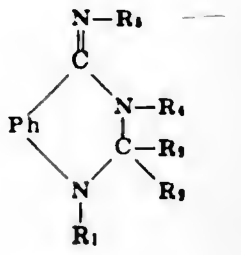
wherein Hal is a halogen
R_1 is a member selected from the group consisting of lower alkyl, lower alkenyl and lower alkynyl, and
R_2 is a member selected from the group consisting of hydrogen, lower alkyl and lower alkenyl.

3,403,152

1-ARYL-4-IMINO-1,2,3,4-TETRAHYDRO-QUINAZOLINES

Herbert Morton Blatter, Springfield, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 509,613, Nov. 24, 1965. This application Mar. 20, 1967, Ser. No. 624,210
5 Claims. (Cl. 260—256.4)

1-aryl-4-imino-1,2,3,4-tetrahydro-quinazolines of the Formula I



(I)

Ph=a 1,2-phenylene
R_1=aromatic radical
R_2=aliphatic or aromatic radical
R_3=H or aliphatic radical
$R_{4;5}$=H, aliphatic or aromatic radical

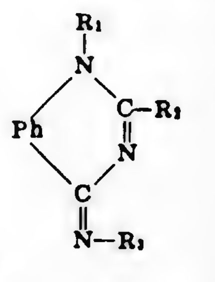
N-oxides, quaternaries and salts thereof, e.g. the 4-n-propyl - imino - 1 - (4-fluoro-phenyl)-2-phenyl-1,2,3,4-tetrahydro-quinazoline, exhibit anti-inflammatory effects.

3,403,153

1-ARYL-4-IMINO-1,2-DIHYDROQUINAZOLINES

Herbert Morton Blatter, Springfield, Richard William James Carney, New Providence, and George de Stevens, Summit, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 488,264, Sept. 17, 1965. This application Mar. 20, 1967, Ser. No. 624,211
10 Claims. (Cl. 260—256.4)

1-aryl-4-imino-1,4-dihydro-quinazolines of the Formula I



(I)

Ph=a 1,2-phenylene
R_1=aromatic radical
R_2=aliphatic or aromatic radical
R_3=H, aliphatic or aromatic radical

N-oxides, quaternaries and salts thereof, e.g., the 4-cyclopropyl - imino - 1,2 - diphenyl - 1,4 - dihydro-quinazoline, exhibit antiinflammatory effects.

3,403,154

COMPOUNDS DERIVED FROM PHENANTHRENEQUINONE

Herbert K. Reimschuessel and Franklin Boardman, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Jan. 14, 1966, Ser. No. 520,676
3 Claims. (Cl. 260—266)

The compounds of the invention are 9,11,20,22-tetrazatetrabenzo[a,c,l,n]pentacene and 9,11,13,22,24,26-hexazatetrabenzo[a,c,p,r]heptacene which are useful as pigments in organic coating compositions. Such compounds are prepared by condensing 9,10-phenanthrenequinone with the appropriate tetraamine compound.

3,403,155

BENZO[6,7]CYCLOHEPTA[1,2,3-d,e]ISOQUINOLINE CARBONITRILES

Leslie G. Humber, Dollard des Ormeaux, Quebec, and Martin A. Davis, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 7, 1966, Ser. No. 555,674
3 Claims. (Cl. 260—283)

There are disclosed herein 3-cyano-7,8-dihydrobenzo[6,7]cyclohepta[1,2,3-d,e]isoquinoline and the intermediates 7,8-dihydrobenzo[6,7]cyclohepta[1,2,3-d,e]isoquinoline, and 2-(p-toluenesulfonyl)-3-cyano-2,3,7,8-tetrahydrobenzo[6,7]cyclohepta[1,2,3-d,e]isoquinoline used in its preparation. The compounds have anti-bacterial properties and methods for their preparation and use are also given.

3,403,156

N-ACYL SUBSTITUTED POLYCYCLIC ISOQUINOLINES

Leslie G. Humber, Dollard des Ormeaux, Quebec, and Martin A. Davis, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 7, 1966, Ser. No. 555,701
10 Claims. (Cl. 260—286)

The compounds 2-(3-chloropropionyl)-, 2-(2-chloroacetyl)-, 2-(3-dimethylaminopropionyl)-, 2-(3-methylaminopropionyl)-, 2-(2-dimethylaminoacetyl)-, 2-(N-methyl-N-formyl-3-aminopropionyl)-, and 2-acetyl-1,2,3,7,8,12b-hexahydrobenzo[6,7]cyclohepta[1,2,3 - d,e]isoquinoline and their preparation are disclosed. These are characterized by possessing anti-bacterial, trichomonicidal, and central nervous system depressant activities. Useful compositions capable of utilizing these properties are also disclosed.

3,403,157

BENZO[6,7]CYCLOHEPTA[1,2,3-d,e]ISOQUINOLINE DERIVATIVES

Leslie G. Humber, Dollard des Ormeaux, Quebec, and Martin A. Davis, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 1, 1965, Ser. No. 484,440
4 Claims. (Cl. 260—288)

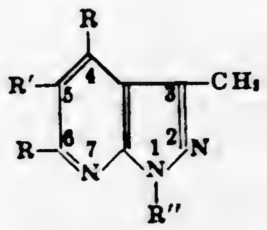
There are disclosed herein 1,2,3,8,9-pentahydro-3aH-benzo[6,7]cyclohepta[1,2,3-d,e]isoquinoline and its N-benzyl, N-ethyl, and N-(γ-diethylaminopropyl) derivatives. The compounds possess anti-bacterial properties and methods for their preparation and use are also disclosed.

3,403,158

1H-PYRAZOLO[3,4-b]PYRIDINES

John H. Markillie, Cooper Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Mar. 11, 1966, Ser. No. 533,399
3 Claims. (Cl. 260—296)

This invention relates to novel pyrazoles and a process for their preparation. It is more particularly directed to novel 1H-pyrazolo[3,4-b]pyridines represented by the formula



I

wherein R is selected from the group consisting of lower alkyl, phenyl, lower-alkylphenyl, lower-alkoxyphenyl, and halophenyl, R′ has the same meaning as R and in addition hydrogen, and R″ is lower-alkyl. The compounds of Formula I possess anti-inflammatory and oral antidiabetic activity.

3,403,159

PHENYLCYCLOHEXYLACETONITRILE DERIVATIVES

Marcel Pesson, Paris, France, assignor to Societe anonyme dite: Laboratoire Roger Bellon, Neuilly-sur-Seine, Hauts-de-Seine, France, a French company
Filed Aug. 10, 1964, Ser. No. 388,476
Claims priority, application Great Britain, Aug. 16, 1963, 32,564/63
7 Claims. (Cl. 260—293)

1. An α-phenyl-α-cyclohexyl acrylonitrile compound selected from the group consisting of α-phenyl-α-cyclohexyl-β-(N-ethyl-2-pyrrolidyl) propionitrile, phenyl cyclohexyl-(N-ethyl-3-piperidyl) acetonitrile, and their substantially non-toxic acid addition salts, said compounds having a high antitussive activity.

3,403,160

DI-β-PYRIDYL METHYL ESTERS OF ISOCINCHOMERONIC ACID

Bo Thuresson af Ekenstam, Molndal, and Carl Göran Claeson, Goteborg, Sweden, assignors to Aktiebolaget Bofors, Bofors, Sweden
No Drawing. Filed June 22, 1966, Ser. No. 559,400
Claims priority, application Sweden, June 28, 1965, 8,480/65
1 Claim. (Cl. 260—295.5)

Di-β-pyridyl methyl ester of 2,5-isocinchomeronic acid and a method for its preparation having vasodilating properties of long duration with a minimum of strong side effects which is characteristic of other vasodilating agents.

3,403,161

[2-(2-AMINO-LOWER ALKYL-AMINO)-5-SUBSTITUTED BENZOYL]-PYRIDINE

Rodney Ian Fryer, North Caldwell, Robert August Schmidt, Wallington, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 358,613, Apr. 9, 1964. This application Apr. 15, 1965, Ser. No. 448,259
3 Claims. (Cl. 260—296)

[2-(2-amino-lower alkyl-amino)-5-substituted benzoyl] pyridine, intermediates convertible into 5-pyridyl-2,3-dihydro - 1,4-benzodiazepines. The last-mentioned compounds are useful for pharmacological purposes, e.g. as sedatives, anticonvulsants and muscle relaxants.

3,403,162
1-PHENYL-2-PYRIDYLBENZOCYCLOALKENES AND DERIVATIVES THEREOF

Daniel Lednicer, Portage Township, Kalamazoo County, and John C. Babcock, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed May 29, 1963, Ser. No. 284,008

2 Claims. (Cl. 260—297)

1. 1 - pheny l- 2 - (3-pyridyl)-6-methoxy-3,4-dihydronaphthalene.

3,403,163
METAL ALKOXIDES AND METHODS OF MAKING THE SAME

Charles H. Fuchsman, Cleveland Heights, Ohio, assignor to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio

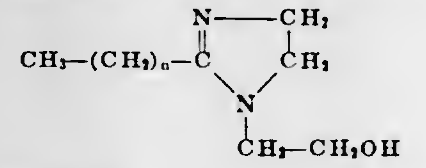
No Drawing. Continuation-in-part of application Ser. No. 64,705, Oct. 25, 1960. This application Sept. 11, 1962, Ser. No. 222,951

22 Claims. (Cl. 260—309.6)

1. A method of making a divalent metal alkoxide in which the metal replaces the hydrogen of an alcoholic OH group, the method comprising the steps of

(A) reacting (a) a divalent nickel salt of an aliphatic monocarboxylic acid having 2 to 30 carbon atoms with (b) a polyfunctional organic alcohol having a functional group attached to a carbon atom in a position alpha to beta with respect to the carbon atom carrying the hydroxyl group and separated from said hydroxyl group by at least one methylene group, the alcohol being a member of the group consisting of

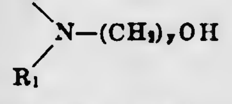
(1) a fatty acid-imidazoline condensation product having the formula:



where *n* is 6 to 20;

(2) a cyclic ether-alcohol that is a member selected from the group consisting of tetrahydrofurfuryl alcohol, tetrahydropyrane-2-methanol, and tetrahydropyrane-2-ethanol;

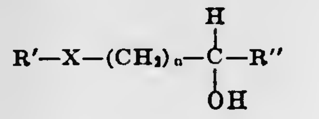
(3) an amino alcohol having the structure:



$$\begin{matrix} R_1 \\ & \searrow \\ & & N-(CH_2)_yOH \\ & \nearrow \\ R_1 \end{matrix}$$

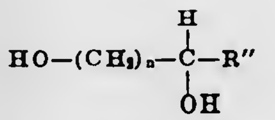
where R_1 is an alkyl radical of 1 to 3 carbon atoms and *y* is an integer from 2 to 3; and

(4) an alcohol having the general formula selected from the group consisting of:



$$R'-X-(CH_2)_n-\underset{\displaystyle OH}{\overset{\displaystyle H}{C}}-R''$$

and



$$HO-(CH_2)_n-\underset{\displaystyle OH}{\overset{\displaystyle H}{C}}-R''$$

wherein R' is a radical selected from the group consisting of alkyl, aryl, alkaryl, aralkyl, cycloalkyl, alkoxyalkyl, alkoxyaryl, aroxyalkyl, alkoxycycloalkyl, cycloalkoxyalkyl hydroxyalkyl, hydroxycycloalkyl and hydroxyalkoxyalkyl, X is selected from the group consisting of oxygen and sulfur, R'' is selected from the group consisting of hydrogen and R'; and *n* is an integer from 1 to 2, and

(B) removing the monocarboxylic acid formed in the reaction from the reaction mass.

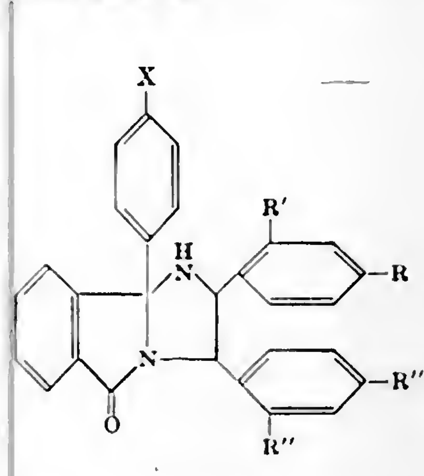
3,403,164
9b-ARYL-1,2,3,9b-TETRAHYDRO-5H-IMIDAZO [2,1-a]ISOINDOL-5-ONES

William J. Houlihan, Mountain Lakes, N.J., assignor to Sandox Inc., Hanover, N.J.

No Drawing. Filed Nov. 25, 1966, Ser. No. 596,833

2 Claims. (Cl. 260—309.7)

1. A compound selected from the group consisting of compounds of the formula



and a non-toxic acid addition salt thereof, wherein

X represents hydrogen or chloro;

R and R''' are the same and represent hydrogen or chloro; and

R' and R'' are the same and represent hydrogen or chloro.

3,403,165
TETRATHIOTETRACENE ION-RADICAL SALTS

Yoshio Matsunaga, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

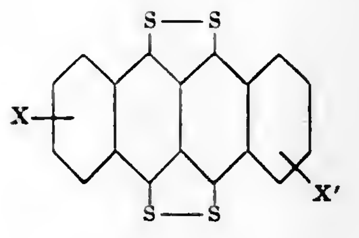
No Drawing. Filed Nov. 19, 1963, Ser. No. 324,880

7 Claims. (Cl. 260—327)

1. A complex of the formula:

$$[D]_m[A]_n$$

where D is a tetrathiotetracene of the formula



where X and X' are selected from the group consisting of H and lower alkyl, *m* and *n* are positive integers of less than 4, and where A is selected from the group consisting of o- and p-benzoquinones having at least 2 electronegative substituents and tetracyanoethylene.

3,403,166
EPISULFIDE PRODUCTION

Friedrich K. Lautenschlaeger, Toronto, Ontario, Canada, assignor to The Dunlop Company Limited, a British company

No Drawing. Filed July 23, 1965, Ser. No. 474,453

Claims priority, application Great Britain, Aug. 1, 1964, 30,410/64

15 Claims. (Cl. 260—327)

Preparation of monomeric substituted vicinal episulphides by reducing in a non-acidic reducing system a chloropolysulphide, being the reaction product of an olefine having a substituent containing at least one atom other than carbon and hydrogen with a sulphur chloride compound having a mol ratio of sulphur to chlorine of at least 0.5:1 said non-acidic reducing system being, e.g., aluminium amalgam and water, nascent hydrogen, lithium aluminum hydride, glucose in a basic medium, and sodium sulphide and/or sodium sulphite. These episulphides may be polymerized or copolymerized to form polymers and serve such uses as modifying the physical and chemical properties of polymeric materials.

3,403,167
3,17-DISUBSTITUTED D-HOMOANDROSTANE

Wataru Nagata, Hyogo Prefecture, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Application May 12, 1965, Ser. No. 464,264, now Patent No. 3,345,385, dated Oct. 3, 1967, which is a division of application Ser. No. 127,097, July 27, 1961, now Patent No. 3,206,472. Divided and this application Oct. 19, 1965, Ser. No. 516,807

Claims priority, application Japan, Mar. 12, 1960, 35/8,208; Mar. 19, 1960, 35/9,421; Apr. 4, 1960, 35/20,124, 35/20,125; Apr. 6, 1960, 35/20,723; Apr. 21, 1960, 35/22,417; Apr. 25, 1960, 35/22,611

4 Claims. (Cl. 260—340.9)

3,17-disubstituted D-homoandrostanes are useful as intermediates in the total synthesis of steroids.

3,403,168
PREPARATION OF METALDEHYDE

Herbert Zima, Brig, Switzerland, assignor to Lonza Ltd., Gampel, Basel, Switzerland

No Drawing. Filed Aug. 23, 1965, Ser. No. 481,888

Claims priority, application Switzerland, Aug. 27, 1964, 11,250/64

8 Claims. (Cl. 260—340)

Metaldehyde is prepared by diluting acetaldehyde with an n-hydrocarbon having 4 to 8 carbon atoms and contacting it with aluminium or silicon (IV) bromide or with the bromide of acetic acid, trichloroacetic acid, or γ-bromoacetic acid.

3,403,169
ADDITION OF ORGANOMETALLIC COMPOUNDS TO ACTIVATED OLEFINS

Bernard Rudner and George S. Achorn, Pittsburgh, and Paul M. Hergenrother, Wampum, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed Aug. 23, 1963, Ser. No. 304,220

7 Claims. (Cl. 260—346.3)

1. A method of making a functionally substituted organometallic compound comprising reacting at a temperature of 50–250° C. in the presence of a free radical catalyst

(a) an alpha hydrogen containing organometallic compound containing a metal portion selected from the group consisting of silicon, germanium, tin and lead and having no metal-hydrogen bonds, with

(b) an activated olefin containing an olefinic group alpha to an activator radical selected from the group consisting of carboxy and a radical hydrolyzable to carboxy.

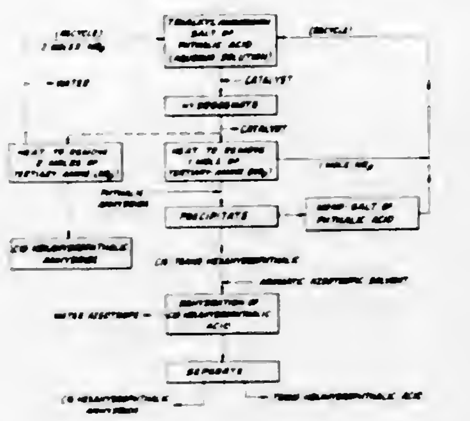
3,403,170
PROCESS FOR THE PREPARATION OF HEXAHYDROPHTHALIC ACID AND ANHYDRIDE

Ben B. Corson and William T. Gormley, Pittsburgh, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

Filed May 9, 1966, Ser. No. 548,533

11 Claims. (Cl. 260—346.3)

A process is provided for the preparation of cis- and trans-hexahydrophthalic acids and cis-hexahydrophthalic anhydride directly from phthalic anhyride by forming an aqueous solution of a tertiary amine salt of phthalic anhydride, hydrogenating the tertiary amine salt, and heating the salt to remove the tertiary amine. To produce the cis-anhydride, the solution is heated to dryness and the anhydride distilled. For production of cis- and trans-hexahydrophthalic acid, phthalic anhydride is added to the aqueous solution causing the hexahydro derivatives to precipitate. These are readily separated and converted to the cis-anhydride.



3,403,171
PROCESS FOR 17α-ACETOXY-6-METHYL-16-METHYLENE-4,6-PREGNADIENE-3,20-DIONE AND INTERMEDIATES THEREFOR

John M. Beaton, Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed June 16, 1965, Ser. No. 464,579

16 Claims. (Cl. 260—397.4)

This invention relates to certain novel steroids, more particularly to 3β,5α,17α-triacetoxy-6β-methyl-16-methylene-pregnan-20-one, 3β-hydroxy-5α,17α-diacetoxy - 6β-methyl-16-methylenepregnan-20-one and 5α,17α - diacetoxy-6β-methyl-16-methylenepregnane - 3,20 - dione and their use in a process for the preparation of the known compound, 17α-acetoxy-6-methyl - 16 - methylene - 4,6-pregnadiene - 3,20 - dione, a highly active progestational agent.

3,403,172
HARD, HIGH-MELTING WAXES FROM LONG-CHAIN N-ALLYLAMIDES

Edmund F. Jordan, Jr., and Bohdan Artymyshyn, Philadelphia, and Arthur N. Wrigley, Oreland, Pa., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Jan. 3, 1964, Ser. No. 335,701

5 Claims. (Cl. 260—404.5)

The polymerization behavior of N-allylamides is shown to be markedly different from that of most allyl compounds, in that relatively little polymer is formed when they are treated with a catalytic amount of peroxide or other source of free radicals. When long carbon chain N-allylamides are partially polymerized by reaction with a peroxide or other source of free radicals the product is a mixture of polymeric and nonpolymeric components and has physical and mechanical properties resembling those of carnauba and other hard waxes.

3,403,173
MANUFACTURE OF TETRAORGANOLEAD

Rolland K. Snuffer and Daniel E. Wiley, Corpus Christi, Tex., assignors to Houston Chemical Corporation, New York, N.Y., a corporation of Texas

No Drawing. Filed Sept. 21, 1965, Ser. No. 489,048

10 Claims. (Cl. 260—437)

An improvement in the manufacture of tetraorganolead is described which involves establishing and maintaining in a reaction zone of organo halide and lead alloy a small concentration of silver above about 50 p.p.m. basis the lead alloy over an extended period of time. Also described is operation of a reaction zone of organo halide and lead alloy in which there is established and maintained a small concentration above about 100 p.p.m. basis the weight of the alloy of combined silver and copper over an extended period of operation. Use of the process contributes to increased yields of tetraethyllead.

3,403,174
METHYLOL DERIVATIVES OF HALO-CYANOACETAMIDES AND THEIR APPLICATION TO CELLULOSIC MATERIALS

Leon H. Chance and Ethel K. Leonard, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Mar. 9, 1965, Ser. No. 438,430, now Patent No. 3,350,164, dated Oct. 31, 1967. Divided and this application June 1, 1967, Ser. No. 655,970

2 Claims. (Cl. 260—465.4)

The N-methylol derivatives of dibromocyanoacetamide and dichlorocyanoacetamide were prepared by reacting said compounds in aqueous solutions of pH about from 7.0 to 9.0 with formaldehyde in the mole ratio of the selected amide to formaldehyde of about from 1:1 to 1:3, at room temperatures to yield compounds useful as cellulosic textile finishing agents.

3,403,175
PREPARATION OF GLYCOL DIESTERS FROM OLEFINS AND CARBOXYLIC ACID ANHYDRIDES

Larry G. Wolgemuth, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Sept. 27, 1965, Ser. No. 490,639

6 Claims. (Cl. 260—497)

The invention comprises contacting a hydrocarbon olefin with oxygen in a reaction medium comprising a carboxylic acid anhydride. The contacting is performed at temperatures from about 75° to about 300° C. and, preferably superatmospheric pressures, to oxidize the hydrocarbon olefin and form a glycol diester with the carboxylic acid anhydride. The reaction is performed non-catalytically and products obtained can be directly distilled to recover the desired glycol diester product.

3,403,176
PHOSPHORUS CONTAINING CHELATING AGENT

Burton Peter Block, Wayne, and Gerd Helmut Dahl, King of Prussia, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 16, 1966, Ser. No. 534,650

6 Claims. (Cl. 260—502.4)

Chelating agents are prepared of the formula

$$[RP(O)OH]_2CH_2$$

where R represents an alkyl radical, substituted alkyl radical, phenyl radical, or substituted phenyl radical. These P,P'-disubstituted methylenediphosphinic acids are used as intermediates in the preparation of chelates of titanium which in turn are useful in the preparation of chelated titanium phosphinate polymers useful as corrosion resistant coatings.

3,403,177
PRETREATMENT OF CATALYST USED IN THE PRODUCTION OF ACRYLIC ACID AND ACROLEIN

Christopher John Brown, Walton-on-the-Hill, Tadworth, England, assignor to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Filed Nov. 22, 1965, Ser. No. 509,155

Claims priority, application Great Britain, Nov. 26, 1964, 48,035/64

5 Claims. (Cl. 260—533)

A catalyst of Sb, V and Sn and/or Fe used in the oxidation of propylene to acrylic acid and acrolein is heated to reaction temperature for at least one hour in an oxygen-free reducing atmosphere, in order to avoid undesirable temperature peaks in the catalyst bed.

3,403,178
PREPARATION OF α-HYDROXY-CARBOXYLIC ACIDS

Theodor Völker and Klaus Hering, Freiburg, Switzerland, assignors to Lonza Ltd., Gampel, Basel, Switzerland

No Drawing. Filed July 9, 1965, Ser. No. 470,896

Claims priority, application Switzerland, July 9, 1964, 9,039/64

4 Claims. (Cl. 260—535)

Alpha-hydroxycarboxylic acids are prepared by contacting the alpha-oximation product of a 2,2,5,5-tetrasubstituted - 3-oxotetrahydrofuran with concentrated sulfuric acid.

3,403,179
NOVEL 7 - (1,2 - BIS - SUBSTITUTED - HYDRAZINO) - TETRACYCLINES AND METHODS OF PREPARING SAME

Ronald Theodore Zambrano, Paterson, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 10, 1967, Ser. No. 608,264

10 Claims. (Cl. 260—559)

This disclosure describes compounds of the class of 7-(1,2-bis-substituted-hydrazino)tetracyclines and 7-(1,2-bis-substituted-hydrazino)-11a-halotetracyclines, useful as intermediates in the preparation of the biologically active 7-mono(lower alkyl)aminotetracyclines and 7-di(lower alkyl)aminotetracyclines.

3,403,180
4-TRIFLUOROMETHYL-2,6-DINITROANILINES

Quentin F. Soper, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Continuation-in-part of application Ser. No. 485,060, Sept. 3, 1965, which is a continuation-in-part of application Ser. No. 314,510, Oct. 7, 1963. This application Oct. 19, 1966, Ser. No. 587,699

6 Claims. (Cl. 260—577)

This invention relates to a group of novel substituted anilines, useful in eliminating germinating and seedling weed grasses and selected broadleaf weeds.

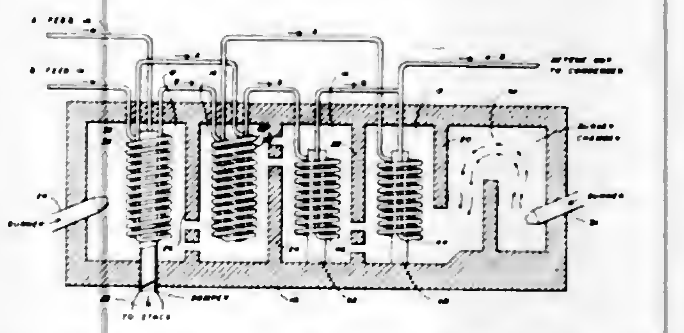
3,403,181
PYROLYSIS PROCESS AND APPARATUS FOR MANUFACTURE OF KETENES AND ANHYDRIDES

Edwin S. Painter, Robert C. Petrey, and John H. Jensen, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Continuation of application Ser. No. 364,509, May 4, 1964, which is a continuation-in-part of application Ser. No. 31,441, May 24, 1960, now Patent No. 3,136,811, dated June 9, 1964. This application July 20, 1966, Ser. No. 566,712

The portion of the term of the patent subsequent to July 5, 1983, has been disclaimed

5 Claims. (Cl. 260—585.5)



A system for preparing ketenes by pyrolysis of material in a furnace having interwound helical coils in its preheating and superheating chambers, with means for subsequent conversion to anhydride.

3,403,182
TRICYCLO[3.3.2.0^{4,6}]DECADIENE-2,7-ONE-10 AND PROCESS THEREFOR

Jan Nielsen and Cornelis Hoogzand, Brussels, Belgium, assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed May 25, 1965, Ser. No. 458,774

2 Claims. (Cl. 260—586)

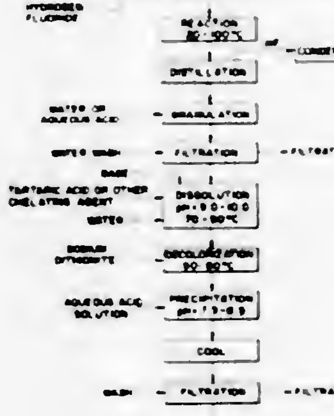
Tricyclo[3.3.2.0^{4,6}]decadiene-2,7-one-10 is prepared by contacting [N-methyl - N - (beta-N',N'-dimethylaminoethyl)]tricyclo[3.3.2.0^{4,6}]deca-2,7,9-triene with silica gel. The ketone is useful as a polar solvent which is liquid over a wide range of temperature.

3,403,183
PRODUCTION OF BENZOPHENONES

Elmer H. Dobratz and Alfred J. Kolka, Pittsburgh, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

Filed Dec. 16, 1966, Ser. No. 602,363

9 Claims. (Cl. 260—591)



Polyhydroxy and alkoxy benzophenones, such as 2,4-dihydroxybenzophenone, are prepared by condensing hydroxy or alkoxy substituted benzenes with benzoic acid or hydroxy or alkoxy derivatives thereof in the presence of a catalyst-solvent hydrogen fluoride system. The hydrogen fluoride is removed from the reaction mass and the residue treated in an alkaline solution at a pH of 9–10 with sodium dithionite. The pH of the solution is adjusted to 7.5 to 8.9 whereby pure and substantially undiscolored polyhydroxy or polyalkoxy benzophenones precipitate. Polyhydroxy or alkoxy substituted benzophenone compounds are used in the preparation of dyestuffs, resins, and ultraviolet light absorption agents, the last mentioned use requiring that these compounds be available in a pure and undiscolored form.

3,403,184
CAROTENOID COMPOUNDS

Albert J. Chechak and Charles D. Robeson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 23, 1966, Ser. No. 536,653

2 Claims. (Cl. 260—612)

Novel carotenoid compounds, useful as food colorants and as additives in poultry feed, having the structural formula:

$$R—A_m—A_n'—R'$$

where R is 2,6,6-trimethylcyohex-1-enyl, A is 3-methyl-1,3-butadienyl, A' is 2-methyl-1,3-butadienyl, R' is 2,6,6-trimethylcyclohex-1-enyl or 2,6,6-trimethylcyclohex-1,3-dienyl or p-methoxyphenyl, *m* is 1 to 3, *n* is 1 to 3, and the sum of *m* plus *n* is 2 to 4.

3,403,185
METHOD OF PRODUCING NITRO-BIPHENYLS AND NITRO-TERPHENYLS

John Martin Nilsson, Solna, and James Axel Christer Björklund, Stockholm, Sweden, assignors to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden

No Drawing. Filed Nov. 30, 1966, Ser. No. 597,845

Claims priority, application Sweden, Dec. 9, 1965, 15,951/65

7 Claims. (Cl. 260—612)

1. A method of producing nitro-biphenyls or nitro-terphenyls which comprises heating in quinoline an aromatic nitro compound selected from the group consisting of nitro-benzene, 1,3-dinitro-benzene, 1,3,5-trinitro-benzene, 2-nitro-benzoic acid, 2,4-dinitro-benzoic acid, 2,6-dinitro-benzoic acid, and the anhydrides of said acids, a halogen substituted benzene selected from the group consisting of iodobenzenes, nitro-chloro-benzenes, and nitro-bromo-benzenes, and copper (I) oxide.

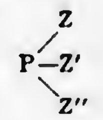
3,403,186
STABILIZATION OF PHENOLS

Hans L. Schlichting, Grand Island, and Ellis I. Lichtblau, Kenmore, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Nov. 30, 1965, Ser. No. 510,683

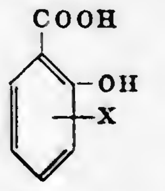
14 Claims. (Cl. 260—621)

A mixture of a trivalent phosphorus-containing organic compound of the formula



$$P{\overset{\diagup Z}{\underset{\diagdown Z''}{—Z'}}}$$

where Z can be hydroxyl, Z and Z' can be hydrogen and Z, Z' and Z'' are selected from the group consisting of alkyl of one to twelve carbon atoms, phenyl, phenoxy, substituted phenyl, substituted phenoxy, where the substituents are selected from alkyl of one to eight carbon atoms, chloro and bromo groups, and substituted phenoxy where the substituents are selected from alkyl of one to eight carbon atoms, chloro and bromo groups, and an organic acid selected from an aromatic ortho-hydroxy-carboxylic acid of the formula



where X is selected from the group consisting of hydrogen, alkyl of one to five carbon atoms, and carboxyl groups, and a saturated polycarboxylic acid containing from two to ten carbon atoms and from two to three carboxyl groups, each agent present being in a stabilizing proportion, can be used to stabilize phenol, halophenols, alkylphenols, and related products against deterioration in color and odor with age. A synergistic effect is suggested.

3,403,187
POLYTHIOETHERDITHIOLS AND PROCESS FOR PRODUCING SAME

Alexis A. Oswald, Mountainside, Karl Griesbaum, Elizabeth, and Daniel N. Hall, Linden, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Nov. 30, 1964, Ser. No. 414,582

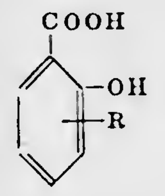
16 Claims. (Cl. 260—609)

Allene is reacted with aliphatic, and aromatic dithiols in a selective free radical process primarily via diterminal attack to form novel thiol and/or allyl terminated difunctional polythioetherdithiols useful as elastomer, mastics and adhesives intermediates and as constituents for room temperature curable rubbers, sealants, etc. Inherent to their unique synthesis these polymer intermediates contain the structural units derived from the dithiol and the allene in an alternating fashion and exhibit some dispersed branching resulting from center attack side reactions.

3,403,188
STABILIZATION OF PHENOLS

Hans L. Schlichting, Grand Island, and Ellis I. Lichtblau, Kenmore, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Nov. 30, 1965, Ser. No. 510,702
13 Claims. (Cl. 260—621)

A polybasic acid of phosphorus and an organic acid selected from an aromatic ortho-hydroxycarboxylic acid of the formula

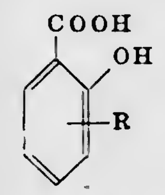


where R is selected from the group consisting of hydrogen, alkyl of one to five carbon atoms, and carboxyl groups, and a saturated aliphatic polycarboxylic acid containing from two to ten carbon atoms and from two to three carboxyl groups, each acid in the combination of said acids present being in a stabilizing proportion, can be used to stabilize phenol, halophenols, alkylphenols, and related products against deterioration in color and odor with age. A synergistic effect is suggested.

3,403,189
COLOR STABILIZATION OF PHENOL

Hans L. Schlichting, Grand Island, and Ellis I. Lichtblau, Kenmore, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Nov. 30, 1965, Ser. No. 510,703
8 Claims. (Cl. 260—621)

A mixture of an aromatic ortho-hydroxycarboxylic acid of the formula



where R is selected from the group consisting of hydrogen, alkyl of one to five carbon atoms, and carboxyl groups, and a saturated aliphatic polycarboxylic acid containing from two to ten carbon atoms and from two to three carboxyl groups, each acid in the combination of said acids present being in a stabilizing proportion, can be used to stabilize phenol against deterioration in color and odor with age. A synergistic effect is suggested.

3,403,190
STABILIZED HALOGENATED HYDROCARBON COMPOSITIONS OF MATTER

Germano Patron, Venice, Italy, assignor to Montecatini Edison S.p.A., Milan, Italy
No Drawing. Filed Nov. 15, 1965, Ser. No. 507,710
Claims priority, application Italy, Nov. 18, 1964, 24,693/64
9 Claims. (Cl. 260—652.5)

A stable composition of matter comprising a halogenated hydrocarbon and a dialkylhydrazone or crotonaldehyde.

3,403,191
CONVERSION OF TETRAFLUOROETHYLENE TO LIQUID FLUOROCARBONS

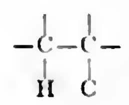
Donald P. Graham, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 1, 1964, Ser. No. 393,767
9 Claims. (Cl. 260—653.1)

Preparation of fluorinated products having at least eight carbon atoms by contacting tetrafluoroethylene with cesium fluoride suspended in a solvent having the structure $RO(C_pH_{2p}O)_nR$, wherein R is a C_1 to C_4 alkyl group, *p* is an integer from two to four and *n* is an integer from one to four. The liquid perfluorocarbons so produced are useful as intermediates, solvents, fluids in systems requiring inert and stable liquids, etc.

3,403,192
SULFUR-PROMOTED OXIDATIVE DEHYDROGENATION PROCESS

Mohan Vadekar and Israel Szabsaj Pasternak, Sarnia, Ontario, Canada, assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 443,683, Mar. 29, 1965. This application Nov. 1, 1967, Ser. No. 679,645
38 Claims. (Cl. 260—666)

Organic compounds having at least one

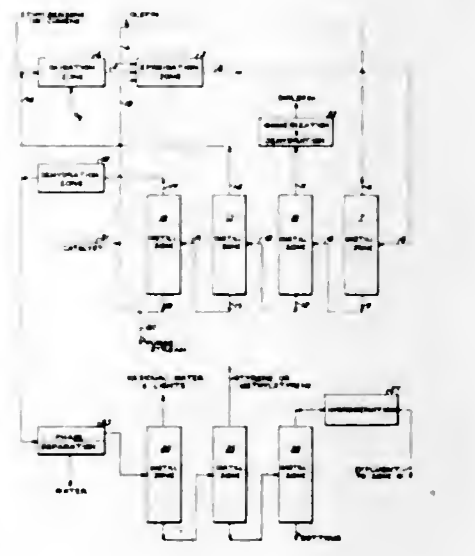


$$\begin{array}{cc} | & | \\ -C- & C- \\ | & | \\ H & C \end{array}$$

groupings are dehydrogenated in the vapor phase, over a low surface area catalyst, by reaction with hydrogen sulfide and oxygen and/or sulfur oxides. The product is useful as intermediates in a variety of applications.

3,403,193
PROCESS FOR THE CO-PRODUCTION OF A STYRENE AND A DI-OLEFIN

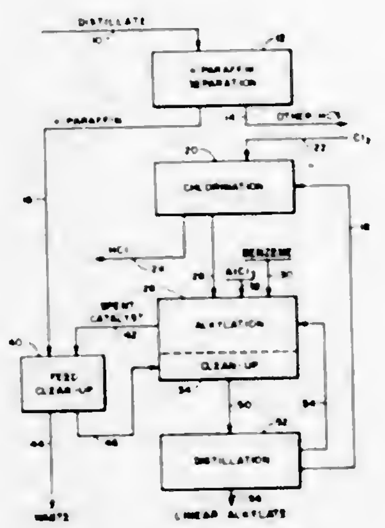
Joseph Lee Russell, Ridgewood, N.J., assignor to Halcon International, Inc., a corporation of Delaware
Filed June 28, 1965, Ser. No. 467,459
5 Claims. (Cl. 260—669)



This application relates to a new and improved process for the co-production of a styrene and di-olefin such as butadiene or isoprene. This is accomplished by first oxidizing ethylbenzene or cumene to the corresponding hydroperoxide, oxidizing an olefin with the hydroperoxide and converting the products of this oxidation to the desired unsaturated materials.

3,403,194
LINEAR ALKYLBENZENE PROCESS

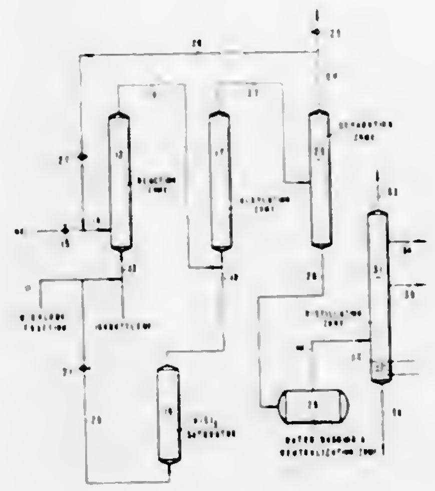
George C. Feighner, Oliver C. Kerfoot, and David W. Marshall, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Apr. 5, 1965, Ser. No. 445,644
11 Claims. (Cl. 260—671)



Benzene is alkylated with chloroparaffins prepared from paraffins which have been freed of aromatic hydrocarbons and oxygenated derivatives thereof by treatment with an aluminum halide or spent aluminum halide alkylation catalyst sludge.

3,403,195
PREPARATION OF t-ALKYL BENZENE

Robert H. Patton, Baytown, Tex., and Robert H. Perry, Jr., Springfield, N.J., assignors to Esso Research and Engineering Company
Filed Aug. 5, 1966, Ser. No. 570,481
2 Claims. (Cl. 260—671)



t-Butyl-m-xylene is produced by reacting isobutylene with hydrogen chloride dissolved in m-xylene to form t-butyl chloride free of isobutylene, the t-butyl chloride formed in situ then being employed to alkylate the m-xylene to form t-butyl-m-xylene and hydrogen chloride resulting in production of t-butyl chloride and hydrogen chloride in situ.

3,403,196
COMPLEXING PROCESS

Robert B. Long, Atlantic Highlands, N.J., and Warren A. Knarr, Ponca City, Okla., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed June 23, 1965, Ser. No. 466,436
12 Claims. (Cl. 260—677)

The addition of extraneous materials, boiling above the feed, i.e., monoolefins, water, alcohols, paraffins, permits greater cuprous chloride absorption capacity for the vapor phase absorption of complexible ligands from feed mixtures; monoolefins accomplish similar results when added to liquid phase absorptions.

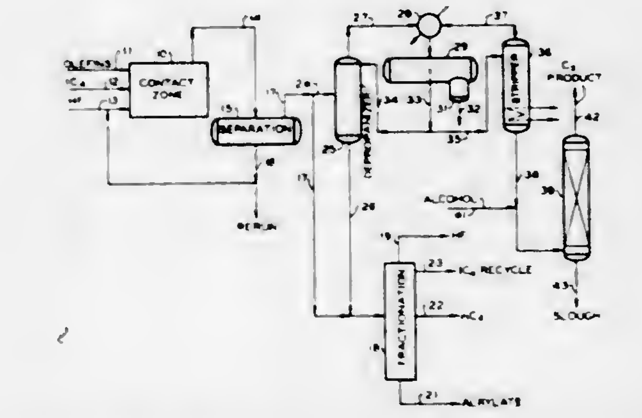
3,403,197
PREPARATION OF UNSATURATED OILS WITH A CRYSTALLINE VIOLET TITANIUM TRICHLORIDE AND ETHYL ALUMINUM DIHALIDE CATALYST

Charles W. Seelbach, Cranford, Erik G. M. Tornqvist, Roselle, and Arthur W. Langer, Jr., Watchung, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 692,050, Oct. 24, 1957. This application Dec. 1, 1965, Ser. No. 510,956
2 Claims. (Cl. 260—683.15)

1. A process for preparing low molecular weight, highly unsaturated oils comprising polymerizing an olefin having 3 to 20 carbon atoms under polymerizing conditions at a temperature in the range of 30 to 200° C. in a hydrocarbon diluent and a pressure in the range from 10 to 500 p.s.i.g. with a catalyst system comprising a crystalline violet titanium trichloride catalyst activated with a monoalkyl aluminum dihalide wherein the molar ratio of said monoalkyl aluminum dihalide to the titanium trichloride in the catalyst system in less than 5:1 and recovering as the predominant product oily, liquid polymers of said olefin having a cryoscopic molecular weight varying from 150 to 1500 and an iodine number of from 30 to 80 centigrams I/gram of polymer oil.

3,403,198
REMOVAL OF FLUORIDES FROM HYDROCARBON STREAMS

Joe Van Pool, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Feb. 14, 1966, Ser. No. 526,992
7 Claims. (Cl. 260—683.42)



Organic fluorides and HF are removed from hydrocarbon streams by chemically reacting potassium hydroxide with the fluorides by introducing in said streams an alcohol, such as, ethanol, methanol or propanol. The reaction with alcohol takes place with either solid KOH or with an aqueous-alcoholic solution of potassium hydroxide. The potassium fluoride formed in the reaction may be reacted with CaO to regenerate KOH. The invention is particularly useful in HF alkylation reaction to reduce the fluorine content of propane which is formed as a byproduct in the reaction.

3,403,199

DIGLYCIDYL ETHER OF POLYHYDRIC ALCOHOLS WITH DIAMINES OR HYDROQUINONES AND BIS(2,3-EPOXYCYCLOPENTYL)ETHER

Thomas Ramos, 536 Fort Washington Ave., New York, N.Y. 10033

No Drawing. Continuation-in-part of application Ser. No. 512,269, Dec. 6, 1965. This application Mar. 8, 1966, Ser. No. 534,971

14 Claims. (Cl. 260—830)

Production of synthetic resins derived from a diglycidyl ether of a polyhydric alcohol, a phenol and a diepoxycycloaliphatic ether. These resins are useful for embedding, encapsulating, casting, filament winding, reinforced plastics and syntactic foam applications. A specific example of one such resin, 1,4-butanediol diglycidyl ether, monotertiary-butylhydroquinone and bis(2,3-epoxycyclopentyl)ether has been used experimentally for the preparation of syntactic foams, and glass filament wound structures.

3,403,200

POLYAMIDE AND POLYSULFONAMIDE AZO DYES

John J. Randall, Cumberland Hill, R.I., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Mar. 30, 1966, Ser. No. 538,592

8 Claims. (Cl. 260—857)

Polymeric dyes may be prepared from diamines containing diazo groups. The diamines are reacted with diacid chlorides or disulfonyl chlorides to form the corresponding polyamides and polysulfonamides. The diamines containing the diazo groups are prepared by reacting a tetrazotized diamine with a diazo coupling compound.

In an example 0.1 mole of oxydianiline was dissolved in 200 ml. of 50/50 HCl/H_2O solution and cooled to 0° C. An aqueous solution of 0.2 mol of $NaNO_2$ is added dropwise until all the amine reacts. 0.2 mole of N-(2-aminoethyl)-N-ethyl-m-toluidine is mixed with 40 ml. of the 50/50 HCl/H_2O solution and allowed to stand overnight.

The coupled amine is then reacted with 0.1 mole of a diacid chloride such as sebacyl chloride or 4,4′-biphenyldisulfonyl chloride.

3,403,201

METHOD FOR THE PREPARATION OF O,O - DIMETHYL - S - (1,2 - DICARBETHOXYETHYL)DITHIOPHOSPHATE

Velniceriu Adrian, Tilincă Romulus and Mihaiu Traian, Bucharest, Rumania, assignors to Ministerul Industriei Chimice, Bucharest, Rumania

No Drawing. Filed Dec. 8, 1964, Ser. No. 416,928

1 Claim. (Cl. 260—981)

A one-step process for preparation of O,O-dimethyl-S-(1,2-dicarbethoxyethyl)diethiophosphate by reaction of diethyl maleic ester with phosphorus pentasulfide in an organic solvent reaction medium.

3,403,202

METHOD AND APPARATUS FOR MAKING TOBACCO-SMOKE FILTERS

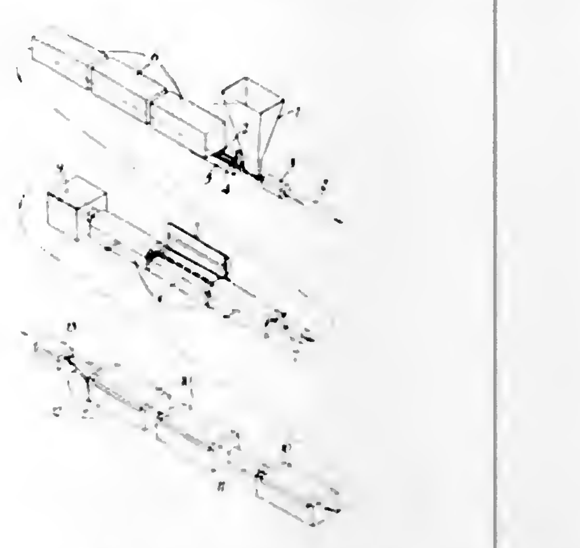
Sydney James Green and Norman Edwin Willis, London, England, assignors to Brown and Williamson Tobacco Corporation, Louisville, Ky., a corporation of Delaware

Filed Apr. 19, 1965, Ser. No. 449,255

Claims priority, application Great Britain, Apr. 20, 1964, 16,235/64

13 Claims. (Cl. 264—26)

Particulate filter and bonding material deposited on and supported by a paper band during transformation to a bonded filter rod having a substantially uniform cross-section by means of passage of the paper wrap and the material carried thereby through heating dies to soften the bonding material throughout the cross-section to bond the filter material, sizing dies to assure uniformity of cross-section of the rod, and cooling dies for cooling the bonded rod which is, thereafter, cut to desired filter segment lengths.



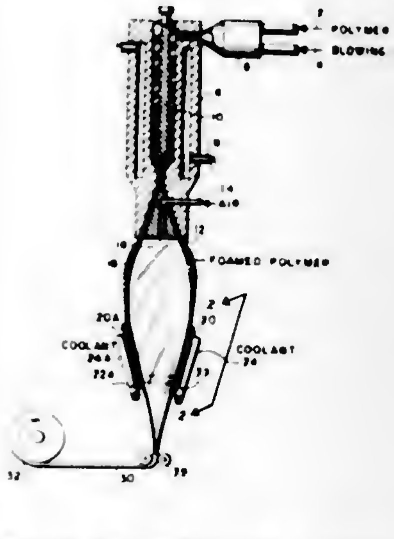
3,403,203

METHOD FOR PREPARING A NON-WOVEN FABRIC-LIKE MEMBER

Henry G. Schirmer, Spartanburg, S.C., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut

Filed Mar. 13, 1964, Ser. No. 351,751

6 Claims. (Cl. 264—51)



1. A method for preparing a non-woven fabric-like member comprising

(a) intimately admixing a normally solid thermoplastic polymeric material and a blowing agent which produces a normally gaseous material at elevated temperatures;

(b) heating said admixture in a confined zone at a temperature above the softening point of said polymer and at an elevated pressure sufficient to prevent expansion of the blowing agent gas;

(c) extruding said admixture through an annular die into an area of reduced pressure thereby forming a tubular shaped cellular structure;

(d) immediately inflating said tube by interiorly applying fluid pressure sufficient to rupture a substantial portion of the cells and form a non-woven fabric-like member;

(e) restricting the flow of fluid from within the inflated tube through the resultant porous fabric-like member by enclosing at least the portion of the inflated tube with ruptured cells with a fluid impermeable member to reduce the loss of fluid pressure; and,

(f) deflating and cooling said tube below the softening point thereof.

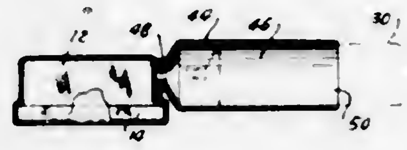
3,403,204

METHOD OF IMPREGNATION

John D. Peterson and Frank M. Simpson, Richardson, Tex., assignors to Self-Organizing Systems, Inc., Garland, Tex., a corporation of Texas

Filed June 24, 1966, Ser. No. 560,295

13 Claims. (Cl. 264—101)



1. A method of impregnation comprising the steps of:

(a) positioning a device to be impregnated within a case having an aperture;

(b) positioning a member having an opening therein in communicating relationship with said aperture with said member extending from said case;

(c) applying a coating of strippable material over said case and said member;

(d) filling said case with impregnating material through said aperture and one of the openings in said member and a passageway formed in said strippable material by removal of said member; and

(e) removing said strippable material.

3,403,205

METHOD FOR MANUFACTURING BUILDING ELEMENTS COMPRISING SUBSTANTIALLY WOOD WASTE AND CEMENT

Tor Axel Ingvar Ottenholm, Tingvallavagen 16C, Marsta, Sweden

No Drawing. Continuation-in-part of application Ser. No. 209,762, July 13, 1962. This application Jan. 25, 1966, Ser. No. 522,848

Claims priority, application Sweden, July 14, 1961, 7,341/61

4 Claims. (Cl. 264—109)

1. A method for treating wood waste to be used as filling material for the manufacturing of building elements consisting essentially of wood wastes and cement, which comprises the steps of powdering onto and rubbing into thoroughly moistened pieces of wood waste cement clinker (portland cement without the admixture of gypsum), whereby the pieces of wood waste are rapidly encased, and drying the surface of the thus treated pieces of wood waste so that a firm film is formed around each piece of said wood waste.

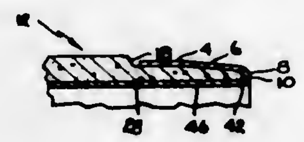
3,403,206

METHOD FOR FORMING A FLUID CONDUIT

Joseph John Thomas and Robert Tyler Hucks, Somerville, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York

Filed June 24, 1965, Ser. No. 466,553

2 Claims. (Cl. 264—263)



A method of providing a protective covering of controllable thickness for the intersection of a tubular inner wall and a wall surface inclined thereto wherein a preformed covering is secured to the inclined wall surface to form a relationship in which a resin coating material being applied to the tubular inner surface cooperates and unites with the preformed covering to form a protective covering of controllable thickness over the intersection.

3,403,207

METHOD OF AND COMPOSITION FOR SCREENING ERYTHEMA INDUCING ULTRAVIOLET BANDS

Saul I. Kreps, 40 Catherine Court, Cedar Grove, N.J. 07009, and Ernest Ohlsson, 2 Oak Knoll Road, Summit, N.J. 07901

No Drawing. Continuation of application Ser. No. 463,352, June 11, 1965, which is a continuation-in-part of application Ser. No. 135,442, Sept. 1, 1961. This application Nov. 14, 1966, Ser. No. 594,261

11 Claims. (Cl. 424—60)

A method of controlling sunburn, comprising application to the skin of a cosmetic carrier containing esters of paradimethylaminobenzoate with monohydric alcohols having 5 to 18 carbon atoms.

3,403,208

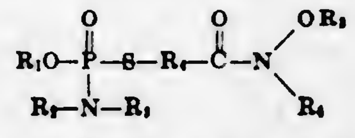
COMPOSITION AND METHOD FOR CONTROLLING INSECT, MITE AND NEMATODE PESTS WITH S-(N-ALKOXYAMIDO)-THIOPHOSPHORAMIDES

Sidney B. Richter, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Delaware

No Drawing. Original application Aug. 4, 1964, Ser. No. 387,491, now Patent No. 3,342,905, dated Sept. 19, 1967. Divided and this application July 21, 1967, Ser. No. 654,959

2 Claims. (Cl. 424—211)

An insecticidal, miticidal and nematocidal composition comprising an inert carrier and, in a quantity toxic to insects, mites and nematodes a compound of the formula



$$R_1O-\overset{\overset{O}{\|}}{\underset{\underset{R_2-N-R_3}{|}}{P}}-S-R_4-\overset{\overset{O}{\|}}{C}-N\begin{matrix}\diagup OR_5\\ \diagdown R_6\end{matrix}$$

wherein R_1, R_2, R_3, R_5, and R_6 are independently selected from the group consisting of hydrogen and alkyl; and R_4 is an alkylene group.

3,403,209

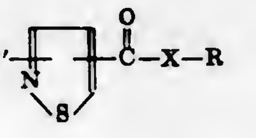
FUNGICIDAL AND BACTERICIDAL COMPOSITIONS AND METHODS EMPLOYING ISOTHIAZOLECARBOXYLATES

Jerold W. Bushong, Middleport, N.Y., and Gert P. Volpp, Princeton, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 462,428, June 8, 1965. This application May 11, 1966, Ser. No. 549,152

26 Claims. (Cl. 424—270)

1. Fungicidal and bactericidal composition which comprises an effective amount of an isothiazolecarboxylate of the formula



wherein R is selected from the group consisting of hydrogen, saturated and unsaturated primary and secondary aliphatic nitro-substituted, chloro-substituted, and unsubstituted hydrocarbon radicals of one to about fourteen carbon atoms, metals, and protonated amines having up to about six carbon atoms; X is selected from the group consisting of oxygen and sulfur atoms; and R′ is selected from the group consisting of hydrogen, methyl, hydroxymethyl, acetoxymethyl, dimethoxymethyl, carboxaldehyde, and carbaldoxime; in admixture with an inert carrier therefor wherein said carrier is a nonvolatile solvent or a finely divided solid and a surface active agent.

ELECTRICAL

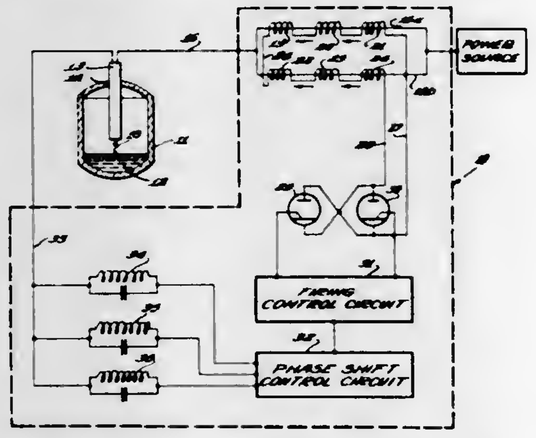
3,403,210

REDUCTION OF THE REACTANCE IN THE FLEXIBLE CABLES OF STEEL MELTING VESSELS

Charles G. Robinson, Sterling, Ill., assignor to Northwestern Steel and Wire Company, Sterling, Ill., a corporation of Illinois

Filed Jan. 25, 1967, Ser. No. 611,771

5 Claims. (Cl. 13—9)



An apparatus for reducing the reactance of a current delivery cable which is connected between a power source and an electrode of an electric arc furnace. The current delivery circuit includes a pair of cables connected between the power source and a single electrode of the furnace. One or more coils are associated with each of the pair of electrodes. Switch means are provided for connecting the coils in circuit with one another in response to sensing the wave-shape of the current delivered to the electrode of the furnace. The wave-shape is indicative of the amount of current. When the coils associated with the pair of cables are connected together the magnetic flux induced into the coils by the current of the cables produces a current flow within the coils which also produces a magnetic flux. The magnetic flux from the cable and from the coils co-act with one another in such a manner as to reduce the reactance of the cables connected to the electrode of the furnace.

3,403,211

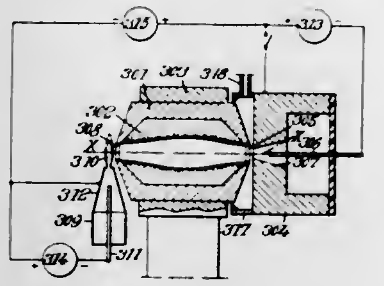
METHODS AND DEVICES FOR HEATING SUBSTANCES

Marc Foex, Paris, France, assignor to Centre National de la Recherche Scientifique, Paris, France

Original application Mar. 31, 1965, Ser. No. 444,206, now Patent No. 3,286,012, dated Nov. 15, 1966. Divided and this application Aug. 15, 1966, Ser. No. 572,342

Claims priority, application France, Apr. 11, 1963, 931,314; Apr. 3, 1964, 969,702; June 3, 1964, 976,833

14 Claims. (Cl. 13—1)



1. A furnace for treating materials at high temperatures, comprising a rotatable heating chamber having a central material receiving region and an inlet opening disposed in one end of said chamber through which said central region communicates with the region outside said chamber, a principal plasma blowpipe disposed in proximity to said inlet opening, a second opening disposed in the end of said chamber which is opposite the end containing said inlet opening, an auxiliary blowpipe disposed in promixity to said second opening, and electrical power means connected to said apparatus to maintain a current arc between said principal blowpipe and the jet produced by said auxiliary blowpipe.

3,403,212

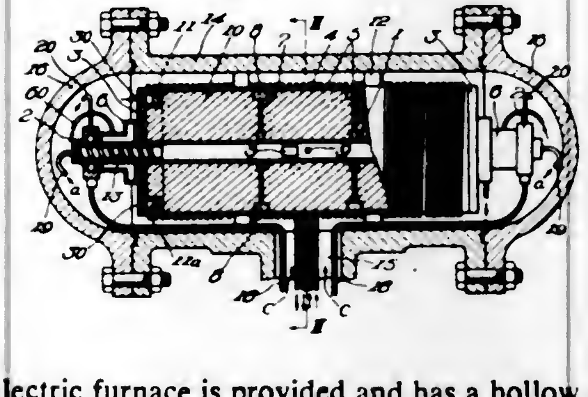
ELECTRIC FURNACE HAVING A HEATING ELEMENT OF CARBON OR GRAPHITE FOR PRODUCING TEMPERATURES UNDER HIGH PRESSURES

Sennosuke Sato, Ibaragi-ken, Japan, assignor to Nihon Genshiryoku Kenkyusho, Tokyo, Japan, a corporation of Japan

Filed Sept. 14, 1965, Ser. No. 487,289

Claims priority, application Japan, Sept. 21, 1964, 39/53,572

2 Claims. (Cl. 13—31)



An electric furnace is provided and has a hollow carbon heating element core member, a furnace body including a casing enclosing the core member, and a heat insulation powdered carbon filling the casing and surrounding the hollow core member. A sealed pressure vessel is received in the furnace body, power leads connect to the core member, means supply the pressure vessel with an inert gas, and gas-permeable members of low density graphite are arranged close to inert gas introducing apertures formed in the casing.

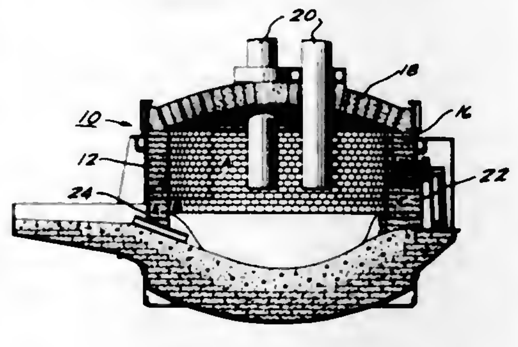
3,403,213

ELECTRIC FURNACE HAVING REFRACTORY BRICK OF SPECIFIC COMPOSITION IN THE CRITICAL WEAR AREAS

William C. Taylor and Robert F. Nale, Pittsburgh, Pa., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed July 20, 1966, Ser. No. 566,585

3 Claims. (Cl. 13—35)



Electric furnace construction in which the critical wear areas, i.e., mast wall, slag line, door jambs and tapping port opening are composed of refractory brick containing at least 50% of fused grain.

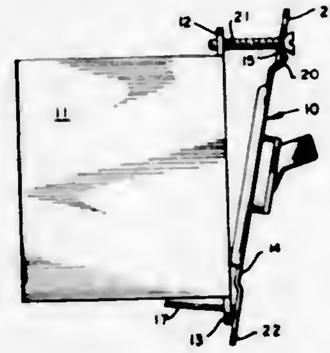
3,403,214

MOUNTING MEANS FOR ELECTRICAL WIRING DEVICES

Herbert A. Slater, New York, N.Y., assignor to Slater Electric, Inc., Glen Cove, N.Y., a corporation of New York

Filed July 8, 1966, Ser. No. 563,792

6 Claims. (Cl. 174—53)



A mounting strap for rapidly mounting an electrical wiring device in an outlet box. The strap has a portion bent at right angles to the strap to extend into the threaded aperture of a mounting box ear. A camming lever at the other end of the strap cooperate with the screw head to hold the strap securely in place.

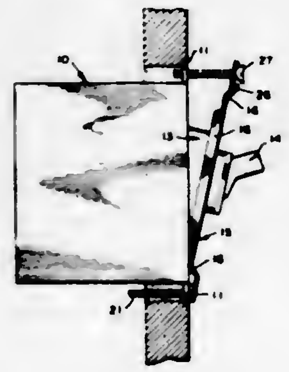
3,403,215

MOUNTING MEANS FOR ELECTRICAL WIRING DEVICES

Herbert A. Slater, New York, and Pierre Haskelson, Huntington, N.Y., assignors to Slater Electric Inc., Glen Cove, N.Y., a corporation of New York

Filed Apr. 5, 1967, Ser. No. 628,622

10 Claims. (Cl. 174—53)



This application discloses means for rapidly and adjustably mounting an electrical wiring device in the usual outlet box. It consists of a mounting strap with a serrated spike fixed thereto, but movable transversely thereof at one end, together with a camming member at the other end cooperating with the ordinary mounting screw. The serrated spike extends at an angle to the perpendicular to the mounting strap to increase the locking engagement of the spike in the aperture of a mounting box ear when the mounting screw is threaded into the corresponding aperture in the ear at the opposite end of the outlet box.

3,403,216

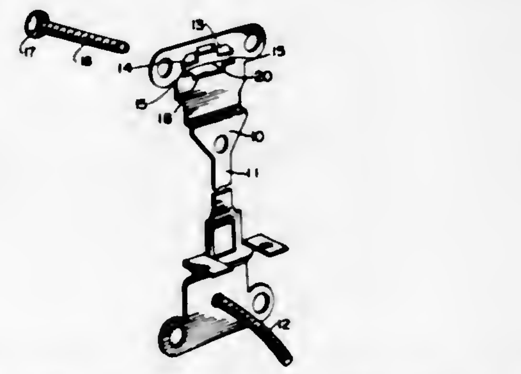
MOUNTING MEANS FOR ELECTRICAL WIRING DEVICES

William Drapkin, Brooklyn, N.Y., assignor to Slater Electric Inc., Glen Cove, N.Y., a corporation of New York

Filed Apr. 5, 1967, Ser. No. 628,703

4 Claims. (Cl. 174—53)

The device disclosed herein is a means for reducing the labor required in mounting an electrical wiring device such as a switch or receptacle in the usual wall box. The device disclosed consists essentially of the usual wiring device mounting strap which has been modified to provide a serrated spike at one end, replacing the usual screw, together with means at the opposite end comprising a captive screw which cooperates with a cut-out in the body of the strap to force the serrated spike into engagement with one outlet box mounting ear, or more exactly, the aperture in that mounting ear, when the screw is inserted in the threaded aperture in the other ear and tightened.



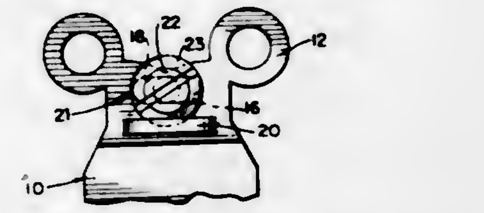
3,403,217

CAPTIVE MOUNTING SCREW PARTICULARLY FOR ELECTRICAL WIRING DEVICE MOUNTING STRAPS

William Drapkin, Brooklyn, N.Y., assignor to Slater Electric Inc., Glen Cove, N.Y., a corporation of New York

Filed June 29, 1967, Ser. No. 650,125

2 Claims. (Cl. 174—53)



The disclosure herein describes a mounting screw which is held captive in the mounting strap of an electrical wiring device by cooperation between a large washer-type head on the screw and a U-shaped portion bent up from the strap and overlying a portion of the large screw head.

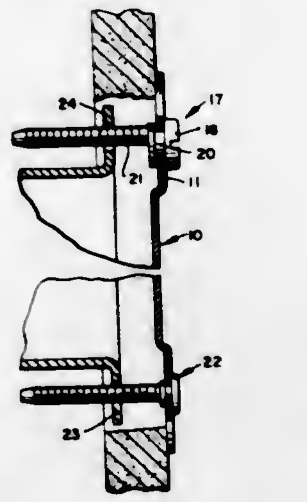
3,403,218

MOUNTING MEANS FOR WIRING DEVICES

Alexander R. Norden, New York, N.Y., assignor to Slater Electric Inc., Glen Cove, N.Y., a corporation of New York

Filed July 28, 1967, Ser. No. 656,843

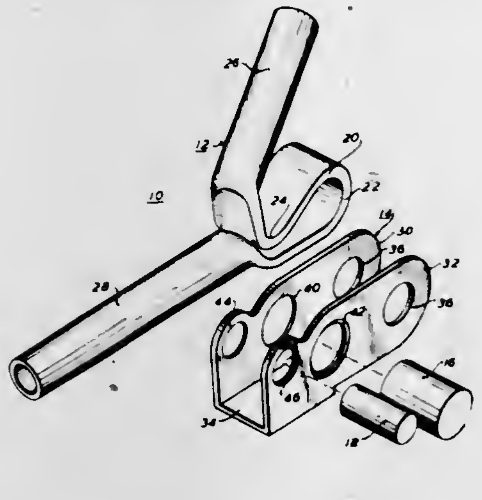
5 Claims. (Cl. 174—53)



The present disclosure relates to a mounting means for wiring devices wherein the usual mounting strap is provided with eccentrically mounted screws which are of a lesser diameter than the corresponding threaded openings in the ears of the customary outlet boxes and which screws act as cams and provide for rapid and simple mounting of the wiring devices in outlet boxes. In some instances, a single one of the eccentrically mounted screws may be utilized in combination with a serrated spike at the opposite end of the mounting strap.

3,403,219
DEAD END CONNECTORS

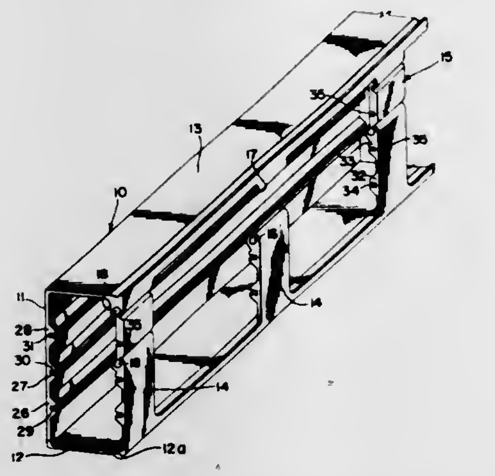
John J. Klosin, 32 Colburn Road,
East Brunswick, N.J. 08816
Filed Oct. 24, 1966, Ser. No. 588,826
10 Claims. (Cl. 174—79)



A compression type dead end connector formed from a clevis and a continuous tube having a flat central portion with a reverse loop and an arcuate portion and securement means associated with the clevis to secure the continuous tube to the clevis at the flat portion reverse loop and arcuate portions with the entire clevis and a portion of the continuous tube adjacent the clevis being coated with a rigid elastomeric material. In the second embodiment the clevis is formed of two parts with one part being a tube carrier and the other part being adapted to control the position of the tube carrier so as to increase or decrease the tension on the dead end connector.

3,403,220
CABLE GUIDING CHANNEL

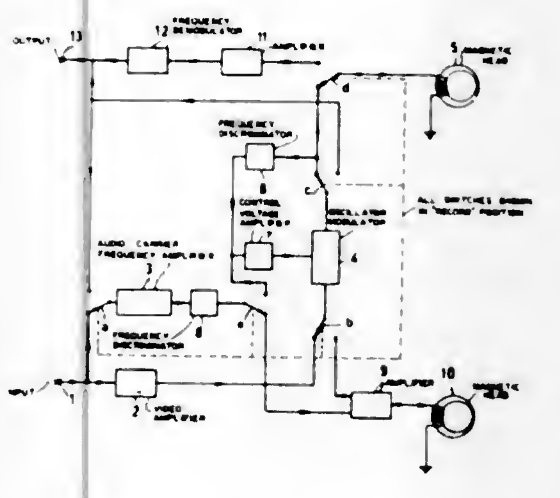
Anton Riedel, 64 Zugspitzstrasse, 8035 Gauting, near Munich, Germany, and Hans Schifferle, 130, Aindorferstrasse, 42 Munich, Germany
Filed Oct. 21, 1966, Ser. No. 588,477
Claims priority, application Germany, Oct. 25, 1965, R 41,807
9 Claims. (Cl. 174—101)



The cable guiding channel of the present invention embodies a vertically extending assembly wall, parallel top and bottom walls projecting outwardly from the assembly wall along its longitudinal top and bottom edges, respectively, spaced front wall portions extending upwardly from the bottom wall and terminating short of the top wall, removable members for connecting and disconnecting the upper edges of the front wall portions to the top wall to provide access to the channel for adding or removing cables after the latter has been mounted. The front wall portions may be removable and slidable longitudinally of the channel.

3,403,221
FREQUENCY MODULATION RECORD REPRODUCE SYSTEM FOR TELEVISION SIGNALS

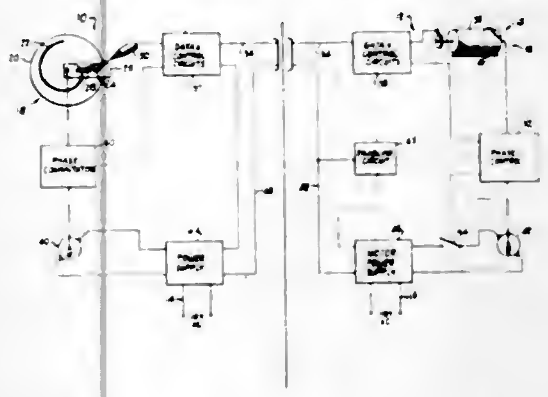
Willem Van den Bussche, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 4, 1965, Ser. No. 437,193
Claims priority, application Netherlands, Mar. 4, 1964, 6402128
3 Claims. (Cl. 178—6.6)



A magnetic recording and reproducing circuit for use with television signals employing an oscillator modulator and a frequency discriminator for recording is provided with a switch for reconnecting the oscillator modulator and frequency discriminator together during playback, the frequency discriminator acting during playback to control the center frequency of the oscillator demodulator.

3,403,222
FACSIMILE RECEIVER PHASING MEANS UTILIZING PARTICULAR POWER SUPPLY MEANS TO EFFECT SYNCHRONIZATION

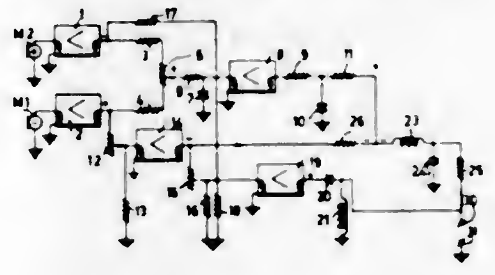
Robert M. Bishop, Arlington Heights, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed May 24, 1965, Ser. No. 458,092
9 Claims. (Cl. 178—69.5)



A power supply for facsimile systems or the like in which a synchronizing signal received from a remote meter is used as a low level trigger for an alternating current generating circuit having silicon controlled rectifiers.

3,403,223
MICROPHONE COMBINATIONS OF THE KIND COMPRISING A PLURALITY OF DIRECTIONAL SOUND UNITS

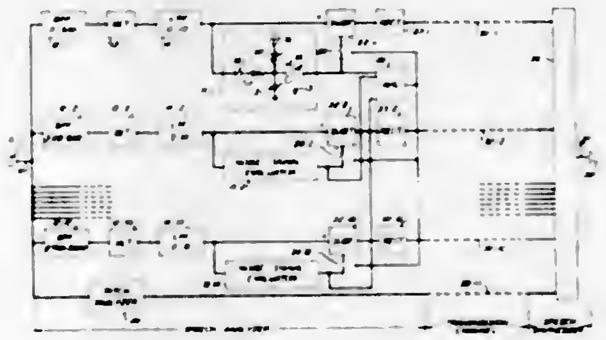
Derk Kleis and Wilhelmus Hermanus Iding, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed May 18, 1965, Ser. No. 456,768
Claims priority, application Netherlands, May 20, 1964, 6405564
7 Claims. (Cl. 179—1)



A microphone system in which the output of two groups of microphones are combined with opposite polarity in a frequency range below a predetermined frequency, and are combined with the same polarity in the frequency range above the predetermined frequency.

3,403,224
PROCESSING OF COMMUNICATIONS SIGNALS TO REDUCE EFFECTS OF NOISE

Manfred R. Schroeder, Gillette, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 28, 1965, Ser. No. 459,655
11 Claims. (Cl. 179—1)

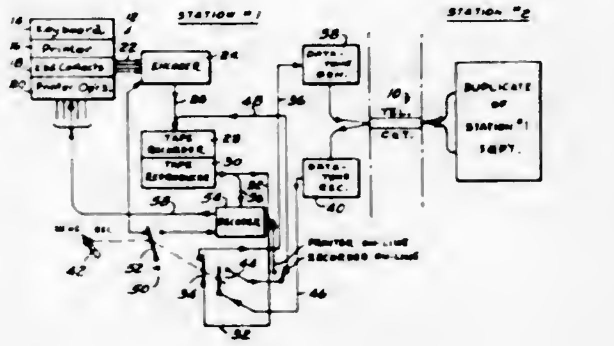


To improve quality of a communications signal, noise components which accompany the signal are removed by analyzing a signal to obtain a measure of the energy in each of a number of frequency sub-bands, by developing a signal representative of the average contribution of noise to the signal in each sub-band, and by selectively subtracting the noise representative signals from the subband signals.

3,403,225
MAGNETIC TAPE RECORDING OF TYPEWRITER KEYBOARD DATA

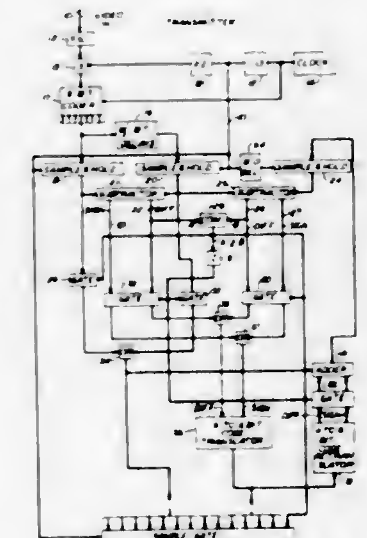
Joseph D. Mislan, Morrisville, Pa., assignor to Communitype Corporation, a corporation of Delaware
Continuation of application Ser. No. 237,598, Nov. 14, 1962. This application Dec. 7, 1967, Ser. No. 688,937
6 Claims. (Cl. 179—2)

An inter-office data communication system station comprises an office typewriter with input-output facilities and electronic circuitry linking the machine either directly to a tone-code receiver-transmitter and thereby to a standard voice telephone channel, or optionally via a magnetic tape recorder-producer for high-speed bit-parallel, word-serial storage and retrieval of typewriter keyboard operations. Provision is made for code parity checking, tape backspacing for error correction under keyboard control, local typing from tape records, error counting, and for various operation modes for text and data transmission, computer terminal use, and other applications.



3,403,226
REDUCED BANDWIDTH DUAL MODE ENCODING OF VIDEO SIGNALS

William T. Wintringham, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 30, 1965, Ser. No. 491,780
15 Claims. (Cl. 179—15.55)



A television transmission system using both full scale and differential PCM encoding of video information is disclosed. For each frame, the video sample differing the most from adjacent samples is determined and encoded using full scale PCM. The differences between the remaining samples in the frame are encoded using reduced scale differential PCM. The encoded information is then transmitted along with information identifying the position of sample encoded in full scale PCM in the frame.

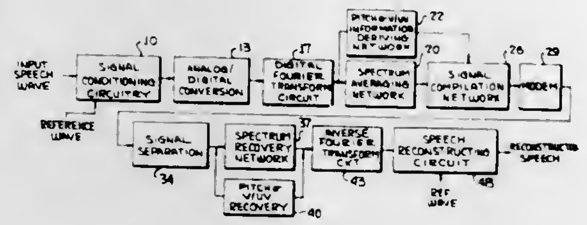
3,403,227
ADAPTIVE DIGITAL VOCODER

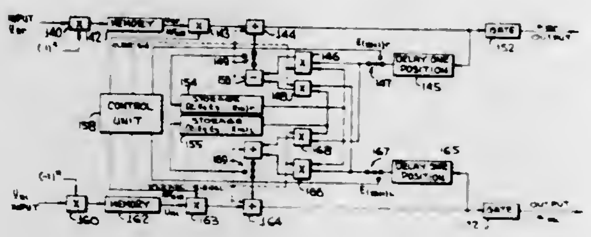
Robert E. Malm, Bethesda, Md., assignor to Page Communications Engineers, Inc., Washington, D.C., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,061
34 Claims. (Cl. 179—15.55)

6. An adaptive digital channel vocoder comprising a single processing channel for analyzing the amplitude spectrum of a speech wave, said channel including means for converting said speech wave from an analog signal to a digital signal, means responsive to said digital signal for deriving therefrom samples of the amplitude spectrum of said speech wave, and means responsive to said spec-

trum samples for compression thereof into a smaller number of digital signals each representative of the average spectral density of preselected groups of said spectrum samples for transmission to a speech synthesizing station.

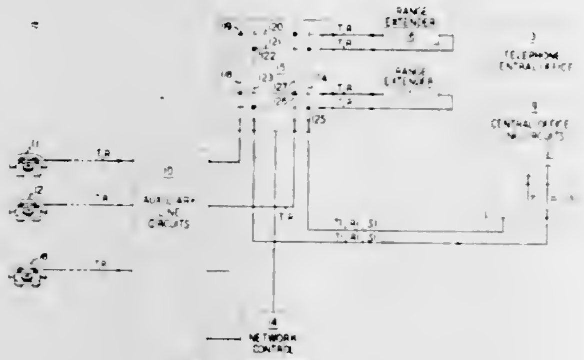
31. A method for analyzing and synthesizing waveforms, comprising sampling the waveform under consideration at a predetermined frame rate to provide time sequential digital samples of amplitude thereof conforming to a Fourier series representation, processing said samples to derive therefrom sine and cosine coefficients of the amplitude spectrum of said waveform, and recovering the original waveform by successively processing the spectral sine and cosine coefficients on a cycle corresponding to the frequency separation between amplitude lines of the spectrum, with sine and cosine functions of the sampling time.





3,403,228
TELEPHONE PARTY-LINE ISOLATION AND RANGE EXTENSION

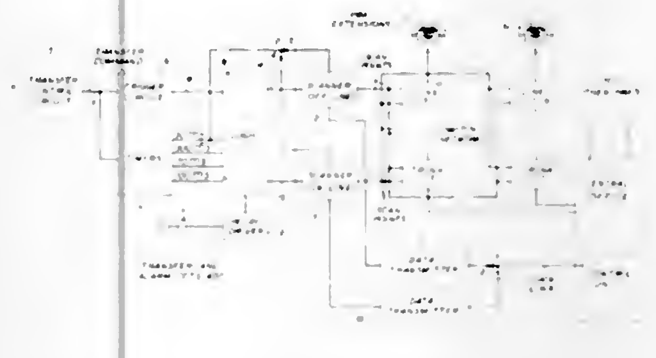
Charles W. Zebe, New Shrewsbury, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 9, 1965, Ser. No. 438,318
11 Claims. (Cl. 179—16)



I disclose a telephone switching system wherein range extenders are inserted in high impedance customer loops during calls. When a central office provides individual wire pairs to customers who, however, must share a common central office terminal ("dedicated" party-line service), bridge lifters are inserted in conjunction with the range extenders in order to remove the capacitive bridge of the idle wire pair and thus enhance transmission quality on the other pair. The insertions of the range extenders and bridge lifters are made by an auxiliary crossbar switching circuit outside of the conventional telephone office in order to permit shared access to common range extension equipment.

3,403,229
ERROR PREVENTING SUPERVISORY CIRCUIT IN A PBX HAVING SCANNER SWITCHOVER MEANS

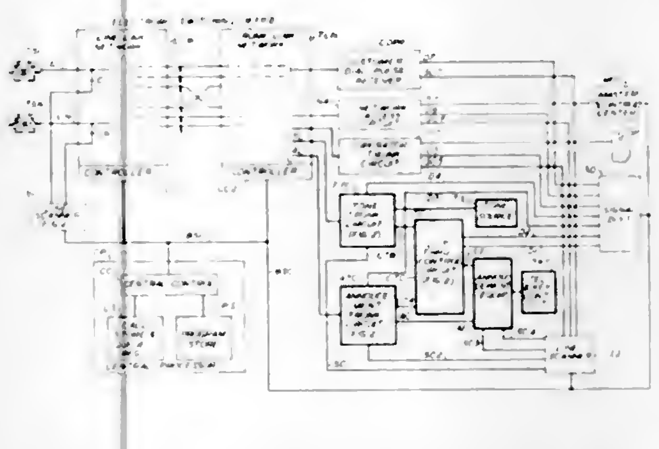
Richard J. Piereth, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 21, 1965, Ser. No. 488,953
9 Claims. (Cl. 179—18)



A transfer control circuit in a time division multiplex PBX switching system in which the introduction of errors arising out of the switchover of the off line scanner to the on line scanner is minimized by trigger, logic and timer circuits. The trigger, logic and timer circuits update the off line scanner and then introduce a time period when neither scanner is operational. Subsequently, the off line scanner becomes operational through the actuation of various switchover circuits and takes over scanning control.

3,403,230
EQUIPMENT FOR SERVING DIALING IRREGULARITIES

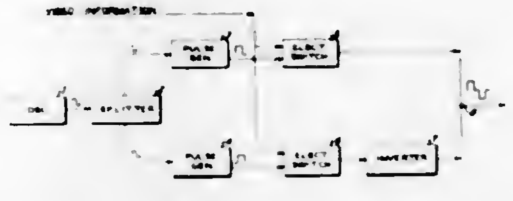
Rolland N. Breed, Middletown and Albert H. Budlong and Russell C. Casterline, Lincroft, and Bobby J. Lewis, Red Bank, N.J.; said Breed, said Budlong, and said Casterline assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York, and said Lewis assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed July 15, 1965, Ser. No. 472,184
20 Claims. (Cl. 179—27)



A communication switching system in which partial dial and permanent signal conditions are detected on lines and are successively served by special service circuits which provide for announcement signals, tone signals and operator interception under control of a program controlled central processor. Apparatus is also provided for reconnecting the lines to line circuits and for queuing in memory lines which have partial dial and permanent signal conditions.

3,403,231
SEQUENTIAL HEAD SWITCHING MAGNETIC RECORDING AND REPRODUCING SYSTEM FOR HIGH FREQUENCY SIGNALS

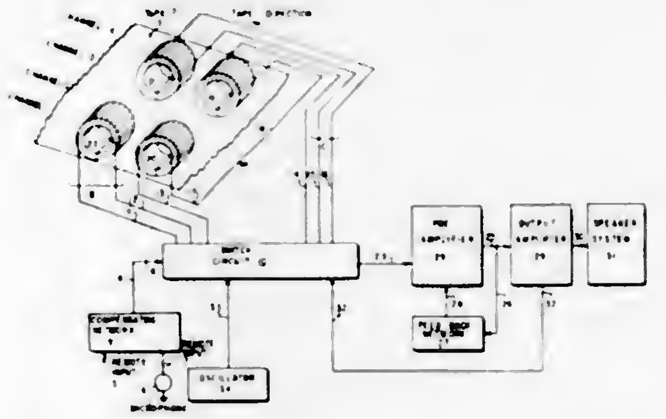
Alvin Maynard Slaton, 279 Nishi-ku, Kunitachi, Machi, Tokyo, Japan
Filed Apr. 17, 1964, Ser. No. 360,677
Claims priority, application Japan, Apr. 20, 1963, 38/20,546
6 Claims. (Cl. 179—100.2)



The following disclosure describes a magnetic recording and reproducing system wherein a control signal is generated, split into 180° components, and used to control the switching of a pair of electronic switches. The switches have additional inputs connected to the source of signals to be recorded. The output of one of the switches is inverted. The inverted output and the output from the other switch are combined to form a composite signal suitable for recording on a magnetic record medium.

3,403,232
TAPE RECORDER AMPLIFIER FOR SIGNALS FROM TWO DIFFERENT SOURCES

Kennard E. Voyles, St. Joseph, and Antanas R. Stapulionis, Benton Harbor, Mich., assignors to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed Dec. 21, 1964, Ser. No. 419,773
7 Claims. (Cl. 179—100.2)

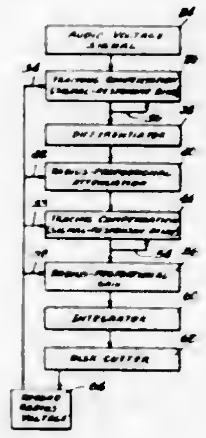


A tape recorder including a compensating stage for attenuating the low frequency signals of a relatively flat response device, such as a microphone, to permit simultaneous recording of such signals with signals from a device such as a recorder playback head of different frequency response with a single preamplifier stage.

3,403,233
METHOD OF MAKING GROOVED RECORDS WITH COMPENSATION FOR REPRODUCTION ERRORS

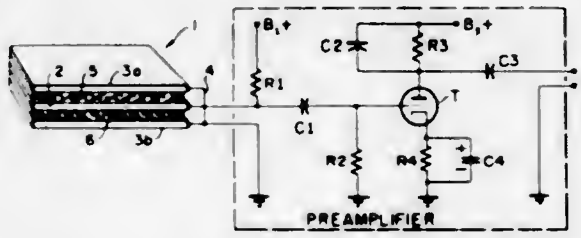
Duane H. Cooper, 804 S. Foley, Champaign, Ill. 61820
Filed Mar. 5, 1964, Ser. No. 349,617
19 Claims. (Cl. 179—100.4)

Tracing and tracking errors in phonograph reproduction are precompensated in the recording process by alteration of phase or delay of the signal being recorded. A derivative signal is employed for control of the tracing-error correction.



3,403,234
ACOUSTIC TRANSDUCER

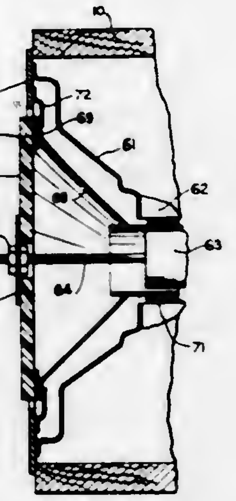
Roswell P. Barnes, Jr., Newton, Mass., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed Sept. 11, 1964, Ser. No. 395,684
9 Claims. (Cl. 179—111)



An acoustic transducer in the form of a capacitor having plates which are joined by a sheet of compressible material, the material being preferably a foam of closed-cell or open-cell composition. The foam is free from voids and is uniformly bonded to each of the plates. The compressibility of the foam may be varied to provide varying sensitivity but it should be less than that which would be exhibited by entrapped gas such as air.

3,403,235
WIDE-RANGE LOUDSPEAKER

Nathaniel Bishop, Fairfield, Conn., assignor to Newmarkets, Inc., Fairfield, Conn., a corporation of Connecticut
Filed Mar. 17, 1965, Ser. No. 440,373
5 Claims. (Cl. 179—115.5)



A loudspeaker capable of reproducing a wide range of audible frequencies and having a low deviation from level response is disclosed. The loudspeaker of the invention can be effectively operated in an enclosing structure only slightly larger than the loudspeaker itself. The disclosed loudspeaker includes a member, associated with the speaker cone suspension means, extending over and covering the larger end of the speaker cone. This covering member is transparent to sound emanating from the speaker cone and, advantageously, has friction loss damping characteristics and can, if desired provide a low frequency barrier between the front and back of the speaker cone.

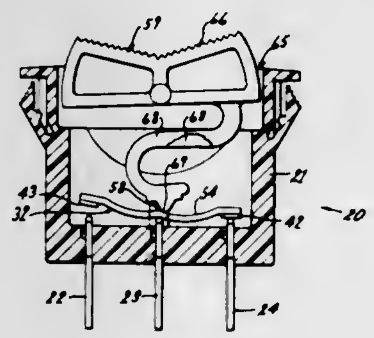
3,403,236

ELECTRICAL SWITCH HAVING A ONE-PIECE ACTUATOR AND SPRING ARM STRUCTURE

Richard S. Zoludow, South Bend, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Apr. 5, 1967, Ser. No. 628,601

5 Claims. (Cl. 200—67)



This disclosure relates to an electrical switch construction having a housing means pivotally carrying a pair of lever means respectively having electrical contact means on the opposed ends thereof and being fulcrumed intermediate their opposed ends on stationary terminal means carried by the housing means, the housing means carrying a pivotally mounted actuator having resilient and integral arms extending therefrom and respectively bearing against the pivotally mounted lever means to pivot the same from one pivotal position thereof to another pivotal position thereof with a snap action to respectively engage or disengage like contact means of the lever means from cooperating stationary contact means of the housing means to or from other stationary contact means of the housing means. Each resilient arm is so constructed and arranged that the same not only generates a downward compressive force against its respective lever means, but also during transfer of movement, the same exerts a force longitudinally in the direction of movement of the arm to impart a crisp and instantaneous snap transfer movement to the lever means to move the same between its operating positions.

3,403,237

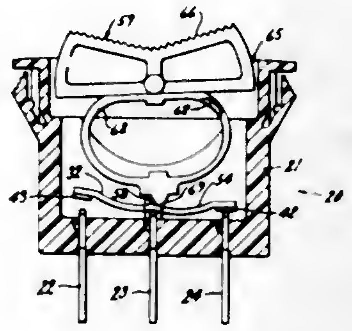
ELECTRICAL SWITCH HAVING A ONE-PIECE ACTUATOR AND SPRING ARM STRUCTURE

Robert D. Wysong, Goshen, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Apr. 5, 1967, Ser. No. 628,759

4 Claims. (Cl. 200—67)

This disclosure relates to an electrical switch construction having a housing means pivotally carrying a pair of lever means respectively having electrical contact means on the opposed ends thereof and being fulcrumed intermediate their opposed ends on stationary terminal means carried by the housing means, the housing means carrying a pivotally mounted actuator having resilient and integral arms extending therefrom and respectively bearing against the pivotally mounted lever means to pivot the same from one pivotal position thereof to another pivotal position thereof with a snap action to respectively engage or disengage like contact means of the lever means from cooperating stationary contact means of the housing means to or from other stationary contact means of the housing means. Each resilient arm is so constructed and arranged that the arm is symmetrical about its centerline so that the same not only generates a downward compressive force against its respective lever means, but also during transfer of movement, the same exerts a force longitudinally in the direction of movement of the arm to impart a crisp and instantaneous snap transfer movement to the lever means to move the same between its operating positions regardless of the direction of pivotal movement of the actuator means.



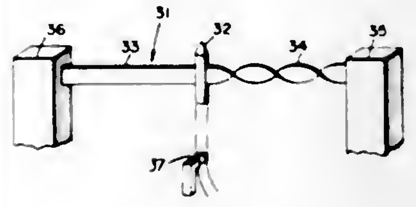
3,403,238

CONVERSION OF HEAT ENERGY TO MECHANICAL ENERGY

William J. Buehler, Bethesda, and David M. Goldstein, Adelphi, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed Apr. 5, 1966, Ser. No. 540,422

10 Claims. (Cl. 337—393)



A method for converting heat energy into mechanical energy which includes, deforming a TiNi alloy, having a 53.5–56.5% by weight nickel content, below its critical temperature and thereafter heating said TiNi alloy to a temperature above its critical temperature.

3,403,239

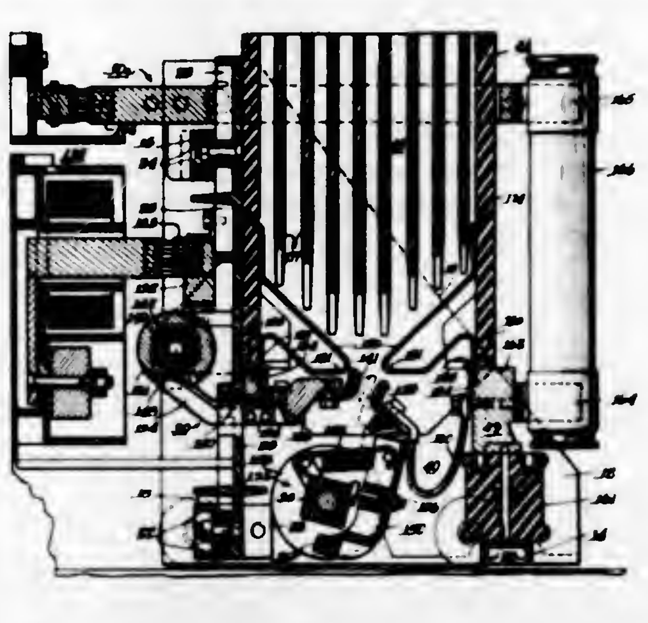
ELECTROMAGNETICALLY - OPERATED AIR-BREAK, CLAPPER-TYPE HIGH-VOLTAGE CONTACTOR

Robert M. Schramm and Richard F. Ptak, Maple Heights, and David L. Swindler, Bedford, Ohio, assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed May 24, 1965, Ser. No. 457,977

9 Claims. (Cl. 200—147)

The contactor has provision for mounting current-limiting fuses disposed vertically on its front side, and has rear-mounted plug-in-terminals. For each pole of the contactor, power is brought to each contact pair from its associated terminal through a horizontally-disposed power bus assembly and thence through its associated current-limiting fuse. Each pole of the contactor is further provided with a blow-out assembly and a removable arc chute for constraining and extinguishing the arc. Additionally, arc constraint is facilitated by the power bus assemblies, each of which includes an elongated conductor which provides a divided current path around its associated arc chute.



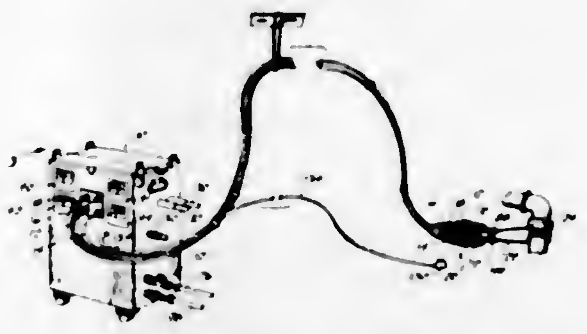
3,403,240

PORTABLE REMOTE INDUCTION BRAZING STATION WITH FLEXIBLE LEAD

Charles H. Henderson, Hampton Falls, Louis A. Vigneault, Dover, and Donald E. Tompson, Rochester, N.H., assignors to the United States of America as represented by the Secretary of the Navy

Filed Sept. 2, 1965, Ser. No. 484,776

5 Claims. (Cl. 219—10.49)



A portable induction brazing apparatus that includes a central work station to which is supplied cooling fluid and an R.F. induction tubular heating element. The circulating cooling fluid is connected to the induction element via flexible fluid cooled electrical cable so as to form a continuous fluid path.

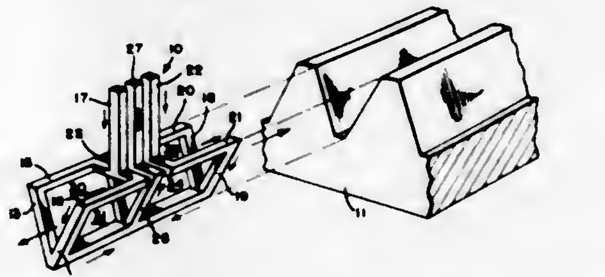
3,403,241

INDUCTION HEATING ELEMENT

Harry D. Kauffman, Cincinnati, Ohio, assignor to The Ohio Crankshaft Co., Cleveland, Ohio, a corporation of Ohio

Filed Aug. 22, 1966, Ser. No. 573,964

5 Claims. (Cl. 219—10.59)



3. In an induction heating device particularly adapted for heating toothed workpieces such as gears during heat treatment processing of the tooth surfaces, the combination of two sets of conductor coils mounted in diverging relation corresponding to the relation of the tooth flank surfaces of adjacent gear teeth, each set of coils including at least two coils having one common conductor and extending along and defining a surface corresponding to one of the tooth flank surfaces whereby flow of alternating current through each of said set of coils will result in opposed current flow through the respective coils of each set at any instant, and means for mounting a toothed workpiece and said sets of coils for relative movement during which the respective sets of coils induce electrical heating currents in opposed wall surfaces of adjacent teeth.

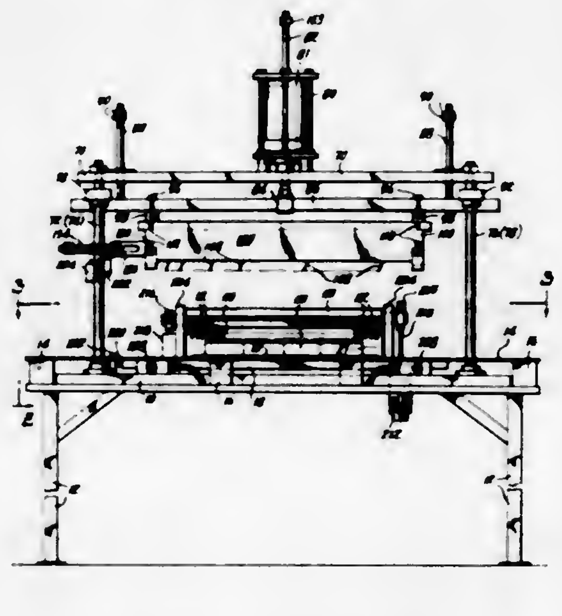
3,403,242

SOLDERING MACHINE

Leland C. Cropp, Oil City, and Charles R. Vaught, Titusville, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Nov. 1, 1966, Ser. No. 591,291

11 Claims. (Cl. 219—85)



1. A soldering machine comprising a table for supporting a contact block having at least one longitudinal row of terminals and conductive material adjacent said terminals to which the terminals are to be soldered, a longitudinal row of soldering tips above said table, one for each terminal, means for heating said tips, said tips being movable from a position above the terminals on the block to a lower position wherein a tip is close to but not in contact with an intermediate portion of an associated terminal and means for raising said table and shifting it laterally in order to bring the base of the terminals in a direction toward the tips whereby solder placed at the base of the terminals will be fluxed about the terminals to effect soldering of the terminals and conductive material, and means enabling lowering and shifting of the table away from the tips and for raising the row of tips.

3,403,243

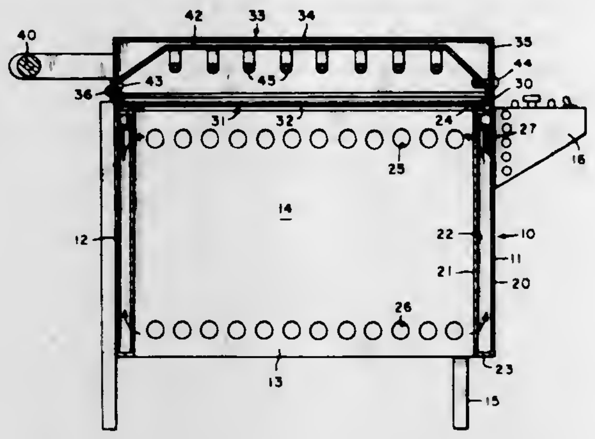
RADIANT BURN-IN UNIT FOR PHOTO-ENGRAVING PLATES

Charles S. Martz, Aurora, Mo., assignor to Tasopé Limited, Aurora, Mo., a corporation of Missouri

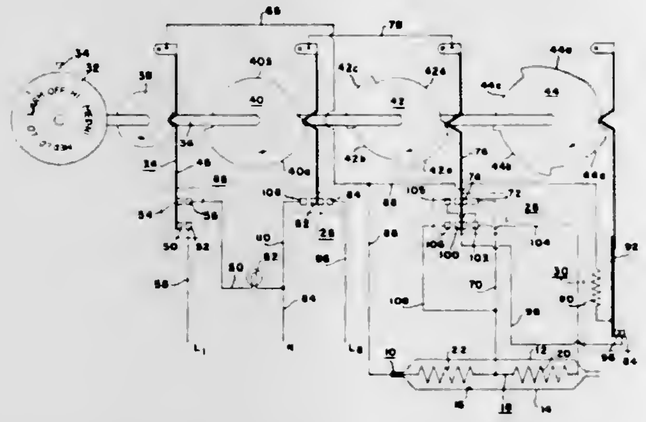
Filed May 27, 1965, Ser. No. 459,322

8 Claims. (Cl. 219—411)

A radiant burn-in unit for photoengraving plates in which a quartz-tube-type radiant heat means is carried by a panel located in and detachably mounted to a lid for the tank. The panel can be detached from the lid and moved into a position for ready servicing of the heat means when the lid is raised. The tank wall includes an outer wall portion and an inner wall portion with a space therebetween. An upper opening is provided in the upper wall portion at the top of the tank below a plate-supporting means which places the space in communication with the heat chamber. A lower opening in the inner wall portion at the bottom of the tank places the space in communication with the heat chamber also for circulating air from the heat chamber through the lower opening, and then upwardly in the space between the inner and outer wall portions and back into the heat chamber through the upper opening.



3,403,244
LOW HEAT CONTROL SYSTEM FOR INFRARED SURFACE HEATING UNIT
Donald C. Siegla, Dayton, Ohio, assignor to General Motors Corporation, a corporation of Delaware
Filed Sept. 22, 1965, Ser. No. 489,242
3 Claims. (Cl. 219—448)



A surface heating unit control for an unsheathed resistance element energizable to a temperature exceeding 1500° F. The control includes first switch means for selectively energizing equal parts of the resistance element in series and parallel electrical relationship to produce a first control of wattage output. Second switch means connect the series or parallel arranged parts of the resistance element across either a 115 voltage source or a 230 voltage source to produce another wattage control. A presettable infinite heat switch is included to vary the wattage output of part of the resistance for still further control.

3,403,245
ULTRASONIC CLEANER CONTROLS
Thomas Eaton, Hawthorne, Calif., assignor to Vernitron Corporation, Farmingdale, N.Y.
Filed Aug. 15, 1966, Ser. No. 572,380
2 Claims. (Cl. 219—494)

1. Apparatus for controlling an ultrasonic cleaner comprising:

an A.C. power supply,

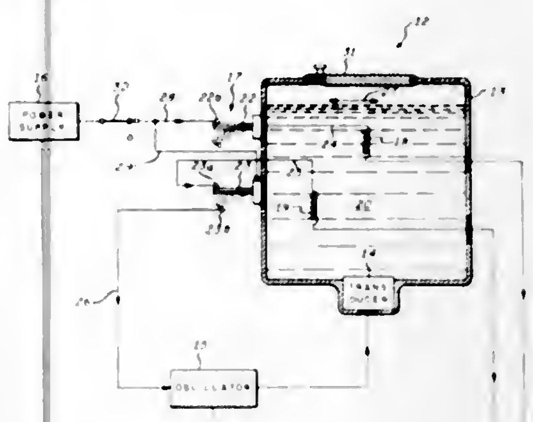
a tank having a liquid solvent solution,

an ultrasonic transducer mounted to the tank,

heating means supported in said tank and immersed in said solution,

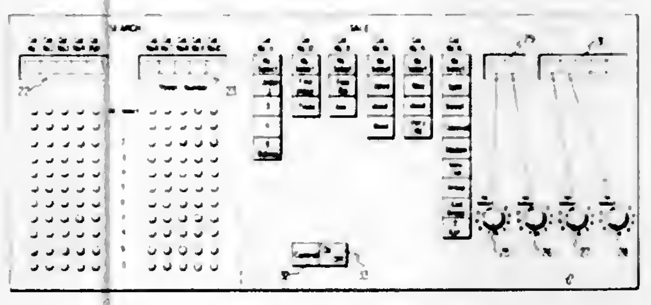
an electric generator for producing high frequency electrical oscillations coupled to said transducer,

and switch control means adapted to connect said power supply to said heating means and responsive to the temperature of said liquid solution to disconnect a portion of said heating means from said power supply and couple said power supply to said electric generator.



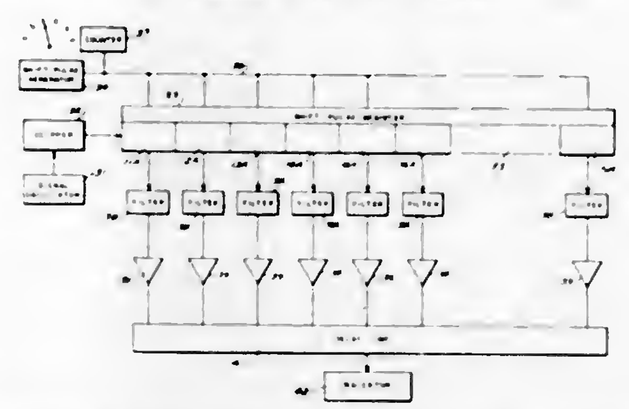
2. Apparatus in accordance with claim 1 wherein said heating means is comprised of two heating coils and said switching means is comprised of a first thermostat coupled to one of said heating coils and a second thermostat coupled to the second of said heating coils and wherein said second thermostat is responsive to one elevated temperature of said liquid solution to decouple said second heater from said power supply and couple said power supply to said electric generator and said first thermostat is responsive to another elevated temperature of said liquid solution to decouple said first heater from said power supply.

3,403,246
DATA RETRIEVAL CONTROL
Donald E. Grempler, Timonium, Md.
(305 E. Joppa Road, Towson, Md. 21204)
Filed Nov. 19, 1963, Ser. No. 324,717
7 Claims. (Cl. 235—61.7)



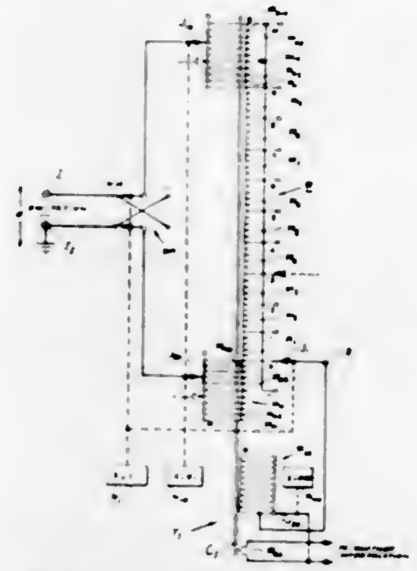
Improvements to record card controlled machines permitting multiple column selection of cards. Automatic encoding is provided through push-button type control panel. Individual selectors are identified with terms of the trade in which the machine is being used and arranged in columns corresponding to record card data. Control panel selection automatically controls delivery of encoded signals and electrical signals generated by stored data for proper comparison and selection of desired cards. The invention permits operation of record card controlled machines by any person familiar with the terms of the enterprise where utilized.

3,403,247
ANALOG BEAM PATTERN DIGITAL SIMULATOR
Layton D. Morgan and Robert J. Vachon, San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Jan. 29, 1964, Ser. No. 341,151
2 Claims. (Cl. 235—184)



A system for simulating the reception of acoustic wavefronts, having variable azimuths, by an array of transducers. The simulated wavefronts are utilized in testing the response characteristics of tapped delay lines used, in the transducer array, for phase compensation. The simulation is achieved by using a shift register having a bit capacity equal to the number of taps on the delay line to be tested and providing the shift register with a variable source of clock signals. The register outputs, depending on the clock frequency, simulate plane wavefronts of particular azimuth since they change in phase as the shifting in the register occurs.

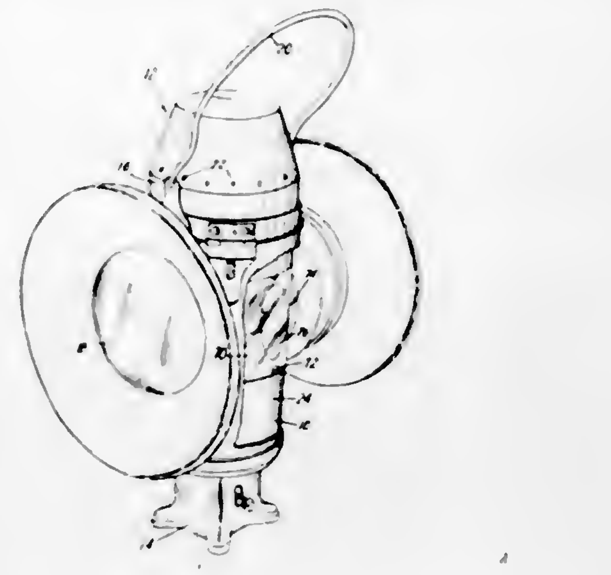
3,403,248
INTERPOLATING INDUCTIVE DIVIDER
Franklin W. Smith, Jr., Port Jefferson Station, N.Y., assignor to North Atlantic Industries, Inc., Plainview, N.Y., a corporation of New York
Filed Dec. 4, 1964, Ser. No. 416,021
17 Claims. (Cl. 235—196)



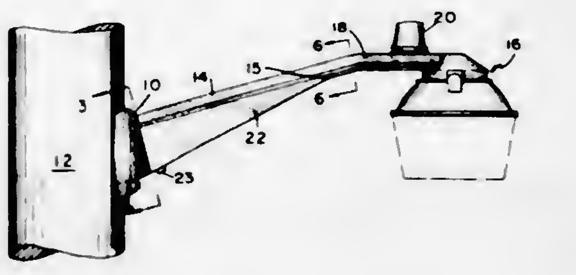
Interpolating inductive divider arrangements are disclosed herein with the divider stages interconnected and excited in configurations which minimize the errors associated with the flow of excitation or magnetization current through the leakage impedances.

3,403,249
BATTERY POWERED SIGNAL UNIT
Roswell J. Bennett, Lakewood, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Dec. 22, 1965, Ser. No. 515,566
18 Claims. (Cl. 240—10.63)

1. An expendable battery powered lantern adapted to replace an oil lamp of a conventional railroad switch lamp assembly having an open top housing with a plurality of translucent windows comprising in combination, a pair of cells axially aligned and disposed apart from each other and defining a predetermined space therebetween, lamp means positioned within said space, means for electrically and mechanically connecting said cells and said lamp means as a compact replaceable unitary assembly for replacing said oil lamp of said switch lamp, said lamp means residing at an elevation in said space and being in mutual cooperative association with the plurality of translucent windows in said housing of said railroad switch lamp such that the light radiated outward from said lamp means is substantially uniform in intensity in any unobstructed direction from said lamp means.



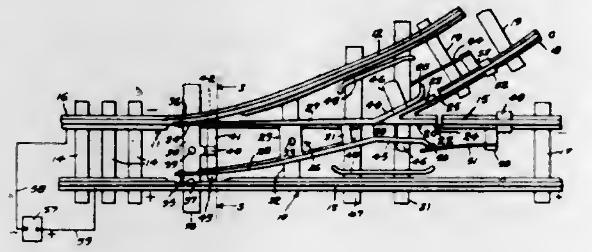
3,403,250
LIGHTING FIXTURE
Hendrik A. J. de Vos, Wenham, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Nov. 18, 1965, Ser. No. 508,453
1 Claim. (Cl. 240—52)



A lighting fixture for adjustable attachment to a pole, the fixture having an extruded arm extending from the lamp and a refractor to an adjustable mounting plate on the pole. The adjustment can be made by an arm having a handle.

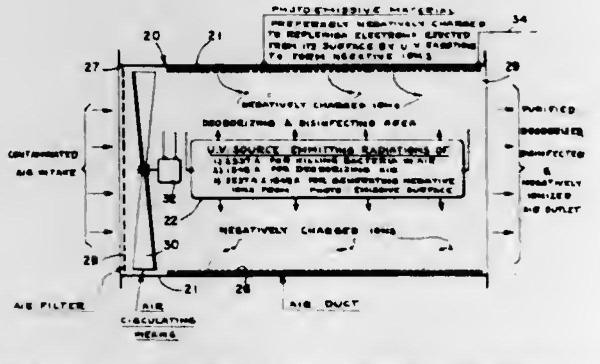
3,403,251
TRACK TURNOUT FOR TWO RAIL MODEL ELECTRIC RAILROADS
Juan Sosa Pale and Faustina L. De Sosa, both % Retorno 30 de Cecilio Robe 10, 24 Col. Jardin Balbuena, Mexico City 9, Mexico
Filed Dec. 30, 1966, Ser. No. 606,103
8 Claims. (Cl. 246—415)

A turn out or switch for a two rail model electric train having narrow air gaps electrically isolating a frog from converging ends of two frog rails, with an electric switch electrically bridging the gap between the frog and either of said frog rails, so that a locomotive, even equipped with very small wheels, can travel over the switch at a very low speed without an interruption in the supply of current to



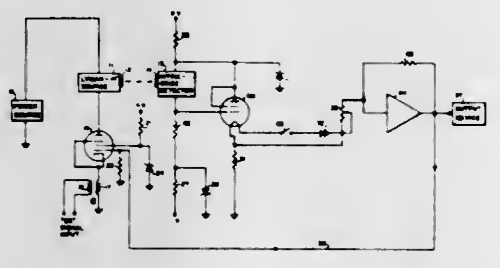
the locomotive motor which would cause a stoppage, and without risk of derailment.

3,403,252
AIR PROCESSING APPARATUS AND ION GENERATOR COMPRISING AN ELECTROMAGNETIC RADIATION SOURCE AND A STABLE ELECTRON EMITTING PHOTOSENSITIVE MEMBER
Rudolph Nagy, Upper Montclair, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 29, 1960, Ser. No. 11,709
35 Claims. (Cl. 250—46)



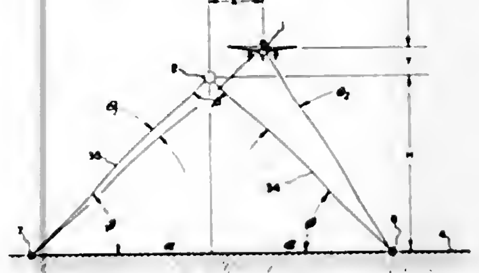
An electric lamp, such as an ultraviolet-generating gaseous discharge lamp, and a photocathode that is stable in air and responsive to radiation produced by the lamp are arranged to inject free electrons into the surrounding air and generate negative ions therein when the lamp is energized. Various types of apparatus for filtering and then electronically treating air by utilizing an air-stable photosensitive component and different kinds of electric lamps are provided.

3,403,253
HUMIDIOMETER HAVING FEEDBACK MEANS TO CONTROL THE ENERGIZATION OF THE TUBE
Oliver K. Larison, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 29, 1965, Ser. No. 510,465
3 Claims. (Cl. 250—83.3)



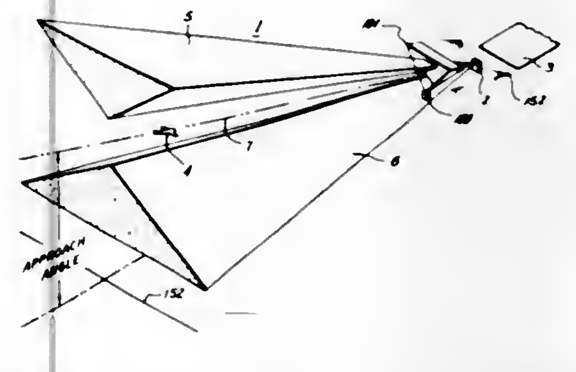
An improved humidiometer having a hydrogen tube for emitting Lyman-alpha radiation through an air path of fixed length to a nitric oxide detector. The output of the detector is amplified and a portion of that signal is coupled, by means of a feedback network, to a current control device coupled to the hydrogen tube for varying the output of the tube in a manner to maintain the ionization current of the detector at a constant level. A meter coupled to the amplifier produces indication of the water vapor content of the air in the radiation path.

3,403,254
GLIDE PATH APPROACH SYSTEM FOR LANDING AIRCRAFT UTILIZING NUCLEAR RADIATION
Angelo J. Campanella, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Apr. 6, 1964, Ser. No. 357,494
19 Claims. (Cl. 250—83.3)



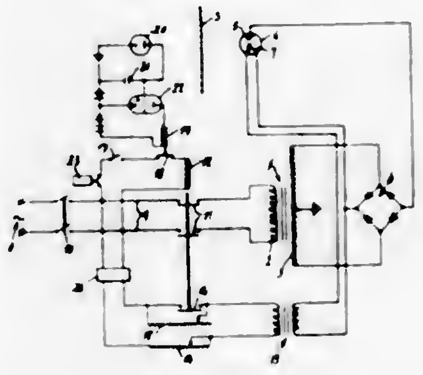
7. Apparatus for providing flight information during the landing of an aircraft, comprising,
means disposed on the ground for producing a radiation beacon comprising at least two sources spaced apart to radiate penetrative nuclear radiation to form a region of intersecting radiation along a predetermined glide path between said sources,
an aircraft,
means installed on said aircraft for continuously measuring the direction of said sources as said aircraft moves between said sources and producing a signal responsive to the deviation of said aircraft from a predetermined glide path altitude and a signal responsive to the deviation of said aircraft from a predetermined glide path horizontal position between said sources, and
means responsive to said signals for indicating position of said aircraft.

3,403,255
NAVIGATIONAL SYSTEM EMPLOYING NUCLEAR RADIATION GLIDE PATHS
Angelo J. Campanella, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed June 9, 1964, Ser. No. 373,735
19 Claims. (Cl. 250—83.3)



1. A landing system for aircraft, comprising:
a beacon to be positioned adjacent a landing area to radiate two beams of nuclear radiation upward in the direction of a glide path to the landing area, one of said beams having one predominant radiation energy range and another beam having another predominant radiation energy range, said one and another beams being spaced along a glide path to form a region of commingled radiation energies with a region of said one predominant radiation energy range to one side and a region to the other side of said other predominant radiation energy range,
an aircraft,
means mounted on said aircraft for detecting the nuclear radiation to indicate the position of said aircraft between said beams, and
said beacon comprising a first housing constructed of a shield material for said nuclear radiation, radioactive materials in said housing having different predominant energy ranges, a first aperture in said housing for collimating the radiation from one of said radioactive materials to form said one beam, a second aperture in said housing, above said first aperture, for collimating the radiation from another of said radioactive materials to form said another beam, said first and second apertures being tapered upward and downward, respectively, to shape said beams, each of said radioactive materials being mounted in containers to form a line source disposed substantially vertically and midway of the respective apertures to form each beam with high intensity radiation from directly out of the respective apertures and fringe, decreasing intensity radiation from the sides, where the radiation is not directly from the respective radioactive materials.

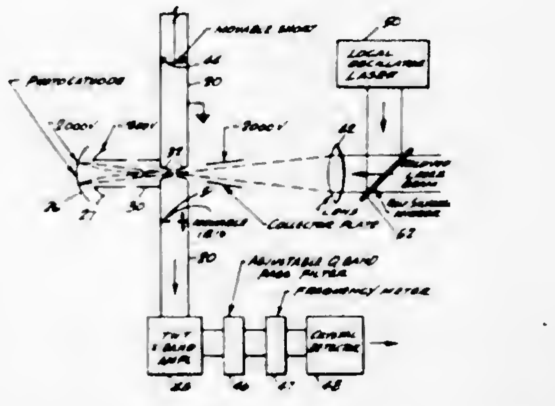
3,403,256
METHOD AND APPARATUS FOR MAKING AN X-RAY EXPOSURE ON A PHOTOGRAPHIC FILM WITH X-RAY TUBE CONTROL
Gerrit David Atse Hoekstra, Voorstraat 94a, Delft, Netherlands
Filed Dec. 7, 1965, Ser. No. 512,068
Claims priority, application Netherlands, Dec. 16, 1964, 6414680
12 Claims. (Cl. 250—95)



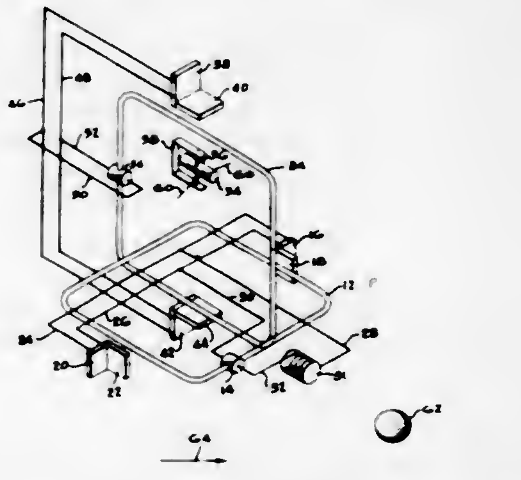
Method and apparatus for X-raying patients of arbitrary thicknesses by changing the filament current of the X-ray tube to vary X-ray intensity and by sensing the emission of an associated fluorescent screen.

3,403,257
LIGHT BEAM DEMODULATOR
Michael D. Petroff, Los Angeles, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Apr. 2, 1963, Ser. No. 270,042
9 Claims. (Cl. 250—199)

1. An arrangement for converting modulated coherent light energy to microwave radiation comprising a microwave interacting structure, an electron beam source, means for applying a modulated coherent light beam through the interacting structure to control the electron beam source, and means for coupling the resultant electron beam to the interacting structure to generate electromagnetic radiation therein.



3,403,258
SUN POINTING ATTITUDE CONTROL SYSTEM EMPLOYING FLUID FLYWHEELS WITH NOVEL MOMENTUM UNLOADING MEANS
Louis K. Davis, Audubon, Pa., assignor to General Electric Company, a corporation of New York
Filed Nov. 22, 1965, Ser. No. 509,077
5 Claims. (Cl. 250—203)



1. A device for orienting a freely rotatable structure with respect to a source of radiant energy and an ambient force field, comprising in combination:
- (a) controllable angular momentum storage means for storing angular momentum in a first plane and for storing angular momentum in a second plane orthogonal to the first plane;
- (b) radiant energy sensing means provided with radiant energy control means for sensing rotational displacement of the device in the first plane with respect to a source of radiant energy and for sensing rotational displacement of the device in the second plane with respect to the source of radiant energy; and producing signals representative thereof;
- (c) permanent force field interacting means for interacting with said ambient force field to produce torques tending to align the device so that the said second plane is aligned with the ambient field;
- (d) controllable force field interacting means for interacting with the said ambient force field responsively to signals from the said radiant energy sensing means;
- (e) connecting means connecting the said radiant energy sensing means,
  - (1) to the said controllable angular momentum storage means to cause the angular momentum storage means to store angular momentum in the said first plane responsively to signals rep-

resentative of rotational displacement in the first plane and to cause the angular momentum storage means to store angular momentum in said second plane responsively to signals representative of rotational displacement in the said second plane; and

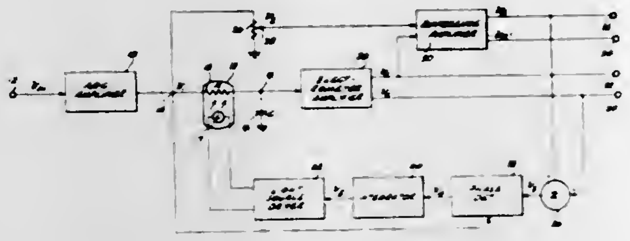
(2) to the said controllable force field interacting means to interact with the ambient force field responsively to signals representative of rotational displacement in the said second plane.

3,403,259
QUADRATURE VOLTAGE GENERATOR

Roger E. Lund, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Feb. 11, 1966, Ser. No. 526,857

9 Claims. (Cl. 250—205)



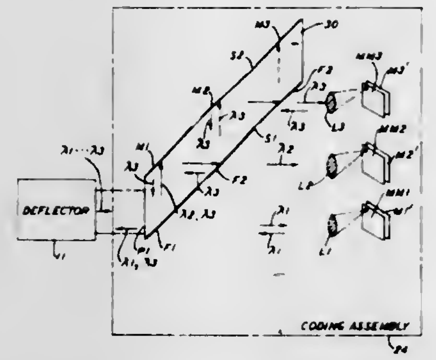
The disclosed quadrature voltage generator includes a photo-resistive element and a capacitor connected in series across an alternating voltage source. First and second voltages are generated indicating the respective voltages across the photo-resistive element and the capacitor. A feedback signal indicative of the relative magnitudes of the first and second voltages is applied to a light source positioned to illuminate the photo-resistive element. The feedback signal controls the intensity of the light emitted from the source so that the resistance of the photo-resistive element is regulated such that the magnitudes of the first and second voltages are maintained equal.

3,403,260
PLURAL CHANNEL OPTICAL MEMORY USING COLOR TO DISCRIMINATE AMONG CHANNELS

Joseph E. Geusic, Berkeley Heights, and John G. Skinner, Basking Ridge, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 8, 1965, Ser. No. 438,022

2 Claims. (Cl. 250—219)



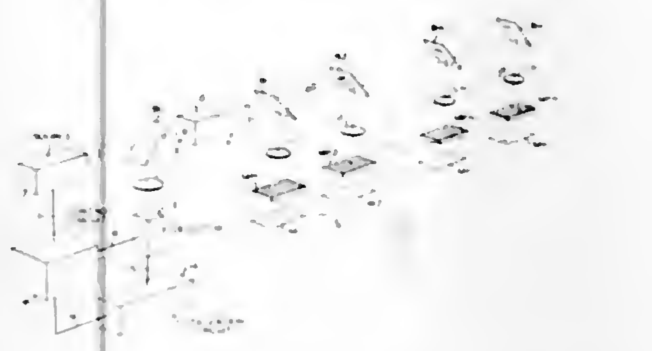
Reflective-type digital light deflector systems are herein provided with multiple channels for permitting increased addressing capacity. The system includes an arrangement for dividing the output of a digital light deflector into parallel secondary beams. Each secondary beam is passed through a different color filter and directed at one of a plurality of memory media. Thus light of a characteristic wavelength is directed at an associated medium. The now color coded secondary beams are reflected back into the deflector by a mirror in the optical path beyond each memory medium. A detector at the input end of the light deflector detects the presence and absence of light at each characteristic wavelength thus indicating the presence and absence of an obstruction in the addressed positions of the associated media.

3,403,261
PLURAL CHANNEL OPTICAL MEMORY USING LIGHT BEAM TRANSIT TIME TO DISCRIMINATE AMONG CHANNELS

Klaus D. Bowers, Summit, and Lawrence J. Varnerin, Jr., Watchung, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 8, 1965, Ser. No. 438,021

2 Claims. (Cl. 250—219)



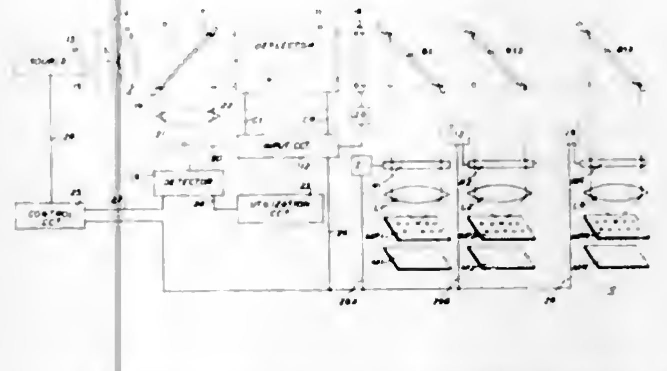
A word-organized memory is described where corresponding bits of binary words are stored as the presence and absence of obstructions in corresponding ones of a plurality of memory media. The media are positioned to define different optical distances between a light source and a detector. A digital light deflector addresses selected bits and the detector detects the bits of a selected word as a coded sequence of pulses.

3,403,262
PLURAL CHANNEL OPTICAL MEMORY WITH INTENSITY MODULATION FOR DISCRIMINATING AMONG CHANNELS

Harold Seidel, Fanwood, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 8, 1965, Ser. No. 437,771

6 Claims. (Cl. 250—219)



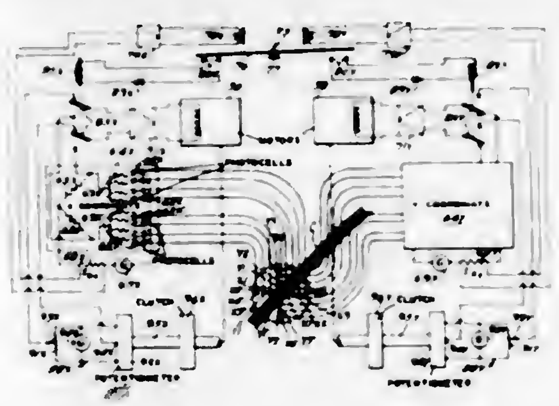
1. A word-organized memory comprising a source of an input beam of plane polarized light, a multistage digital light deflector wherein the path of light transmitted by said deflector is determined responsive to the coded presence and absence of voltages across the various stages therein, each of said stages comprising means for selectively rotating the plane of polarization of said input beam and birefringent means for transmitting said input beam along different paths depending upon the plane of polarization, said deflector being arranged in the optical path of said beam and having input and output ends, means for dividing the light at said output end into a plurality of spaced apart secondary beams each having a first direction for the plane of polarization thereof, a plurality of memory media each positioned in the path of a different one of said secondary beams and including the presence and absence of obstructions defining one bit of each memory word, means for modulating the intensity of each of said secondary beams at a different frequency characteristic for each of said media in a manner to insure that said secondary beams are in said first direction when they are redirected into said output end of said deflector, reflecting means in the path of each of said secondary beams for redirecting those of said secondary beams passed through said memory media back into said output end of said deflector at the same position at which the light exited while the voltage code is maintained, and means separating said input beam from said secondary beams.

3,403,263
METHOD AND APPARATUS FOR OPTICAL FIBER CURVE FOLLOWER INCLUDING METHOD AND APPARATUS FOR MAKING POSITION SCALE THEREFOR

Charles W. Hargens III, Philadelphia, Pa., assignor to The Franklin Institute, Philadelphia, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 272,013, Apr. 10, 1963. This application Oct. 16, 1964, Ser. No. 404,218

16 Claims. (Cl. 250—202)



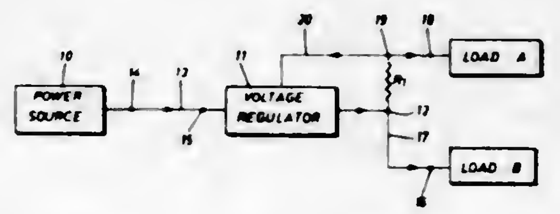
A curve follower including a movable scanning head suported on a bridge structure which in turn is movable relative to a curve support base. Drive means are supplied to move the scanning head and other drive means are supplied to move the bridge. The scanning head contains a plurality of optical fibers in a closely grouped array positioned to pick up light reflected from the curve illustration when associated with individual photocells. The fibers and photocells are preferably divided into at least two groups, one group of which is designed to actuate the scanning head drive member and the other group of which is designed to actuate the bridge drive member. A switching circuit is provided whereby upon predetermined conditions one group of photocells or the other is effective and the drive means for the other group is connected to a power source to provide an independent drive movement. Preferably scale means is provided using additional sensing heads movable with the scanning head and the bridge means respectively and cooperating with scales on the structure relative to which this movement occurs, which scales have patterns which are unique for each position of the respective sensing heads. The coded scales for the sensing heads may be made using light sensitive strips and transmitting light through the fibers intended to sense light or dark of the scale to provide a unique pattern of light and dark across each row representing a given position or station of the associated movable means.

3,403,264
VOLTAGE REGULATOR FOR MULTIPLE LOADS

James A. Ronback, Kitchener, Ontario, Canada, assignor to Electrohome Limited, Kitchener, Ontario, Canada

Filed Sept. 28, 1965, Ser. No. 490,892

9 Claims. (Cl. 307—32)



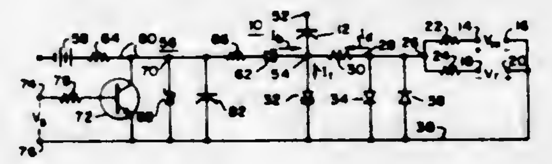
1. In combination, a power source for producing a voltage and current; a first load, said first load being variable and demanding varying amounts of said current from said power source; a second load; a voltage regulator for maintaining the voltage supplied to said second load from said voltage regulator substantially constant during variations in the current demanded by said first load, said voltage regulator having first and second input terminals and an output terminal; means connecting said power source to deliver power to said first input terminal; means connecting said output terminal to said second load to deliver a regulated voltage thereto; and means connecting said output terminal to said first load to deliver power thereto, said last-mentioned means including an impedance connected in series between said output terminal and said first load, said second input terminal being connected between said impedance and said first load to supply a signal to said voltage regulator to increase the internal resistance thereof in response to an increase in said signal and to decrease the internal resistance thereof in response to a decrease in said signal.

3,403,265
TEMPERATURE COMPENSATED TUNNEL DIODE VOLTAGE COMPARATOR CIRCUIT

Otto L. Apfelbeck, Shawnee Township, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 21, 1964, Ser. No. 405,448

3 Claims. (Cl. 307—235)



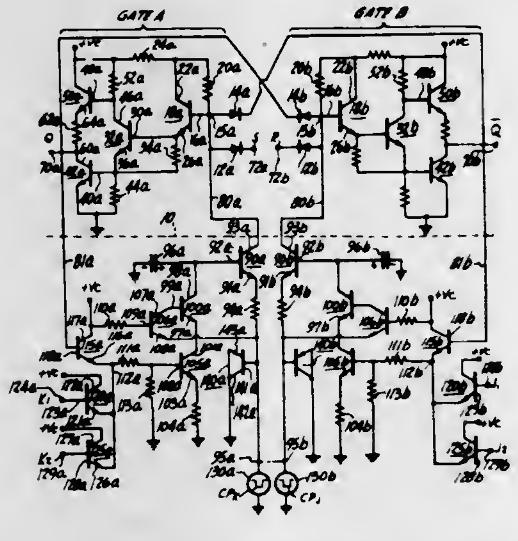
1. A comparator circuit comprising an output tunnel diode having a characteristic peak current switching value and coupled with an output, difference current circuit means connected to supply a difference current to said output tunnel diode, bias current circuit means energized by a suitable energy source and connected to supply a bias current to said output tunnel diode, said bias current circuit means including another tunnel diode having another characteristic peak current switching value less than that of said output tunnel diode, said tunnel diodes having said peak current values matched over a predetermined temperature range so that said peak current values vary substantially equally with temperature change within said temperature range, said bias current circuit means further including tunnel diode voltage and current controlling means so as to provide for generating a bias current in excess of the peak current value of said bias circuit tunnel diode and in excess of respective holding current values of said tunnel diodes after said tunnel diodes have been switched but less than the peak current value of said output tunnel diode, said

voltage and current controlling means including resistance means connected serially between said bias circuit tunnel diode and said energy source and further including a voltage limiting diode connected in a path which is parallel to a path in which said tunnel diodes are connected.

3,403,266

CLOCK-PULSE STEERING GATE ARRANGEMENT FOR FLIP-FLOP EMPLOYING ISOLATED GATE CONTROLLED CHARGING CAPACITOR

Robert C. Heuner, Bound Brook, and Joseph W. Harmon, Highland Park, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Nov. 17, 1966, Ser. No. 595,247
13 Claims. (Cl. 307—247)

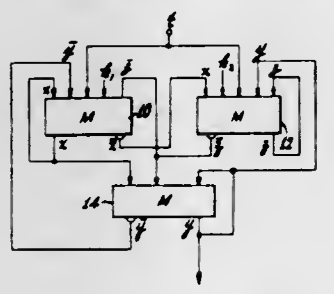


1. In a capacitance multiplication circuit in which capacitance means is coupled between a point of reference potential and the base electrode of a first transistor, the collector electrode of which is coupled to an output point and the emitter electrode of which is coupled to a control terminal means; the improvement comprising:
- second and third transistors having their collector-emitter paths connected in series across said capacitance means,
- a plurality of input terminals,
- gating means coupled between said input terminals and said second transistor, and
- control signal responsive means coupled between said control terminal means and said third transistor.

3,403,267

FLIP-FLOP EMPLOYING THREE INTERCONNECTED MAJORITY-MINORITY LOGIC GATES

Robert O. Winder, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Sept. 24, 1965, Ser. No. 490,052
11 Claims. (Cl. 307—289)

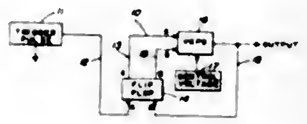


1. A logic circuit comprising, three majority-minority gates; means for applying to each gate its own majority output, and outputs from the other two gates, respectively; means for supplying control inputs to the first and second gates; and means for concurrently applying input pulses to the first and second gates.

3,403,268

VOLTAGE CONTROLLED PULSE DELAY

Frederick L. Beckner and Michael C. Fischer, Austin, Tex., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 18, 1964, Ser. No. 420,257
2 Claims. (Cl. 307—293)

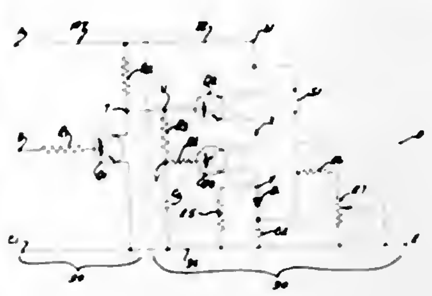


A delay pulse generator having a bistable device with two inputs, the first of which is operative to receive pulses from a trigger pulse circuit to change the output state of the bistable device to thereby feed a pulse to a voltage controlled pulse delay circuit which delays the pulse by an amount determined by the magnitude of a control voltage applied to the delay circuit and feeds the delayed pulse to an output circuit and also to a feedback circuit connected to the second input of the bistable device to change the state of bistable device back to the initial state.

3,403,269

FREQUENCY RESPONSIVE RC TIMING CIRCUIT FOR DETECTING EITHER LACK OF INPUT OR OVEREXTENDED PRESENCE OF INPUT

Robert C. Thompson, Muskegon, Mich., assignor to Techrand Corporation of America, Muskegon, Mich., a corporation of Michigan
Filed Apr. 25, 1966, Ser. No. 545,080
13 Claims. (Cl. 307—293)



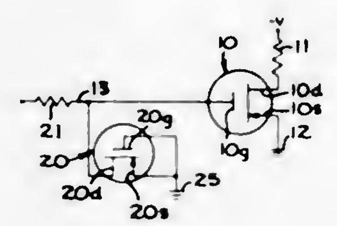
A circuit having a pair of time-controlled switch stages which produces a continuous output voltage exceeding a predetermined minimum in response to regularly-pulsing input signals, in which one such switch stage responds to the absence of such input signals by interrupting the output voltage and the other such switch stage responds to a steady or non-pulsing input signal condition by similarly interrupting the output voltage.

3,403,270

OVERVOLTAGE PROTECTIVE CIRCUIT FOR INSULATED GATE FIELD EFFECT TRANSISTOR

Robert E. Pace, James D. Trotter, and Warren C. Wheeler, Sunnyvale, Calif., assignors to General Micro-Electronics Inc., Santa Clara, Calif., a corporation of Delaware
Continuation-in-part of application Ser. No. 454,460, May 10, 1965. This application June 1, 1965, Ser. No. 460,164
4 Claims. (Cl. 307—304)

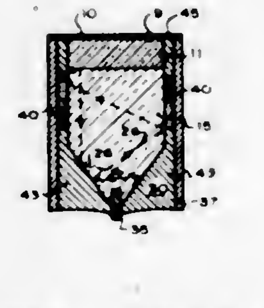
Overvoltage protective circuit for insulated gate field effect transistor (IGFET) comprising a second IGFET whose source-drain circuit is connected between the input terminals of the first IGFET and whose gate insulator's thickness and built-in charge are selected so that the second IGFET will undergo avalanche breakdown before the input voltage can become large enough to destroy the gate insulator of first IGFET.



3,403,271

ULTRASONIC TRANSDUCER WITH ABSORPTIVE LOAD

Donn D. Lobdell, Palo Alto, and Edward H. Phillips, Los Altos, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Feb. 9, 1966, Ser. No. 526,165
2 Claims. (Cl. 310—8.2)

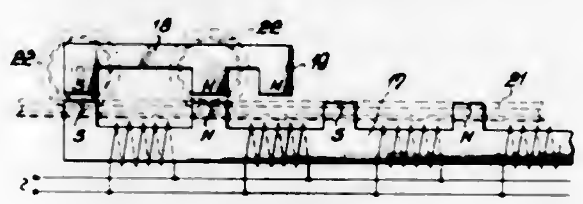


An improved ultrasonic transducer includes an absorptive load which is acoustically coupled to a piezoelectric crystal and which includes particles of heavy metal in a matrix of thermoplastic binder.

3,403,272

LINEAR AND ROTARY ELECTRIC MOTORS ADAPTED FOR USE AS COUNTERS

Siegfried August Dold, Rheinberg, Germany, assignor to Emil Ewald Josef Underberg, Rheinberg, Germany
Filed Nov. 8, 1965, Ser. No. 506,744
Claims priority, application Germany, Nov. 11, 1964, U 11,199
10 Claims. (Cl. 310—12)

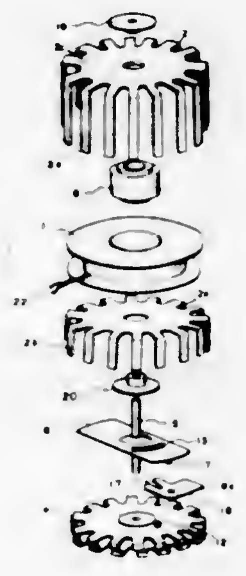


1. An electric machine which includes: a first member having means adapted to function as at least one first group of a north pole and a south pole, and a second member having means adapted to function as at least a second group of a north pole and a south pole, one of said members being movable and the other one of said members forming a stator, all of the groups of one of said members including means adapted to function as a third pole with the poles of said last-mentioned member pertaining to one and the same group arranged one behind the other with regard to the movement of the movable member relative to the stator and having two succeeding poles of one and the same group of the same polarity and the third pole of opposite polarity whereby said movable member is given a preferred direction of movement.

3,403,273

SELF-STARTING SYNCHRONOUS MOTOR

Hiroshi Higuchi, Yokosuka, Japan, assignor to Tanaka Instrument Company, Limited, Yono, Japan
Filed Dec. 13, 1965, Ser. No. 513,209
Claims priority, application Japan, Feb. 26, 1965, 40/14,653, 40/14,654
8 Claims. (Cl. 310—41)



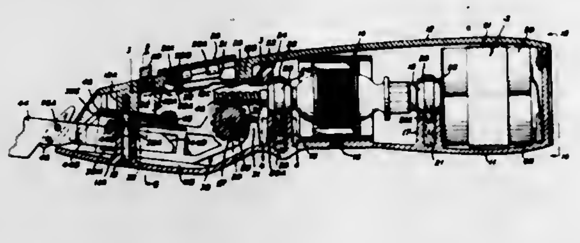
An improved fractional horsepower synchronous motor which has a stator consisting of a field coil with a pair of pole plates each of which has a number of finger-like subpoles extending from the plate and perpendicular to the plane of the plate. The subpoles of one plate are longer than those of the other plate, and the longer end shorter subpoles alternate around the periphery of the stator. The rotor has an axially magnetized permanent disc magnet and a pair of pole plates having a number of subpoles around the periphery thereof, the pole plates being clamped to opposite sides of the disc magnet. The number of subpoles on the two plates is the same and the total number is the same as the number of subpoles of the stator. A coupling plate is provided between the stator and the rotor mounted on a shaft freely rotatable within the stator and rotor. Means are provided for coupling the coupling plate to the rotor so that the coupling plate will rotate in only one direction when the stator is energized.

3,403,274

BEARING AND LUBRICATING MEANS FOR ROTATABLE SHAFT

Russell O. Robison, Plymouth, Ohio, assignor to Dominion Electric Corporation, a corporation of Ohio
Original application Oct. 18, 1965, Ser. No. 496,947, now Patent No. 3,337,954, dated Aug. 29, 1967. Divided and this application Apr. 5, 1967, Ser. No. 628,778
4 Claims. (Cl. 310—90)

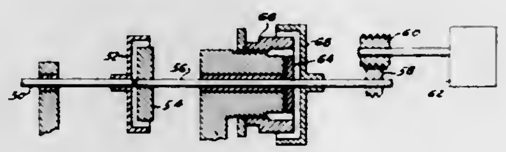
A pillow type porous metal bearing structure for providing bearing support of an electric motor shaft on a supporting post, such a molded plastic post deformable under sufficient sustained pressure, the bearing structure having a tongue portion extending outwardly and interfitting in a recess in the post to resist rotation and obviating such pressure of a deforming character on the post for holding the bearing structure to the post. Also, a post containing a lubricant in the recess in the post in contact with the tongue portion of the bearing structure protruding



into the recess whereby the lubricant is supplied by a wicking or capillary action to the porous metal of the bearing structure through the tongue portion.

3,403,275
HYSTERESIS DRIVE WITH CONSTANT SPEED OUTPUT

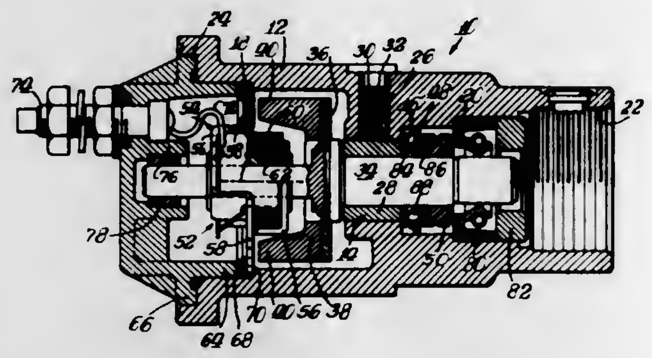
Arthur J. Little, Springfield, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 30, 1965, Ser. No. 468,460
1 Claim. (Cl. 310—103)



The following specification describes an hour meter operated by a constant speed output shaft coupled to a variable speed input shaft through a hysteresis drive. A magnet on the output shaft is coupled to an axially adjustable speed cup to provide an eddy current braking torque corresponding to the driving torque and thereby avoid the need for an escapement in the hour meter.

3,403,276
ELECTRICAL TACHOMETER SENDER

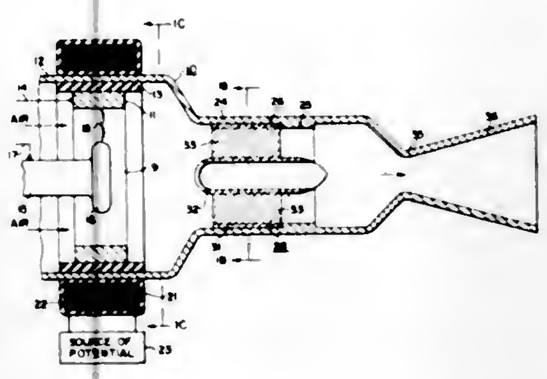
John D. Baker, Jr., Oak Park, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Feb. 28, 1966, Ser. No. 530,679
10 Claims. (Cl. 310—156)



1. In an electrical tachometer sender, an elongated casing, a stator unit mounted in said casing adjacent the forward end thereof, a magnet shaft rotatably mounted in said casing, a magnet secured to said magnet shaft rearwardly of said stator unit, a collar member secured to said magnet shaft rearwardly of said magnet and being restrained against movement in an axial forward direction whereby a predetermined axial spacing is maintained between said magnet and said stator unit during operation of said sender.

3,403,277
DOWNSTREAM DAMPED HEAT LOSS REDUCING ELECTRIC ARC GAS HEATERS FOR WIND TUNNELS

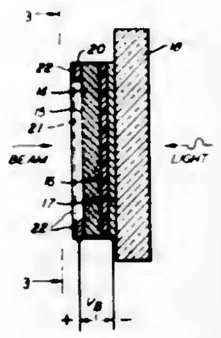
Stewart Way, Churchill, and Edward V. Somers, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 26, 1965, Ser. No. 435,558
13 Claims. (Cl. 313—35)



5. Arc heater apparatus comprising, in combination, means forming an arc chamber for gas to be heated, the chamber forming means being composed of a non-magnetic material, an annular electrode mounted in the chamber and insulated from the wall thereof, a stem electrode mounted in the chamber coaxially with the annular electrode, magnetic field producing means disposed outside the chamber forming means and producing a magnetic field in the chamber transverse to the arc path between the stem electrode and the annular electrode which causes the arc to move substantially continually around the annular electrode, the end of the stem electrode not extending axially toward the exhaust means a substantial distance beyond the arc path, exhaust means for the chamber including a calming section, and baffle means disposed in the calming section near the arc path, the baffle means including a plurality of spaced baffles for damping turbulence in the gas passing through the calming section and reducing the heat lost to the wall of the calming section.

3,403,278
CAMERA TUBE TARGET INCLUDING N-TYPE SEMICONDUCTOR HAVING HIGHER CONCENTRATION OF DEEP DONORS THAN SHALLOW DONORS

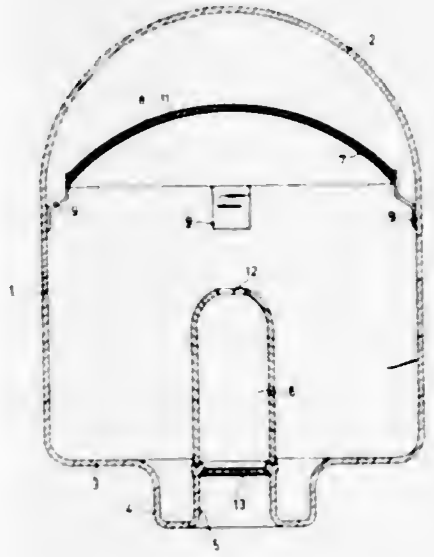
Dawon Kahng, Bridgewater Township, Somerset, and Jack A. Morton, South Branch, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Feb. 7, 1967, Ser. No. 614,457
13 Claims. (Cl. 313—65)



In one embodiment, a television camera tube includes a target structure comprising a flat semiconductor with a grid electrode bonded to a target surface and a transparent insulative film overlayed by a transparent conductor bonded to a light admitting surface. The semiconductor contains a relatively high concentration of deep donor centers which are ionized by incoming light to form a charge density pattern which, by electron beam scanning, is converted to a video output signal. Electrons are transmitted from the semiconductor by the grid conductor. In another embodiment, the semiconductor is bonded to a flat conductor by a junction contact and light is admitted on the target surface.

3,403,279
X-RAY CONVERTER HAVING TERBIUM ACTIVATED LANTHANUM COMPOUND PHOSPHOR

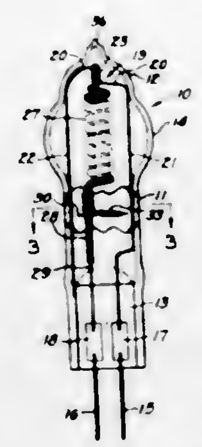
Willem Lambertus Wanmaker, Alfred Bril, and Johannus Godefridus Verlijsdonk, Emmasingel, Eindhoven, Netherlands, assignors to North American, Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 2, 1966, Ser. No. 576,879
Claims priority, application Netherlands, Sept. 4, 1965, 6511566
3 Claims. (Cl. 313—94)



Terbium activated lanthanum oxide, silicate or phosphate phosphor employed in X-ray sensitive screen in image converter.

3,403,280
SINGLE-ENDED ELECTRIC INCANDESCENT LAMP FILAMENT SUPPORT

John G. Cardwell, Jr., Kirtland, Ohio, assignor to General Electric Company, a corporation of New York
Filed Mar. 4, 1966, Ser. No. 531,799
6 Claims. (Cl. 313—271)



1. A single-ended electric incandescent lamp comprising a generally tubular bulb of vitreous material having a pinch seal at one end,

a pair of lead-in conductors extending through said pinch seal,

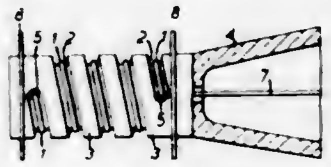
a coiled filament extending longitudinally of said bulb and having a leg portion at one end connected to one of said lead-in conductors,

and a generally U-shaped support member comprising an intermediate bend portion to which the other end of said filament is connected,

and side leg portions of said support member extending longitudinally downward from said intermediate portion and bearing against the inner wall of the bulb, one of said side leg portions extending into said pinch seal and connected to the other lead-in conductor, the other side leg portion extending into and terminating within said pinch seal.

3,403,281
MAGNETRON HAVING RAPID STARTING PROPERTY WHEN COLD

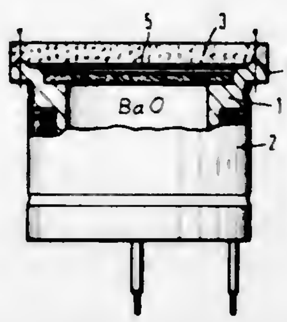
Francis James Weaver, Essex, England, assignor to English Electric Valve Company Limited, London, England, a British company
Filed June 10, 1966, Ser. No. 556,663
Claims priority, application Great Britain, Aug. 16, 1965, 34,961/65
7 Claims. (Cl. 313—337)



1. A magnetron having a cathode structure comprising a secondary electron emissive cathode member adapted to provide at least the major part of the required electron emission by secondary emission by electron bombardment when the magnetron is in normal operation, and a filamentary thermionic emitter adapted to provide emission for rapidly starting said magnetron into operation from cold.

3,403,282
DISPENSER TYPE CATHODE

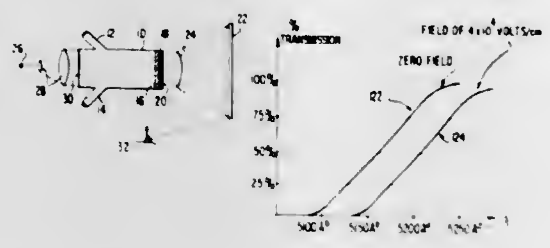
Helmut Katz, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Nov. 30, 1965, Ser. No. 510,606
Claims priority, application Germany, Dec. 2, 1964, S 94,410
2 Claims. (Cl. 313—346)



A dispenser type cathode having a supply chamber in which is disposed a supply of emission substance with the chamber having an opening for the discharge of barium from such supply which opening is covered by a sintered porous member of high melting metal, through which emission material may migrate, the inner face of the emission carrier being provided with a thin coating of aluminum oxide which effects a uniform distribution of the barium to the cathode surface of the emission substance carrier.

3,403,283
VARIABLE TRANSMISSION SYSTEM CATHODE RAY TUBE

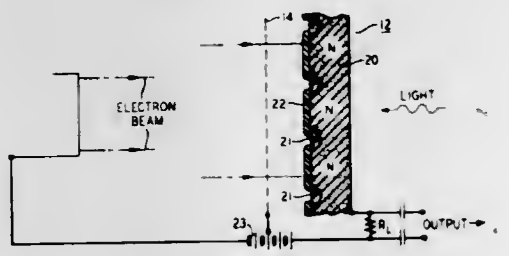
Fred Chernow, 19 Mooney Road, Burlington, Mass. 01803, and Stephen Lane Kurtin, 594 Cumberland Ave., Teaneck, N.J. 07666
Filed Mar. 11, 1966, Ser. No. 533,514
9 Claims. (Cl. 315—11)



Information in the form of an electrical signal is converted into visual information by selectively applying potentials proportional to the electrical information to selected areas of an electric field dependent variable transmission layer having an optical absorption edge in the visible region. A source of light floods the variable transmission layer and the amount of light passed through the layer at any point thereon is dependent upon the field strength through the layer at that point. The potential or field strength is varied by placing a common transparent electrode on one surface of the layer and creating potential differences at selected areas on the other surface of the layer by means of an electron beam which creates secondary emission at the latter surface.

3,403,284
TARGET STRUCTURE STORAGE DEVICE USING DIODE ARRAY

Thomas M. Buck, Basking Ridge, Merton H. Crowell, Morristown, and Eugene I. Gordon, Convent Station, N.J., assignors to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York
Filed Dec. 29, 1966, Ser. No. 605,715
12 Claims. (Cl. 315—11)



1. In an electron beam storage device, the combination comprising:

a target structure comprising a semiconductive wafer the major portion of which is of a first conductivity type;

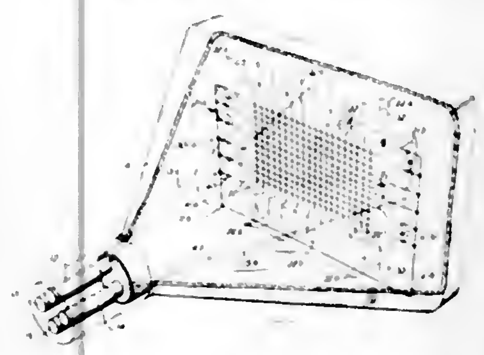
the semiconductive wafer including on a first surface thereof an array of regions, each of the regions defining with the major portion of the wafer a p-n junction;

means for reverse-biasing the p-n junctions comprising means for periodically scanning the target structure with an electron beam;

and means for shielding the portion of the wafer of the first conductivity type from the electron beam comprising a coating of insulating material over that part of the first surface of the wafer that is of the first conductivity type.

3,403,285
ELECTROLUMINESCENT DISPLAY MATRIX FOR CATHODE RAY TUBE

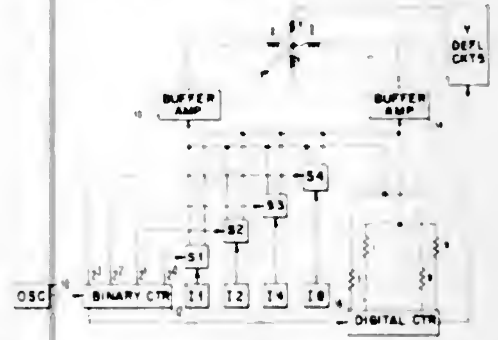
Robert L. Eilenberger, Bridgewater Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 14, 1965, Ser. No. 513,685
4 Claims. (Cl. 315—13)



An electroluminescent display matrix on the faceplate of a cathode ray tube comprises strip electrodes which are extended beyond the boundaries of the matrix. The extended electrodes beyond each boundary are scanned by individually controlled cathode ray beams. A luminescent spot is produced in the display matrix at the intersection of any two strip electrodes respectively energized by cathode ray beams.

3,403,286
DIGITAL CATHODE RAY TUBE DEFLECTION SYSTEM

Frank R. Carlock, Hyde Park, and William R. Lamoureux, Kingston, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 27, 1966, Ser. No. 604,900
10 Claims. (Cl. 315—18)

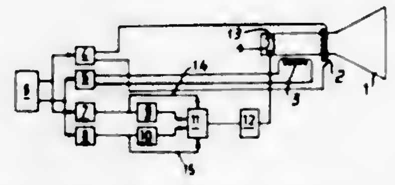


In a cathode ray tube display system, a plurality of equally weighted current sources are digitally controlled to provide coarse deflection of the cathode ray beam. Another plurality of current sources, which are binarily weighted, are controlled by a binary counter to provide fine deflection. The current from the largest binary source is substantially equal to one half that of the equally weighted sources. The coarse and fine currents are combined to provide the desired deflection with a minimum of distortion.

3,403,287
CATHODE RAY TUBE BEAM SUPPRESSION SYSTEM FOR PRODUCING A RASTER WHICH CORRESPONDS TO A PREDETERMINED GEOMETRIC SHAPE

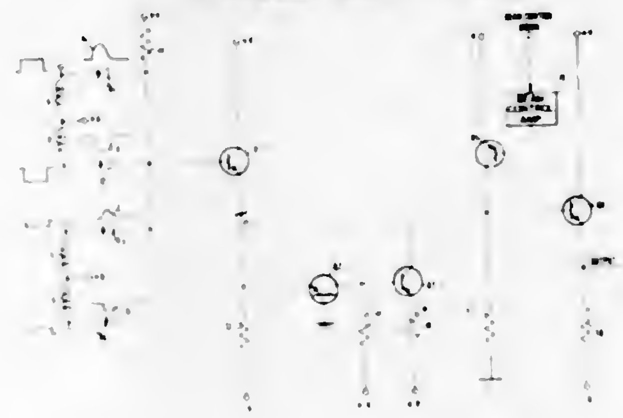
Christian Jacobus Seur and Joost Engbert Marquerinck, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 27, 1964, Ser. No. 385,380
Claims priority, application Netherlands, Aug. 22, 1963, 297,011
9 Claims. (Cl. 315—22)

A system is provided for suppressing the beam of a cathode ray tube in certain regions of a scan, for example, when a rectangular raster is employed on a circular screen tube, the beam is suppressed when it is directed to off-screen regions. The suppressing signal is developed by producing parabolic wave shape signals from the deflection signals, adding the parabolic wave shape signals, and then clipping the added signals at a predetermined level in order to derive a beam switching signal.



3,403,288
DYNAMIC INTENSITY CORRECTIONS CIRCUIT

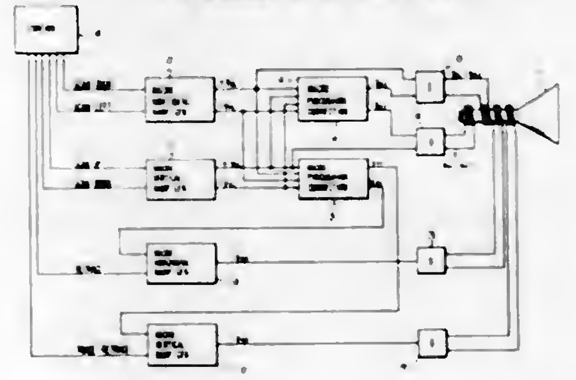
Mark E. Bradley, Red Hook, and Donald J. Hinkein, Germantown, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 28, 1965, Ser. No. 505,483
3 Claims. (Cl. 315—22)



An intensity correction circuit is utilized in a cathode ray display having step deflection currents applied to electromagnetic deflection windings. The kickback voltages induced in the windings by the application of the step currents are detected by diode circuitry. The most negative of the detected voltages is combined with a beam control signal for application to the intensity control grid of the cathode ray tube to maintain uniform illumination despite nonlinear beam deflection velocities.

3,403,289
DISTORTION CORRECTION SYSTEM FOR FLYING SPOT SCANNERS

Gerald A. Garry, Rochester, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Feb. 18, 1966, Ser. No. 528,570
7 Claims. (Cl. 315—24)



1. Distortion correction apparatus for a flying spot scanner comprising:

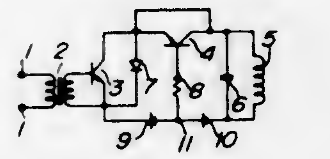
means for generating large and small beam deflection signals,

means for generating large and small distortion correction signals for said large and small beam deflection signals, and

means for combining said large deflection signals with said large correction signals and said small deflection signals with said small correction signals to provide corrected large and small deflection signals free of distortion.

3,403,290
HORIZONTAL DEFLECTION DEVICE

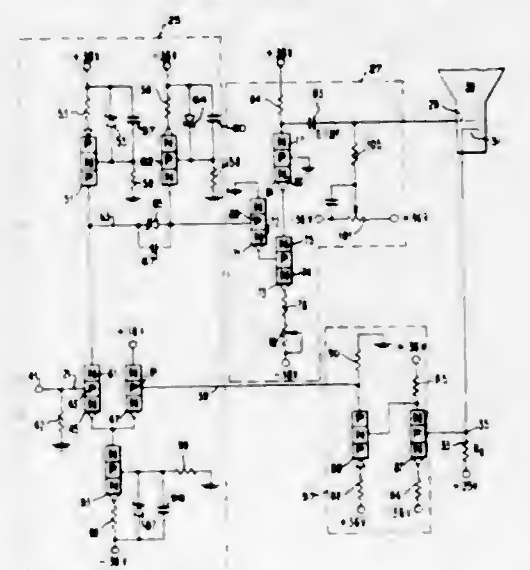
Yusuke Itagaki, Ota-shi, and Takashi Ando, Gunma-ken, Japan, assignors to Sanyo Electric Co., Ltd., Moriguchi-shi, Japan, a corporation of Japan
Filed July 20, 1965, Ser. No. 473,298
Claims priority, application Japan, Apr. 7, 1965, 40/20,692
2 Claims. (Cl. 315—27)



The disclosure describes a horizontal deflection circuit for a television receiver employing transistors. Two transistors are used, the collector current of the first transistor flowing directly into the emitter of the second transistor. The first transistor is operated with the emitter grounded and the second transistor is operated with the base grounded.

3,403,291
INTENSITY CONTROL CIRCUIT

Nicholas Lazarchick, Jr., Hyde Park, and Robert A. Thorpe, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 16, 1964, Ser. No. 383,027
10 Claims. (Cl. 315—30)



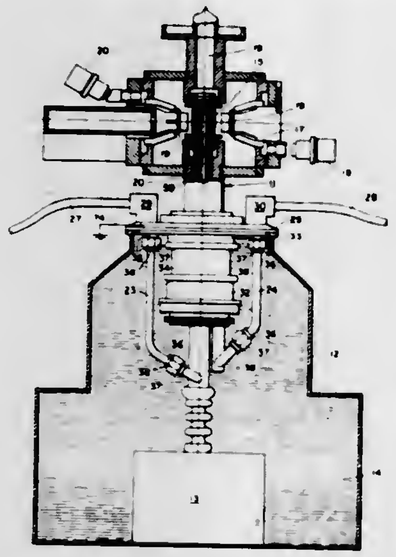
In a cathode ray tube display system, a control system is provided for uniform intensity in a constant time variable velocity display. A control potential varying in amplitude as a function of the length of a vector to be displayed is used to control a current generator whereby the resultant beam current is proportional to the vector length. This beam current is amplified and applied through a feedback loop to the circuit input to effectively increase the input impedance by the amplification factor of the amplifier. The resultant system is enabled to operate with low level input signals such as provided by a data processor and provides linear transfer characteristics over a wide frequency bandwidth under direct computer control irrespective of individual cathode ray tube characteristics.

3,403,292
COOLANT FLOW MEANS UTILIZING TUBING OF DIELECTRIC MATERIAL

Walter J. Griffin, Sudbury, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Sept. 26, 1966, Ser. No. 582,474

7 Claims. (Cl. 315—50)



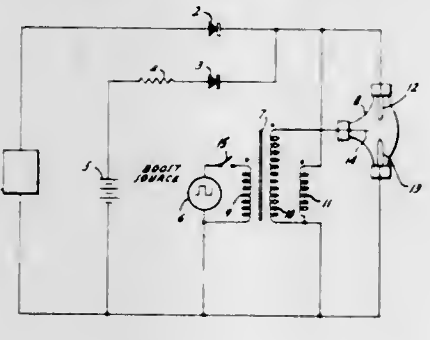
Means are provided by which coolant is passed through the oil-seal flange at one side of the insulating oil chamber and directed through flexible, high strength dielectric tubing to the region of the cathode emitter. After flowing through a passage adjacent the region to be cooled, coolant is returned to a heat exchanger or supply source through another tube of similar material at a remote part of the oil-seal flange. The coolant is grounded by a positive electrical ground connected at any desired point on the oil-seal flange.

3,403,293
STARTER CIRCUIT FOR THREE-ELECTRODE GASEOUS DISCHARGE DEVICE

Claus Henry Michelsen, Tustin, Calif., assignor to Philco-Ford Corporation, a corporation of Delaware

Filed July 29, 1966, Ser. No. 568,915

5 Claims. (Cl. 315—168)



STARTING CIRCUIT FOR 3 ELEMENT GASEOUS DISCHARGE DEVICE

Starter circuit for three-electrode gaseous discharge device using pulse source and transformer to supply high starting voltage between starting electrode and cathode, with additional transformer winding connected to raise voltage of anode during starting period to prevent starting electrode to anode arc.

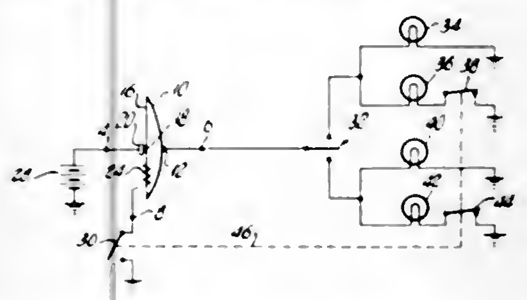
3,403,294
LOAD COMPENSATED SERIES TYPE FLASHER

Hemming G. Silberg, Union, N.J., assignor, by mesne assignments, to Wagner Electric Corporation, South Bend, Ind., a corporation of Delaware

Filed Sept. 14, 1965, Ser. No. 487,242

4 Claims. (Cl. 315—209)

A series type flasher is compensated to flash greater and lesser loads at substantially the same rate. In one embodiment an auxiliary heater winding is energized to augment heating of the flasher pull ribbon whenever the lower load is flashed, thereby avoiding a change in flashing rate due to lower current flow when the flasher is switched from the greater to the lesser load. In another embodiment, a portion of the flasher pull ribbon is short-circuited whenever the greater load is flashed, thereby avoiding a change in flashing rate due to higher current flow when the flasher is switched from the lesser to the greater load.



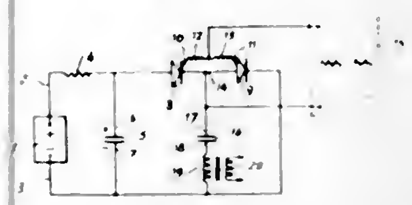
3,403,295
VOLTAGE-MULTIPLYING, ALTERNATING-PULSE CIRCUITS, NOTABLY FOR THE IGNITION SYSTEM OF INTERNAL COMBUSTION ENGINES

Gaetan de Coye de Castelet, Billancourt, France, assignor to Regle Nationale des Usines Renault, Billancourt, France

Filed Aug. 23, 1966, Ser. No. 574,329

Claims priority, application France, Sept. 6, 1965, 30,550

5 Claims. (Cl. 315—239)



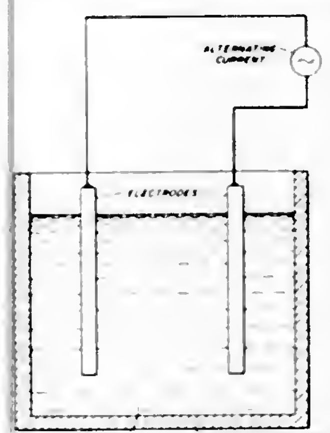
An alternating-current generator having a pair of thyratrons connected in series across a direct current source. A monitoring-pulse generator is connected to the control members of the thyratrons to alternatively render them conductive. A capacitor and the primary of a transformer are series connected between a point common to the thyratrons and to a terminal of the current source to develop and deliver the alternating current produced.

3,403,296
ELECTROCHEMILUMINESCENCE OF ISOINDOLES

Arnold Zweig, Westport, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Dec. 13, 1965, Ser. No. 513,584

6 Claims. (Cl. 315—246)



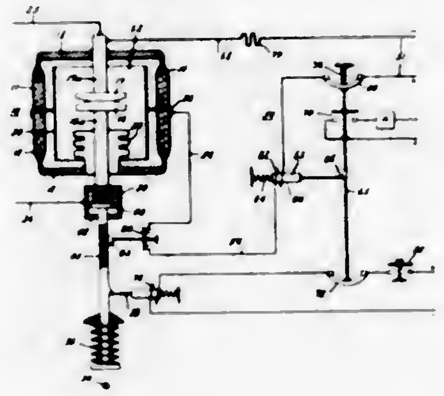
A method and means for obtaining light by passing an alternating current between electrodes in an electrolyte having isoindole fluorescent compounds in an inert solvent.

3,403,297
VACUUM-TYPE CIRCUIT INTERRUPTER WITH PRESSURE-MONITORING MEANS

Donald W. Crouch, Newtown Square, Pa., assignor to General Electric Company, a corporation of New York

Filed Mar. 17, 1966, Ser. No. 535,078

6 Claims. (Cl. 317—62)



1. In combination,

(a) a vacuum-type circuit interrupter comprising an evacuated envelope, a pair of relatively movable contacts inside the envelope, and a tubular metal shield surrounding the contacts and electrically isolated from said contacts when the interrupter is closed by evacuated space inside said envelope,

(b) means for monitoring the pressure inside said evacuated envelope while the interrupter is carrying current therethrough, comprising:

- (i) high potential-applying means for applying a high potential across said space between said shield and said contacts when the interrupter is closed,
- (ii) said potential being sufficiently low that no significant discharge is present across said space when the pressure inside said envelope is in a normal range,
- (iii) said potential being sufficiently high to initiate a discharge across said space when the pressure inside said envelope is above said normal range,
- (iv) current-responsive means connected in circuit with said high potential-applying means and operable in response to a discharge being initiated across said space,
- (v) and means responsive to initiation of an interrupter-opening operation for removing said high potential from across said space when the interrupter-opening operation is initiated and for reapplying said high potential across said space when said interrupter is closed.

3,403,298
WIRE WOUND INDUCTORS/COMPONENT SUBSTRATE ASSEMBLIES

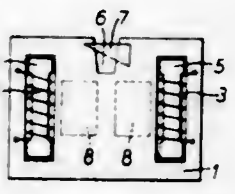
Howard D. Richards and Anthony W. Simpson, Ilford, England, assignors to The Plessey Company Limited, Ilford, England, a British company

Filed Nov. 8, 1966, Ser. No. 592,768

Claims priority, application Great Britain, Nov. 9, 1965, 47,375/65

2 Claims. (Cl. 317—99)

An electric substrate assembly comprising electrical components and conductors deposited on a magnetic substrate having a recess for receiving a magnetic core structure which supports a wire wound inductor, the reluctance of the magnetic circuit formed between the substrate and the inductor is varied by an adjustable magnetic bridging member associated with a suitable air gap in the magnetic circuit.

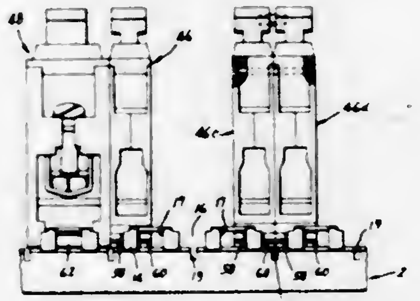


3,403,299
ELECTRIC CIRCUIT CONTROL DEVICE PANEL BOARD WITH POSITION CONTROL AND ASSEMBLY

Joseph J. Mrowka, Plainville, and David B. Powell, Bristol, Conn., assignors to General Electric Company, a corporation of New York

Filed June 1, 1967, Ser. No. 642,853

10 Claims. (Cl. 317—99)



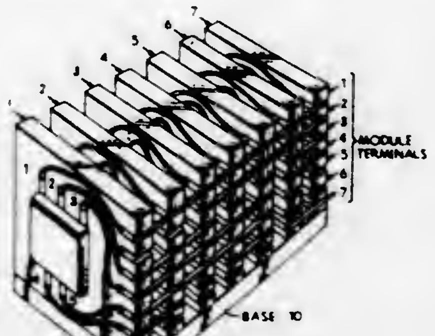
There is disclosed an electric circuit control device panel board for use with first and second circuit control devices. The second control devices differ from the first essentially by being of narrower width. The combination includes interconnected pairs of devices of the narrower width used as "two-pole" control devices. The panel and the two-pole devices include cooperating polarizing means to insure that the two-pole devices will be properly mounted in the panel.

3,403,300
ELECTRONIC MODULE

Maurice Horowitz, Fort Wayne, and John T. Link, New Haven, Ind., assignors to The Magnavox Company, Fort Wayne, Ind., a corporation of Delaware

Filed Sept. 1, 1966, Ser. No. 576,675

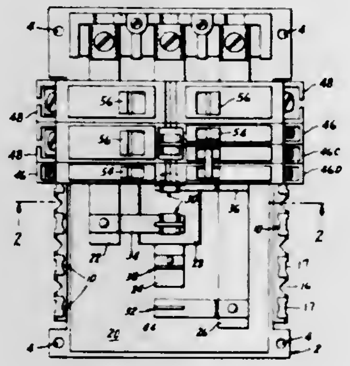
8 Claims. (Cl. 317—101)



A module for receiving a flat pack with M terminals is formed with M layers, each of which has pads positioned to correspond with the flat pack terminals, and each of which has module terminals. One pad on each layer is connected to a selected module terminal. A flat pack is mounted on the module with each flat pack terminal connected to each of the correspondingly positioned pads of each layer so as to connect the flat pack terminals to respective, selected module terminals. A large number of interconnections between flat pack terminals and module terminals can thus be provided with a relatively small number of different layers.

3,403,301
ELECTRIC CIRCUIT CONTROL DEVICE PANEL BOARD AND ASSEMBLY

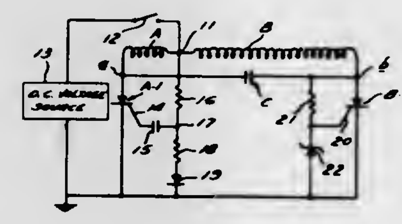
Joseph J. Mrowka, Plainville, and David B. Powell, Bristol, Conn., assignors to General Electric Company, a corporation of New York
Filed June 1, 1967, Ser. No. 642,917
14 Claims. (Cl. 317—119)



There is disclosed an electric circuit control device panel board for use with circuit control devices of two different widths. The panel includes a base having a row of mounting hooks including portions fitting into recesses in the wider control devices. Each hook has an opening defining two spaced apart side portions. Each narrower control device has a pair of spaced projections arranged to straddle one of the side portions of the hook, so that two of the narrower control devices can be mounted in retained position by each of the hooks.

3,403,302
COMMUTATING TWO-COIL CONTROL FOR ELECTROMAGNETICALLY-OPERATED DEVICE

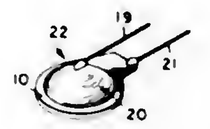
James A. Mason, Shaker Heights, Ohio, assignor, by mesne assignments, to Eaton Yale & Towne, Inc., a corporation of Ohio
Filed June 16, 1965, Ser. No. 464,466
13 Claims. (Cl. 317—148.5)



The field coil of an electromagnetically-operated device has two oppositely-wound, inductively coupled coils connected across a capacitor. When a voltage is applied to the junction point between the coils, an SCR turns on to complete a path for a high current surge through the smaller coil, which establishes a magnetic field for pulling in the armature of the device and induces a voltage across the larger coil to prevent it from conducting. After the armature is in, the capacitor discharges through another SCR which completes a path for current through the larger coil, which now produces an armature-holding magnetic field in the same direction as the field previously established by the smaller coil. This capacitor discharge also turns off the SCR for the smaller coil. This condition prevails until the voltage at the junction point between the coils is removed, at which time the capacitor causes a rapid collapse of the magnetic field produced by the second coil to speed up the release of the armature.

3,403,303
ELECTROLYTIC DEVICE AND ELECTRODE THEREFOR

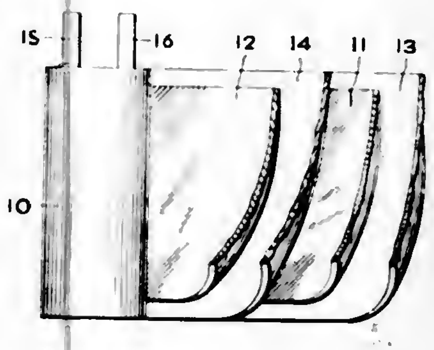
Gerhart P. Klein, Manchester, Mass., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 513,457
26 Claims. (Cl. 317—230)



An electrode for an electrolytic device including a sheet of film-forming metal having a depressed portion forming a container and a margin extending at least partially around the container. A porous mass of bonded film-forming metal particles is bonded to the container. A substantially uninterrupted dielectric film covers the surface of the particles in the unbonded areas. The invention also extends to an electrode assembly including at least a pair of substantially flat base plates of film-forming metal with sides placed in engagement and bonded together.

3,403,304
ELECTROLYTIC CAPACITOR WITH AN ELECTROLYTE OF AN AMMONIUM ORGANO-BORON COMPOUND

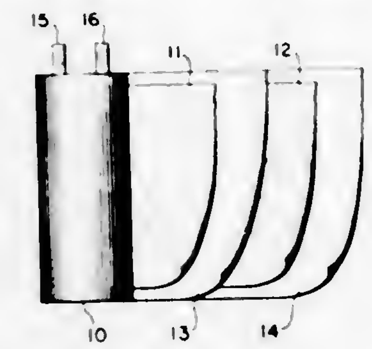
Sidney D. Ross, Williamstown, Raymond C. Petersen, North Adams, and Manuel Finkelstein, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Feb. 7, 1966, Ser. No. 525,624
7 Claims. (Cl. 317—230)



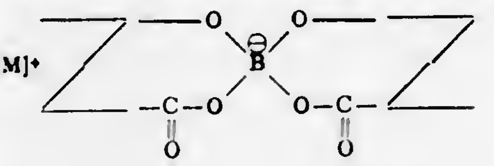
An electrolytic capacitor, with at least one electrode of film-forming metal, has a quaternary ammonium di-organo-boron compound of high purity constituting the solute in the electrolyte. The solvent may be any one or a mixture of such solvents as water, glycols, formamide, dimethylformamide and the like.

3,403,305
ELECTROLYTIC CAPACITOR HAVING AN ELECTROLYTE CONTAINING A BORATE COORDINATION COMPOUND

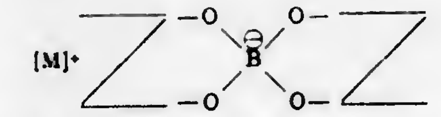
Robert W. Santway, Bennington, Vt., and Robert S. Alwitt, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Nov. 10, 1966, Ser. No. 593,460
12 Claims. (Cl. 317—230)



An electrolytic capacitor containing a new electrolyte comprising a solvent having dissolved therein a compound of the formula selected from the group consisting of:



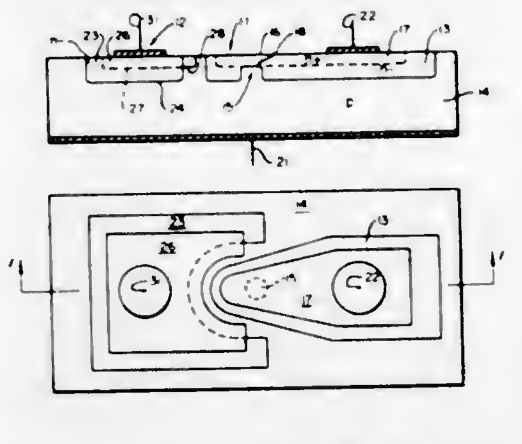
and



wherein M is a hydrogen ion, alkali metal ion, ammonium ion or C_1–C_{18} hydrocarbyl amine ion and Z is a vicinally substituted aryl group.

3,403,306
SEMICONDUCTOR DEVICE HAVING CONTROLLABLE NOISE CHARACTERISTICS

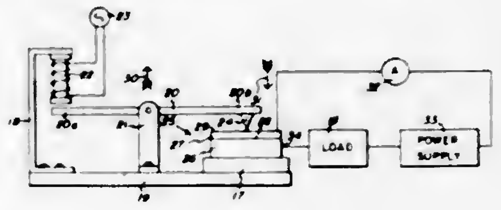
Roland H. Haitz, Dallas, Tex., and David Farrington, Palo Alto, Calif., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Jan. 20, 1966, Ser. No. 521,888
2 Claims. (Cl. 317—235)



A semiconductor device that affords greater control over its noise generating characteristics by surrounding a noise producing PN junction with a guard ring having a higher breakdown voltage than said noise junction thereby providing better optical coupling with a photon emitting PN junction within said device. By partially surrounding said photon emitting PN junctions with another guarded ring the efficiency and control of said optical coupling mechanism is further improved.

3,403,307
STRAIN SENSITIVE BARRIER JUNCTION SEMICONDUCTOR DEVICE

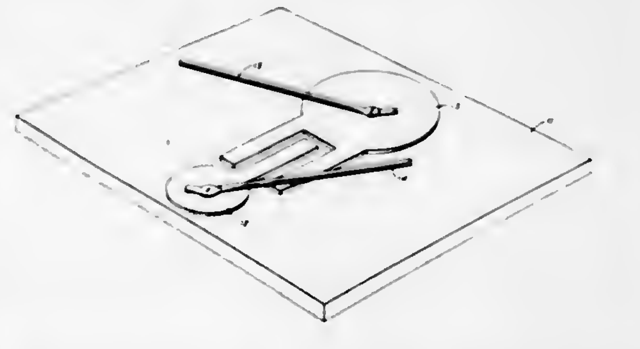
Wilhelm Rindner, Lexington, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Continuation-in-part of application Ser. No. 183,940, Mar. 30, 1962. This application Feb. 26, 1963, Ser. No. 261,065
13 Claims. (Cl. 317—235)



A semiconductor strain transducer which comprises a semiconductor element having at least two regions of different conductivity type separated by a barrier, one region having an exposed surface area relatively close-spaced to the barrier. A stylus having a small-radius point bears on the exposed surface for applying concentrated, nonuniform anisotropic stress to a small volume of the barrier.

3,403,308
ALUMINUM-GOLD CONTACT TO SILICON AND GERMANIUM

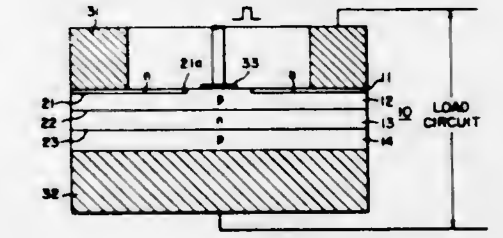
Rudolf Schmidt, Summit, and Jack H. Wernick, Madison, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New Jersey
Filed Oct. 3, 1966, Ser. No. 583,691
8 Claims. (Cl. 317—234)



1. An aluminum-gold contact to a semiconductor body selected from the group consisting of silicon and germanium which includes phosphorus at a concentration of between about a few parts per million and about 0.1 percent.

3,403,309
HIGH-SPEED SEMICONDUCTOR SWITCH

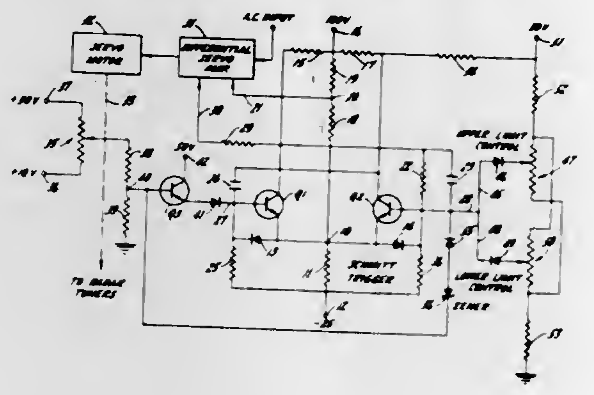
Richard L. Longini, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 23, 1965, Ser. No. 503,943
11 Claims. (Cl. 317—235)



A thyristor in which one load terminal and the gate contact are so arranged as to cause a substantial lateral voltage drop to occur in the first region when the load terminals are connected in a load circuit and turn-on is initiated by a signal applied to the gate contact.

3,403,310
TRIGGER CIRCUIT HAVING ADJUSTABLE UPPER AND LOWER VOLTAGE TRIGGER LIMITS TO CONTROL A SERVOMOTOR IN FORWARD AND REVERSE DRIVE

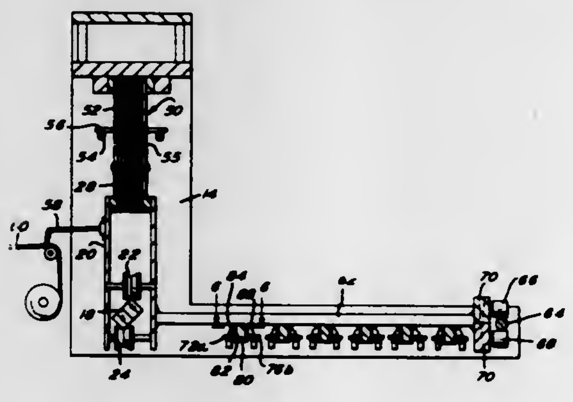
Dorsey Davidoff, Fort Lee, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 5, 1965, Ser. No. 445,806
9 Claims. (Cl. 318—18)



A variable hysteresis trigger circuit having a high adjustable voltage limit input and a low adjustable voltage limit input thereto and a single output producing a high voltage for one triggered condition and a low voltage for another triggered condition, said output being operative to control a servo motive means which drives a variable resistance device as well as a load with the output of the variable resistance device being fed back to the trigger circuit to produce triggering thereof when each adjusted high or low voltage limit is reached thereby producing reversed servomotor oscillations between driving limits.

3,403,311
LINEAR INDUCTION MOTOR FOR SLIDE WIRE POTENTIOMETERS AND SERVO SYSTEMS

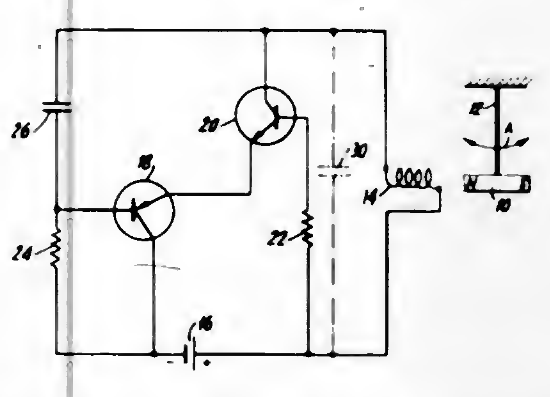
Gustave Ehrenberg, Havertown, Pa., assignor, by mesne assignments, to Electro-Nite Co., a corporation of Pennsylvania
Filed Aug. 31, 1964, Ser. No. 393,086
10 Claims. (Cl. 318—22)



A precision linear induction motor for moving the contact of a slide wire potentiometer in servo systems. High precision and accuracy are obtained by providing a uniform small air gap throughout the entire length of displacement of the movable stator relative to the fixed armature. Adjustable means are provided for limiting the amount by which the stator approaches the armature and maintaining a uniform air gap.

3,403,312
CIRCUITRY FOR TIMEKEEPING INSTRUMENTS

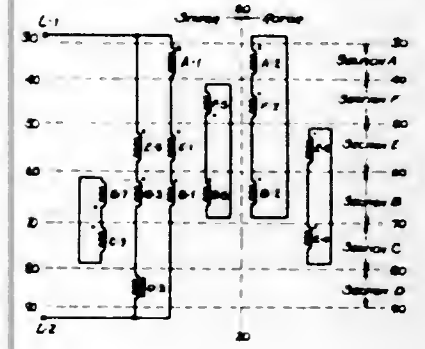
Klaus A. Sparing, Dusseldorf, Germany, assignor to The United States Time Corporation, Waterbury, Conn., a corporation of Connecticut
Filed Dec. 20, 1965, Ser. No. 514,971
Claims priority, application Germany, Jan. 2, 1965, U 11,336
9 Claims. (Cl. 318—130)



A battery-driven timepiece includes a mechanical oscillator as its time base. The oscillator is driven by the interaction of a magnet and a coil. The coil is pulsed by a free running multivibrator circuit having a pair of complementary transistors. The coil is in series with the collector-emitter pairs of both transistors and the battery.

3,403,313
CONSTANT POWER, VARYING SPEED POLYPHASE MOTOR

Francis J. Pansini, 43 Maxwell Road, Garden City, N.Y. 11530
Filed Oct. 21, 1965, Ser. No. 499,843
31 Claims. (Cl. 318—225)

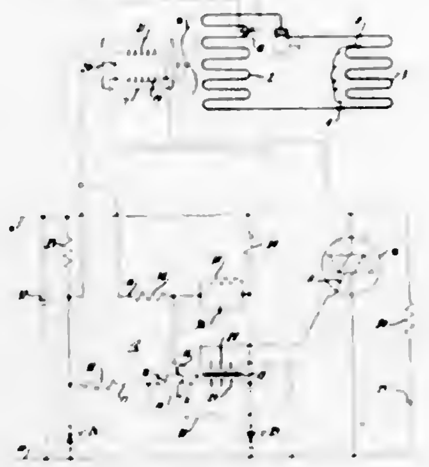


A self-regulating varying speed, constant power alternating current motor which has two induction motor type stator windings and two wound rotor type rotor windings; currents transferred from the stator windings to the rotor windings, and vice versa, solely by inductive means; and the rotor assembly as its only moving part. A similar adjustable speed alternating current motor having a variable reactance for varying the current supplied to selected stator windings.

3,403,314
CONDITION RESPONSIVE MOTOR CONTROL HAVING UNIJUNCTION FIRING CIRCUIT FOR A TRIGGERED SWITCH

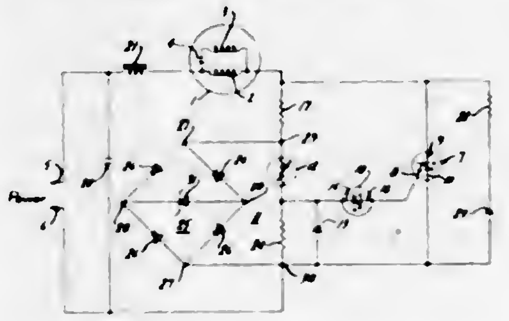
John T. Maynard, New Berlin, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Oct. 22, 1965, Ser. No. 500,966
6 Claims. (Cl. 318—227)

A split capacitor motor is connected to a power supply in series with a "Triac" or other bidirectional solid state gated switch. A capacitor firing circuit is connected to the incoming power line and connected to fire the switch. A unijunction firing circuit includes a thermistor in series with a capacitor to vary the time a positive pulse is applied to the gate of the unijunction transistor in accordance with the sensed temperature. The firing circuit is connected across the incoming power lines through a rectifying bridge circuit such that the unijunction transistor and the series thermistor and capacitor are parallel connected and energized with a pulsating direct current corresponding in frequency and phase to the incoming alternating current power. The unijunction transistor **14** includes a pair of base electrodes, one of which is connected in the circuit in series with a resistor and the opposite of which is is connected in series with the primary of the pulsating transformer connected to the "Triac." A resistor is connected in series with the resistor and in parallel with the interbase circuit of unijunction transistor in series with the primary of the pulsing transformer.



3,403,315
CONDITION RESPONSIVE CONTROL CIRCUIT CONNECTED TO GATE A TRIGGERED SWITCH

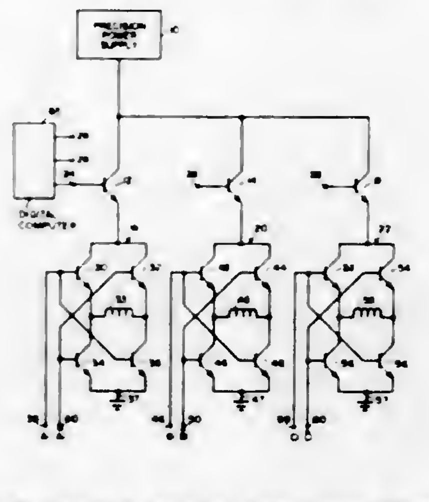
John T. Maynard, New Berlin, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Oct. 22, 1965, Ser. No. 500,968
6 Claims. (Cl. 318—227)



A motor is connected to the power lines in series with a symmetrical switch such as a "Triac." A firing signal is applied through a symmetrical switching device which maintains an open circuit condition until a selected breakdown voltage is applied across the device after which it conducts. The trigger signal is generated by an alternating current network including a thermistor connected in series with a timing capacitor. A voltage regulator is connected across the thermistor and the capacitor to maintain an essentially constant voltage across the timing circuit for any one temperature. Variations in the resistance of the thermistor with temperature changes results in a corresponding variation in the voltage division across the timing circuit and in the time constant of the circuit. Consequently, the thermistor produces a dual action in the timing circuit and increases the sensitivity of the output with temperature. The voltage regulator is shown as a neon bulb and as a diode bridge having a Zener type diode connected across the D.C. terminals with the input terminals connected across the combination of the thermistor and the timing capacitor.

3,403,316
DIGITAL CONTROL SYSTEM FOR GYRO TORQUERS

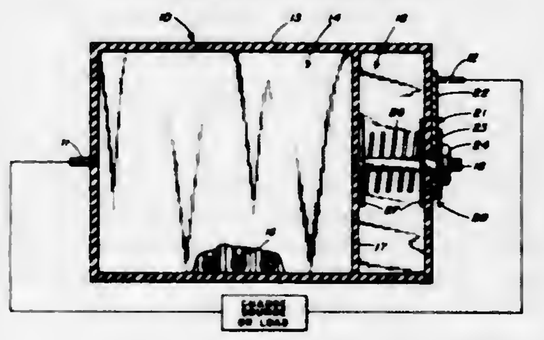
Theodore A. Conant, Jr., Sylmar, Calif., assignor to General Precision, Inc., a corporation of Delaware
Filed May 17, 1965, Ser. No. 456,101
6 Claims. (Cl. 318—436)



1. A digital control system for controlling a gyroscope system with a digital computer comprising: a constant current source, a plurality of torquers, means coupling said torquers to said constant current source for alternately enabling a preselected number of different torquers at all times with digital signals obtained from said digital computer, and a current directing means coupled to said torquers for directing current through each said torquer in alternate directions.

3,403,317
BATTERY CHARGING CONTROLLER

Milton A. Knight, Box 113, R.R. 1, Centreville, Va. 22020
Filed Jan. 27, 1966, Ser. No. 523,467
2 Claims. (Cl. 320—22)

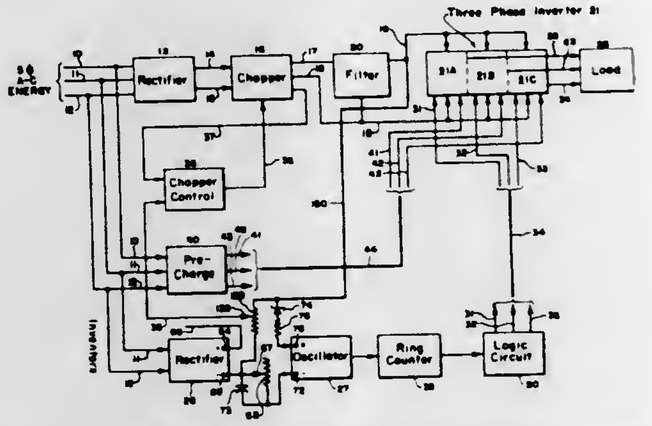


A battery charging control which gradually varies the impressed charging voltage through the operation of a carbon pile resistance element which varies the effective magnitude of the charging voltage in response to changes in internal battery cell pressure.

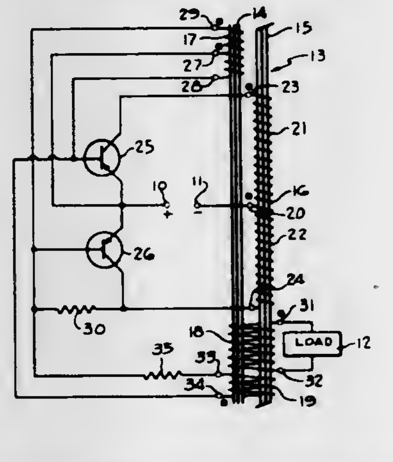
3,403,318
STATIC INVERTER SYSTEM WITH FREQUENCY REGULATION OF INVERTER OUTPUT VOLTAGE AS A FUNCTION OF INVERTER INPUT VOLTAGE AMPLITUDE

Stanley Krauthamer, Monterey Park, and Manfred Lilienstein, Rolling Hills, Calif., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 1, 1965, Ser. No. 505,879
3 Claims. (Cl. 321—5)

A rectifier **13** passes a D-C voltage over supply circuit **14**, **15** to a chopper circuit **16** which periodically transfers D-C voltage over lines **17**, **18** through filter **20** to an inverter **21**. A pre-charge circuit **40** provides commutation voltage for the inverter when the inverter energizing voltage is low. Chopper control circuit **36** senses (over **37**) the current level pased to the inverter and also senses (over **150**, **129**, **35**) the voltage level passed to the inverter. A voltage-controlled oscillator **27** is also connected to sense the level of the inverter input voltage and to control (through **28**, **30**) the frequency of the inverter output voltage as a function of the amplitude of the inverter energizing voltage.



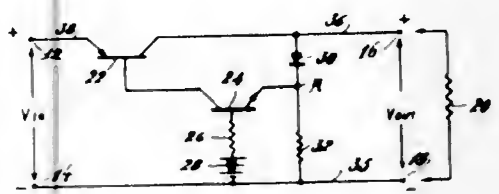
3,403,319
INVERTER CIRCUIT
John M. Tate, Levittown, Pa., assignor to ESB Incorporated, a corporation of Delaware
Filed Aug. 4, 1967, Ser. No. 658,439
3 Claims. (Cl, 321—18)



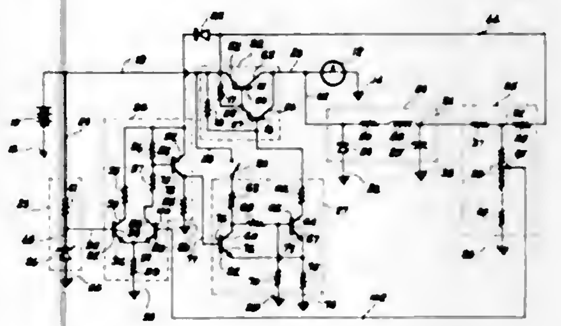
An inverter utilizing a multicore transformer having at least one core to supply drive current proportional to the load current for the transistor switching elements and an output core to supply output voltage transformation. The primary winding of the switching circuit encompasses only the output core of the transformer with coupling between the output core and the drive current core being provided by the inverter output winding which encompasses both cores.

3,403,320
VOLTAGE REGULATOR WITH CURRENT OVERLOAD PROTECTION
Allen Lee Whitman, Jr., Lexington, Mass., assignor to Gorham Corporation, Providence, R.I., a corporation of Rhode Island
Filed Mar. 26, 1964, Ser. No. 354,966
11 Claims. (Cl. 323—4)

A voltage regulator, with a transistor current source in series with a load whose voltage is to be regulated, includes a forward biased diode and series resistor connected in parallel with the load. A transistor complementary to the transistor current source is responsive to the voltage at the junction of the diode and resistor together with a fixed voltage, and supplies a signal current to regulate the transistor current source. When the load current reaches a critical value, the diode becomes back-biased to terminate regulation, preventing current from increasing further and thereby preventing overloading.



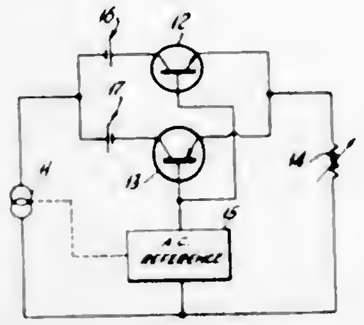
3,403,321
HIGH EFFICIENCY VOLTAGE REGULATING CIRCUIT
Joel L. Mosak, Glenview, Ill., assignor to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 14, 1966, Ser. No. 593,771
15 Claims. (Cl. 323—20)



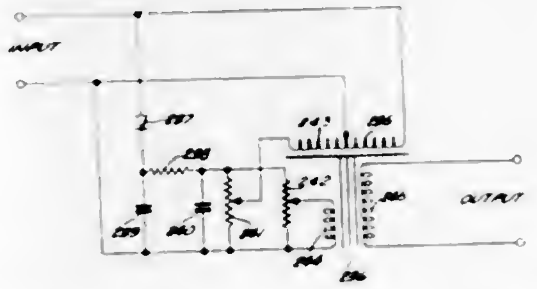
13. In a high efficiency voltage regulating circuit for supplying a substantially constant R.M.S. voltage to a preselected load from a source of direct current having a voltage which is subject to variation, the combination comprising means for establishing from said source a fixed D.C. reference voltage below the maximum voltage of the source and related to the R.M.S. voltage which is to be applied to the load, low resistance solid state switching means through which the load is connected to said source, and means for effecting operation of said switching means for providing a voltage of substantially fixed R.M.S. value from the source to the load, said means for effecting operation of said switching means including additional solid state switching means and a network of connected resistors having applied to selected ones thereof the source voltage and a voltage directly related to the average voltage applied to the load, and from which a voltage is obtained for comparison to said fixed reference voltage for determining the rate and periods of operation of the first mentioned switching means to establish the R.M.S. voltage applied to the load.

3,403,322
ALTERNATING CURRENT VOLTAGE REGULATOR
Loebe Julie, New York, N.Y., assignor to Julie Research Laboratories, Inc., New York, N.Y., a corporation of New York
Filed Oct. 7, 1966, Ser. No. 585,147
11 Claims. (Cl. 323—22)

1. An alternating current voltage regulator comprising an unregulated source of alternating current input voltage, a source of alternating current reference voltage having a frequency the same as that of said input source, a load, first and second opposite-type transistors each having an emitter terminal connected to one end of said load, the base terminals of each of said transistors being connected to one end of said reference source, a first source of direct current voltage connected between the collector terminal of one of said transistors and one end of said input source, a second source of direct current voltage connected between the collector terminal of the other of said transistors and said one end of said input source, said first and second sources of direct current voltage each being poled to bias the respective connected transistor for conduction, and means for connecting together the other ends of said input source, said reference source and said load.



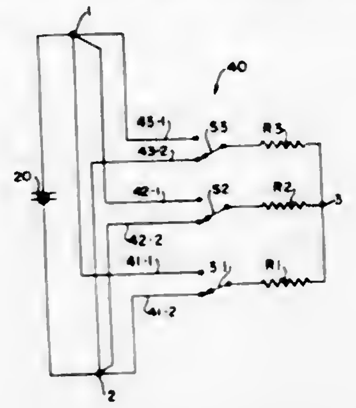
3,403,323
ELECTRICAL ENERGY TRANSLATING DEVICES AND REGULATORS USING THE SAME
Leslie Kent Wanlass, Newport Beach, Calif., assignor, by mesne assignments, to Wanlass Electric Company, Santa Ana, Calif., a corporation of California
Continuation-in-part of application Ser. No. 857,083, Dec. 3, 1959. This application May 14, 1965, Ser. No. 455,939
92 Claims. (Cl. 323—56)



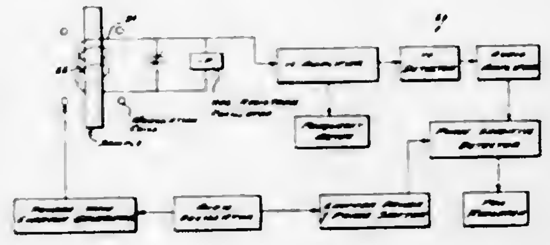
45. A variable transformer comprising a magnetic core having four common regions and two end regions magnetically joining said common regions, a primary winding wound on said core between the first and fourth and the second and third of said common regions; means for continuously supplying alternating current to said primary winding; a secondary winding; a control winding; said secondary winding and said control winding being wound on said core between said first and second and said third and fourth common regions and substantially transverse to said primary winding whereby normally substantially no power is transferred from said primary winding to said secondary winding; and means for continuously supplying current to said control winding, said supplying of current causing power to be transferred from said primary winding to said secondary winding.

3,403,324
VOLTAGE DIVIDER NETWORKS
Frank R. Bradley, 9 Dash Place,
Bronx, N.Y. 10463
Filed Oct. 22, 1965, Ser. No. 500,669
12 Claims. (Cl. 323—80)

A voltage divider network including a plurality of impedance elements such as resistors having at least one end selectively adapted for connection to a first or second terminal of the divider by a switching device, there being a separate lead wire from each switching device to the first and second terminals. The impedance of each lead wire of the pair of lead wires associated with a given switch is preferably made equal to each other and, in one form of divider network, all of the impedance elements are also of the same value.



3,403,325
APPARATUS FOR AND METHOD OF MEASURING THERMAL STRESS BY NUCLEAR RESONANCE
George Epstein, Los Angeles, Robert R. Hewitt, Riverside, and Bernard Mazelsky, West Covina, Calif., assignors to ARA, Inc. (Aerospace Research Associates, Inc.), West Covina, Calif., a corporation of California
Filed Sept. 17, 1964, Ser. No. 397,077
7 Claims. (Cl. 324—.5)



1. The method of determining stress and temperature profiles in a body of non-conductive material having therein a first tracer in at least that region at which stress and temperature profiles are desired, said first tracer exhibiting changes in nuclear conditions in response to temperature changes and being capable of absorbing radio-frequency energy, and a second tracer in said region exhibiting changes in nuclear conditions in response to stress changes and being capable of absorbing radio-frequency energy, comprising the steps of: simultaneously measuring the nuclear quadrupole resonant frequency of each of said tracers at a point in said region, and similarly measuring said frequencies at at least one other point in said region to establish temperature and stress profiles; and correlating said profiles to determine therefrom the stresses in said region due to temperature gradients therein, due to residual stresses, and due to external loading.

3,403,326
MAGNETIC RESONANCE MAGNETOMETERS
Antoine Salvi, Fontaine, and René Besson, Meylan, France, assignors to Commissariat à l'Energie Atomique, Paris, France, an organization of France
Filed June 27, 1966, Ser. No. 560,570
2 Claims. (Cl. 324—.5)

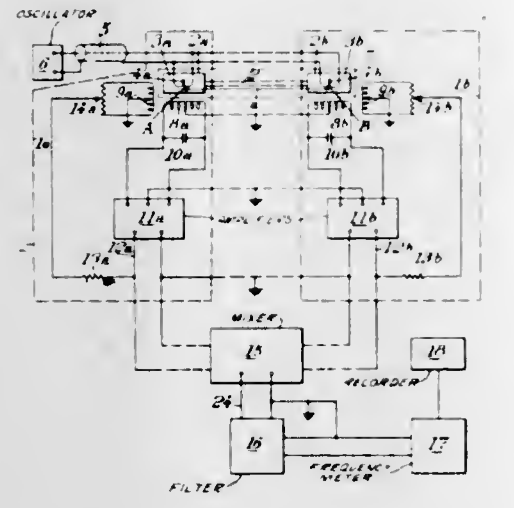
1. For use on a movable body fitted with electrical apparatus which produces a permanent parasitic magnetic field the intensity of which varies from one point to another on said movable body, a magnetic resonance magnetometer which comprises, in combination,

two probes carried by said movable body and each respectively including subatomic particles of a given kind having a non zero magnetic moment and a non zero kinetic momentum, the two respective kinds being different from each other and having different respective gyromagnetic ratios,

means for producing and detecting the magnetic resonance of said kinds of particles in each of said probes,

means for measuring the respective magnetic resonance frequencies of said two kinds of particles, respectively, and

means for measuring the algebraic difference of said respective magnetic resonance frequencies,



said two probes being located on said body in two respective spaced positions such that the product of the intensity of said permanent parasitic magnetic field in one of said two positions by the gyromagnetic ratio of the particles of the probe located in said position is substantially the same as the product of the intensity of said permanent parasitic magnetic field in the other of said two positions by the gyromagnetic ratio of the particles of the probe located in said other position.

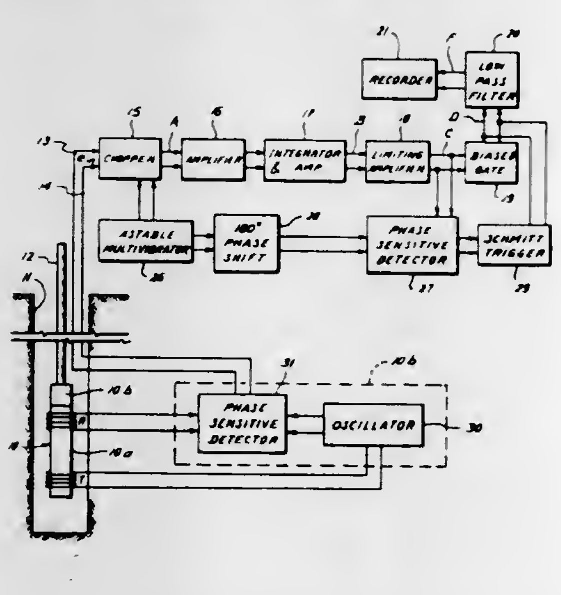
3,403,327

METHODS AND APPARATUS FOR PROCESSING WELL LOGGING MEASUREMENTS USING TIME DOMAIN COMPUTATION TO OBTAIN THE RECIPROCAL FUNCTION OF THE MEASUREMENTS

Wilbur C. Welz, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Sept. 8, 1965, Ser. No. 485,818

13 Claims. (Cl. 324—1)



In accordance with an illustrative embodiment of the invention, a technique for obtaining the reciprocal function of well logging measurements is disclosed. To accomplish this, the well logging measurement signals are chopped to provide substantially square wave signals. These square wave signals are then integrated to produce a triangular shaped signal, which is then limited in amplitude. A signal having a time characteristic representative of the reciprocal of the well logging measurements is generated in response to the limited triangular shaped signal. The time characteristic signal is then converted to a DC type signal representative of the reciprocal for subsequent recordation.

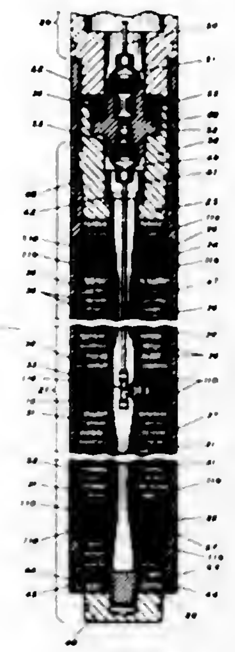
3,403,328

HIGH-STRENGTH LOGGING TOOL HOUSING HAVING A COMPRESSIBLY STRESSED SIDE WALL

Francis Nicholas Fossati, Lafayette, and Robert Ruppe Unterberger, Fullerton, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Filed Nov. 14, 1966, Ser. No. 594,096

12 Claims. (Cl. 324—6)



In a logging sonde for movably positioning an electrically insulated diagnostic element adjacent to an earth formation penetrated by a well bore to determine an electrical characteristic of the earth formation, the mechanical rigidity thereof is improved by forming the sonde of an axially elongated central housing adapted for movement through the borehole, the housing including a side wall section defining a cavity for support of the diagnostic element therein and an axially loading means coextensive with the side wall section. By compressibly stressing the side wall section relative to either (i) another section exterior of the side wall, on (ii) a centrally located core or mast, the columnar stiffness of the sonde to lateral loads is improved. The high-strength sonde has especial advantage in movably supporting electromagnetic logging equipment within a borehole penetrating an earth formation, such as a salt dome, for measuring the distance to a discontinuity therein.

3,403,329

FLUX-GATE MAGNETOMETER WITH MAGNETIC AMPLIFIER

William A. Geyger, Takoma Park, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Nov. 29, 1963, Ser. No. 327,159

10 Claims. (Cl. 324—43)

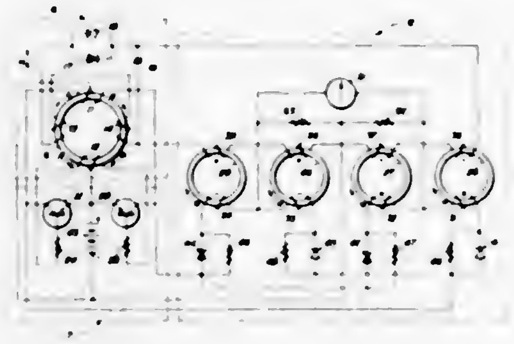
1. In a flux-gate magnetometer:

(a) a saturable core operated in magnetic saturation having

- (1) means for generating a D.C. voltage output proportional to detected D.C. magnetic field when simultaneously energized by both said D.C. magnetic field and an A.C. magnetic field,
- (2) first means for simultaneously generating an A.C. magnetic field and controlling the switching rate of a D.C. power source,

(b) a polarity reversible power source having

- (1) a source of D.C. power,
- (2) and switching means connecting between said D.C. source of power and said first means for alternately switching the polarity of D.C. power supplied to said first means,



(c) and an amplifier producing an output proportional to the detected D.C. magnetic field having

- (1) control means connected to the D.C. voltage output of said generating means for varying the output of the amplifier,
- (2) and means connected to said switching means and to said control means for supplying an output varied in direct proportion to the detected D.C. magnetic field.

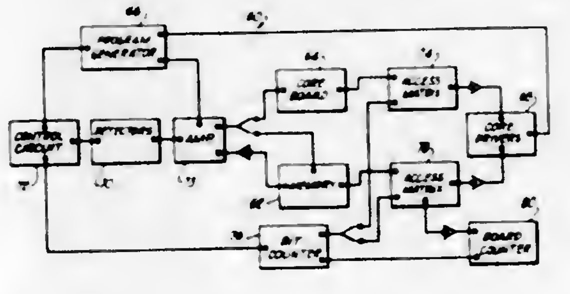
3,403,330

TEST CIRCUIT FOR EVALUATING MAGNETIC MEMORY DEVICES

William H. Kastning, Naperville, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 7, 1964, Ser. No. 402,276

9 Claims. (Cl. 324—34)



An apparatus for testing partially wired magnetic core boards and completed magnetic memories including groups of core boards, which apparatus includes a counter controlled access matrix for individual testing of each magnetic unit consisting of paired memory-translator cores. In testing the core boards, the memory cores are mechanically probed, and the access matrix controls the sequential application of a test program of pulses from a program generator in which core response is measured during the leading edge of a pulse in a time slot and the state of the magnetic core is changed by varying the trailing edge of the pulse. In testing a completed memory, the access matrix controls the sequential application of the drive pulse program to the paired cores, and the response signal is derived from different windings of the magnetic unit under test at different points in the test program.

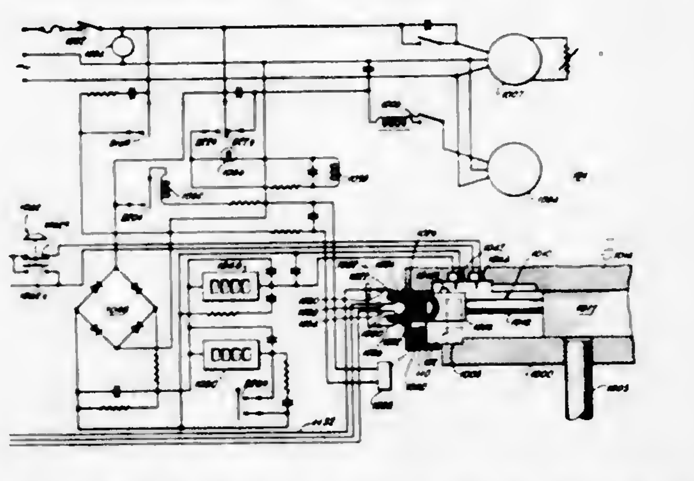
3,403,331

TEST CIRCUIT FOR EVALUATING MAGNETIC MEMORY DEVICES WHICH ENERGIZES THE DEVICES A PREDETERMINED NUMBER OF TIMES PRIOR TO TEST

William H. Kastning, Aurora, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 26, 1964, Ser. No. 392,141

16 Claims. (Cl. 324—34)



A core testing apparatus in which cores are automatically fed to a test station and then to accept or reject stations in dependence on the results of the test performed at the test station. A testing circuit repeatedly places a core in a given state and enables a response detector to measure the response of the core only after the core has been placed in the given state a predetermined number of times greater than one. A bidirectional counter advanced in one direction for each core fed to the testing station and in an opposite direction for each core tested acceptable automatically arrests operation of the apparatus when a given number of cores are found defective. The counter can also check the actual feeding of cores to the testing station and disables the operation of the apparatus when the core feeding unit fails to deliver cores for test.

3,403,332

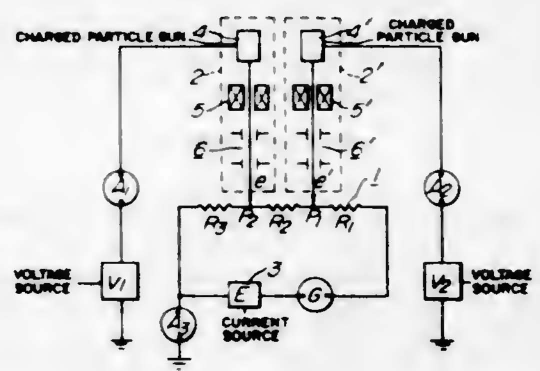
APPARATUS FOR MEASURING IMPEDANCE OF A SPECIMEN EMPLOYING TWO OPPOSITE POLARITY CHARGED PARTICLE BEAM PROBES

Hiroshi Watanabe and Chusuke Munakata, Kokubunji-shi, Japan, assignors to Hitachi Ltd., Tokyo, Japan, a corporation of Japan

Filed Sept. 22, 1965, Ser. No. 489,175

Claims priority, application Japan, Sept. 25, 1964, 39/54,331

8 Claims. (Cl. 324—57)



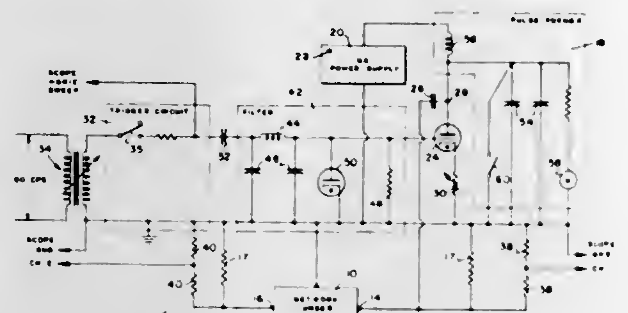
An apparatus for measuring the impedance of a specimen in which two charged particle beams of adjustable intensity and opposite polarity are directed to two predetermined points on the surface of the specimen. A variable DC current which is allowed to flow through the specimen is adjusted to zero, and at the same time, the intensities of the two charged particle beams are adjusted so that the currents due to the respective beams flowing between one end of the specimen and ground become equal to each other.

3,403,333
TRANSIENT PULSE SUPPRESSION TESTER INCLUDING MEANS FOR COMPARING GENERATED TRANSIENT VOLTAGES WITH OUTPUT VOLTAGES FROM THE NETWORK UNDER TEST

Stanley J. Wooten, Oxnard, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Sept. 29, 1966, Ser. No. 583,508

10 Claims. (Cl. 324—57)



1. A transient pulse suppression tester for testing the capability of a network to suppress transient voltages comprising:

- input and output terminals for connecting to respective input and output terminals of said network;
- a pulse forming circuit coupled to said input terminal and adapted to be connected to a power source for feeding a simulated transient pulse to said network through said input terminal;
- a triggered type gate means connected between the pulse forming circuit and said network for gating the pulse from the pulse forming circuit to said network;
- a trigger circuit coupled to the gate means and adapted to be connected to a power source for triggering said gate means;
- a dual channel oscilloscope;
- the vertical sweep of one oscilloscope channel being connected to said input terminal and the vertical sweep of the other oscilloscope channel being connected to said output terminal; and
- means connected to the horizontal sweep of the oscilloscope for activating the horizontal sweep when said gate means is triggered,

whereby the input transient pulse and the output pulse from the network can be simultaneously presented on the oscilloscope to indicate the transient pulse suppression capability of said network.

3,403,334
SYSTEM FOR MEASUREMENT OF MICROWAVE DELAY LINE LENGTH

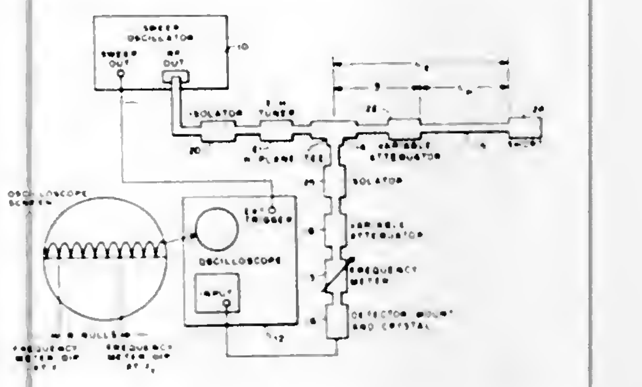
Jimmy J. Hoote, Riverside, and Lee Sutton, Norco, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed Oct. 19, 1965, Ser. No. 498,164

2 Claims. (Cl. 324—58)

1. A system for electrically measuring the length of a microwave delay line, comprising:

- (a) a sweep oscillator for repeatedly sweeping through a desired frequency range,
- (b) a display means for viewing series of standing waves generated by the sweeping oscillator,
- (c) a delay line of unknown length to be measured having its output port shorted,
- (d) a first waveguide means including a first waveguide isolator, an E–H plane tuner, an H-plane T and a first variable attenuator connected together in series and used to feed frequency swept signals from said sweep oscillator to the input port of said delay line,
- (e) a second waveguide means including a second waveguide isolator, a second variable attenuator, a frequency meter and a crystal detector connected in series for observing the signal power level in said H-plane T.
- (f) said crystal detector in turn being connected to said display means, and said observed signal power level being fed to and displayed on said display means for viewing and measuring the nulls thereof,



- (g) said frequency meter measuring the frequency of the signal at said H-plane,
- (h) the length of said delay line (L_μ) being determined from the measured number of additional nulls (N), generated as a result of the frequency of said signal power level being changed from a first selected frequency (f_1) to a second selected frequency (f_2), and the measured value of the frequencies (f_1 and f_2) in accordance with the formula

$$L_\mu = L_g - \delta = \frac{NC}{2}\left[\frac{1}{\sqrt{f_1^2-f_c^2}-\sqrt{f_2^2-f_c^2}}\right]^{-1}$$

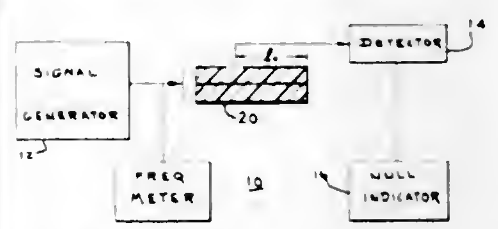
where C is the velocity of light (2.9979×10^{10} cm./sec.); f_c is the cutoff frequency of the waveguide of the system and, δ is the known length of any waveguide added to the delay line for the purpose of facilitating measurement.

3,403,335
DIELECTRIC CONSTANT MEASUREMENT MEANS AND METHOD UTILIZING FREQUENCY SWEEP AND FIXED PROBE

William Dean Couper, Palmyra, and Jerry Hench Bogar, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Filed May 19, 1965, Ser. No. 456,915

12 Claims. (Cl. 324—58)



A technique for measuring the dielectric constant and loss tangent of materials is disclosed featuring a material sample holder in the form of a coaxial line having one end shorted and the other end connected to a signal generator capable of injecting a signal of varying frequency into the sample. A probe extended through the sample holder outer conductor to engage the center conductor is utilized to develop an output signal to a detector which output signal is supplied to a null indicator or to an oscilloscope. The null voltage is detected at some distance l_o from the shorted end of the sample holder with the frequency f_o associated with the null voltage being measured. Knowing the number of half wavelengths n for f_o existing between the point of sample and the shorted end of the sample holder, the dielectric constant K′ of the material under test may be determined for the relationship:

$$K' = \left[\frac{lc}{\frac{2l_o}{n} f_o}\right]^2$$

where c represents the velocity of light in free space. Loss tangent Tan δ_e may be determined by the foregoing measurements and in addition the measurement of the frequencies f_1 and f_2 associated with twice the null voltage for the standing wave presented in the sample with the loss tangent being calculated from the relationship:

$$\tan \delta_e = \frac{Q_L - Q_T}{Q_L - Q_T}$$

where Q_L is the quality factor of the coaxial line without the dielectric sample therein and

$$\frac{Q_T = f_o}{f_2 - f_1}$$

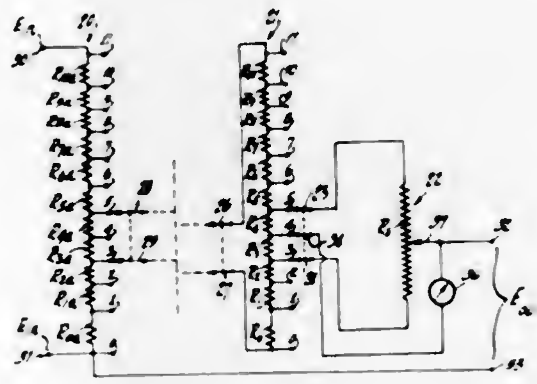
A preferred construction of a sample holder is taught featuring a structure to precisely locate a very small diameter probe within the sample under test and in engagement with the center conductor of the coaxial line formed by the sample holder structure.

3,403,336
METHOD AND APPARATUS FOR PERIODICALLY CALIBRATING A PRECISION POTENTIOMETER

Thomas Coor, Princeton, and Robert F. Herrman, Burlington, N.J., assignors to Princeton Applied Research Corporation, Princeton Junction, N.J., a corporation of New Jersey

Filed June 21, 1965, Ser. No. 465,302

15 Claims. (Cl. 324—63)



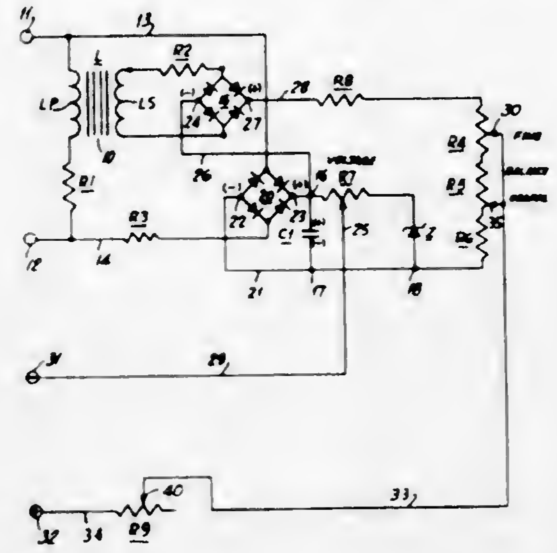
A method of and the apparatus for periodically calibrating a precision potentiometer is provided wherein a select amount of resistance in one of the resistor banks thereof is connected as adjacent arms in a Wheatstone bridge and the remaining, less significant, resistor banks are connected as the other two adjacent arms of said Wheatstone bridge. According to a further aspect of this invention, further calibration is accomplished by connecting a select amount of resistance in one of the resistor banks of a precision potentiometer as two adjacent arms of a Wheatstone bridge and the remaining resistance of said one resistor bank as well as the remainder of the less significant resistor banks are connected as the other two adjacent arms of said Wheatstone bridge.

3,403,337
FREQUENCY METER UTILIZING A TRANSFORMER HAVING A NON-RECTANGULAR HYSTERESIS LOOP SATURABLE CORE AND A COMPENSATION CIRCUIT THEREFOR

Raymond H. Legatti, Moultrie, Ga., assignor to Electromagnetic Industries, Inc., Sayville, N.Y.

Filed Apr. 18, 1966, Ser. No. 543,243

10 Claims. (Cl. 324—78)



1. A frequency meter or monitor comprising, in combination, a pair of input terminals for connection to a source of variable A.C. potential; a saturated toroid, having a core of paramagnetic material, other than square loop paramagnetic material, connected across said input terminals and having an output voltage variable with the input potential; a first full wave rectifier having its input connected to the output of said saturated toroid; a second full wave rectifier having its input connected directly across said input terminals; means connecting the outputs of said full wave rectifiers in series in a bridge circuit; comparison means connected to the junction of said full wave rectifiers and operable to compare the output voltages of said full wave rectifiers, said comparison means including means clamping at least a portion of the output voltage of said second full wave rectifier; voltage adjusting means included in said comparison means and in a diagonal of said bridge circuit; and a pair of output terminals, for connection to a frequency meter or monitor means, connected to said voltage adjusting means across said diagonal; said voltage adjusting means being operable to effect relative adjustment of the output voltages of said full wave rectifiers to a point where the slope of the input potential curve corresponds to the output voltage characteristic of said first full wave rectifier, to compensate fully for the change in output of said saturated toroid with variations in said input potential.

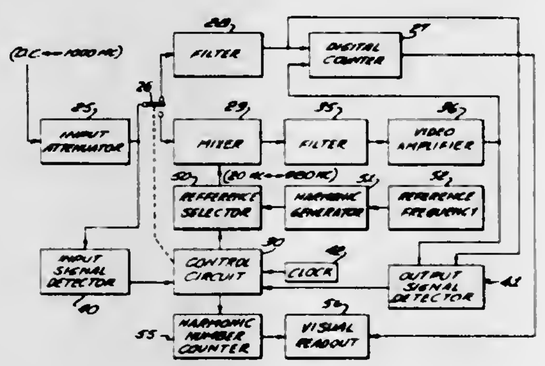
3,403,338
ELECTRONIC FREQUENCY MEASURING AND SPECTRUM ANALYZING APPARATUS

William Lee Martin, Lafayette, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Continuation of application Ser. No. 358,574, Apr. 9, 1964. This application Mar. 16, 1967, Ser. No. 623,775

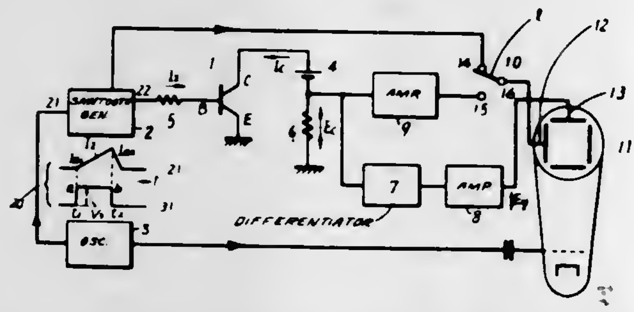
18 Claims. (Cl. 324—79)

Electronic frequency measuring and spectrum analyzing apparatus for high-speed automatic operation is provided with a control circuit responsive to clock pulses for generating a plurality of reference signals successively increasing in frequency in uniform steps until a difference in frequency of the reference signal and an unknown input signal is within the range of a basic counter as determined by a filter coupling a means for mixing the reference and input signals to the counter. Detecting means responsive to the output of the filter inhibits further pulses from being applied to the control circuit. A separate counter records the number of pulses applied to the reference generator in order to determine with digital accuracy and speed the frequency measured in conjunction with the basic counter. For spectrum analysis, the detecting means inhibits further pulses from being applied to the control circuit only momentarily in order that the frequency energy of a frequency band may be analyzed.



3,403,339
APPARATUS FOR DISPLAYING THE GAIN FACTOR AS A FUNCTION OF A CHANGING INPUT SIGNAL APPLIED TO AN ELEMENT UNDER TEST

Masahide Nishida, Shiroh Kitoh, and Takayuki Satoh, Tokyo, Japan, assignors to Yokogawa-Hewlett-Packard, Ltd., Tokyo, Japan, a corporation of Japan
Filed July 14, 1966, Ser. No. 565,287
Claims priority, application Japan, Sept. 17, 1965, 40/76,176
3 Claims. (Cl. 324—158)

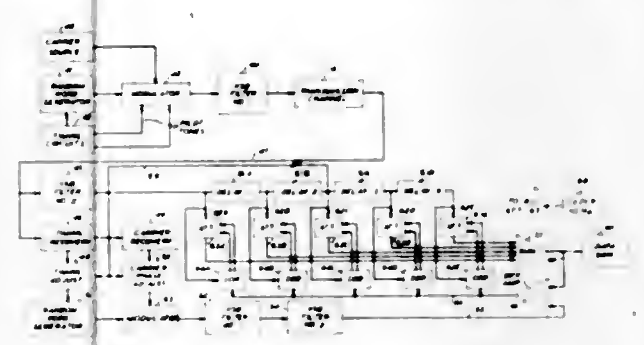


A circuit for displaying the small signal characteristic curve of transistors on the display screen of a cathode-ray tube of an oscilloscope provides a direct display of the magntude of the small signal characteristics of a transistor under test as a function of current supplied to the transistor.

3,403,340
AUTOMATIC MEAN-SQUARE EQUALIZER

Floyd K. Becker, Colts Neck, Louis N. Holzman, Lincroft, Erich Port, Red Bank, and Harry R. Rudin, Jr., Lincroft, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York
Filed Nov. 21, 1966, Ser. No. 595,885
9 Claims. (Cl. 325—42)

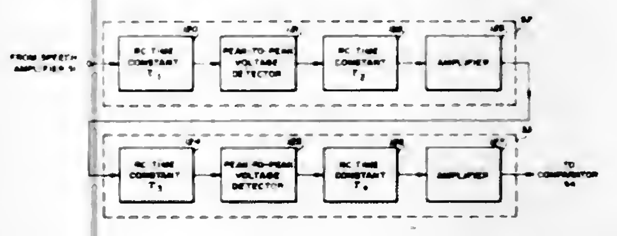
1. In combination with a nonideal transmission channel and a transversal equalizer having a plurality of equally spaced taps, an adjustable attenuator at each tap and a summing circuit common to the outputs of all attenuators, apparatus for optimally adjusting said equalizer to impart a desired frequency response to a passband of said channel comprising
- means at each terminal of said channel generating identical quasi-random data word patterns as test signals,
- means at each terminal of said channel translating the respective word patterns from said generating means to equivalent passbands of said channel,
- means at the transmitting terminal inserting signaling components bearing a fixed relation to the transmitter carrier frequency and the data timing,
- means at the receiving terminal responsive to said signaling components accompanying the transmitted signal and controlling said translating means thereat for extracting a demodulating carrier frequency compensated for frequency offset introduced by said channel with respect to the transmitter carrier frequency,
- means also responsive to said signaling components recovering a timing wave for said word generator at the receiver terminal,
- reference filter means at the receiver terminal shaping the receiver generated word pattern according to the desired frequency response,



- means responsive to a correlation of the word pattern received at the receiving terminal with the passband word pattern generated thereat by both peak amplitudes and time derivatives of such amplitudes resulting from such correlation producing word synchronization between the respective word patterns,
- means deriving an error signal from the difference between the synchronized receiver terminal word pattern after traversing said reference filter means and the transmitter word pattern after traversing said channel and equalizer,
- means correlating said error signal with each of the tap outputs of said equalizer, and
- means responsive to said correlating means incrementally adjusting said attenuators in a sense to minimize said error signal.

3,403,341
COMMUNICATION SYSTEM WITH AUTOMATIC CHANNEL SELECTION

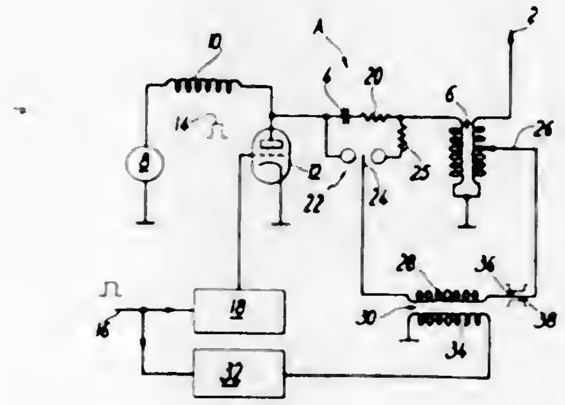
Edvard Munch, Fremont, Calif., assignor, by mesne assignments, to The Rucker Company, Oakland, Calif., a corporation of California
Filed Sept. 13, 1965, Ser. No. 486,650
39 Claims. (Cl. 325—65)



A multiple channel communication system in which the channel providing the best intelligence signal above the noise is automatically selected. The transmitted communication includes, in addition to the intelligence to be transmitted, a periodically varying characteristic superimposed upon the intelligence signal which has a frequency which is at least an order of magnitude lower than the lowest frequency of the intelligence. The intelligence signal, after having stripped from it the carrier, if any, is applied to a demodulator which provides a demodulated signal commensurate with the superimposed periodically varying characteristic. The demodulated signal is applied to a slow leakage rate accumulator which stores the positive going pulses of the demodulated signal. The stored signal therefore provides an output quantity which is a measure of the immediate past history of the demodulated signal. The output quantities from the various integrators are compared, and the one having the highest amplitude, above a selected minimum amplitude, is selected as being derived from the channel of the communication system having the highest signal-to-noise ratio.

3,403,342
DEVICE FOR THE POSITIVE PROTECTION OF A THERMIONIC TUBE

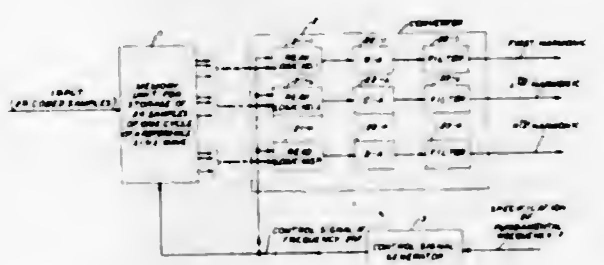
Hubert Leboutet, Saint-Cloud, and Jacques Soffer, Plessis-Robinson, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Sept. 14, 1966, Ser. No. 579,348
Claims priority, application France, Sept. 23, 1965, 32,490
5 Claims. (Cl. 328—8)



A thermionic tube is protected by transmitting energy to it through a pulse transformer when a trigger pulse is applied to the control grid of a switching tube. Two pulses of equal and opposite phase are then applied to the trigger electrode of a discharge device connected through an impedance to a memory system, the amplitude of one pulse being proportional to the current in the transformer and the amplitude of another pulse being proportional to the current of the trigger pulse.

3,403,343
HARMONIC GENERATOR

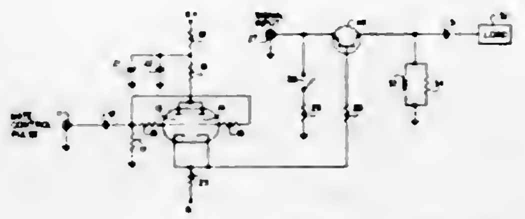
James M. Kelly, Morris Plains, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 17, 1966, Ser. No. 528,180
9 Claims. (Cl. 328—17)



1. Apparatus which comprises
- means for storing $2n$ samples of one cycle of a reference sine wave where n is a selected positive integer;
- means for generating a signal with a frequency $2n$ times a selected fundamental frequency $F(t)$;
- means driven by said signal for sequentially reading out of said storing means every ith stored sample at a frequency of $2nF$ cycles per second, where i is an integer given by $1 \leq i \leq n$; and
- means for converting the ith sequence of samples into the ith harmonic of said selected fundamental frequency $F(t)$.

3,403,344
COMMUTATED LINEAR MULTIPLE GATE

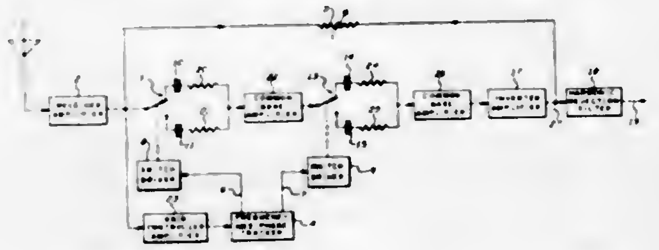
Spencer M. Cork, Camp Springs, Md., Garold K. Jensen, Alexandria, Va., and James E. McGeogh, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 22, 1965, Ser. No. 441,937
2 Claims. (Cl. 328—98)



An electronic transmission gate comprising a transistor which is switched between conditions of saturation and cutoff under the control of a cathode follower driver circuit. The cathode follower serves as a low output impedance driver as well as a source of bias voltage of one polarity to bias off the transistor and as a source of control voltage of the opposite polarity to place the transistor in saturation.

3,403,345
TUNABLE NARROW-BAND REJECTION FILTER EMPLOYING COHERENT DEMODULATION

Robert L. Frank, Great Neck, and Alan H. Phillips, Syosset, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed July 19, 1965, Ser. No. 473,000
5 Claims. (Cl. 328—165)

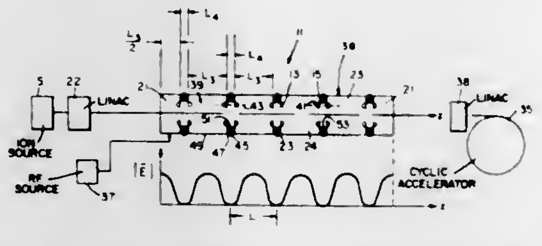


Two series connected chopper demodulators coupled to receive an input signal comprising desired as well as interfering signal components. One of the demodulators is driven substantially in phase with the interfering signal component and the other demodulator is driven substantially in phase quadrature with the interfering signal component. The output of the demodulators is subtractively combined with an attenuated portion of the input signal to substantially eliminate the interfering signal component.

3,403,346
HIGH ENERGY LINEAR ACCELERATOR APPARATUS

Salvatore T. Giordano, Port Jefferson, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 20, 1965, Ser. No. 499,120
9 Claims. (Cl. 328—233)

High energy linear accelerator apparatus for protons and heavier charged particles having a plurality of uniform diameter disk shaped irises forming periodic, alternate, long and short cells having uniform inside diameters and fixed and adjustable tuning means providing high shunt impedance at increasing particle velocities, high

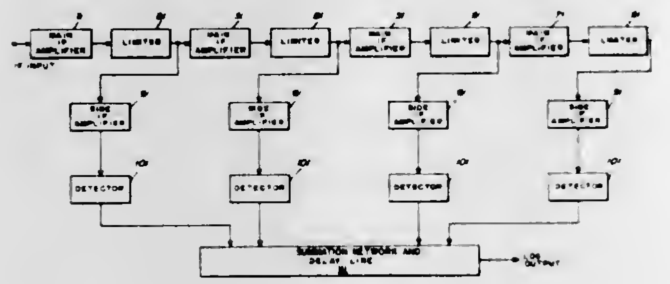


transit time factor, small mode separation around the operating mode, low sensitivity to tank de-tuning errors, simple control, and high energy injection into cyclic particle accelerators.

3,403,347
HIGH ACCURACY INSTANTANEOUS INTERMEDIATE FREQUENCY LOGARITHMIC AMPLIFIER

Keefer S. Stull, Jr., Baltimore, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Feb. 15, 1965, Ser. No. 432,909
7 Claims. (Cl. 329—145)

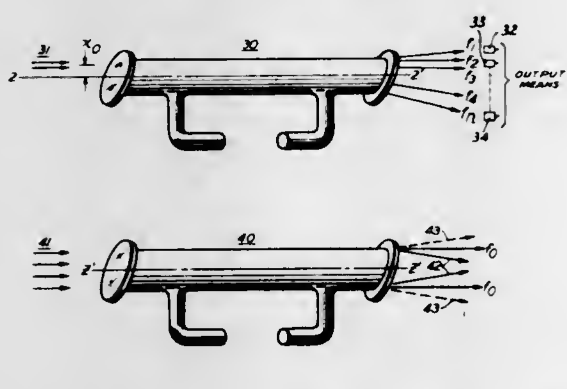


A device for substantially instantaneous logarithmic response to input signals by utilizing successive detection technique and employing grid limited IF stages. The detector outputs are added in a delay line and presented at the output, the output thus being a logarithmic function of the input signal.

3,403,348
FREQUENCY SELECTIVE LASER DEVICES

Arthur Ashkin, Bernardsville, and Herwig W. Kogelnik, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 29, 1964, Ser. No. 400,266
3 Claims. (Cl. 330—4.3)



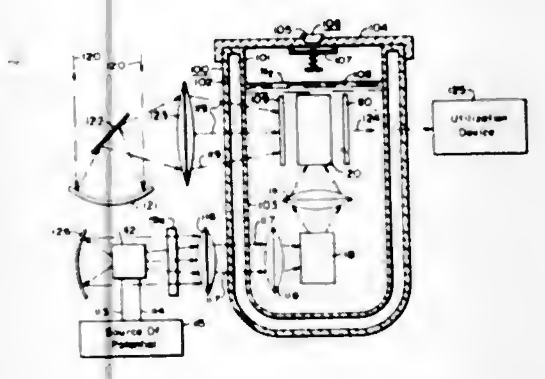
Because the index of refraction in a discharge gas column varies as a function of frequency and radius, light rays of different frequencies are defracted different amounts as they traverse the column. By suitably locating the cavity mirrors on opposite sides of the column, a single frequency laser oscillator is realized. By changing the location and orientation of one of the mirrors, the laser can be continuously tuned over the band of frequencies within the Doppler line width.

A discharge gas column is also used as a combination amplifier and focusing element in a wave guidance system, and as a prism to separate the different frequencies in a multifrequency transmission system.

3,403,349
OPTICALLY PUMPED MASER AND SOLID STATE LIGHT SOURCE FOR USE THEREIN

Irwin Wieder, Palo Alto, Calif., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 220,938, Aug. 27, 1962, which is a continuation of application Ser. No. 816,582, May 28, 1959. This application July 28, 1966, Ser. No. 569,559
15 Claims. (Cl. 330—4.3)

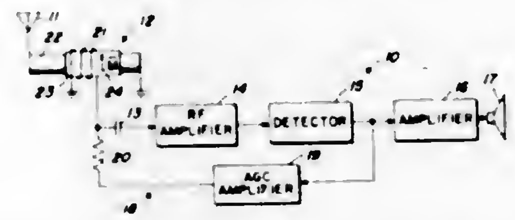


1. Solid state light source apparatus for exciting an active material having excited energy levels of electrons and suitable for use in masers and light amplifiers comprising, in combination, a first element of solid active material having a plurality of ground state sublevels of electron energy separated from each other by discrete amounts, said first element undergoing optical absorption when irradiated with light in a predetermined first wavelength band in the light energy spectrum, optical absorption in the first element resulting the movement of at least some of the electrons from ground state sublevels to excited energy levels and the creation of an excited stated in said first element, a lower ground state sublevel being depopulated by the movement of electrons to excited energy levels at a greater rate than an upper ground state sublevel, electrons thereafter moving from the excited energy levels to the plurality of ground state sublevels, some of the electrons in an upper ground state sublevel thereafter moving by radiative transition to a lower ground state sublevel and being adapted while so moving to give up energy to an electromagnetic wave of predetermined frequency impinging on the first element, a source of broad spectrum light, and a light concentrator including a second element of the same solid active material interposed between the source of light and said first element and having broad spectrum light impinging thereon, said second element having optical absorption of light over a second wavelength band broad relative to said first wavelength band and lying outside of the first wavelength band, the optical absorption in said second element resulting in electrons moving to excited energy levels, said electrons of said second element thereafter falling back by radiationless decay to a metastable luminescent state in said second element, said electrons thereafter returning from the luminescent state to the ground state and emitting optical energy in said first wavelength band, said last-named optical energy passing to said first element and causing an excited state in the first element of active material.

3,403,350
MAGNETIC DOMAIN IMPRESSED COATED WIRE ATTENUATOR WITH WIDE DYNAMIC RANGE

Charles P. Womack, Marion, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed July 18, 1966, Ser. No. 565,835
7 Claims. (Cl. 330—144)

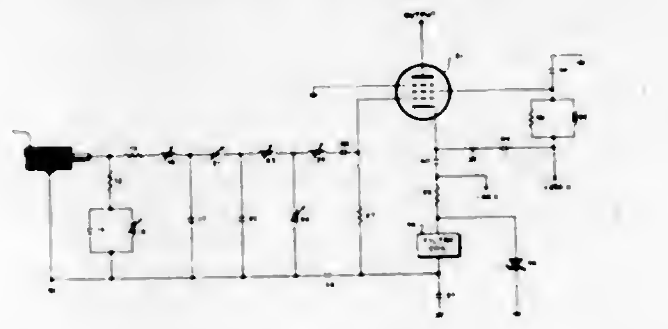


A magnetic domain impressed thin film ferromagnetic attenuator with the thin film deposited as a closed circutious band on a wire also used as one signal inductive means and with a second wire as a winding, or substantially the straight wire equivalent thereof, so placed in immediate close contact or substantially so and oriented substantially at right angles to the axis of the other wire as to be a second signal inductive means in proper operational alignment with the rest direction of a magnetization vector Ⅺ impressed in the thin film band.

3,403,351
WIDEBAND AMPLIFIER INPUT CIRCUIT

Allen C. Wooldridge, Bernardsville, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Apr. 5, 1965, Ser. No. 446,484
7 Claims. (Cl. 330—185)



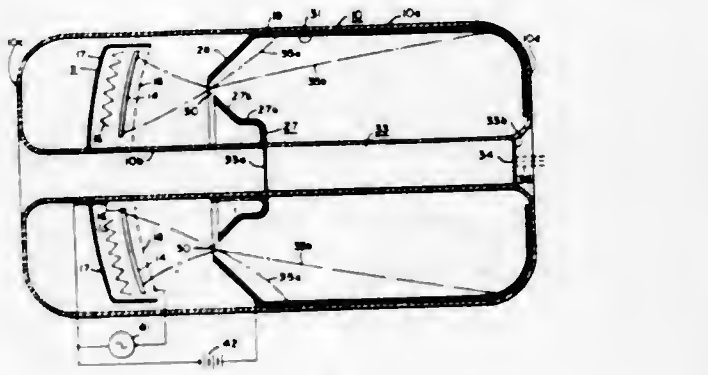
A wideband amplifier input circuit with a constant resistance single resonant input line coupled with a double tuned line having resonant frequencies on either side of the resonant frequency of the constant resistance single resonant line for maintaining a constant input voltage over a wide range of frequencies.

3,403,352
LASER HAVING EFFICIENT COUPLING BETWEEN A PHOSPHOR PUMP SOURCE AND THE LASER MEDIUM

Jon W. Ogland, Glen Burnie, and Charles W. Baugh, Jr., Severna Park, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 266,146, Mar. 15, 1963. This application Apr. 10, 1967, Ser. No. 629,828
6 Claims. (Cl. 331—94.5)

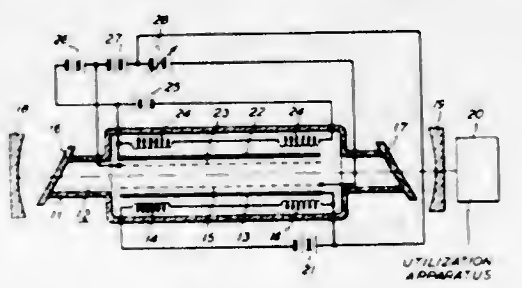
1. Maser apparatus comprising a light-confining diffusely reflecting enclosure, a negative temperature medium supported in said enclosure, a source of electron beam energy, phosphor pumping means supported on the inner surface of said enclosure and disposed for bombardment by said electron beam energy for production of light output for pumping said medium, said enclosure and said phosphor means completely surrounding said medium except for an opening area for ingress of said electron beam energy and an opening area for emission of coherent light output from said medium, the respective areas of said ingress and emission openings being small compared to the surface area of said medium, said diffusely reflecting enclosure being related to said medium in such a way that substantially all of said optical pumping light which is not absorbed as a result of direct impingement upon said medium will be diffusely reflected by said enclosure, whereby the absorption of said pumping light by said medium is substantially enhanced by multiple reflection of said pumping light.



3,403,353
GAS LASER HAVING A SECOND CATHODE FOR SPACE CHARGE NEUTRALIZATION

Willis E. Lamb, Jr., New Haven, Conn., and Ping K. Tien, Chatham Township, Morris County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 8, 1965, Ser. No. 446,588
7 Claims. (Cl. 331—94.5)



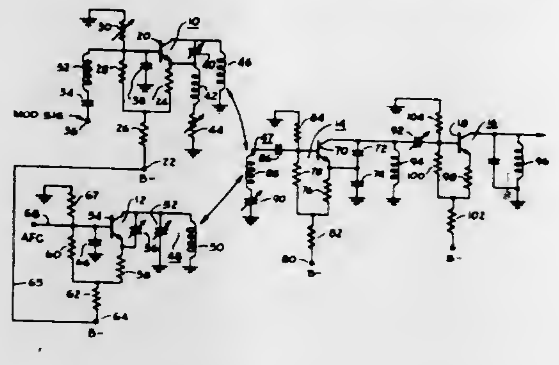
1. Apparatus adapted for the stimulated emission of radiation, comprising a member containing an active medium, means associated with said member for forming an optical cavity resonator, means for pumping said active medium with a substantially monoenergetic electron beam to establish a population inversion between a pair of optically connected energy levels of said active medium, and means for supplying positive ions to neutralize at least partially the space charge within the portion of said member traversable by said radiation, said supplying means including a source of electrons having energies different from said monoenergic beam and sufficient to ionize said active medium.

3,403,354
LINEAR FREQUENCY MODULATION SYSTEM INCLUDING AN OSCILLATING TRANSISTOR, AN INTERNAL CAPACITY OF WHICH IS VARIED IN ACCORDANCE WITH A MODULATING SIGNAL

Leopold A. Harwood, Somerville, N.J., assignor to Radio Corporation of America, a corporation of Delaware

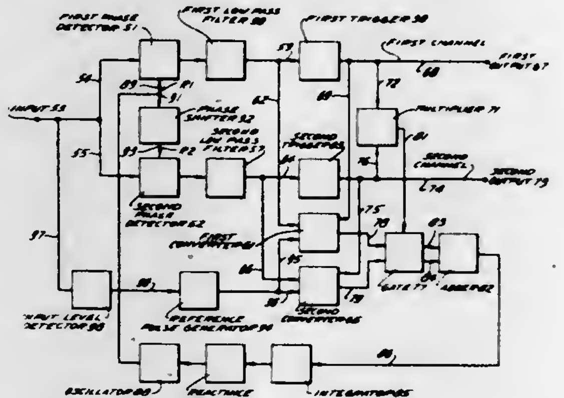
Filed Apr. 26, 1965, Ser. No. 450,805
12 Claims. (Cl. 332—19)

A linear frequency modulation system is provided utilizing a modulated oscillating transistor which needs no variable reactance element other than the internal capacity change between electrodes of the transistor. To avoid changes in frequency of the oscillator due to changes in temperature, or due to variations in the voltage supply, a second similar unmodulated oscillating transistor, which is subjected to the same temperature and which is supplied by the same voltage supply is provided. A beat frequency which is obtained by beating the waves provided by the two oscillating transistors therefor will not vary in frequency due to change in ambient temperature or in change of supply voltage and yet may be linearly frequency modulated.



3,403,355
PHASE CONTROL CIRCUIT

Yuji Takada, Kawasaki-shi, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Jan. 12, 1966, Ser. No. 520,285
10 Claims. (Cl. 332—23)



1. A phase control circuit for controlling the phase of a carrier wave relative to a pair of input signals, said phase control circuit comprising:

input means for said input signals;

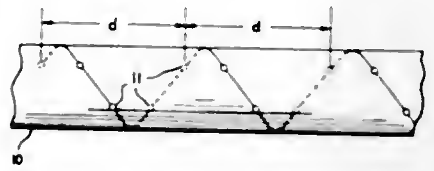
output means for providing from said input signals output signals;

controllable carrier wave generating means having an input and an output coupled to said input means for providing a carrier wave for said input signals; and

control means having an input coupled between said input means and said output means and an output coupled to the input of said carrier wave generating means for controlling the frequency and phase of said carrier wave generating means, said control means comprising converting means for providing a pair of pulses having durations dependent upon the magnitudes of voltages derived from said input signals and adder means coupled between said converting means and the input of said carrier wave generating means for providing a control voltage dependent upon the difference in duration of the pair of pulses provided by said converting means to control the frequency and phase of said carrier wave generating means.

3,403,356
RECIPROCAL MICROWAVE POLARIZATION ROTATOR

Jack H. Richmond, Columbus, Ohio, and Walter J. Wesner, Morristown, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed June 14, 1966, Ser. No. 558,210
4 Claims. (Cl. 333—21)



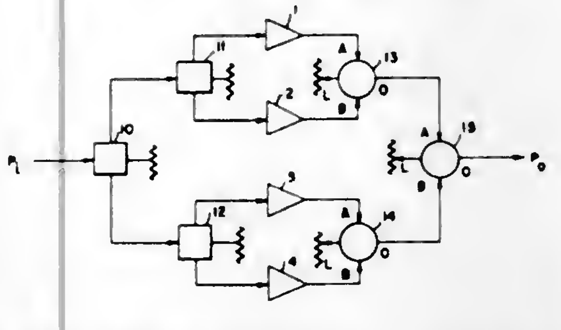
1. A reciprocal waveguide device for controlling the orientation of a linearly polarized electromagnetic field vector in a circular waveguide, comprising:

a plurality of susceptance probe means arranged in a helical array in a section of circular waveguide, the helix of said helical array having a lead length equal to one wavelength of the frequency being transmitted, said probe means extending through the wall of said waveguide and protruding diametrically into said waveguide, wherein the number of said probe means that are required and the depth of said diametric protrusion into said wall is predetermined by the amount of susceptance coupling that is necessary for a particular application, said probe means being electrically insulated from said waveguide; and

a plurality of variable capacitance means, one of said capacitance means coupled from each of said probe means, on the outside of said circular waveguide, to said circular waveguide, whereby the orientation of a linearly polarized field vector may be changed by adjusting the values of said plurality of variable capacitance means.

3,403,357
SWITCHING APPARATUS FOR SELECTIVELY COUPLING A PREDETERMINED NUMBER OF MICROWAVE DEVICES BETWEEN AN INPUT AND AN OUTPUT PORT

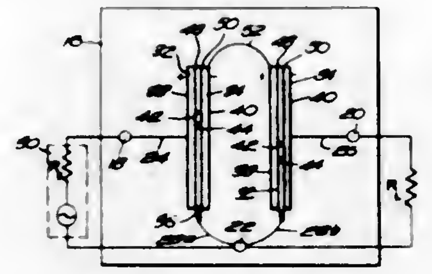
Harold A. Rosen, Santa Monica, and Neal C. Silence, Torrance, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Apr. 14, 1966, Ser. No. 542,579
4 Claims. (Cl. 333—24)



Microwave circuit arrangements capable of selectively coupling a number of similar microwave transmission paths in parallel are disclosed. Selective coupling is accomplished by a combination of multifunction microwave switches disposed in the output of the transmission paths to be coupled. Each switch utilizes an element of Faraday-effect material. By providing a magnetic biasing field through the element in the proper direction and magnitude the switch can be made to transmit either one or the other or both outputs from two transmission paths. By arranging a plurality of such switches in the manner of a relay tree any combination of one or more outputs from a plurality of transmission paths can be selected.

3,403,358
COMPOSITE PIEZOELECTRIC FILTER METHOD AND MEANS

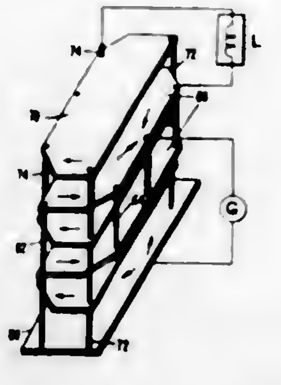
Eric A. Kolm, Brookline, Mass., assignor to Sonus Corporation, Cambridge, Mass.
Filed June 9, 1964, Ser. No. 373,612
3 Claims. (Cl. 333—72)



An electrical filter is constructed using a plurality of piezoelectric coupling elements. Each coupling element consists of a pair of piezoelectric crystals cemented together face to face. Each element is then subjected to a direct voltage in excess of that required to polarize it, but less than the stress limit voltage for the ceramic. Two or more of the elements are electrically connected together in cascade so that their axes of polarization are aligned. That is, the input signals applied to all of the coupling elements in the filter are applied across the transducers having the same polarity sign. Likewise, the outputs from all the coupling elements are taken from transducers having the same polarity sign.

3,403,359
RADIO FREQUENCY RESONANT CIRCUIT COMPONENT

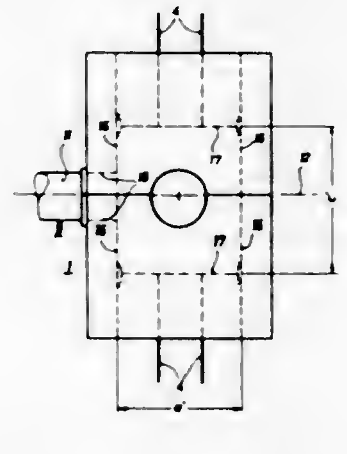
Joshua George Dowell Manwaring, Needham, Mass., assignor to Radio Frequency Company Inc., Medfield, Mass., a corporation of Massachusetts
Continuation-in-part of applications Ser. No. 128,326, July 18, 1961, now Patent No. 3,095,548, and Ser. No. 362,471, Apr. 24, 1964; continuation-in-part and division of application Ser. No. 441,564, Mar. 22, 1965. This application July 28, 1966, Ser. No. 568,486
The portion of the term of the patent subsequent to June 25, 1980, has been disclaimed
8 Claims. (Cl. 333—76)



1. A radio frequency turned circuit component consisting of a conductive support having opposed, spaced, generally parallel support members electrically connected together and two series of alternating opposed solid conductive plates spaced from one another in a direction perpendicular to the plane of the plates for capacitive coupling therebetween, with the plates of each series mounted on opposite said members in the space between said support members, said support members of a pair being connected to a common plate, said series of plates being electrically connected together through said members providing an inductive loop, at least one of said series of plates having a common high energy connection point spaced from the connected said member of said series to provide a pair of mutually inductively coupled inductors providing radio frequency current flow in at least one high current density path in each of said plates with said flow in said opposed plates establishing a radio frequency field by current flow in opposite directions along said plates for mutual inductive coupling and the axis of said inductive loop being parallel to said plates.

3,403,360
WAVE-GUIDE RESONATOR HAVING VARIOUS TUNING RANGES

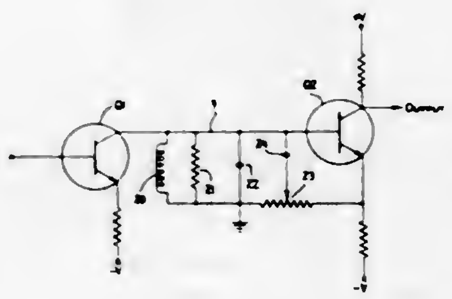
Wolfgang Schmidt, Hamburg-Othmarschen, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 516,397
Claims priority, application Germany, Jan. 30, 1965, P 24,700
2 Claims. (Cl. 333—83)



In order to extend the tuning range of a tunable cavity resonator, for example for use in combination with a klystron, the cavity resonator is in the form of a rectangular waveguide having removable inner partitions parallel to the narrow waveguide walls, and the waveguide is formed in two sections which are joined together at the coupling apertures. Adjustable plungers are provided in each end of the waveguide between the partitions.

3,403,361
POTENTIOMETER FREQUENCY ADJUSTMENT OF A TUNED CIRCUIT

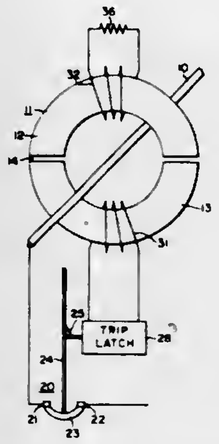
Winfield R. Koch, Marlton, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 16, 1966, Ser. No. 551,497
1 Claim. (Cl. 334—40)



A network coupled in a tuned circuit for trimmer adjustment of same having a potentiometer and a capacitor arranged in the coupling of the tuned circuit with an amplifier for trimming the reactance to compensate for changes in the resonant frequency from a predetermined amount.

3,403,362
RATE-OF-RISE TRIPPING DEVICE

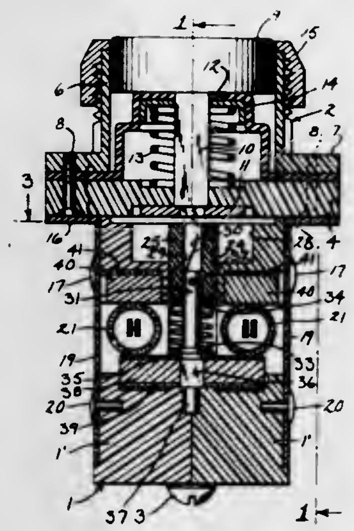
Albert P. Strom, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 5, 1966, Ser. No. 584,410
8 Claims. (Cl. 335—174)



Rate-of-rise circuit breaker tripping apparatus includes a saturable core having a first or trip winding thereon which supplies a tripping signal to the circuit breaker, and having a second winding thereon across which is connected a non-linear resistor. The flux in the saturable core is a function of the current in the line to be protected and it is also a function of the current flowing in the second winding and the non-linear resistor.

3,403,363
OPERATING MEANS FOR PUSHBUTTON SWITCHES AND THE LIKE HAVING MAGNETICALLY OPERABLE CONTACTS

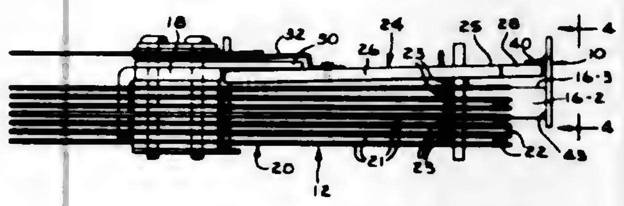
James N. Pearse, Menomonee Falls, and Joseph C. Mayer, Milwaukee, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 11, 1966, Ser. No. 585,965
4 Claims. (Cl. 335—205)



A pushbutton switch includes a linear actuator, a pair of magnetically operable reed switches, each with a bias magnet across its contacts, a rotatable operating magnet facing the switch contacts, and an operating mechanism to rotate the operating magnet in response to linear movement of the actuator. The operating magnet is quadrantially magnetized and aligned with the switches to present a pair of opposite poles across the contacts of each switch, a quarter turn rotational movement of the magnet serving to reverse the polarity, thus—depending on the polarity of the bias magnets—opening or closing the switches. The operating mechanism includes a cam movable between normal and operated positions and engageable by the actuator to be moved to operated position. A cam bore leads through the cam and presents opposite inclined cam surfaces, and a cam follower connected to the operating magnet has pins engageable with the surfaces to cause the magnet to be moved rotationally in response to movement of the cam in either direction. Bias means urges the cam toward normal position.

3,403,364
ONE PIECE ARMATURE BACKSTOP MEMBER FOR A RELAY

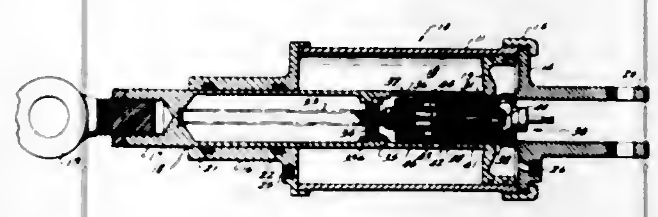
Robert H. Turner, Bethany, Okla., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed June 2, 1966, Ser. No. 554,858
4 Claims. (Cl. 335—273)



A one-piece armature backstop member of a relay is formed of sheet metal plate and includes a backstop lug formed by an internal portion of the plate which is bent so as to extend laterally from the plate in spaced relation to the edges thereof. In mounting the backstop member in the relay an elongated magnetic core of the relay is supported on a first welding electrode and the backstop member is held in engagement with a flat end surface of the core by a second welding electrode. A spacing gage is positioned between the armature and the core, and the backstop member is located relative to the core such that a stop surface of the lug engages a surface portion of the armature in mating relationship and such that the lug causes the spacing gage to be firmly engaged between the armature and the core, to establish a limit of movement of the armature away from the core. A welding circuit then is closed through the electrodes, the core and the backstop member to weld the backstop member to the core, after which the spacing gage is removed from between the armature and the core.

3,403,365
SHIELDED TRANSDUCER HAVING MEANS TO REDUCE CORE MOVEMENT

John C. Richards, Mason, Ohio, assignor to General Electric Company, a corporation of New York
Filed May 4, 1964, Ser. No. 364,648
4 Claims. (Cl. 336—30)

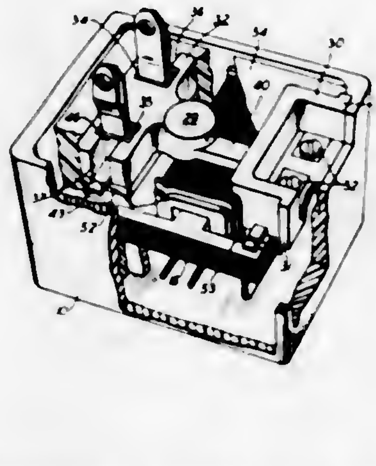


1. An actuator comprising,
a cylinder having closed ends,
a piston reciprocable in said cylinder and having a rod projecting through one end thereof said piston defining in combination with the closed ended cylinder, expansible pressurization chambers on opposite sides of the piston,
said cylinder having ports for the alternate introduction of pressurized fluid into the pressurization chambers at the opposite end portions of the piston to reciprocate said piston and rod,

a transducer disposed in the pressurization chamber at the end portion of said cylinder opposite said rod, and exposed to the fluid introduced therein,
said transducer comprising a coil having electrical leads extending from said actuator and a core displaceable within said coil to produce an output signal therefrom which is a function of the relative position of said core within said coil, and
positive coupling means for connecting said core and piston and positively displacing said core in response to piston movement at a fixed lesser rate than said piston movement,
whereby a relatively small transducer may provide an output signal reflecting the full range of a relatively long piston stroke.

3,403,366
PLUG-IN TRANSFORMER STRUCTURE

John A. Klatte, Dover, N.J., and Joseph C. Dill, Indianapolis, Ind.; said Klatte assignor to Bell Telephone Laboratories Incorporated, Murray Hill, N.J., a corporation of New York, and said Dill assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 29, 1966, Ser. No. 575,798
7 Claims. (Cl. 336—92)



A plug-in tranformer consists of a one-piece molded casing with a raised interior portion at one end containing an auxiliary outlet. The winding is supported on ribs molded into the sides and floor of the casing, and includes a telescoping secondary to facilitate assembly and packaging. The device is low in profile and hence suitable for use in home and office wall outlets.

3,403,367
POTTED BALLAST TRANSFORMER

Robert D. Holzinger, Homewood, Ill., assignor to The Sherwin-Williams Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Original application Feb. 19, 1963, Ser. No. 259,725. Divided and this application Jan. 19, 1967, Ser. No. 642,255
1 Claim. (Cl. 336—96)

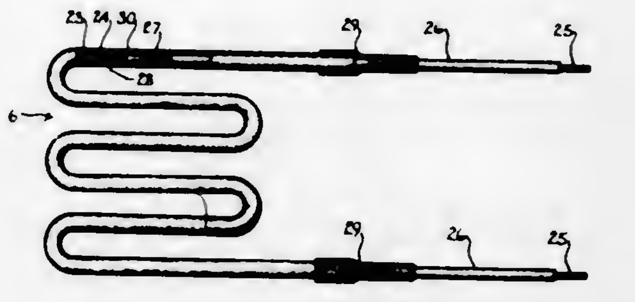
A ballast transformer having a laminated core with insulated wire wound thereon. Surrounding the transformer is a potting composition comprising 8 to 18 parts of oiticica oil, from 6 to 15 parts of triisobutylene monomers, from 1 to 8 parts of liquid extender and from 70 to 80 parts of a solid particulate extender and ferric chloride catalyst in an amount sufficient to cause polymerization between the oiticica oil and the triisobutylene monomers in an addition polymerization reaction.

ERRATUM

For Class 337—393 see:
Patent No. 3,403,238

3,403,368
WATERPROOF HEATING ASSEMBLY

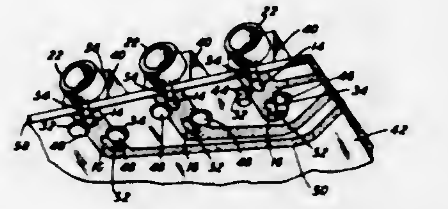
Vincent J. Scardina, Elk Grove, Ill., assignor to Deltrol Corp., doing business as Campbell Products, Inc., Bellwood, Ill., a corporation of Illinois
Filed Mar. 10, 1967, Ser. No. 622,234
3 Claims. (Cl. 338—270)



A resistance wire is helically coiled around a core of heat resistant supple material. To each end of this unit is electrically and mechanically connected a conductor lead having a flexible waterproof insulation sheath. A tube of vinyl coated glass fiber surrounds the resistance wire and core and extends therebeyond over inner end portions of both conductor sheaths. Sleeves of heat shrinkable plastic snugly surround the end portions of the tube and their outwardly adjacent portions of the conductor sheaths to provide moisture seals.

3,403,369
CONNECTOR

Leon H. Steiff, Peabody, and Ralph J. Wirtz, Andover, Mass., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 18, 1965, Ser. No. 433,701
11 Claims. (Cl. 339—17)



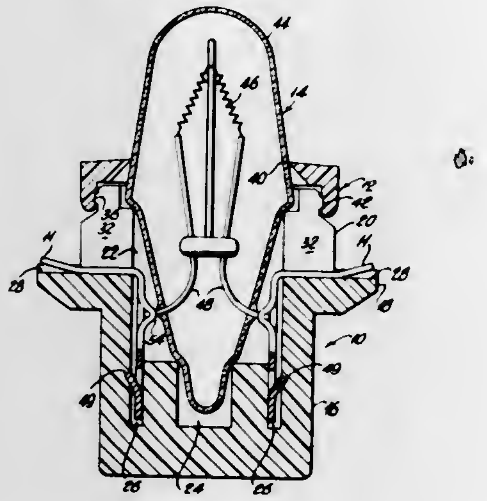
1. A connector for a printed circuit board comprising an insulating body defining a surface for contact with said board, said body defining a plurality of recesses projecting inwardly from said surface, a pin projecting from each recess beyond the surface for insertion into the board, and conductive means supported by said body for contacting wiring on said printed circuit board, said body defining an elongated opening extending parallel to said surface and transverse to said pins for receiving a test probe, said conductive means including a cylinder-like conductive member extending along said opening for contacting the test probe and a conductive terminal extending from said member in the direction of said pins so as to project through the board at a location spaced from said pins.

3,403,370
MECHANICALLY BASED REAR LOADING PANEL LAMP

Walter E. Carpenter, Cedar Grove, N.J., assignor, by mesne assignments, to Wagner Electric Corporation, South Bend, Ind., a corporation of Delaware
Filed Oct. 15, 1965, Ser. No. 496,310
8 Claims. (Cl. 339—17)

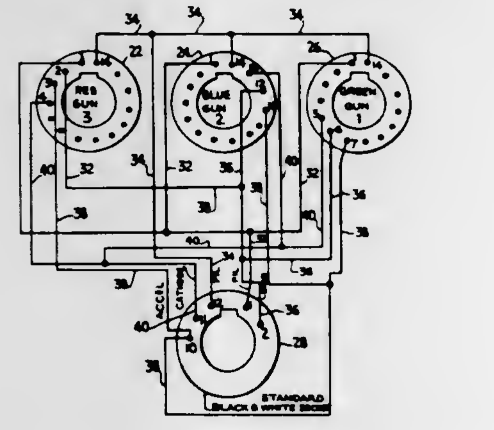
1. A rear loading panel lamp for printed circuits comprising:

(i) a glass bulb having lead wires extending therefrom,
(ii) at least two terminals connected to said lead wires,
(iii) a molded base having a first opening therein to receive said bulb and additional openings to receive said terminals,



(iv) a pliable retaining ring to slide over the bulb and engage the base, said ring and said base formed with interlocking means for mechanically locking the bulb, the ring, and the base together.

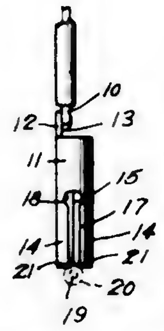
3,403,371
ADAPTER FOR CATHODE RAY TUBE TESTERS
Lyle E. Mitcham, R.D. 2, Centerville, Pa. 16404
Filed May 18, 1967, Ser. No. 639,502
4 Claims. (Cl. 339—28)



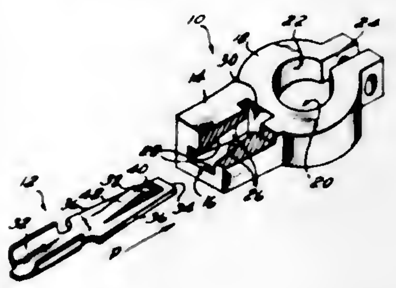
An adapter to be used with a tester for monochrome cathode ray tubes in order to enable the tester to test tricolor cathode ray tubes. A plug end of the adapter fits the tester, and successive socket ends thereof test each color electron gun of the tube.

3,403,372
METHOD OF MAKING ELECTRICAL CONNECTIONS AND THE CONNECTIONS PRODUCED THEREBY
Herman B. Stinson, Jr., 346 Medina Drive,
Warson Woods, Mo. 63122
Filed Feb. 3, 1966, Ser. No. 524,703
8 Claims. (Cl. 339—97)

A tubular electrical conductor has a split throughout its length providing opposed insulation cutting and conductor gripping jaws, with a longitudinal generally keyhole slot diametrically opposite within which the conductor is engaged without cutting the insulation. To select a conductor from an insulated wire bundle the tip of an assembling tool is manipulated into engagement with the conductor and slid therealong until the conductor is supported on spaced abutments.

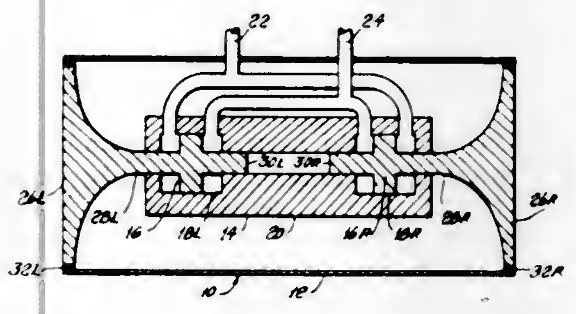


3,403,373
WEDGE-FITTING CONNECTOR
Joseph Julien Dereymaeker, Malines, Antwerp, and Paul Gustaaf Philips, Hoombeek, Antwerp, Belgium, assignors to Burndy Corporation, a corporation of New York
Filed June 28, 1966, Ser. No. 561,224
1 Claim. (Cl. 339—252)



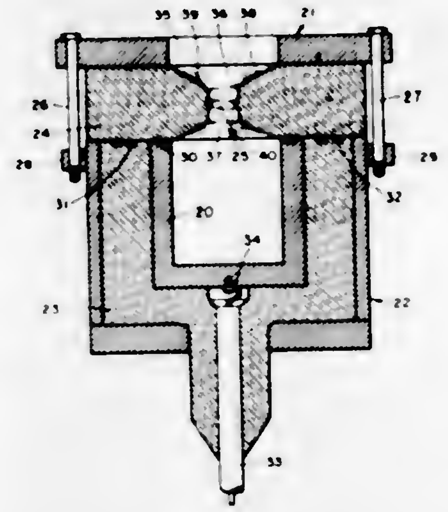
A separable electrical connector of the plug and receptacle type. The receptacle has an entrance aperture and includes one pair of inner wall surfaces which extend from the aperture in diverging relationship and a second pair of inner wall surfaces which extend from the same aperture in converging relationship. The plug is a flat sheet metal blade formed with an integral cantilever spring. Side edges of the plug are tapered to wedge into the converging walls of the receptacle, and the cantilever spring bears against one of the diverging inner wall surfaces, urging the base against the opposite diverging surface to increase wedging pressure.

3,403,374
UNDERWATER HYDRODYNAMIC ACOUSTIC PROJECTOR
Robert H. Mellen, Old Lyme, Robert Berman, New London, and Kenneth L. Moothart, Stonington, Conn., assignors to the United States of America as represented by the Secretary of the Navy
Filed Apr. 5, 1962, Ser. No. 185,489
1 Claim. (Cl. 340—8)



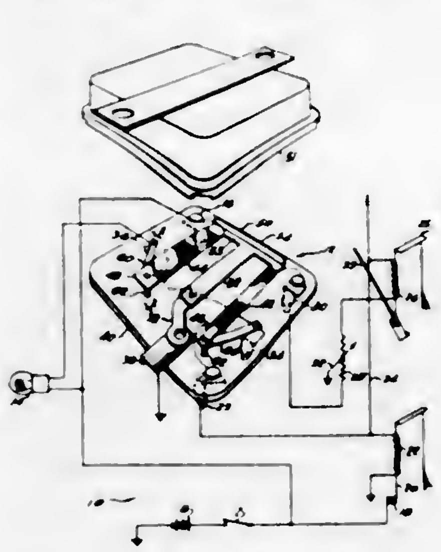
An underwater acoustic energy projector having two oppositely directed planar pistons mounted in the opposite ends of a tubular housing, hydraulic motor means in the housing, and hydraulic conduits extending from the hydraulic motor means through the wall of the tubular housing for transmitting driving force to the planar pistons forcing them to execute mirror image displacement. The perimeters of the pistons are yieldably secured to the housing by elastomeric means to form a fluid tight structure.

3,403,375
ACOUSTIC GENERATOR OF THE SPARK DISCHARGE TYPE
Hubert A. Wright, Jr., Lexington, Mass., and John P. Tobey, Jr., Nashua, N.H., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 27, 1967, Ser. No. 637,033
4 Claims. (Cl. 340—12)



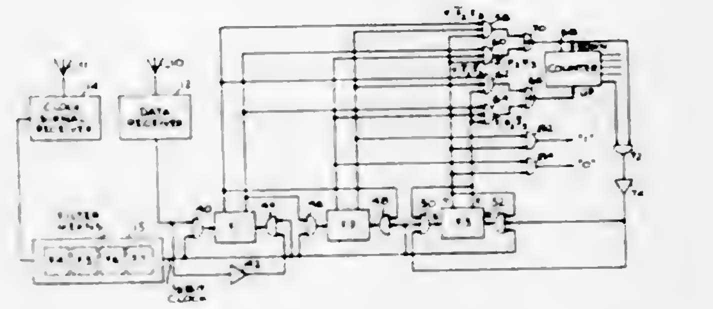
The present invention is directed to an impulse acoustic generator of the type which utilizes as the sound generating mechanism a controlled electrical discharge that takes place between two volumes of an electrically conductive fluid which are separated by a dielectric barrier having an aperture of small cross section formed therein.

3,403,376
FUEL DEPLETION ALARM CIRCUIT UTILIZING BIMETAL
Edmond W. Kraft, Roselle, and Frank C. Weaver, Chicago, Ill., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Nov. 12, 1964, Ser. No. 410,689
6 Claims. (Cl. 340—59)



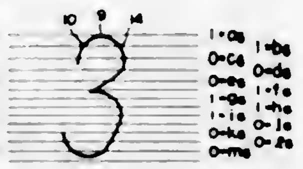
The following specification describes a circuit using a bimetal switch of E-shaped construction with one end leg having a winding controlled by a fuel level rheostat with a normally open contact on the one end leg controlling a winding on the other end leg which has a normally open contact for lighting an alarm lamp in the event both windings are energized to indicate the fuel level has fallen below a predetermined value.

3,403,377
APPARATUS FOR MONITORING THE SYNCHRONIZATION OF A PULSE DATA RECEIVER
Thomas A. Connolly, Anaheim, and David B. Kaplan and Alfred D. Scarbrough, Los Angeles, Calif., assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Sept. 10, 1963, Ser. No. 307,972
10 Claims. (Cl. 340—146.1)



1. In a digital data communication system in which digits are represented by a manifestation according to some redundant code of the type in which the phase relationship between each manifestation and other manifestations must be known in order to properly interpret said digits, means for interpreting said digits comprising:
- means for storing selected manifestations;
- means for comparing said stored manifestations on the basis of an assumed phase relationship in accordance with some predetermined criteria; and
- means for changing said assumed phase relationship in response to said manifestations violating said predetermined criteria.

3,403,378
CHARACTER SENSING BY PULSE CODE ANALYSIS
Sho Narita, Kodaira-shi, and Shinji Yamamoto, Kokubunji-machi, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed May 27, 1964, Ser. No. 370,532
Claims priority, application Japan, May 30, 1963, 38/27,665
7 Claims. (Cl. 340—146.3)



Means for the detection and encoding of time relationships of a predetermined number of pulses in a form sensing system wherein a form to be recognized is scanned. A plurality of scanning lines is scanned, and electrical pulse signals are generated when the lines intersect. The means detect advanced and retarded time relationships between the instant at which a predetermined number of pulses is generated in different scanning lines and permit the encoding thereof. Thus a code series is obtained by which the form is recognized.

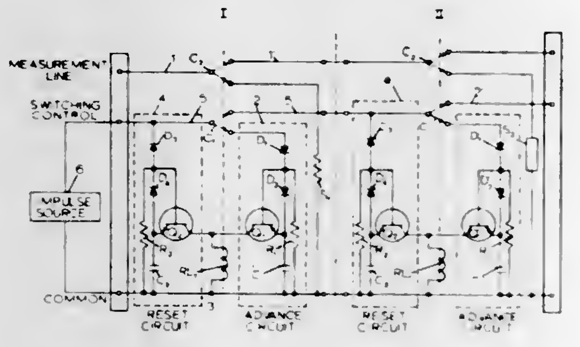
3,403,379

MEASUREMENT APPARATUS EMPLOYING LONG-LINE CALL-UP SYSTEM

Kenneth E. Perry, Wayland, Mass., assignor, by mesne assignments, to EG & G International, Inc., Bedford, Mass., a corporation of Delaware

Filed May 27, 1965, Ser. No. 459,358

6 Claims. (Cl. 340—147)



1. Apparatus for making measurements at a plurality of successively displaced regions having, in combination, a two-conductor line; a plurality of sensing means disposed at successive displaced regions along the line and permanently connected with at least one conductor of the line; a corresponding plurality of similar advance circuits each provided with energy storage means and normally ineffective relay means; a source of successive electrical impulses; a corresponding plurality of switching means for connecting the other conductor of the line to a first of the plurality of sensing means to enable a measurement thereof through the line and for connecting the source to a first of the advance circuits in order to enable a first impulse from the said source to energize the energy storage means thereof and, upon termination of the impulse, to render the corresponding relay means thereof effective; means responsive to the effective relay means of the said first advance circuit for controlling the corresponding first switching means to disconnect the said first sensing means from the said other conductor and to connect a second of the plurality of sensing means at a displaced region along the line to the said other conductor to enable a measurement thereof through the line while connecting the corresponding second advance circuit to the said source.

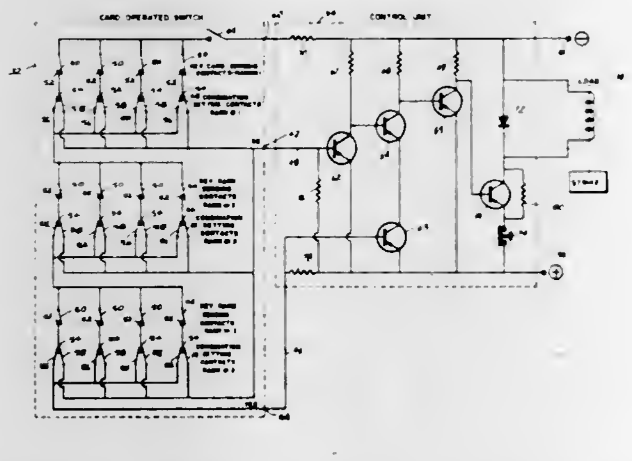
3,403,380

KEY CARD OPERATED SWITCH AND SYSTEM

Nicholas A. Welch, West Hartford, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut

Filed Mar. 1, 1965, Ser. No. 437,009

11 Claims. (Cl. 340—149)



In a key card operated switch a combination setting card insertable therein conditions a plurality of sets of combination setting contacts to establish the acceptableness of a key card inserted therein. Each set of combination setting contacts includes one main contact, connected to an associated pair of key card sensing contacts, and two other contacts which are maintained alternately to one another in either a closed or an open condition relative to the main contact by the combination setting card. When an acceptable key card is inserted in the switch, a closed circuit is completed through closed pairs of key card sensing contacts and associated closed pairs of combination setting contacts. If an unacceptable key card in inserted in the switch, another closed circuit, indicating the unacceptableness, is completed through at least one closed pair of key card sensing contacts and one closed pair of combination setting contacts.

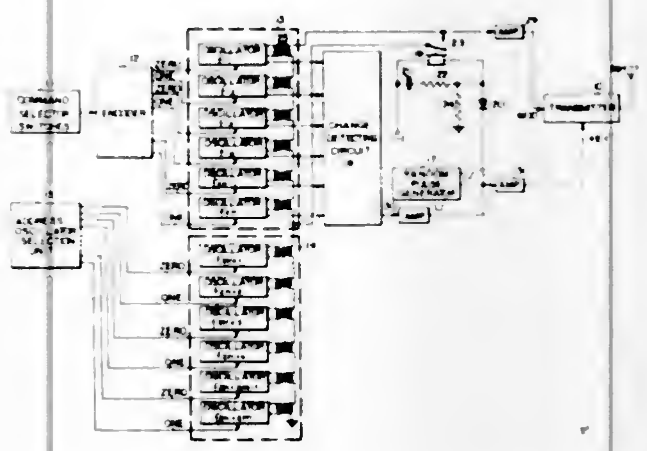
3,403,381

SYSTEM FOR RADIO COMMUNICATION BY ASYNCHRONOUS TRANSMISSION OF PULSES CONTAINING ADDRESS INFORMATION AND COMMAND INFORMATION

Robert B. Haner, Scottsville, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York

Filed Feb. 5, 1965, Ser. No. 430,673

11 Claims. (Cl. 340—171)



A communication system having a plurality of paired transmitters and receivers in which each transmitter sends a carrier frequency modulated by command and address signals, the command signal being sent at a short interval after the address signal. A receiver demodulates the address and command signals and applies them through gating circuitry to utilization apparatus. The gating circuitry only permits application of the command signals to the utilization apparatus upon recognition of address signals associated with a particular transmitter.

3,403,382

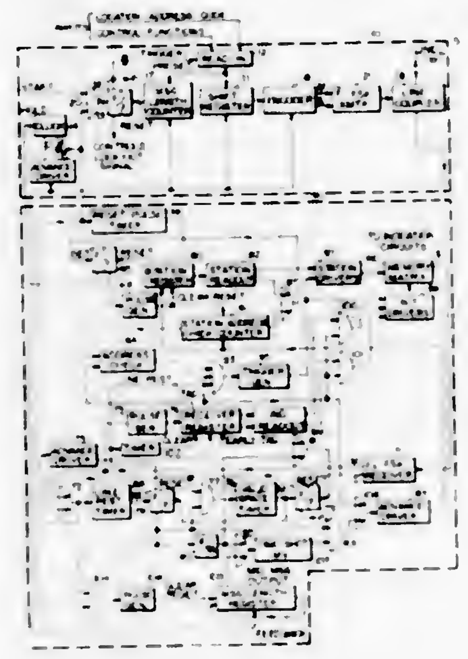
CODE COMMUNICATION SYSTEM WITH CONTROL OF REMOTE UNITS

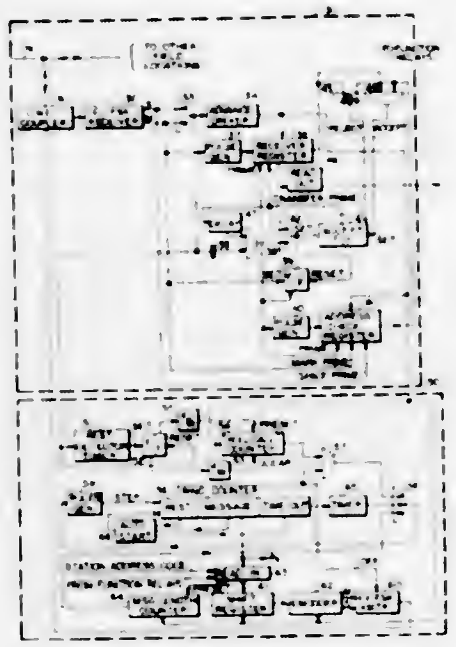
Klaus H. Frielinghaus, Arthur W. Wetmore, and Larry Appleman, Rochester, N.Y., assignors to The General Signal Corporation, Rochester, N.Y., a corporation of New York

Filed June 8, 1965, Ser. No. 462,300

9 Claims. (Cl. 340—172.5)

A code communication system having a transmitter at a central office sending messages having a function and address to remote parallel field stations. A receiver at each field station responsive to a particular address for supplying function information to utilization equipment. Transmitters at each field station responsive to a distinctive signal from the central office transmitter for cyclically sequentially transmitting in a predetermined order indication messages from the field station representative of the condition of the utilization equipment, each such message having a function and address. A plurality of storage memories at the central office for storing the information received from each field station and checking means for preventing storage of information from each field station in other than the particular memory device associated with that station.





3,403,383

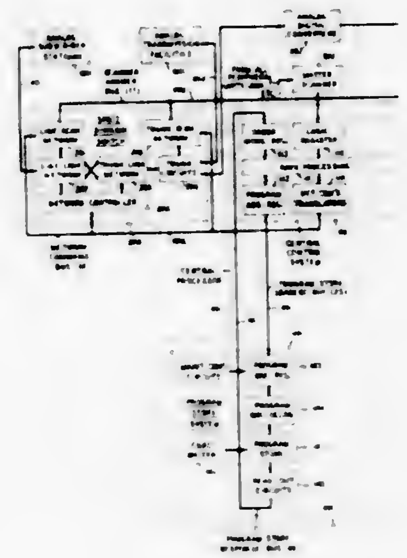
INTEGRATED ANALOG-DIGITAL SWITCHING SYSTEM WITH MODULAR MESSAGE STORE-AND-FORWARD FACILITIES

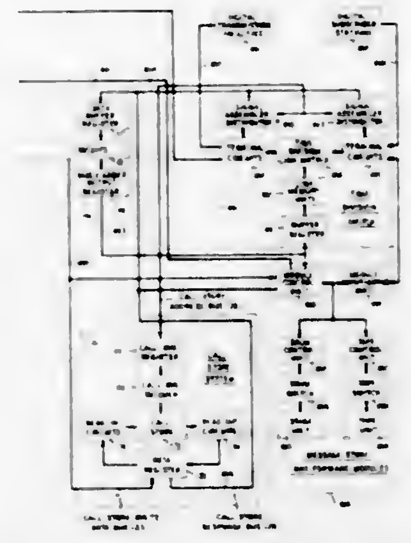
Harry G. Klenzle, Shrewsbury, and Roger E. Swift, Fair Haven, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 28, 1964, Ser. No. 371,135

14 Claims. (Cl. 340—172.5)

An integrated analog-digital electronically controlled telephone switching system is disclosed in which store-and-forward facilities are available to store digital messages and forward them at a later time to their destinations. Magnetic drum and tape storage units are disclosed together with control units all arranged on a modular basis for easy expansion of the store-and-forward capability. Multiple access to the various storage modules increases the reliability of message recovery.





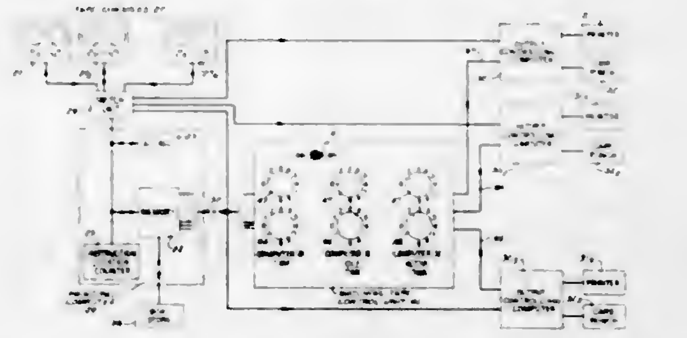
3,403,384

COMPUTER CONTROLLED OUTPUT TAPE BATCHING ARRANGEMENT

Carole B. Cushing, Malden, and Frank R. Michael, Princeton, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 11, 1965, Ser. No. 463,274

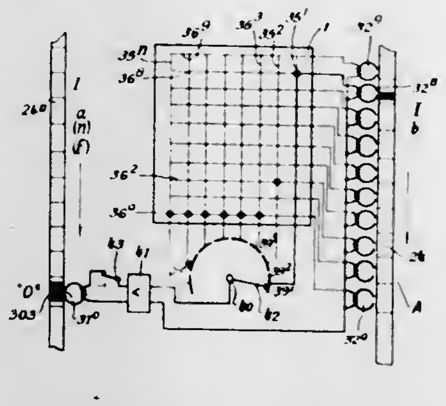
21 Claims. (Cl. 340—172.5)



The "turn-around" time of a computing system is reduced by examining various system parameters to determine whether or not the system should terminate the current output tape and begin output data batching associated with the next computation on a new tape. In this way the lengths of the respective tapes are terminated in a systematic manner thereby to achieve more efficient utilization of a plurality of computer-associated data outputting structures.

3,403,385
MAGNETIC STORAGE DEVICE

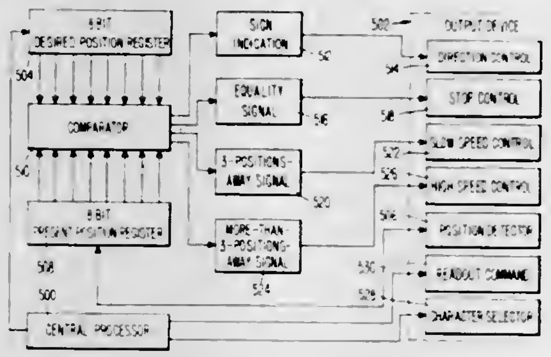
**Gerhard Dirks, 12120 Edgecliff Place,
Los Altos Hills, Calif. 94022
Application Apr. 26, 1961, Ser. No. 107,283, now Patent No. 3,228,007, dated Jan. 4, 1966, which is a continuation of application Ser. No. 498,047, Mar. 30, 1955, which in turn is a continuation-in-part of application Ser. No. 101,032, June 24, 1949. Divided and this application Oct. 23, 1965, Ser. No. 503,685
Claims priority, application Germany, Oct. 1, 1948, P 11,464; Great Britain, Dec. 23, 1954, 37,214/54
11 Claims. (Cl. 340—172.5)**



A selective data storage arrangement comprising first magnetic data signal storage means including reading means, second data signal storage means including writing means, transmitting means interconnecting said reading and writing means. The arrangement further includes selective electronic gating means comprising at least two electronic gating elements which are rendered conductive in a selective manner.

3,403,386
FORMAT CONTROL

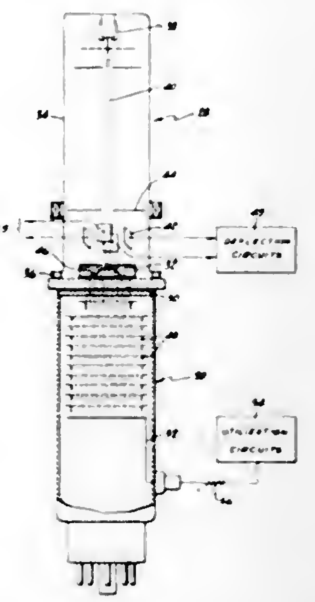
**Cornelius C. Perkins and William W. Allen, Jr., Birmingham, Bruce L. Ayres, Detroit, Thomas A. Dowds, Bloomfield Hills, and Bernardo N. Levy, Detroit, Mich., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Jan. 24, 1966, Ser. No. 522,440
9 Claims. (Cl. 340—172.5)**



A format printing control apparatus comprising an addressing circuit which receives information indicating the present position of a printing element and information indicating the next or desired printing position of the printing element. A difference number is determined by subtracting the present position number from the desired position number. The sign of this difference number determines the direction of movement of the printing element. The magnitude of this difference number determines the movement speed of the printing element. Speed control apparatus reduces the speed of the printing element when the element is within a predetermined distance of the desired position. The element is then stopped when the difference number is reduced to zero at the desired position.

3,403,387
ELECTRON BEAM INFORMATION REPRODUCING APPARATUS

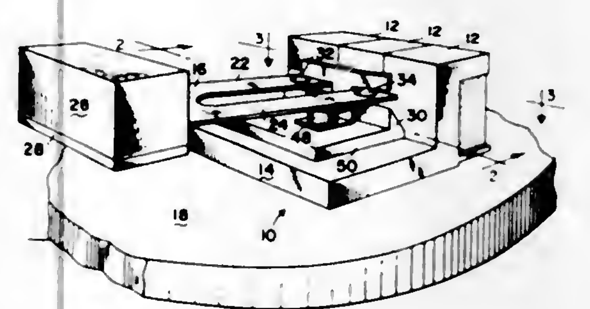
**Emil V. Boblett, Los Altos Hills, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed July 26, 1962, Ser. No. 212,546
9 Claims. (Cl. 340—173)**



System employing a special medium and an electron beam which directly impinges the medium, to provide readout of information recorded as contrasting opaque and transparent elemental areas, wherein the medium includes an electron responsive sinctillating material which upon readout causes light radiation from within the medium which is sensed to provide output signals representative of the stored information.

3,403,388
SPRING CLIP RETAINER MEANS FOR AIR BEARING MAGNETIC TRANSDUCER ASSEMBLIES

**Clarence R. Linsley, La Crescenta, Calif., assignor to General Precision Systems Inc., a corporation of Delaware
Filed Feb. 21, 1966, Ser. No. 528,967
8 Claims. (Cl. 340—174.1)**



1. A transducer assembly having:

a shoe being capable of floating upon a laminar air film which is created upon the moving surface of a rotating memory member;

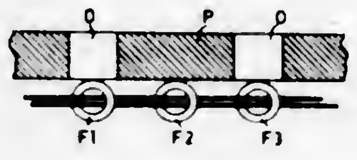
a spring means for urging said shoe toward the moving surface;

at least one connecting means mounted to said shoe on the side opposite the moving surface, said connecting means being pivotally coupled to said spring means; and

a spring clip means for retaining said shoe to said spring means, said spring clip means being securely mounted to said shoe and having at least one resilient arm which extends over said spring means and resiliently contacts said connecting means.

3,403,389
MAGNETIC INFORMATION STORAGE MATRIX EMPLOYING PERMANENTLY MAGNETIZED INHIBITING PLATE

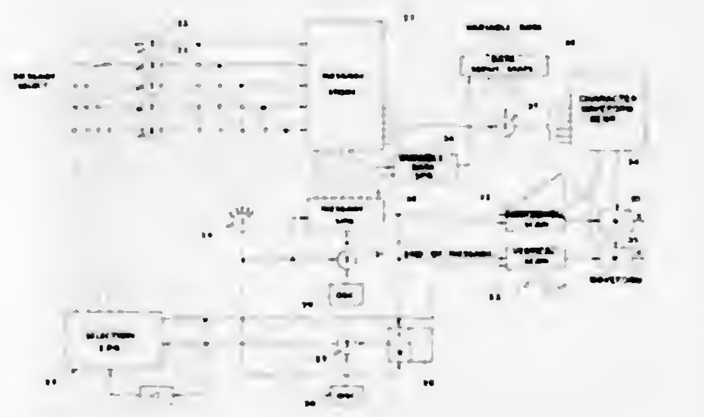
**Allan Henry Ellson, Whyteleaf, and Alexander Donald Main, Sutton, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 28, 1963, Ser. No. 268,668
Claims priority, application Great Britain, Apr. 16, 1962, 14,640/62
13 Claims. (Cl. 340—174)**



1. In combination, an information storage device having an array of magnetic cores arranged in rows and columns, and a permanently magnetized inhibiting plate juxtaposed with said array and having at least one aperture corresponding to the position within said array of at least one core to be rendered inoperative.

3,403,390
MESSAGE STORAGE

**Peter Frederic Thomas Cryer Stillwell, Aldershot, England, assignor to Rank-Bush Murphy Limited, London, England, a British company
Filed Jan. 31, 1964, Ser. No. 341,790
Claims priority, application Great Britain, Feb. 1, 1963, 4,254/63
1 Claim. (Cl. 340—324)**



1. A message storage arrangement comprising,

a first and second plurality of conductors in a matrix array, said second plurality of conductors being arranged in predetermined groups of conductors, each group having a common selector conductor,

storage means having a plurality of resistor elements arranged in a resistance matrix, said resistor elements selectively forming connections between said first and second plurality of conductors,

sequential pulse generator means for sequentially applying pulses to said first plurality of conductors, whereby output pulses appear at individual ones of said second plurality of said conductors, each of said output pulses being determined by the coded allocation of the resistor elements to that conductor of the first plurality of conductors which corresponds to the respective sequential pulse,

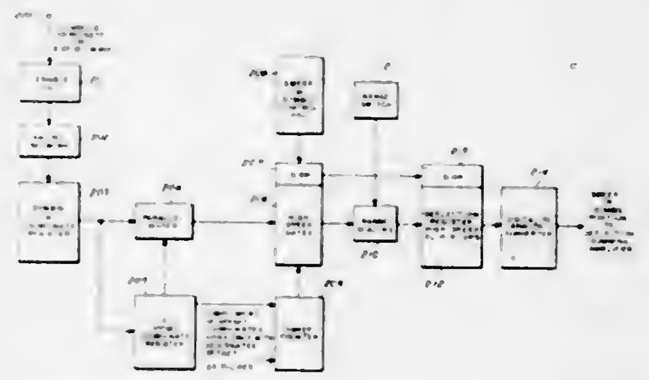
means for selecting said predetermined groups of conductors from which said output pulses appear by selectively enabling said common group selector conductors, wherein each of said second plurality of groups of conductors are connected to the same set of individual amplifiers by means of diodes, the individual conductors of said groups being connected through diodes to said common group selector conductors, the arrangement being such that selection of the group of conductors from which output pulses are provided can be effected by suitably biasing the corresponding common group selector conductor,

display means for displaying characters forming a message or part thereof, said characters or some of the displayed characters being allocated to sequential groups of output pulses, wherein said display means comprises a character waveform generator providing beam deflection potentials for a cathode ray tube on which the characters are to be displayed, the generated waveforms being correlated to the respective groups of output pulses, and

means for controlling the character waveform generator for the generation of characters representative of variable data in addition to the generation of characters representative of the selected stored message.

3,403,391
INTEGRATED VERSATILE DISPLAY CONTROL MECHANISM

**Everett E. McCown, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed July 13, 1964, Ser. No. 382,422
5 Claims. (Cl. 340—324)**

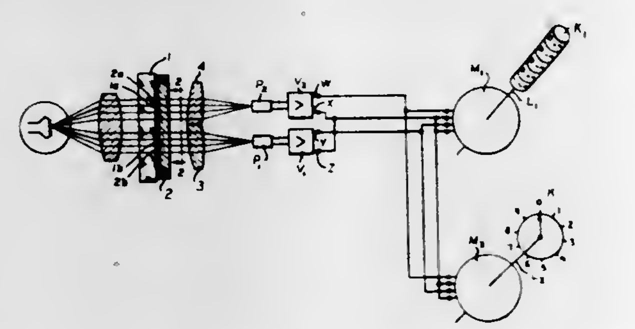


A display system wherein one or more consoles are arranged to simultaneously receive multiple category data signals from a single source which sequentially transmits each category of data signals to the consoles. The signals contain continually changing sequential positional information as might represent a moving target, vessel or aircraft. The multiple categories of data may be statically presented as symbols on a console and an operator at a console may select certain of these categories of data for dynamic display of the changing positional information, the console being responsive only to data in the category selected. In addition the selected categories of data may be transmitted into storage, processing or computing means as may be required.

3,403,392
APPARATUS FOR MEASURING OF LENGTHS BY IMPULSE COUNTING

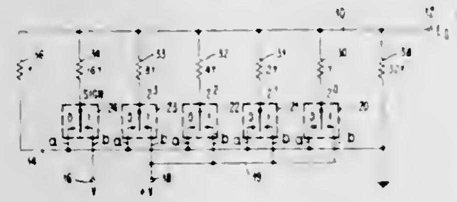
**Horst Wogatzke, Dusseldorf-Grafenberg, Germany, assignor to Wenczler & Heidenhain, Traunreut, near Traunstein, Germany, a corporation of Germany
Filed July 31, 1964, Ser. No. 386,695
Claims priority, application Germany, Aug. 1, 1963, W 35,000
2 Claims. (Cl. 340—347)**

An apparatus for measuring the position of two parts longitudinally or rotatably movable relative to each other comprising a light source for passing light through an immovable grid and a grid of a photo-electric cell disposed parallel thereto and reciprocable or rotatably movable in its plane. An indicating device is electrically connected to the photo-electric cell for transmitting impulses received from the photo-electric cell, and comprises electronic multi-vibrators and counting arrangements for providing an indication of the measurement and includes a synchronous motor having a rotor including a shaft, the counter including a drive shaft with the rotor shaft coupled to the drive shaft of the counter.



3,403,393
BIPOLAR DIGITAL TO ANALOG CONVERTER

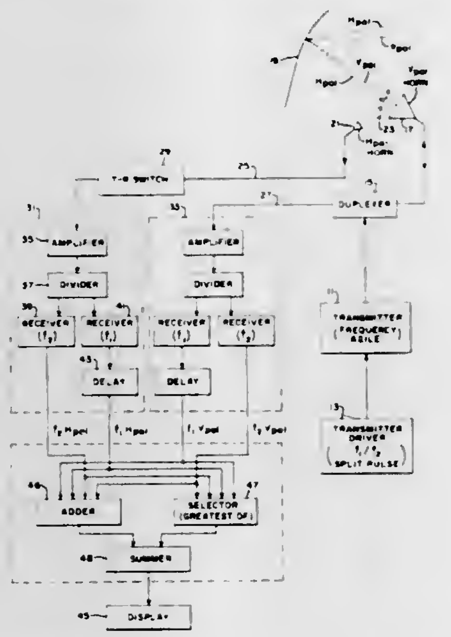
David H. Skrenes, Rochester, Minn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 24, 1964, Ser. No. 420,879
7 Claims. (Cl. 340—347)



A bipolar digital to analog converted for use with a complementary numbers system including a resistance network made up of a plurality of weighted summing resistors connected to an output terminal at one end and selectively switched between either two voltages at the other end. A further similar voltage device is provided at the output terminal, which responds in accordance with the value of a sign digit to shift the output voltage into the negative range.

3,403,394
DIVERSITY RADAR SYSTEM

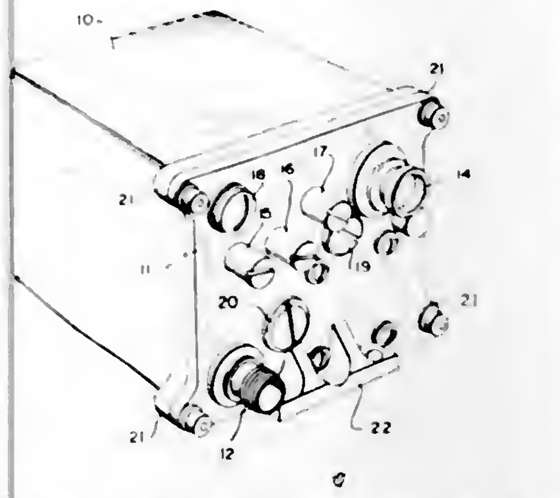
Charles L. Rouault, Boxford, Mass, assignor to General Electric Company, a corporation of New York
Filed July 19, 1966, Ser. No. 566,377
6 Claims. (Cl. 343—5)



This disclosure describes radar systems utilizing diversity of frequency and polarization for improved performance and improved reliability of performance in the presence of propagation anomalies in the atmosphere. Specifically described are radar antenna constructions enabling signal transmission and reception by a single antenna with diversity of both polarization and frequency, and means for additively combining and selectively processing signal returns to optimize the usable information output under different radar operating conditions.

3,403,395
COMPACT ELECTRONIC DEVICE WITH COMPONENTS MOUNTED ON A CASE COVER

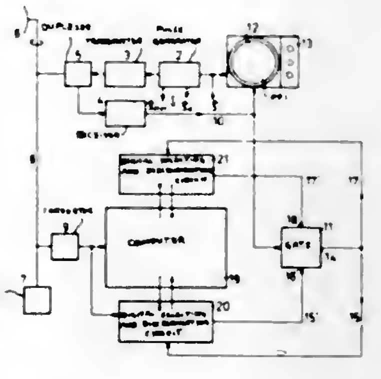
Joseph C. Gundry, Phoenix, and Walter J. Noble, Mesa, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Oct. 22, 1965, Ser. No. 500,572
12 Claims. (Cl. 343—6.8)



All components of an electronic device are mounted on a heat sink cover and insertable into an open ended case. The components are movable a slight amount toward and away from the cover and when inserted into the case all components are under compression for preventing vibration. High heat dissipating components are mounted adjacent the cover with compressible material being between components remote from the cover.

3,403,396
AUTOMATIC TARGET TRACKING SYSTEMS

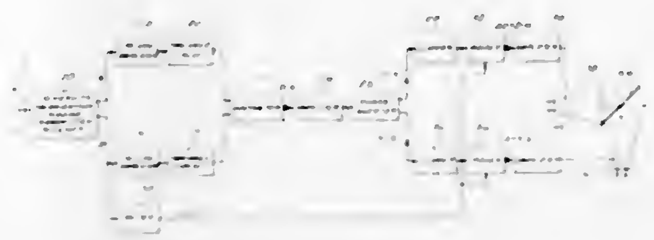
Yftinus Frederik van Popta and Jan Dirk Ehbel, Hengelo, Netherlands, assignors to N.V. Hollandse Signaalapparaten, Hengelo Overijssel, Netherlands, a firm of the Netherlands
Filed Sept. 7, 1966, Ser. No. 577,647
Claims priority, application Netherlands, Sept. 14, 1965, 6511921
13 Claims. (Cl. 343—7.3)



An automatic tracking system for a pulse radar, in which the azimuth and range tracking circuits are provided with storage means for storing predicted target positions received from a digital computer and for storing actual target positions for application to the computer. The times of information exchange with the computer is determined by the computer. In the azimuth tracking circuit the storage means includes a counter in which both predicted and actual positions are stored, and the actual position signals are derived from the difference between the summed outputs of two halves of a shift register to which the video pulses are applied. In the range tracking circuit, the predicted and actual position signals are stored in separate counters, and the storage in the actual position counter may be the sum of a plurality of errors in order to compensate for erroneous signals.

3,403,397
DUOCHROMATIC INDICATOR FOR A DIVERSITY POLARIZATION RADAR RECEIVER

Roger C. Harrington, Mineola, and George R. Latham IV, Great Neck, N.Y., assignors to Sperry Rand Corporation, a corporation of Delaware
Filed Oct. 14, 1955, Ser. No. 540,773
9 Claims. (Cl. 343—7.9)

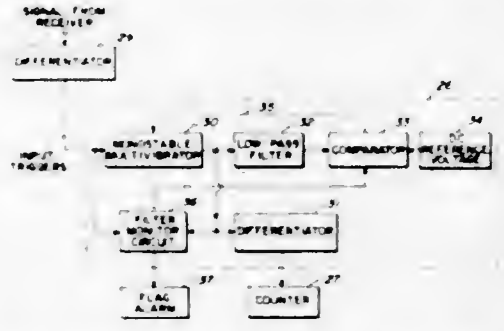


1. Radar apparatus comprising means for receiving radar echo pulses of microwave energy, said means including means having two output channels for deriving separate output pulses proportional in amplitude respectively to the directly-polarized and cross-polarized components of the received microwave energy, a lin-log amplifier coupled to each of the respective outputs of said means, a subtracter circuit coupled to the outputs of the lin-log amplifiers for producing a signal proportional to the difference between the two lin-log outputs, means for eliminating the signals applied to the subtracter means having an amplitude below a predetermined threshold level whereby only strong echo pulses are utilized, phase inverting means coupled to the difference signal output of the subtracter means for producing two signals having pulses of opposite sense, first and second clipping means coupled to the respective outputs of the phase inverting means, amplitude limiter means coupled to the directly-polarized component output of said receiving means, first and second summing means coupled respectively to the outputs of the first and second clipping means and to the output of the limiter means, a pair of cathode ray indicator tubes having different colored phosphor screens, the output of the first summing means being coupled to the intensity control of one indicator tube and the output of the second summing means being coupled to the intensity control of the second indicator tube, and means for superimposing the images formed on the screen of the two indicator tubes.

3,403,398
DOUBLE BOUNCE SECOND SIGNAL RETURN FILTER CORRECTED FMCW RADIO ALTIMETER

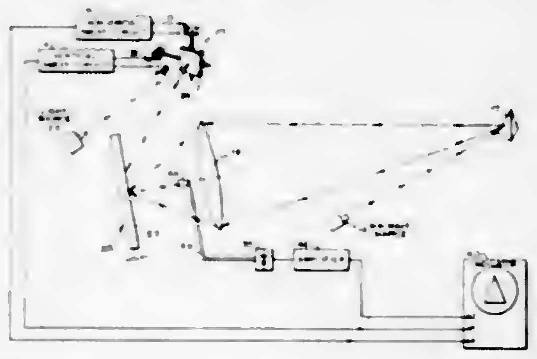
Kenneth J. Engholm, Cedar Rapids, John B. Majerus, Marion, Alan D. Snodgrass, Cedar Rapids, and Charles A. Weber, Marion, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed June 1, 1967, Ser. No. 642,831
10 Claims. (Cl. 343—14)

A filter circuit for a swept FMCW type radio altimeter system using a monostable multivibrator passing an output through a low pass filter to a voltage comparator circuit for developing a controlling feedback voltage to the monostable multivibrator. This provides a control of the monostable multivibrator active periods and coexistent waveform percentage dead time to a predetermined percentage of the input signal cycle periods. This provides for effective tracking of the frequency difference between the transmitted signal and the received ground reflected return signal and simultaneous filtering substantially complete attenuation rejection of difference signals between the transmitted signal and double bounce received signals. A monitor circuit used with the filter circuit compares the signal input to, and the output of the monostable multivibrator. When there is a difference between the two signals persisting beyond a time delay of approximately one half second then a switch trigger circuit is activated to provide a voltage signal through a differentiator circuit to the comparator circuit and thereby controlled adjustment of the monostable multivibrator to a higher frequency difference. A flag alarm is also connected for activation by the switch trigger circuit.



3,403,399
MILLIMETER WAVE IMAGING SYSTEM

Harold Jacobs, West Long Beach, N.J., Ronald C. Hofer, Brookville, Ind., and George E. Morris, Long Branch, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Mar. 10, 1967, Ser. No. 623,194
14 Claims. (Cl. 343—17)

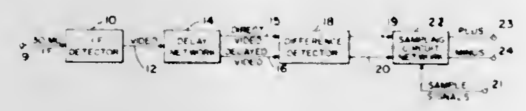


A visual presentation of a millimeter wave image formed on a layer of dielectric material or semiconductor of critical geometry is achieved by controlling over a wide range the magnitude of the millimeter wave radiation reflected from said layer by sequentially changing the conductivity of discrete regions of said layer under the influence of external scanning means, detecting the radiation so reflected, and applying the detected output to a visual indicating device the scanning of which is synchronized with said scanning means.

3,403,400
TARGET TRACKING RADAR FRONT EDGE TRACKING

George C. Emo, Raritan, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Nov. 1, 1967, Ser. No. 679,939
3 Claims. (Cl. 343—17.1)

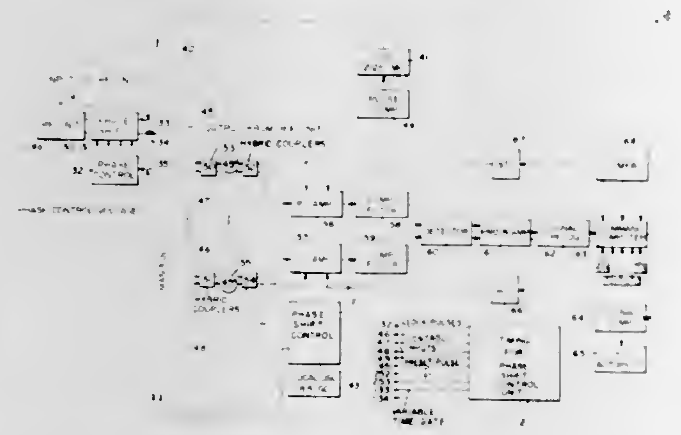
A target tracking radar that tracks returned wide echo signals caused by heating of an atmospheric re-entry body or explosion of a land vehicle. Heating of an atmospheric re-entry body or explosion of a land vehicle reflects a wide echo signal back to the target tracking



radar. With proper adjustment of a radar computer, either the leading or the trailing edge of the wide echo signal may be tracked.

3,403,401
DIGITAL PHASE SHIFT CONTROL FOR PHASED ARRAY RADAR

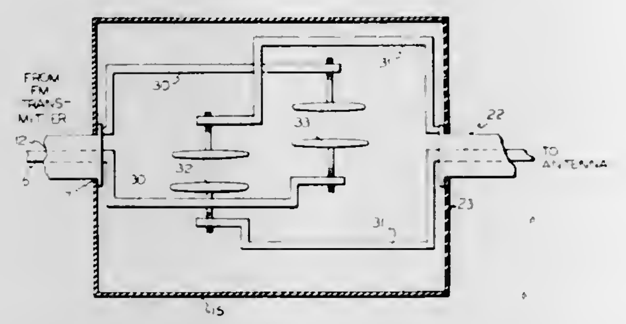
Harvey G. Cragon, Dallas, and Henry N. Peterson, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Texas, a corporation of Delaware
Filed Nov. 25, 1966, Ser. No. 597,003
10 Claims. (Cl. 343—100)



Phase shift across a phased array radar antenna is controlled, for transmitting the radar signals to antenna elements, through a delay means of variable length provided for each element, by the use of clock pulses in a pulse counting and dividing logic to apply graded numbers of pulses corresponding with the desired phase shifts to switching elements which control the effective electrical length of the delay means.

3,403,402
FM ISOLATION TRANSFORMER COUPLING TO DUAL FREQUENCY TRANSMITTER ANTENNA

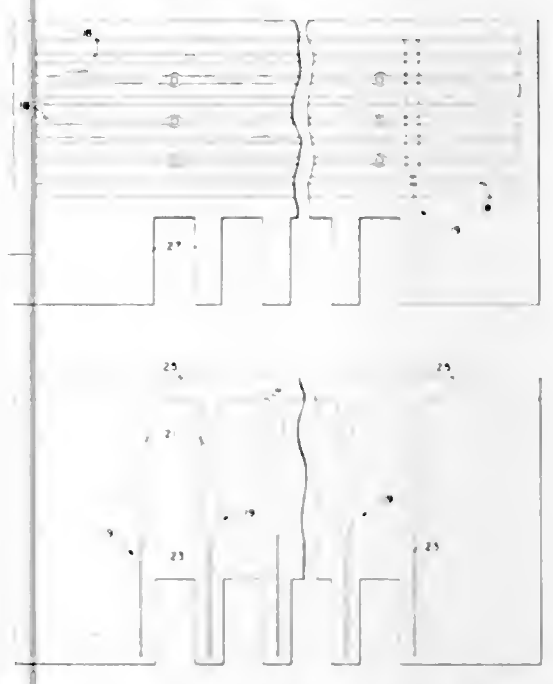
Robert M. Silliman, Silver Spring, Md., assignor to Electronics Research, Inc., Evansville, Ind., a corporation of Indiana
Filed Mar. 23, 1966, Ser. No. 536,717
2 Claims. (Cl. 343—208)



An isolation transformer is disclosed for coupling between a transmitter and an antenna to operate at two differing frequencies such as used in AM-FM transmission. Structure including a grounded metal housing with a portion insulated envelops internal coupling elements including a tuned R-F transformer arrangement coupling the antenna and transmitter radio frequency energy between two electrically isolated coaxial lines.

3,403,403
ANTENNA FILTER WINDOW

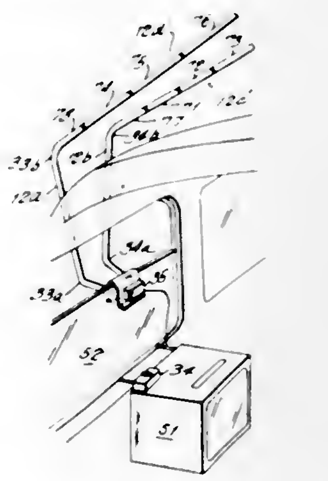
James E. Howell, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 8, 1966, Ser. No. 534,981
10 Claims. (Cl. 343—708)



1. A filter means comprising a device having a first plurality of radiation pickup means, each of said pickup means having a first and a second end, first means electrically connecting the first ends to each other, a plurality of transmission line means individually connected to the second ends of said pickup means, and each transmission means being a quater-wave open circuit transmission line for a predetermined frequency, whereby for radiation at said frequency each of said pickup means will appear to be short circuited.

3,403,404
PORTABLE ANTENNA ASSEMBLY

Jerome Berger, North Woodmere, Frank Guido, Brooklyn, and John Fesko, Jr., Fayetteville, N.Y., assignors, by mesne assignments, to Stratford Retreat House, White Plains, N.Y., a religious organization of New York
Filed Apr. 29, 1966, Ser. No. 546,378
7 Claims. (Cl. 343—713)

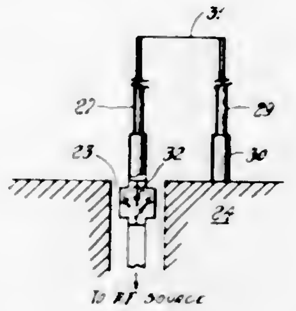


1. An antenna assembly comprising a window mounting assembly including a substantially U-shaped bracket;
- a pair of dipole elements;
- means for removably coupling the inboard ends of said dipole elements to one arm of said bracket;
- sheathed conductive means having a first end thereof electrically coupled to the inboard ends of said dipole elements and being arranged to follow the general contour of said bracket member;
- the opposite end of said sheathed conductive means being located near the end of the remaining arm of said bracket;
- cable means electrically coupled to said sheathed conductor means for coupling the antenna assembly to a receiver;
- first and second resilient sheets being secured to the inner surfaces of said bracket arms for embracing and frictionally engaging the rolled down window of an automobile to permit said antenna assembly to be rigidly mounted thereto.

3,403,405
TELESCOPING FOLDED MONOPOLE WITH CAPACITANCE AT INPUT

Richard Barrar, Beverly Hills, Calif., and Albert R. Giddis, Lowell, Mass., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Jan. 8, 1965, Ser. No. 424,449
1 Claim. (Cl. 343—745)

1. An adjustable broadband folded monopole antenna system for operation in conjunction with a ground plane which comprises:
- a fed metallic antenna section having a plurality of extensible intertelescoping elements,
- an unfed metallic antenna section having a plurality of extensible intertelescoping elements,
- said ground plane having an aperture therethrough opening outwardly thereof,
- said unfed section having one end thereof affixed to said ground plane and extending outwardly thereof,
- said fed section disposed with one end proximate said aperture, aligned with and isolated from said ground plane,
- a series capacitance connected to said one end of said fed section and disposed entirely within said aperture,



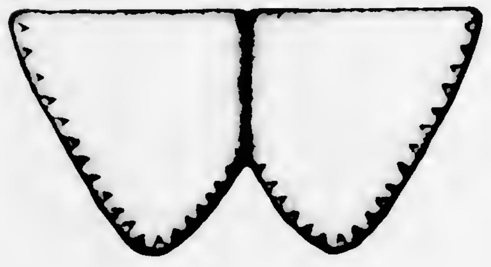
- said capacitance having an impedance equal to the inductive impedance of said antenna at its lowest tuned frequency, and
- a coupling electrically connecting the free ends of said sections,
- whereby when a transmission line is connected to said one end to feed R.F. energy thereto and therefrom, the length of said antenna may be adjusted to provide proper broadband matching and radiation characteristics.

DESIGNS

SEPTEMBER 24, 1968

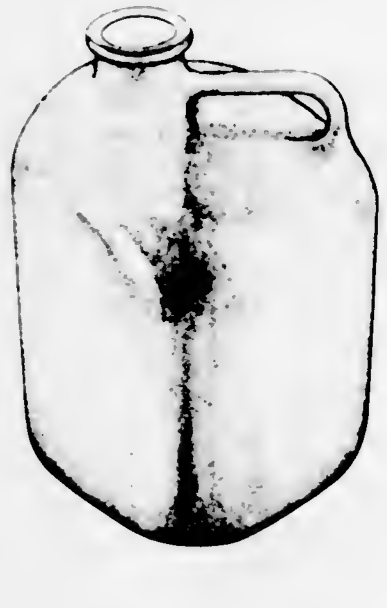
212,274
TURNOVER PIE

George W. Evans, 273 Wentworth Ave.,
Salt Lake City, Utah 84115
Filed Oct. 30, 1967, Ser. No. 9,214
Term of patent 14 years
(Cl. D1—11)



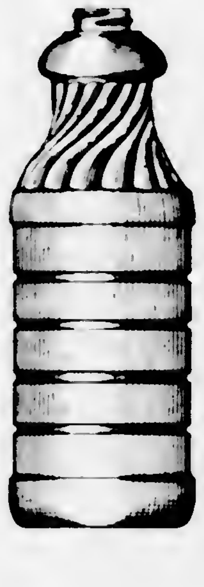
212,275
JUG

Raymon E. Hobbs and James A. Shepler, Toledo, Ohio, assignors to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Mar. 29, 1967, Ser. No. 6,434
Term of patent 14 years
(Cl. D9—47)



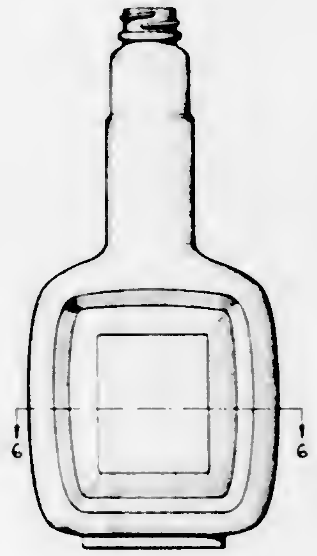
212,276
BOTTLE

William F. Lodding, Wilmington, Del., and Martin Kaplan, Highland Park, Ill., assignors, by direct and mesne assignments, to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware
Filed Nov. 1, 1967, Ser. No. 9,236
Term of patent 14 years
(Cl. D9—107)



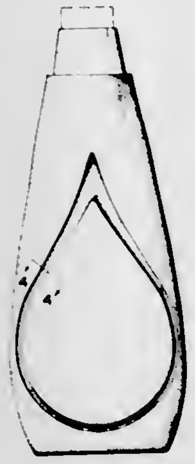
212,277
DECANTER

Walter T. Heintze, New Canaan, Conn., assignor to Schenley Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 20, 1967, Ser. No. 8,674
Term of patent 14 years
(Cl. D9—137)



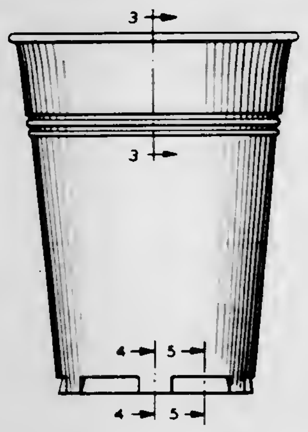
212,278
BOTTLE

Richard L. Weckman, Perrysburg, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Feb. 19, 1968, Ser. No. 10,621
Term of patent 14 years
(Cl. D9—143)



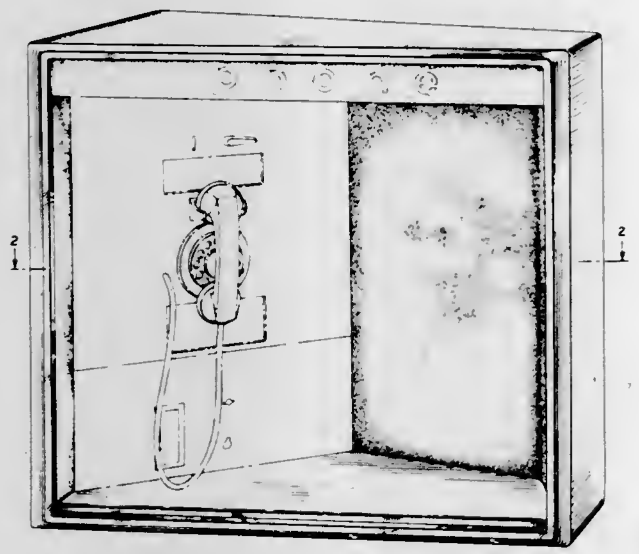
212,279
DRINKING CUP

Herbert Lewis Bennett, Geneva, Ill., and Kenneth William Fuge, Easton, Pa., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed May 29, 1967, Ser. No. 7,285
Term of patent 14 years
(Cl. D9—220)



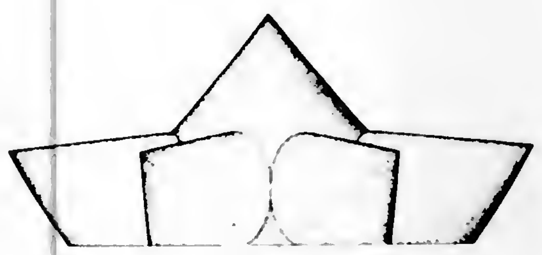
212,280
COIN TELEPHONE WALL BOOTH

Rembert R. Stokes, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed July 3, 1967, Ser. No. 7,683
Term of patent 14 years
(Cl. D13—1)



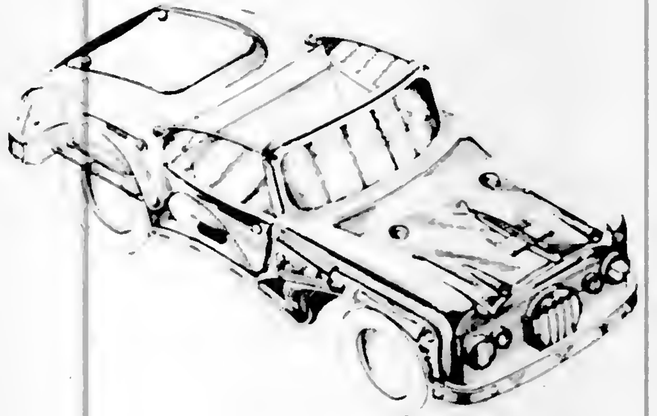
212,281
DOMICAL STRUCTURE

Helen Bryan English, Los Angeles, Calif.
(16725 Knollwood Drive, Granada Hills, Calif. 91344)
Filed Jan. 31, 1968, Ser. No. 10,379
Term of patent 14 years
(Cl. D13—1)



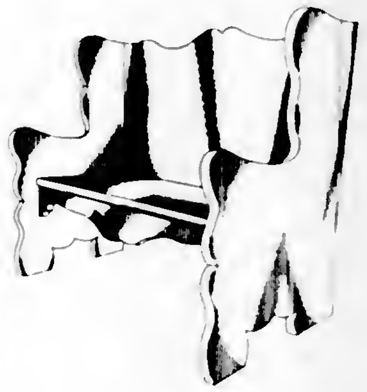
212,282
MOTOR VEHICLE

Adolph J. Campos, 950 McCarter Highway, Newark, N.J. 07102
Filed Mar. 1, 1968, Ser. No. 10,850
Term of patent 14 years
(Cl. D14—3)



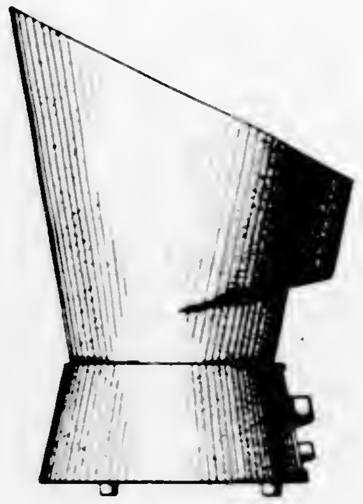
212,283
BENCH

Herbert E. Spencer, 3852 Division Ave. SE., Grand Rapids, Mich. 49508
Filed June 7, 1967, Ser. No. 7,399
Term of patent 14 years
(Cl. D15—11)



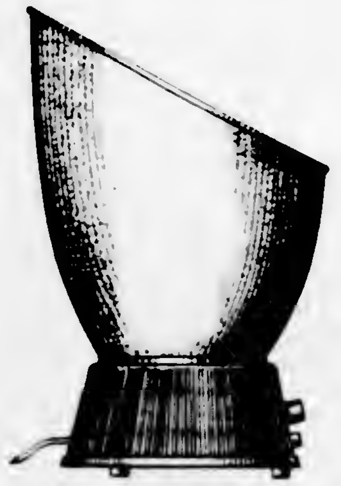
212,284
VAPORIZER APPLIANCE OR SIMILAR ARTICLE

Bernard A. Mitchell, 33 N. La Salle St., Chicago, Ill. 60602
Filed Nov. 22, 1967, Ser. No. 9,501
Term of patent 14 years
(Cl. D23—148)



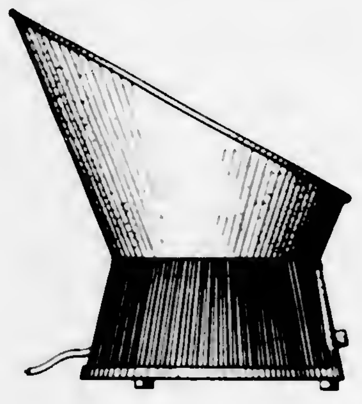
212,285
VAPORIZER APPLIANCE OR SIMILAR ARTICLE

Bernard A. Mitchell, 33 N. La Salle St., Chicago, Ill. 60602
Filed Nov. 22, 1967, Ser. No. 9,505
Term of patent 14 years
(Cl. D23—148)



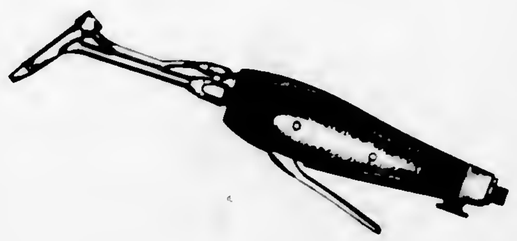
212,286
VAPORIZER APPLIANCE OR SIMILAR ARTICLE

Bernard A. Mitchell, 33 N. La Salle St., Chicago, Ill. 60602
Filed Nov. 22, 1967, Ser. No. 9,510
Term of patent 14 years
(Cl. D23—148)



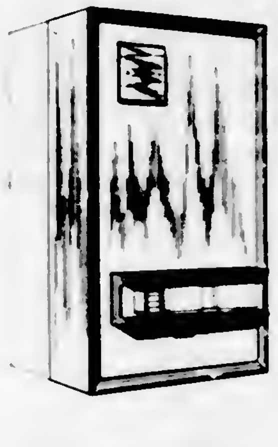
212,287
PIEZOELECTRICALLY IGNITED GAS TORCH

Theodore Frank Deucher, 6016 Westminster Drive, Parma, Ohio 44129
Continuation-in-part of design application Ser. No. 6,235, Mar. 15, 1967. This application Dec. 11, 1967, Ser. No. 9,720
Term of patent 14 years
(Cl. D26—1)



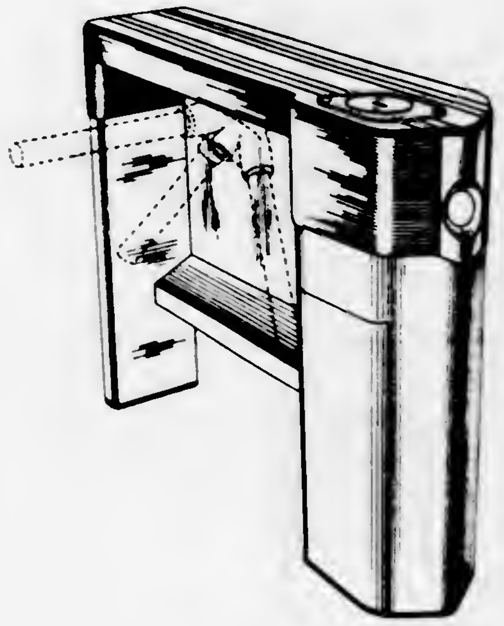
212,288
ELECTRICAL CONTROLLER CASING

Raymond L. Erickson, Brookfield, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Oct. 23, 1967, Ser. No. 9,127
Term of patent 14 years
(Cl. D26—13)

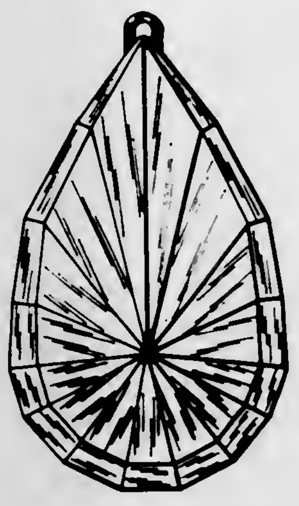


212,289
TURNSTILE

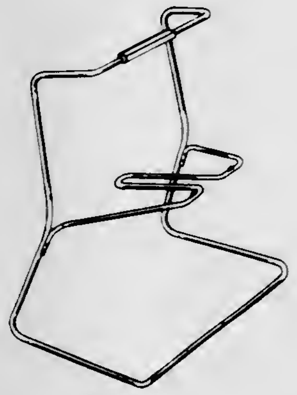
Robert H. Ensign, Bronxville, N.Y., assignor to Perey Manufacturing Co., Inc., New York, N.Y., a corporation of New York
Filed Mar. 5, 1968, Ser. No. 10,583
Term of patent 14 years
(Cl. D28—1)



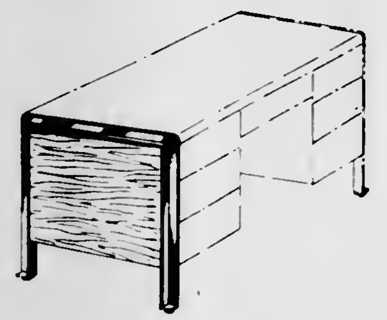
212,290
CHRISTMAS TREE ORNAMENT OR SIMILAR ARTICLE
Jack Burnbaum, Newton, Mass., assignor to Bradford Novelty Co., Inc., Cambridge, Mass., a corporation of Massachusetts
Filed July 26, 1967, Ser. No. 7,990
Term of patent 14 years
(Cl. D29—1)



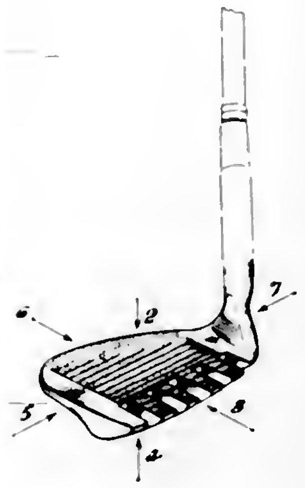
212,291
TRAY TABLE RACK
John J. Hamilton and Charles E. Schroer, Columbus, Ind., assignors to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana
Filed Apr. 13, 1967, Ser. No. 6,675
Term of patent 14 years
(Cl. D33—3)



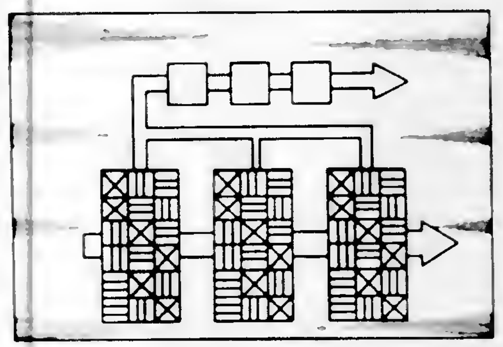
212,292
DESK OR SIMILAR ARTICLE
Alexis M. Yermakov, San Francisco, Calif., assignor to Stow & Davis Furniture Company, Grand Rapids, Mich., a corporation of Michigan
Filed Aug. 29, 1967, Ser. No. 8,413
Term of patent 14 years
(Cl. D33—7)



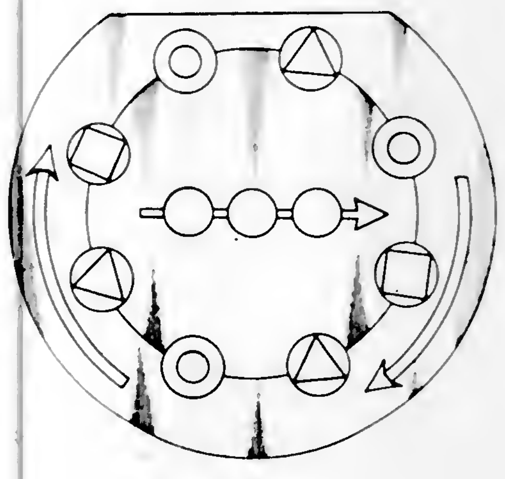
212,293
SAND WEDGE GOLF CLUB HEAD
Lester Z. Brown, Jr., 4816 Glencairn Road, Los Angeles, Calif. 90027
Filed Oct. 9, 1967, Ser. No. 8,929
Term of patent 14 years
(Cl. D34—5)



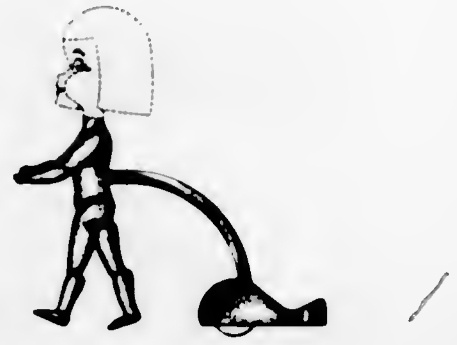
212,294
GAME BOARD
Charles J. Schultz, P.O. Box 5324, Reno, Nev. 89503
Filed Jan. 25, 1968, Ser. No. 10,299
Term of patent 14 years
(Cl. D34—5)



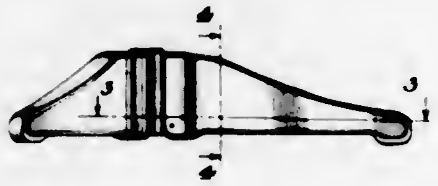
212,295
GAME BOARD
Charles J. Schultz, P.O. Box 5324, Reno, Nev. 89503
Filed Jan. 25, 1968, Ser. No. 10,310
Term of patent 14 years
(Cl. D34—5)



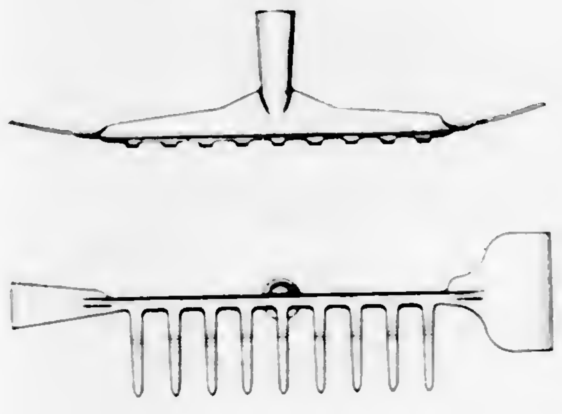
212,296
COMBINED DOLL AND VEHICLE
Joyce C. Clark, San Pedro, Cyril Gordon Shireman, Rolling Hill Estates, David Weissmann, Palos Verdes, and John W. Gardner, Hermosa Beach, Calif., assignors to Mattel, Inc., a corporation of California
Filed Nov. 21, 1967, Ser. No. 9,484
Term of patent 14 years
(Cl. D34—15)



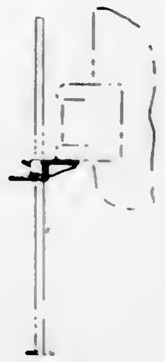
212,297
COLLAPSIBLE STAND FOR CHRISTMAS TREES
Duncan Tong, 23C Robinson Road, Victoria, Hong Kong
Filed Feb. 21, 1968, Ser. No. 10,662
Term of patent 14 years
(Cl. D35—3)



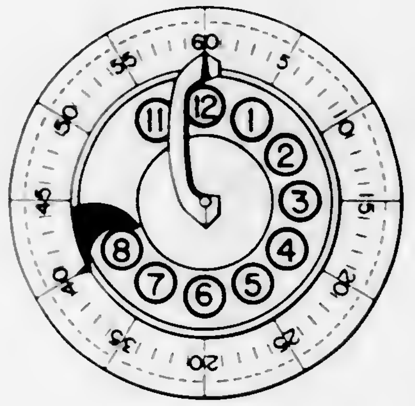
212,298
COMBINED GARDEN RAKE AND HOE
William J. Roberts, Portland, Oreg., assignor to Jeanie Rake-Hoe Co., Inc., a corporation of Oregon
Filed Apr. 11, 1967, Ser. No. 6,629
Term of patent 14 years
(Cl. D39—1)



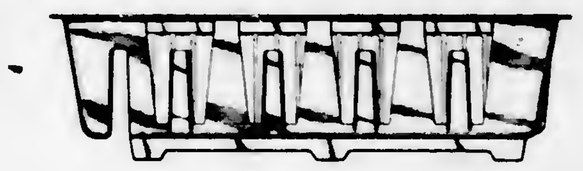
212,299
ADJUSTABLE STABILIZING SUPPORT FOR RECREATIONAL VEHICLES
Robert J. Fiers, 8195 Lesner Ave., Van Nuys, Calif. 91406
Filed Mar. 7, 1968, Ser. No. 10,890
Term of patent 14 years
(Cl. D41—1)



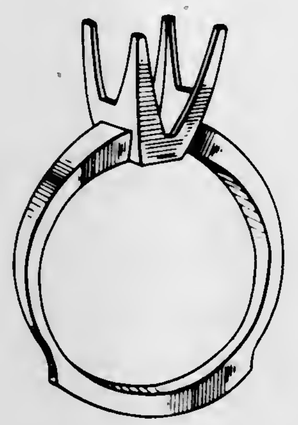
212,300
COMBINED FACE AND HANDS FOR A CLOCK
Leo M. Margolis, Jamaica, N.Y., assignor to Coro, Inc., Providence, R.I., a corporation of New York
Filed Oct. 23, 1967, Ser. No. 9,107
Term of patent 14 years
(Cl. D42—7)



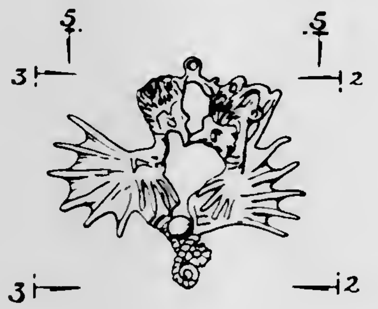
212,301
DISH DRAINER
William D. Taylor, Wooster, Ohio, assignor to Rubbermaid Incorporated, Wooster, Ohio, a corporation of Ohio
Filed Aug. 28, 1967, Ser. No. 8,408
Term of patent 14 years
(Cl. D44—29)



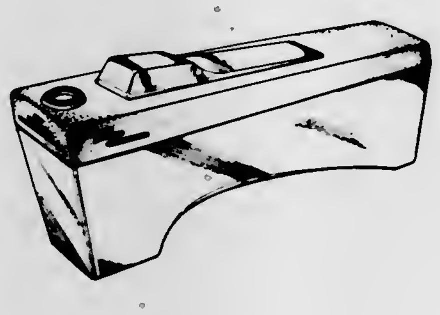
212,302
FINGER RING
Albert C. Lodrini, 697 Hillcrest Road, Washington Township, Westwood, N.J. 07675
Filed Feb. 16, 1968, Ser. No. 10,619
Term of patent 14 years
(Cl. D45—10)



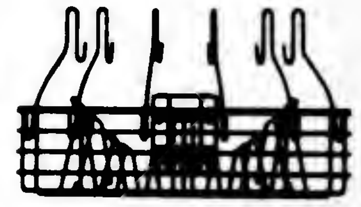
212,303
LAVALIERE
Helen Bryan English, Los Angeles, Calif.
(16725 Knollwood Drive, Granada Hills, Calif. 91344)
Filed Jan. 31, 1968, Ser. No. 10,378
Term of patent 14 years
(Cl. 45—17)



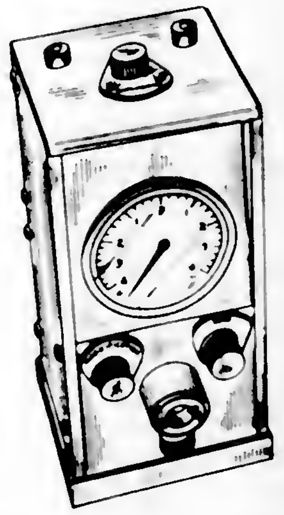
212,304
LIGHTER
Yasuhisa Ebine, Tokyo-to, Japan, assignor to Kabushiki Kaisha Crown Sangyo, Tokyo-to, Japan
Filed Dec. 5, 1967, Ser. No. 9,644
Term of patent 14 years
(Cl. D48—27)



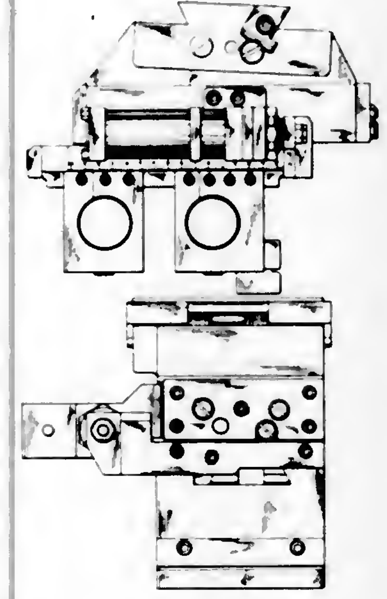
212,305
DISH AND UTENSIL BASKET FOR DISHWASHING MACHINES
George L. Hilleman, St. Louis County, Mo., assignor to Vulcan Manufacturing Company, Inc., St. Louis, Mo., a corporation of Missouri
Filed Jan. 3, 1967, Ser. No. 5,289
Term of patent 3½ years
(Cl. D49—1)



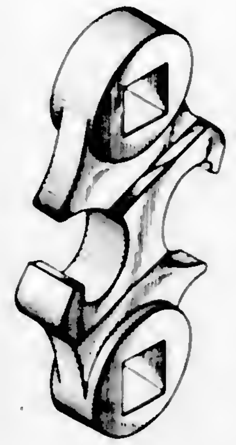
212,306
AIR GAUGE
William A. Minix, Detroit, Mich., assignor to Freeland Gauge Company, Detroit, Mich., a corporation of Michigan
Filed Oct. 12, 1967, Ser. No. 8,970
Term of patent 14 years
(Cl. D52—6)



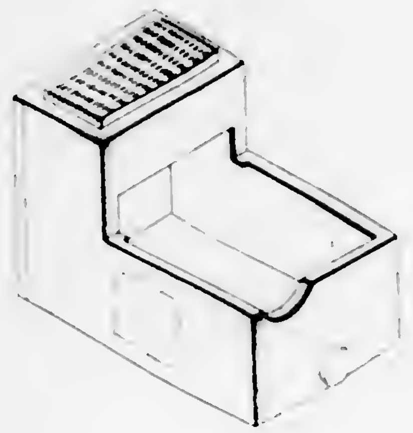
212,307
SLIDE HEAD TOOL
Howard W. Dase, Strongsville, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 30, 1967, Ser. No. 8,431
Term of patent 14 years
(Cl. D54—6)



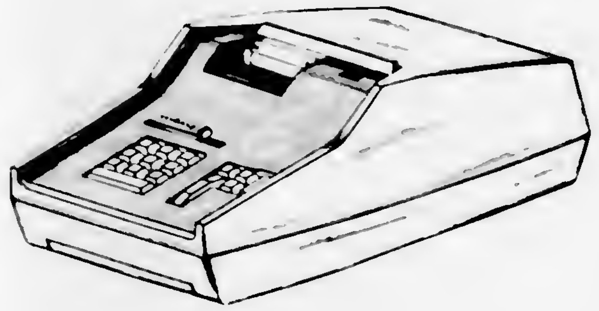
212,308
SPANNER WRENCH
Edwyn R. Selander, 0N020 Jefferson, Winfield, Ill. 60190
Filed Aug. 17, 1967, Ser. No. 8,309
Term of patent 14 years
(Cl. D54—16)



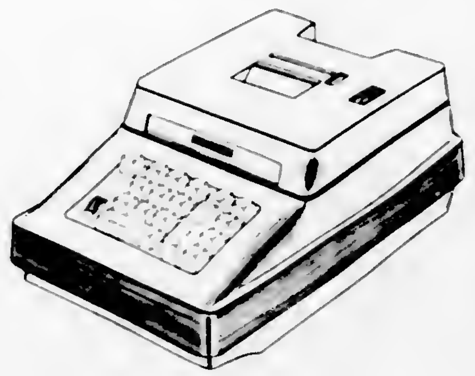
212,309
SUPPORT CABINET FOR A SLIDE PROJECTOR
William C. Ralke, 641 N. Highland Ave., Los Angeles, Calif. 90036, and Jack K. Duncan, 10436 San Jose St., Southgate, Calif. 90280
Filed Oct. 11, 1966, Ser. No. 4,230
Term of patent 14 years
(Cl. D61—1)



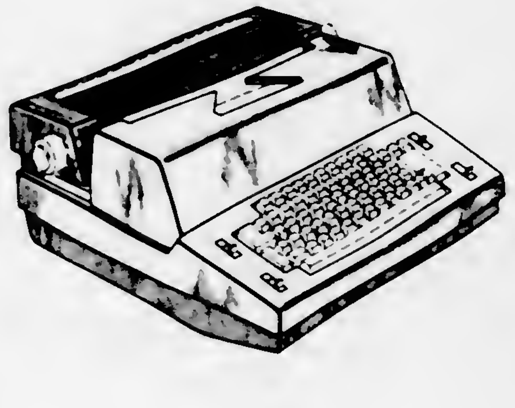
212,310
DESK CALCULATOR
Henry Dreyfuss, Pasadena, Calif., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 21, 1967, Ser. No. 7,927
Term of patent 3½ years
(Cl. D64—11)



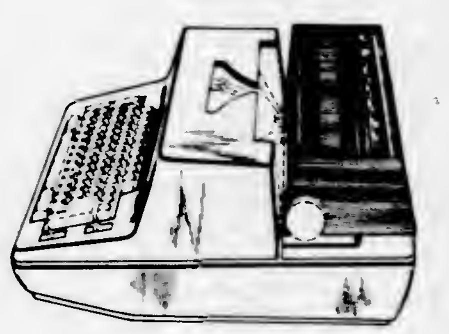
212,311
CALCULATING MACHINE
Carl Auboeck, Vienna, Austria, and Wolfgang Bindel, Wilhelmshaven, Germany, assignors to Olympia Werke AG, Wilhelmshaven, Germany
Filed Dec. 26, 1967, Ser. No. 9,923
Claims priority, application Germany Oct. 5, 1967
Term of patent 14 years
(Cl. D64—11)



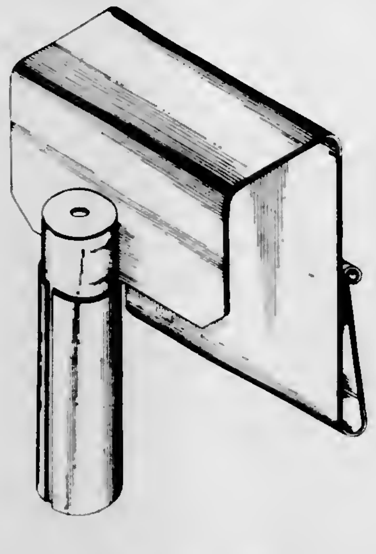
212,312
TYPEWRITER
Alfons Boothby, Wilhelmshaven, Germany, assignor to Olympia Werke AG, Wilhelmshaven, Germany
Filed Feb. 1, 1968, Ser. No. 10,391
Claims priority, application Germany Sept. 7, 1967
Term of patent 14 years
(Cl. D64—11)



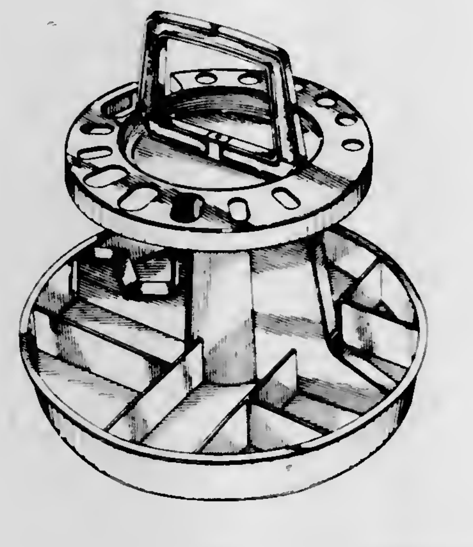
212,313
TYPEWRITER
Alfons Boothby, Wilhelmshaven, Germany, assignor to Olympia Werke AG, Wilhelmshaven, Germany
Filed Feb. 1, 1968, Ser. No. 10,404
Claims priority, application Germany Sept. 7, 1967
Term of patent 14 years
(Cl. D64—11)



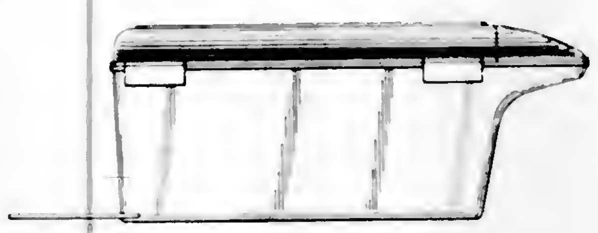
212,314
CLINICAL THERMOMETER HOLDER
Norma G. Walker, R.D. 1, Box 171,
Cortland, Ohio 44410
Filed Dec. 11, 1967, Ser. No. 9,743
Term of patent 14 years
(Cl. D83—1)



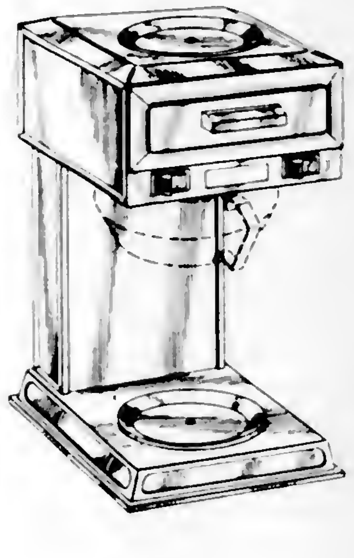
212,315
ROTARY TOOL CADDY
William D. Taylor, Wooster, Ohio, assignor to Rubbermaid Incorporated, Wooster, Ohio, a corporation of Ohio
Filed Mar. 31, 1967, Ser. No. 6,463
Term of patent 14 years
(Cl. D87—1)



212,316
STEREO TAPE CONTAINER
Daniel C. Larkin, Detroit, Mich., assignor to The Crest Manufacturing Co., Southfield, Mich., a corporation of South Carolina
Filed Mar. 22, 1967, Ser. No. 6,334
Term of patent 14 years
(Cl. D87—5)



212,317
COFFEE MAKER
Leonard P. Hausam, 5801 50th Ave. N.,
Minneapolis, Minn. 55424
Filed July 17, 1967, Ser. No. 7,837
Term of patent 14 years
(Cl. D94—3)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 24TH DAY OF SEPTEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- Briggs & Stratton Corp.: *See—*
  - Harkness, Joseph R., Sellenbinder, and Santi. Re. 26,462.
- Carrillo, Andres M., to Rotat-Coffee, Inc. Infusion machine. Re. 26,463, 9-24-68, Cl. 99—293.
- Closmann, Philip J., and M. Prats, to Shell Oil Co. Oil production method utilizing in situ chemical heating of hydrocarbons. Re. 26,466, 9-24-68, Cl. 166—11.
- Gryctko, Carl E., to I-T-E Circuit Breaker Co. Circuit breaker trip unit assembly with improved thermal characteristics. Re. 26,465, 9-24-68, Cl. 337—146.
- Harkness, Joseph R., R. W. Sellenbinder, and J. D. Santi, to Briggs & Stratton Corp. Means for reducing starting torque in four-cycle engines. Re. 26,462, 9-24-68, Cl. 123—182.
- I-T-E Circuit Breaker Co.: *See—*
  - Cryctko, Earl E. Re. 26,465.
- Lugli, Giuseppe. Pirelli S.p.A. Pneumatic tire and removable tread therefor. Re. 26,464, 9-24-68, Cl. 152—176.
- Pirelli S.p.A.: *See—*
  - Lugli, Giuseppe. Re. 26,464.
- Prats, Michael: *See—*
  - Closmann, Philip J., and Prats. Re. 26,466.
- Rotat-Coffee, Inc.: *See—*
  - Carrillo, Andres M. Re. 26,463.
- Santi, John D.: *See—*
  - Harkness, Joseph R., Sellenbinder, and Santi. Re. 26,462.
- Sellenbinder, Richard W.: *See—*
  - Harkness, Joseph R., Sellenbinder, and Santi. Re. 26,462.
- Shell Oil Co.: *See—*
  - Closmann, Philip J., and Prats. Re. 26,466.

LIST OF DESIGN PATENTEES

- American Can Co.: *See—*
  - Bennett, Herbert L., and Fuge. 212,279.
- Auboeck, Carl, and W. Bindel, to Olympia Werke AG. Calculating machine. 212,311, 9-24-68, Cl. D64—11.
- Beatrice Foods Co.: *See—*
  - Lodding, William F., and Kaplan. 212,276.
- Bell Telephone Laboratories, Inc.: *See—*
  - Stokes, Rembert R. 212,280.
- Bennett, Herbert L., and K. W. Fuge, to American Can Co. Drinking cup. 212,279, 9-24-68, D9—220.
- Bindel, Wolfgang: *See—*
  - Auboeck, Carl, and Bindel. 212,311.
- Boothby, Alfons, to Olympia Werke AG. Typewriter. 212,312, 9-24-68, Cl. D64—11.
- Boothby, Alfons, to Olympia Werke AG. Typewriter. 212,313, 9-24-68, Cl. D64—11.
- Brown, Lester Z., Jr. Sand wedge golf club head. 212,293, 9-24-68, Cl. D34—5.
- Burnbaum, Jack. Christmas tree ornament or similar article. 212,290, 9-24-68, Cl. D29—1.
- Campos, Adolph J. Motor vehicle. 212,282, 9-24-68, Cl. D14—3.
- Clark, Joyce C., C. G. Shireman, D. Weissmann, and J. W. Gardner, to Mattel, Inc. Combined doll and vehicle. 212,296, 9-24-68, Cl. D34—15.
- Coro Inc.: *See—*
  - Margolis, Leo M. 212,300.
- Crest Mfg. Co., The: *See—*
  - Larkin, Daniel C. 212,316.
- Cutler-Hammer, Inc.: *See—*
  - Erickson, Raymond L. 212,288.
- Dase, Howard W., to The Warner & Swasey Co. Slide head tool. 212,307, 9-24-68, Cl. D54—6.
- Deucher, Theodore F. Piezoelectrically ignited gas torch. 212,287, 9-24-68, Cl. D26—1.
- Dreyfuss, Henry, to Sperry Rand Corp. Desk calculator. 212,310, 9-24-68, Cl. D64—11.
- Duncan, Jack K.: *See—*
  - Ralke, William C., and Duncan. 212,309.
- Ebine, Yasuhisa, to Kabushiki Kaisha Crown Sangyo. Lighter. 212,304, 9-24-68, Cl. D48—27.
- English, Helen B. Domical structure. 212,281, 9-24-68, Cl. D13—1.
- English, Helen B. Lavaliere. 212,303, 9-24-68, Cl. D45—17.
- Ensign, Robert H., to Perey Mfg. Co., Inc. Turnstile. 212,289, 9-24-68, Cl. D28—1.
- Erickson, Raymond L., to Cutler-Hammer, Inc. Electrical controller casing. 212,288, 9-24-68, Cl. D26—13.
- Evans, George W. Turnover pie. 212,274, 9-24-68, Cl. D1—11.
- Fiers, Robert J. Adjustable stabilizing support for recreational vehicles. 212,299, 9-24-68, Cl. D41—1.
- Freeland Gauge Co.: *See—*
  - Minix, William A. 212,306.
- Fuge, Kenneth W.: *See—*
  - Bennett, Herbert L., and Fuge. 212,279.
- Gardner, John W.: *See—*
  - Clark, Joyce C., Shireman, Weissmann, and Gardner. 212,296.
- Hamilton, John J., and C. E. Schroer. Tray table rack. 212,291, 9-24-68, Cl. D33—3.
- Hausam, Leonard P. Coffee maker. 212,317, 9-24-68, Cl. D94—3.
- Heintze, Walter T., to Schenley Industries, Inc. Decanter. 212,277, 9-24-68, Cl. D9—137.
- Hilleman, George L., to Vulcan Mfg Co., Inc. Dish and utensil basket for dishwashing machines. 212,305, 9-24-68, Cl. D49—1.
- Hobbs, Raymon E., and J. A. Shepler, to Owens-Illinois, Inc. Jug. 212,275, 9-24-68, Cl. D9—47.
- Jeanie Rake-Hoe Co., Inc.: *See—*
  - Roberts, William J. 212,298.
- Kabushiki Kaisha Crown Sangyo: *See—*
  - Ebine, Yasuhisa. 212,304.
- Kaplan, Martin: *See—*
  - Lodding, William F., and Kaplan. 212,276.
- Larkin, Daniel C., to The Crest Mfg. Co. Stereo tape container. 212,316, 9-24-68, Cl. D87—5.
- Lodding, William F., and M. Kaplan, to Beatrice Foods Co. Bottle. 212,276, 9-24-68 Cl. D9—107.
- Lodrini, Albert C. Finger ring. 212,302, 9-24-68, Cl. D45—10.
- Margolis, Leo M., to Coro Inc. Combined face and hands for a clock. 212,300, 9-24-68, Cl. D42—7.
- Mattel, Inc.: *See—*
  - Clark, Joyce C., Shireman, Weissmann, and Gardner. 212,296.
- Minix, William A., to Freeland Gauge Co. Air gauge. 212,306, 9-24-68, Cl. D52—6.
- Mitchell, Bernard A. Vaporizer appliance or similar article. 212,284, 9-24-68, Cl D23—148.
- Mitchell, Bernard A. Vaporizer appliance or similar article. 212,285, 9-24-68 Cl. D23—148.
- Mitchell, Bernard A. Vaporizer appliance or similar article. 212,286, 9-24-68, Cl. D23—148.
- Olympia Werke AG: *See—*
  - Auboeck, Carl, and Bindel. 212,311.
  - Boothby, Alfons. 212,312.
  - Boothby, Alfons. 212,313.
- Owens-Illinois, Inc.: *See—*
  - Hobbs, Raymon E., and Shepler. 212,275.
  - Weckman, Richard L. 212,278.
- Perey Mfg. Co., Inc.: *See—*
  - Ensign, Robert H. 212,289.
- Ralke, William C., and J. K. Duncan. Support cabinet for a slide projector. 212 309, 9-24-68, Cl. D61—1.
- Roberts, William J., to Jeanie Rake-Hoe Co., Inc. Combined garden rake and hoe. 212,298, 9-24-68, Cl. 39—1.
- Rubbermaid Inc.: *See—*
  - Taylor, William D. 212,301.
  - Taylor, William D. 212,315.
- Schenley Industries, Inc.: *See—*
  - Heintze, Walter T. 212,277.
- Schroer, Charles E.: *See—*
  - Hamilton, John J., and Schroer. 212,291.
- Schultz, Charles J. Game board. 212,294, 9-24-68, Cl. D34—5.
- Schultz, Charles J. Game board. 212,295, 9-24-68, Cl. D34—5.
- Selander, Edwyn R. Spanner wrench. 212,308, 9-24-68, Cl. D54—16.
- Shepler, James A.: *See—*
  - Hobbs, Raymon E., and Shepler. 212,275.
- Shireman, Cyril G.: *See—*
  - Clark, Joyce C., Shireman, Weissmann, and Gardner. 212,296.
- Spencer, Herbert E. Bench. 212,283, 9-24-68, Cl. D15—11.
- Sperry Rand Corp.: *See—*
  - Dreyfuss, Henry. 212,310.
- Stokes, Rembert R., to Bell Telephone Laboratories, Inc. Coin telephone wall booth. 212,280, 9-24-68, Cl. D13—1.
- Stow & Davis Furniture Co.: *See—*
  - Yermakov, Alexis M. 212,292.
- Taylor, William D., to Rubbermaid Inc. Dish drainer. 212,301, 9-24-68, Cl. D44—29.
- Taylor, William D., to Rubbermaid Inc. Rotary tool caddy. 212,315, 9-24-68, Cl. D87—1.
- Tong, Duncan. Collapsible stand for Christmas trees. 212,297, 9-24-68, Cl. D35—3.
- Vulcan Mfg. Co., Inc.: *See—*
  - Hilleman, George L. 212,305.
- Walker, Norma G. Clinical thermometer holder. 212,314, 9-24-68, Cl. D83—1.
- Warner & Swasey Co., The: *See—*
  - Dase, Howard W. 212,307.
- Weckman, Richard L., to Owens-Illinois, Inc. Bottle. 212,278, 9-24-68, Cl. D9—143.
- Weissmann, David: *See—*
  - Clark, Joyce C., Shireman, Weissmann, and Gardner. 212,296.
- Yermakov, Alexis M., to Stow & Davis Furniture Co. Desk or similar article. 212,292, 9-24-68, Cl. D33—7.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 24TH DAY OF SEPTEMBER, 1968

Note—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- ACF Industries, Inc.: *See*—
  - Stevens, Eric S. 3,402,971.
- AMP Inc.: *See*—
  - Blair, Bryce W., and Friend. 3,402,662.
  - Couper, William D., and Bogar. 3,403,335.
  - Kinkaid, Robert J. 3,402,590.
- ARA, Inc.: *See*—
  - Epstein, George, Hewitt, and Mazelsky. 3,403,325.
- Abolins, Visvaldis, and R. M. Lukes, to General Electric Co. Asbestos-phosphoric acid molding composition. 3,403,038, 9–24–68, Cl. 106—63.
- Abrasive Products, Inc.: *See*—
  - Johnson, William L. 3,402,514.
- Achorn, George S.: *See*—
  - Rudner, Bernard, Achorn, and Hergenrother. 3,403,169.
- Adams, Doris E., ½ to H. L. Foster. Puzzle game. 3,402,934, 9–24–68, Cl. 273—156.
- Adams, Robert B., to Moore Products Co. Staged oscillating diverting valve. 3,402,728, 9–24–68, Cl. 137—81.5.
- Adrian, Velniceriu, T. Romulus, and M. Traian, to Ministerul Industriel Chimice. Method for the preparation of O,O-dimethyl-S-(1,2-dicarbethoxyethyl) dithiophosphate. 3,403,201, 9–24–68, Cl. 260—981.
- Aeon Products, (London) Ltd.: *See*—
  - Rix, Johannes. 3,402,924.
- Aeroprojects, Inc.: *See*—
  - Tarpley, William B., Jr., and McKinney. 3,402,665.
- Af Ekenstam, Bo T., and C. G. Claeson, to Aktiebolaget Bofors. Di-β-pyridyl methyl esters of isocinchomeronic acid. 3,403,160, 9–24–68, Cl. 260—295.5.
- Agfa-Gevaert Aktiengesellschaft: *See*—
  - Gemmer, Richard, and Scheffel. 3,402,636.
  - Jacknau, Alex, Wolf, Scheffel, and Beyer. 3,402,635.
- Agnon, Shmuel E., to The State of Israel, Ministry of Defense. Air filter installations. 3,402,530, 9–24–68, Cl. 55—350.
- Ahlborg, Nils K. G., to Stora Kopparbergs Bergslags Aktiebolag. Method for recovering chemicals from waste liquor obtained during the production of cellulose. 3,402,992, 9–24–68, Cl. 23—48.
- Aktiebolaget Bofors: *See*—
  - Af Ekenstam, Bo T., and Claeson. 3,403,160.
  - Nilsson, John M., and Bjorklund. 3,403,185.
- Aktiengesellschaft fr. Mettler's Sohne Maschinenfabrik: *See*—
  - Mettler, Hermann. 3,402,447.
- Akutin, Modest S.: *See*—
  - Kargin, Valentin A., Kotrelev, Akutin, Opolovenkov, Andrianov, and Kotrelev. 3,403,129.
- Albemarle Paper Co.: *See*—
  - Erickson, Richard C., and Williams. 3,403,045.
- Alexandrov, Evgeny V. Device for impact loading a solid body. 3,402,776, 9–24–68, Cl. 173—133.
- Allen-Bradley Co.: *See*—
  - Pearse, James N., and Mayer. 3,403,363.
- Allen, William A.: *See*—
  - Hart, William E., Allen, and Cunningham. 3,402,470.
- Allen, William W., Jr.: *See*—
  - Perkins, Cornelius C., Allen, Ayres, Dowds, and Levy. 3,403,386.
- Allied Chemical Corp.: *See*—
  - Beringer, Charles W. 3,402,752.
  - Craven, William J. 3,403,142.
  - Reimschuessel, Herbert K., and Boardman. 3,403,154.
  - Schmitt, George J., and Reimschuessel. 3,403,135.
- Allum, Keith G., and J. F. Ford, to The British Petroleum Co. Ltd. Sulphur- and chlorine-containing E.P. additives for lubricants. 3,403,101, 9–24–68, Cl. 252—48.4.
- Alm, Karl S., to Atlas Copco Aktiebolag. Acoustically deadened piling. 3,402,560, 9–24–68, Cl. 61—53.
- Altmann, Max: *See*—
  - Jenny, Hans, and Altmann. 3,402,483.
- Alwitt, Robert S.: *See*—
  - Santway, Robert W., and Alwitt. 3,403,305.
- American Air Filter Co., Inc.: *See*—
  - Berst, Albert H. 3,402,654.
- American Allsafe Co.: *See*—
  - Militello, James V. 3,402,882.
- American Can Co.: *See*—
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  - Colgan, Joseph D., and Ostroff. 3,403,111.
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  - Matsunaga, Yoshio. 3,403,150.
  - Matsunaga, Yoshio. 3,403,165.
  - Sanborn, William E., and Lindsley. 3,403,110.
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  - Zweig, Arnold. 3,403,296.
- American Gas Association, Inc.: *See*—
  - Witzky, Julius E., and Clark. 3,402,704.
- American Home Products Corp.: *See*—
  - Elsenhand, Henry R. 3,402,712.
  - Humber, Leslie G., and Davis. 3,403,155.
  - Humber, Leslie G., and Davis. 3,403,156.
  - Humber, Leslie G., and Davis. 3,403,157.
- American Standard, Inc.: *See*—
  - Kaiser, Jack N. 3,402,406.
  - Martin, George. 3,402,731.
- Ammondson, Clayton J.: *See*—
  - James, Forrest H., Jr., and Ammondson. 3,402,689.
- Ampex Corp.: *See*—
  - Boblett, Emil V. 3,403,387.
- Amtek, Inc.: *See*—
  - Gruner, Frederick R. 3,402,823.
- Anaconda Co., The: *See*—
  - Von Dreusche, Charles F., Jr., and Sullivan. 3,402,920.
- Anaconda Wire and Cable Co.: *See*—
  - Walker, James J. 3,403,063.
- Anchor Hocking Glass Corp.: *See*—
  - Smith, Wendell S. 3,403,016.
- Andersen, Harry M., J. D. Gabbett, and O. D. Deex, to Monsanto Co. Processes for preparing ethylene/vinyl chloride copolymers. 3,403,137, 9–24–68, Cl. 260—87.5.
- Anderson Brass Co.: *See*—
  - Kass, Gerald H. 3,402,739.
- Andersson, Carl H. L. Tray combined with a breadbox. 3,402,878, 9–24–68, Cl. 220—4.
- Ando, Takashi: *See*—
  - Itagaki, Yusuke, and Ando. 3,403,290.
- Andrews, Edythe D. Drain cover. 3,402,407, 9–24–68, Cl. 4—293.
- Andrews, James D., to General Electric Co. Electrolytic material removal wherein the current-voltage relationship is in the "Kelogg region." 3,403,084, 9–24–68, Cl. 204—143.
- Andrianov, Boris V.: *See*—
  - Kargin, Valentin A., Kotrelev, Akutin, Opolovenkov, Andrianov, and Kotrelev. 3,403,129.
- Anheuser-Busch, Inc.: *See*—
  - Hunt, Walter G. 3,403,146.
- Anner, Georg, and P. Wieland, to Ciba Corp. Process for the manufacture of 3-oxo-7α-methyl-17-ethylene-dioxy-$\Delta^{1,4}$-androstadiene. 3,403,148, 9–24–68, Cl. 260—239.55.
- Antonucci, Carmine J.: *See*—
  - Potter, John T., Foley, and Antonucci. 3,402,657.
- Apfelbeck, Otto L., to Westinghouse Electric Corp. Temperature compensated tunnel diode voltage comparator circuit. 3,403,265, 9–24–68, Cl. 307—235.
- Appleman, Larry: *See*—
  - Frielinghaus, Klaus H., Wetmore, and Appleman. 3,403,382.
- Aregger, Alois, to Nahma AG. Automatic repeating apparatus. 3,403,067, 9–24–68, Cl. 274—15.
- Armour Agricultural Chemical Co.: *See*—
  - Mustian, William R., Jr. 3,402,997.
- Armour and Co.: *See*—
  - Story, Julian R., Norman, and Jungermann. 3,403,106.
- Arnoldy, Roman F. Method of making abrasion resistant plate. 3,402,459, 9–24–68, Cl. 29—528.
- Artymyshyn, Bohdan: *See*—
  - Jordan, Edmund F., Jr., Artymyshyn, and Wrigley. 3,403,172.
- Asaff, Annis G., to Diamond Tool Engineering Co. Method of sealing aluminum oxide bodies to metals. 3,402,458, 9–24–68, Cl. 29—470.5.
- Asai, Ken W.: *See*—
  - Feder, Ralph, Asai, Charbnau, and Mannheimer. 3,402,632.
- Ashkin, Arthur, and H. W. Kogelnik, to Bell Telephone Laboratories, Inc. Frequency selective laser devices. 3,403,348, 9–24–68, Cl. 330—4.3.
- Assahi Kasei Kogyo Kabushiki Kaisha: *See*—
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- Babcock, John C.: *See*—
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- Bach, Ricardo O., to Lithium Corp. of America. Method of preparing alkali metal iodides. 3,402,995, 9–24–68, Cl. 23—89.
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  - Dickerson, Devere C., and Bachorski. 3,402,703.
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- Baker, John D., Jr., to Stewart Warner Corp. Electrical tachometer sender. 3,403,276, 9–24–68, Cl. 310—156.
- Baker, Owen R., R. M. Gubbins, and R. G. Hentschel, to Baker & Gubbins Co. Liquid applicator system. 3,402,695, 9–24–68, Cl. 118—7.
- Baker, Randolph H. Measurement of currents in liquids. 3,402,605, 9–24–68, Cl. 73—194.
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- Banks, David E., to United Shoe Machinery Corp. Controls for cutting presses. 3,402,626, 9–24–68, Cl. 83—57.
- Barbour, William P., and H. L. Cook, Jr., to Farrington Business Machines Corp. Control means for traveling platen roller in bed and cylinder printing machines. 3,402,661, 9–24–68, Cl. 101—269.
- Barclay, Curle & Co., Ltd.: *See*—
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- Barde, Rene, R. Buvet, J. Millet, J. Dubois, S. Palous, and N. Busson, to Electricite de France-Service National. Method of operating a fused alkali carbonate fuel cell. 3,403,056, 9–24–68, Cl. 136—86.
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- Barrar, Richard, and A. R. Giddis, to United States of America, Navy. Telescoping folded monopole with capacitance at input. 3,403,405, 9–24–68, Cl. 343—745.
- Barry, Frank W., to United Aircraft Corp. Attitude biased mach sensor. 3,402,726, 9–24–68, Cl. 137—15.2.
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- Becker, Floyd K., L. N. Holzman, E. Port, and H. R. Rudin, Jr., to Bell Telephone Laboratories, Inc. Automatic mean-square equalizer. 3,403,340, 9–24–68, Cl. 325—42.
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- Bennett, Harold E., to United States of America, Navy. Instrument for measuring absolute reflectance and transmittance at cryogenic temperatures. 3,402,634, 9–24–68, Cl. 88—14.
- Bennett, Roswell J., to Union Carbide Corp. Battery powered signal unit. 3,403,249, 9–24–68, Cl. 240—10.63.
- Benson, Burton A., to Minnesota Mining and Mfg. Co. Resin coated single fibers for molding compositions. 3,403,069, 9–24–68, Cl. 161—170.
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- Beringer, Charles W., to Allied Chemical Corp. Reinforcing cord and tire therefrom. 3,402,752, 9–24–68, Cl. 152—359.
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- Berry, Foster W.: *See*—
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- Bettis, Edward S., to United States of America, Atomic Energy Commission. Molten salt breeder reactor and fuel cell for use therein. 3,403,070, 9–24–68, Cl. 176—18.

- Beun, Jacobus P.: *See*—
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- Blatter, Herbert M., R. W. J. Carney, and G. de Stevens, to Ciba Corp. 1-aryl-4-imino-1,2-dihydroquinazolines. 3,403,153, 9–24–68, Cl. 260—256.4.
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- Blount, Charles, Jr., and A. Niepraschk, to United Piece Dye Works. Apparatus for high-temperature dyeing or finishing of a fabric material. 3,402,577, 9–24–68, Cl. 68—9.
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- Bogar, Jerry H.: *See*—
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- Bohdansky, Josef, R. Caron, and H. Strub, to European Atomic Energy Community (Euratom). Heat pipes. 3,402,767, 9–24–68, Cl. 165—105.
- Bollito, Jack, J. Heinlein, and C. R. Demmett, to J & J Tool Co. Chamfering tools. 3,402,624, 9–24–68, Cl. 77—73.
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- Borrelli, Ronald N., R. A. Edwards, C. A. Lindberg, H. F. Noller, R. I. Stitt, and J. R. Wilson, Jr., to Control Data Corp. Punching system. 3,402,867, 9–24–68, Cl. 226—76.
- Bos, Jules, J. P. Beun, J. Koorneef, and G. L. Walther, to North American Philips Co., Inc. Method of manufacturing pole-piece units for magnetic heads. 3,402,463, 9–24–68, Cl. 29—603.
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- Bowers, Klaus D., and L. J. Varnerin, Jr., to Bell Telephone Laboratories, Inc. Plural channel optical memory using light beam transit time to discriminate among channels. 3,403,261, 9–24–68, Cl. 250—219.
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- Breed, Rolland N., A. H. Budlong, R. C. Casterline, and B. J. Lewis; said Breed, Budlong and Casterline assors to Bell Telephone Laboratories, Inc. and said Lewis assor to Western Electric Co., Inc. Equipment for serving dialing irregularities. 3,403,230, 9–24–68, Cl. 179—27.
- Breen, Dale H.: *See*—
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- Bristol-Myers Co.: *See*—
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- Buck, Thomas M., M. H. Crowell, and E. I. Gordon, to Bell Telephone Laboratories, Inc. Target structure storage device using diode array. 3,403,284, 9–24–68, Cl. 315—11.
- Budlong, Albert H.: *See*—
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- Buehler, William J., and D. M. Goldstein, to United States of America, Navy. Conversion of heat energy to mechanical energy. 3,403,238, 9–24–68, Cl. 337—393.
- Buffalo Forge Co.: *See*—
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- Bunker-Ramo Corp., The: *See*—
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- Byrnes, Robert J. Animation for advertising displays. 3,402,496, 9–24–68, Cl. 40—139.
- Cain, Harry C. Milking system. 3,402,699, 9–24–68, Cl. 119—14.04.
- Camardella, Giuseppe. Automatic winding machine. 3,402,903, 9–24–68, Cl. 242—158.5.
- Cambillard, Etienne, J. P. Le Frere, J. Lelong, and R. Morisset, to Commissariat A L'Energie Atomique. Coupled inductance level indicator for liquid metals. 3,402,607, 9–24–68, Cl. 73—304.
- Camco, Inc.: *See*—
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- Campanella, Angelo J., to Industrial Nucleonics Corp. Glide path approach system for landing aircraft utilizing nuclear radiation. 3,403,254, 9–24–68, Cl. 250—83.3.
- Campanella, Angelo J., to Industrial Nucleonics Corp. Navigational system employing nuclear radiation glide paths. 3,403,255, 9–24–68, Cl. 250—83.3.
- Campbell, Paul E., to Phillips Petroleum Co. Bottles with protective caps or cover. 3,402,843, 9–24–68, Cl. 215—100.
- Campbell Products, Inc.: *See*—
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- Canter, William B., and R. N. Suiter, to Dan River Mills, Inc. Cellulose modification with solution comprising a methylolated carbamate and a methylolated triazone. 3,402,989, 9–24–68, Cl. 8—116.3.
- Cardone, Vincent P., 49% to S. Mikelberg. Glare reduced light ray screen. 3,402,981, 9–24–68, Cl. 350—276.
- Cardwell, John G., Jr., to General Electric Co. Single-ended electric incandescent lamp filament support. 3,403,280, 9–24–68, Cl. 313—271.
- Carl-Zeiss-Stiftung: *See*—
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- Carle, Robert A.: *See*—
  - Matthews, Robert W., and Carle. 3,402,849.
- Carlock, Frank R., and W. R. Lamoureux, to International Business Machines Corp. Digital cathode ray tube deflection system. 3,403,286, 9–24–68, Cl. 315—18.
- Carlson, Ronald J., C. C. Simons, and R. L. Bradford, to Westinghouse Electric Corp. Explosive tube welding device. 3,402,870, 9–24–68, Cl. 228—3.
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  - Blatter, Herbert M., Carney, and De Stevens. 3,403,153.
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- Carrier Corp.: *See*—
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- Carter, D. F., Co.: *See*—
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  - Goth, Gary J. 3,402,840.
- Cassens, David L.: *See*—
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- Celanese Corp.: *See*—
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  - Jones, James O. 3,402,852.
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  - Mackrle, Svatopluk and V., Dracka, Selzer, and Halamek. 3,403,096.
- Chadha, Rajendra N., to Stauffer Chemical Co. Water repellent compositions for porous substrates. 3,403,050, 9–24–68, Cl. 117—161.
- Chance, Leon H., G. L. Drake, Jr., and W. A. Reeves, to United States of America, Agriculture. Process for flameproofing cellulosic material. 3,403,044, 9–24–68, Cl. 117—62.2.
- Chance, Leon H., and E. K. Leonard, to United States of America, Agriculture. Methylol derivatives of halo-cyanoacetamides and their application to cellulosic materials. 3,403,174, 9–24–68, Cl. 260—465.4.
- Chang, Winston H., to General Electric Co. Chromium base alloy. 3,403,022, 9–24–68, Cl. 75—176.
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  - Feder, Ralph, Asai, Charbnau, and Mannheimer. 3,402,632.
- Charbonneau, Allan P.: *See*—
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- Chenilles, Carolyn, Inc.: *See*—
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- Chin, Wesley S. C. Catsup bottle with cap-stand. 3,402,844, 9–24–68, Cl. 215—100.5.
- Chipperfield, Philip N. J., and J. H. Benton, ½ each to Ethyl Corp., and Imperial Chemical Industries Ltd. Sewage treatment process and apparatus. 3,403,095, 9–24–68, Cl. 210—17.
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- Christian, Rodney E., to Traub Mfg. Co. Method for casting in a shell mold. 3,402,754, 9–24–68, Cl. 164—35.
- Christian, Rodney E., to Traub Mfg. Co. Method for making a precision casting. 3,402,755, Cl. 164—35.
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- Clapman, Charles H., Jr., to United States Radium Corp. Encapsulated radioactive light sources. 3,402,492, 9–24–68, Cl. 40—130.
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- Clark, Hubert M., G. H. Drutchas, and P. Becker, to TRW Inc. Furnace pump and oil burner circuit. 3,402,891, 9–24–68, Cl. 239—127.
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- Clejan, Deodat, deceased (by Harris Trust and Savings Bank, executor), and T. C. Gray, to Cushion Coupler Corp. Railway car provided with car coupler and combination carrying and centering mechanism therefor. 3,402,826, 9–24–68, Cl. 213—21.
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- Colgate, Stirling A., to Colgate Research & Development Co. Nondestructive measurement of material strength. 3,402,598, 9–24–68, Cl. 73—67.8.

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- Connolly, Thomas A., D. B. Kaplan, and A. D. Scarbrough, to The Bunker-Ramo Corp. Apparatus for monitoring the synchronization of a pulse data receiver. 3,403,377, 9-24-68, Cl. 340—146.1.
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- Conway, Edward M., to Conway Lumber Rule Co. Apparatus for measuring board footage of lumber. 3,402,471, 9-24-68, Cl. 33—76.
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- Coons, William R., Jr., and W. R. Hencke, to Texaco, Inc. Method of grease manufacture. 3,403,100, 9-24-68, Cl. 252—41.
- Cooper, Albert S., Jr.: *See—*
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- Cooper, David, and R. C. Lenz, to General Electric Co. Continuous pressure control system. 3,402,972, 9-24-68, Cl. 303—20.
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- Cooperman, Isadore N., and M. W. Kline, to The Borden Co. Polyvinyl halide latices stabilized with diammonium phosphate and ammonium hydroxide. 3,403,123, 9-24-68, Cl. 260—29.6.
- Coor, Thomas, and R. F. Herrman, to Princeton Applied Research Corp. Method and apparatus for periodically calibrating a precision potentiometer. 3,403,336, 9-24-68, Cl. 324—63.
- Copping, Bruce G., and W. D. Hardee, to Geo. J. Meyer Mfg. Co. Palletizer. 3,402,830, 9-24-68, Cl. 214—6.
- Cork, Spencer M., G. K. Jensen, and J. E. McGeogh, to United States of America, Navy. Commutated linear multiple gate. 3,403,344, 9-24-68, Cl. 328—98.
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- Couper, William D., and J. H. Bogar, to AMP, Inc. Dielectric constant measurement means and method utilizing frequency sweep and fixed probe. 3,403,335, 9-24-68, Cl. 324—58.
- Cowan, Jack C., A. E. Beasley, Jr., and H. G. Gainey, to National Lead Co. Foundry core and molding sand composition. 3,403,037, 9-24-68, Cl. 106—38.6.
- Cragon, Harvey G., and H. N. Peterson, to Texas Instruments, Inc. Digital phase shift control for phased array radar. 3,403,401, 9-24-68, Cl. 343—100.
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- Currey, John E., J. Rutherford, D. P. Fernandes, and R. J. Leonard, to Hooker Chemical Corp. Operation of chloralkali cells. 3,403,083, 9-24-68, Cl. 204—98.
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- Curtiss-Wright Corp.: *See—*
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- Cushman, Robert H., to Western Electric Co., Inc. Method for die casting electrical connections. 3,402,758, 9-24-68, Cl. 164—108.
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- Dahms, James B., and B. P. Edmonds, to Kalium Chemicals Ltd. Forming solution mining surface at interface above cavern. 3,402,966, 9-24-68, Cl. 299—4.
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- Dalton, Philip B., and M. R. Leibowitz, to GAF Corp. Dyeing of polymeric articles treated with a graft copolymer of an N-vinyl lactam polymer. 3,402,987, 9-24-68, Cl. 8—81.
- Dalton, Thomas B., to Westran Corp. Power package for semitrailer support. 3,402,915, 9-24-68, Cl. 254—86.
- Daman, Arthur C., to Denver Equipment Co. Portable ore milling plant. 3,402,896, 9-24-68, Cl. 241—38.
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- Davidoff, Dorsey, to United States of America, Navy. Trigger circuit having adjustable upper and lower voltage trigger limits to control a servomotor in forward and reverse drive. 3,403,351, 9-24-68, Cl. 318—18.
- Davidson, James W., and J. L. Maurer, to Eagle-Picher Industries, Inc. Forming corrugated hose. 3,402,429, 9-24-68, Cl. 18—19.
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- Davis, Lester M., to Les Davis Fishing Tackle Co. Fishing line display and dispenser. 3,402,501, 9-24-68, Cl. 43—25.2.
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- Day, Ronald L. Slide bed for trucks. 3,402,944, 9-24-68, Cl. 280—423.
- Debrey, Robert J., J. M. Deterding, and J. R. Weyer, to Conco, Inc. Control system for an automatic warehouse apparatus. 3,402,836, 9-24-68, Cl. 214—16.4.

- De Coye de Castelet, Gaetan, to Regie Nationale des Usines Renault. Hydropneumatic apparatus for measuring volume variations of a cavity from a standard. 3,402,602, 9-24-68, Cl. 73—149.
- De Coye de Castelet, Gaetan, to Regie Nationale des Usines Renault. Rear wheels suspension systems for motor vehicles. 3,402,940, 9-24-68, Cl. 280—124.
- De Coye de Castelet, Gaetan, to Regie Nationale des Usines Renault. Voltage-multiplying, alternating-pulse circuits, notably for the ignition system of internal combustion engines. 3,403,295, 9-24-68, ClC. 315—239.
- Dedian, Charles. Threadless pipe connection system. 3,402,946, 9-24-68, Cl. 285—236.
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- Del Duca, Michael G., to TRW Inc. Enzyme activated biochemical battery. 3,403,053, 9-24-68, Cl. 136—86.
- Dell, Jack M., to International Harvester Co. Track joint having floating seal. 3,402,974, 9-24-68, Cl. 305—11.
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- Desloge, George B., and R. M. Frayne, to Watlow Electric Mfg. Co. Method for continuously making sheated heating elements. 3,402,465, 9-24-68, Cl. 29—615.
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- De Vogelaere, Goerge E. Marksmanship training target film. 3,402,933, 9-24-68, Cl. 273—105.1.
- De Vos, Hendrik A. J., to Sylvania Electric Products, Inc. Lighting fixture. 3,403,250, 9-24-68, Cl. 240—52.
- Dewas, Raymond. Weft insertion needles in weaving machines. 3,402,746, 9-24-68, Cl. 139—123.
- Dewey, Bradley, to Deering Milliken Research Corp. Treatment of keratinic fibers with a reducing agent and an amino acid. 3,402,990, 9-24-68, Cl. 8—127.6.
- De Woskin, Irvin S., to Beltx Corp. Clasp and apparatus for molding same. 3,402,441, 9-24-68, Cl. 24—245.
- Diamond Tool Engineering Co.: *See—*
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- Dickerson, Devere C., and R. M. Bachorski, to International Harvester Co. Fuel connection to cylinder head. 3,402,703, 9-24-68, Cl. 123—32.
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- Dietert, Harry W., Co.: *See—*
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- Dirks, Gerhard. Magnetic storage device. 3,403,385, 9-24-68, Cl. 340—172.5.
- Distillers Co. Ltd., The: *See—*
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- Dixon, John W. Process of treating coal mine acid drainings. 3,403,099, 9-24-68, Cl. 210—53.
- Dobratz, Elmer H., and A. J. Kolka, to Koppers Co. Production of benzophenones. 3,403,183, 9-24-68, Cl. 260—591.
- Doggett, Otto G., and J. R. Seay, to Go Services, Inc. Fracture detection method for bore holes. 3,402,769, 9-24-68, Cl. 166—4.
- Doherty, George O. Endotracheal tube with valved balloon having a removable inflation stylet insert therein. 3,402,717, 9-24-68, Cl. 128—351.
- Doherty, George O. Endotracheal tube with valved balloon having removable inflation means and balloon rupturing means associated therewith. 3,402,718, 9-24-68, Cl. 128—351.
- Dold, Siegfried A., to E. E. J. Underberg. Linear and rotary electric motors adapted for use as counters. 3,403,272, 9-24-68, Cl. 310—12.
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- Donhauser, Hubert. Liquid dispensing apparatus. 3,402,856, 9-24-68, Cl. 222—164.
- Donnelley, R. R., & Sons Co.: *See—*
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- Dorr-Oliver, Inc.: *See—*
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  - Chance, Leon H., Drake, and Reeves. 3,403,044.
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- Drapkin, William, to Slater Electric, Inc. Mounting means for electrical wiring devices. 3,403,216, 9-24-68, Cl. 174—53.
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- Durst, Gilbert, to Durst A.G. Fabrik Fototechnischer Apparate. Sharp focusing device for enlarger. 3,402,637, 9-24-68, Cl. 88—24.
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- Dybvig, Douglas H., to Minnesota Mining and Mfg. Co. Photochemical process for the production of halogenated fluoroimino compounds. 3,403,087, 9-24-68, Cl. 204—158.
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  - Dahms, James B., and Edmonds. 3,402,966.
- Edmonds, Byron P., and J. Elledge, to Kalium Chemicals Ltd. Method and apparatus for controlling the development of a solution mining cavity. 3,402,967, 9-24-68, Cl. 299—5.
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- Engle, Jack F., to Borg-Warner Corp. Differential mechanism. 3,402,797, 9–24–68, Cl. 192—107.
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- Feder, Ralph, K. W. Asai, H. P. Charbnau, and R. Mannheimer, to United States of America Atomic Energy Commission Metrology method for crystal defect detection. 3,402,632, 9–24–68, Cl. 88—14.
- Feighner, George C., O. C. Kerfoot, and D. W. Marshall, to Continental Oil Co. Linear alkylbenzene process. 3,403,194, 9–24–68, Cl. 260—671.
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- Fesko, John, Jr.: *See—*
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- Geitz, Robert C. Drying apparatus and method for sheet tobacco or the like. 3,402,480, 9–24–68, Cl. 34—151.
- Gemmer, Richard, and W. Scheffel, to Agfa-Gevaert Aktiengesellschaft. Method and means for automatically adjusting the light projection in microfilm cameras. 3,402,636, 9–24–68, Cl. 88—24.
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- Geyger, William A., to United States of America, Navy. Flux gate magnetometer with magnetic amplifier. 3,403,329, 9–24–68, Cl. 324—43.
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- Glass, Marvin I., and G. A. Barlow, to Marvin Glass & Associates. Model vehicle tile track system with accessories. 3,402,503, 9–24–68, Cl. 46—17.

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  Dybvig, Douglas H. 3,403,087.
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Mislan, Joseph D., to Communitype Corp. Magnetic tape recording of typewriter keyboard data. 3,403,225, 9–24–68, Cl. 179—2.
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  Messenger, Joseph U. 3,402,770.
Mod, Robert R., F. C. Magne, and E. L. Skau, to United States of America, Agriculture. Vinyl chloride plastic compositions and certain plasticizers therefor. 3,403,126, 9–24–68, Cl. 260—30.4.
Modesto, Narciso G., R. C. Pape, and W. F. Ridenour, to General Stone and Materials Corp. Leveling machine. 3,402,648, 9–24–68, Cl. 94—45.
Mojonnier, Albert, Inc.: *See*—
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Morel, Roger C. M., and P. Tauveron, to Sames, Societe Anonyme de Machines Electrostatiques. Method and apparatus for the electrostatic sorting of granular materials. 3,402,814, 9–24–68, Cl. 209—127.
Morgan, Layton D., and R. J. Vachon, to United States of America, Navy. Analog beam pattern digital simulator. 3,403,247, 9–24–68, Cl. 235—184.
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Mrowka, Joseph J., and D. B. Powell, to General Electric Co. Electric circuit control device panel board and assembly. 3,403,301, 9–24–68, Cl. 317—119.
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Nerwin, Hubert, to Eastman Kodak Co. Sorting appaartus for film cartridges. 3,402,811, 9–24–68, Cl. 209—74.
Nerwin, Hubert, to Eastman Kodak Co. Sorting apparatus for film cartridges. 3,402,812, 9–24–68, Cl. 209—80.
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Nimtz, Klaus, and G. Franzen, to Palitex Project Co. G.m.b.H. Multiple twist spindles. 3,402,545, 9–24–68, Cl. 57—58.49.
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Ott, Karl-Heinz, K. Dinges, K. H. Knapp, and H. Rohr, to Farbenfabriken Bayer Aktiengesellschaft. Moulding compositions based on elastically thermoplastic copolymer mixtures. 3,403,120, 9–24–68, Cl. 260—33.6.

- Ottenholm, Tor A. I. Method for manufacturing building elements comprising substantially wood waste and cement. 3,403,205, 9–24–68, Cl. 264—109.
- Ouchi, Hiromu, and M. Nishida, to Matsushita Electric Industrial Co., Ltd. Piezoelectric ceramic compositions. 3,403,-103, 9–24–68, Cl. 252—62.9.
- Owens-Corning Fiberglas Corp.: *See*—
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- PPG Industries, Inc.: *See*—
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- Pace, Robert E., J. D. Trotter, and W. C. Wheeler, to General Micro-Electronics Inc. Overvoltage protective circuit for insulated gate field effect transistor. 3,403,270, 9–24–68, Cl. 307—304.
- Pacific Coast Engineering Co.: *See*—
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  - Wright, William S., Jr., and Francis. 3,402,899.
- Page Communications Engineers, Inc.: *See*—
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- Painter, Edwin S., R. C. Petrey, and J. H. Jensen, Jr., to Eastman Kodak Co. Pyrolysis process and apparatus for manufacture of ketenes and anhydrides. 3,403,181, 9–24–68, Cl. 260—585.5.
- Pale, Juan S., and F. L. De Sosa. Track turnout for two rail model electric railroads. 3,403,251, 9–24–68, Cl. 246—415.
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- Palitex Project-Co., G.m.b.H.: *See*—
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- Palmer, Charles E., to Jones & Laughlin Steel Corp. Containers. 3,402,875, 9–24–68, Cl. 229—51.
- Palmer, George W., R. C. Gast, and R. E. Bartholomew, to Hercules Gallon Products, Inc. Refuse collecting vehicle. 3,402,837, 9–24–68, Cl. 214—83.3.
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- Pannell, Calvin E., and E. D. Lund, to The Dow Chemical Co. Plastisol binder composition for rocket propellants containing azide and hydrazine compounds. 3,403,062, 9–24–68, Cl. 149—36.
- Pansini, Francis J. Constant power, varying speed polyphase motor. 3,403,313, 9–24–68, Cl. 318—225.
- Panther Pumps & Equipment Co., Inc.: *See*—
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- Park, Jerald L., and N. L. Lagasse, to Avco Corp. Face-type shaft seal with means for optimizing face seal loading at various speeds. 3,402,937, 9–24–68, Cl. 277—41.
- Parker, Matthew, to Formmaster Ltd. Intermittent driving mechanism. 3,402,615, 9–24–68, Cl. 74—125.5.
- Parsey, M'chael R., to Imperial Chemical Industries Ltd. Ropes and cordage. 3,402,547, 9–24–68, Cl. 57—140.
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- Patton, Robert H., and R. H. Perry, Jr. Preparation of t-alkyl benzene. 3,403,195, 9–24–68, Cl. 260—671.
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  - Johnston, Edward J., and Peacock. 3,402,533.
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- Peck, William H., ½ to W. H. Peck, Jr. Centrifugal separator. 3,402,821, 9–24–68, Cl. 210—325.
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- Peden, Merle F., and L. V. M. Odden, to General Mills, Inc. Die-head for producing hollow particles. 3,402,682, 9–24–68, Cl. 107—14.
- Peene, Guido, to Trefileries Leon Bekaert, PVBA. Twisted flat wires and method of making said wires. 3,402,546, 9–24–68, Cl. 57—139.
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- Perin, David C.: *See*—
  - Berger, Elmer J., and Perin. 3,403,085.
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- Perkins, Cornelius C., W. W. Allen, Jr., B. L. Ayres, T. A. Dowds, and B. N. Levy, to Burroughs Corp. Format control. 3,403,386, 9–24–68, Cl. 340—172.5.
- Perl, Richard L., to The Tappan Co. Detergent mixing dispenser. 3,402,853, 9–24–68, Cl. 222—70.
- Perolo, Pierre, to Etablissements J. Perolo & Cie S.A. Pipe coupling with valves. 3,402,738, 9–24–68, Cl. 137—614.06.
- Perolo, Pierre, to Etablissements J. Perolo & Cie, S.A. Valve mechanism in a joint for passing a fluid under elevated pressure. 3,402,740, 9–24–68, Cl. 137—630.14.
- Perry, John F., and I. Williamson, to Formica International Ltd. Laminated plastics and method of making same. 3,403,-071, 9–24–68, Cl. 161—189.
- Perry, Kenneth E., to EG & G International, Inc. Measurement apparatus employing long-line call-up system. 3,403,-379, 9–24–68, Cl. 340—147.
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- Pershing, John A., to Owens-Corning Fiberglas Corp. Method and apparatus for handling fibrous materials. 3,402,833, 9–24–68, Cl. 214—8.5.
- Persson, Ake B.: *See*—
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- Pesson, Marcel, to Societe Anonyme dite: Laboratoire Roger Bellon. Phenylcyclohexylacetonitrile derivatives. 3,403,159, 9–24–68, Cl. 260—293.
- Petersen, Raymond C.: *See*—
  - Ross, Sidney D., Petersen, and Finkelstein. 3,403,304.
- Peterson, Francis C. Adjustable threshold. 3,402,512, 9–24–68, Cl. 49—468.
- Peterson, Francis C., to C. Hager & Sons Hinge Mfg. Co. Device for warming or cooling infant food. 3,402,763, 9–24–68, Cl. 165—46.
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- Pieronek, Cass A., and J. H. Le Blond; said Le Blond, assor. to said Pieronek. Automatic film programmer. 3,402,651, 9–24–68, Cl. 95—75.

- Pinkham, Jesse R., to J. R. Reynolds Tobacco Co. Package and blank for a package. 3,402,877, 9–24–68, Cl. 229—87.
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- Polymers, Inc.: *See*—
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- Pontecorvo, Nicholas E., and W. A. Shaffer, to N. E. Pontecorvo. Method for processing cheese curd into plasticized cheese of the mozzarella type. 3,403,030, 9–24–68, Cl. 99—116.
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- Potter, John T., T. P. Foley, and C. J. Antonucci, to Potter Instrument Co., Inc. High speed belt printer with printing slugs supporting means. 3,402,657, 9–24–68, Cl. 101—93.
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  - Mrowka, Joseph J., and Powell. 3,403,301.
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- Randall, John J., to Borg-Warner Corp. Polyamide and polysulfonamide azo dyes. 3,403,200, 9–24–68, Cl. 260—857.
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- Redding, Thomas P., to Xerox Corp. Sheet handling apparatus. 3,402,928, 9–24–68, Cl. 271—62.
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- Rhoads, Delmar D., and R. H. MacKay, to Lincoln Mfg. Co., Inc. Device for inactivating a selected portion of a coil spring. 3,402,923, 9–24–68, Cl. 267—61.
- Richards, Edward E., to Pennsalt Chemicals Corp. Industrial process and apparatus. 3,402,696, 9–24–68, Cl. 118—125.
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- Richards, John C., to General Electric Co. Shielded transducer having means to reduce core movement. 3,403,365, 9–24–68, Cl. 336—30.
- Richmond, Jack H., and W. J. Wesner, to United States of America, Navy. Reciprocal microwave polarization rotator. 3,403,356, 9–24–68, Cl. 333—21.
- Richmond, Robert C., and L. F. Marsch, to Texaco, Inc. Consistometer. 3,402,729, 9–24–68, Cl. 137—92.
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- Roantree, William J., to Roantree Electro-Mech Corp. Variable gearing mechanism. 3,402,618, 9–24–68, Cl. 74—424.7.
- Robbins, Roland W., Jr., to United States of America, Navy. Balanced piston relief valve. 3,402,734, 9–24–68, Cl. 137—491.
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- Robinson, LaRoy E., and A. D. Mills, to Continental Machines, Inc. Band saw with improved band wheels. 3,402,627, 9–24–68, Cl. 83—201.14.
- Robinson, Mayes R., to International Harvester Co. Soil tillage sled. 3,402,774, 9–24–68, Cl. 172—413.
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- Rodgers, Arthur, to General Fire Extinguisher Corp. Pressure indicator. 3,402,691, 9–24–68, Cl. 116—74.
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- Rosenberg, Edgar N., and C. S. Manning. Grounded ship recovery apparatus. 3,402,688, 9–24–68, Cl. 114—51.
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- Ross, Sidney D., R. C. Petersen, and M. Finkelstein, to Sprague Electric Co. Electrolytic capacitor with an electrolyte of an ammonium organo-boron compound. 3,403,304, 9–24–68, Cl. 317—230.
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- Salvi, Antoine, and R. Besson, to Commissariat a l'Energie Atomique. Magnetic resonance magnetometers. 3,403,326, 9–24–68, Cl. 324—.5.
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- Sasaki, Jiro. Osmosis filtering method and device. 3,402,818, 9–24–68, Cl. 210—82.
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- Sato, Sennosuke, to Nihon Genshiryoku Kenkyusho. Electric furnace having a heating element of carbon or graphite for producing temperatures under high pressures. 3,403,212, 9–24–68, Cl. 13—31.
- Sattler, Robert I., to La Salle Machine Tool, Inc. Preset tool apparatus. 3,402,473, 9–24–68, Cl. 33—185.
- Saul, Sanford, to The Triax Co. Control system for a zoned automatic warehouse arrangement. 3,402,835, 9–24–68, Cl. 214—16.4.
- Saxonmeyer, Wallace J., to Whiting Corp. Signal producing means for use with a railway car handling mechanism. 3,402,677, 9–24–68, Cl. 104—176.
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- Schaeffer, Daniel D. Carpet cleaning device. 3,402,420, 9–24–68, Cl. 15—320.
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- Schirmer, Henry G., to W. R. Grace & Co. Method for preparing a non-woven fabric-like member. 3,403,203, 9–24–68, Cl. 264—51.
- Schiessel, Joseph H. Magazine with slide retention means. 3,402,489, 9–24–68, Cl. 40—79.
- Schlichtig, Ralph C. Refrigeration systems and refrigerants used therewith. 3,402,570, 8–24–68, Cl. 62—483.
- Schlichting, Hans L., and E. I. Lichtblau, to Hooker Chemical Corp. Stabilization of phenols. 3,403,186, 9–24–68, Cl. 260—621.
- Schlichting, Hans L., and E. I. Lichtblau, to Hooker Chemical Corp. Stabilization of phenols. 3,403,188, 9–24–68, Cl. 260—621.
- Schlichting, Hans L., and E. I. Lichtblau, to Hooker Chemical Corp. Color stabilization of phenol. 3,403,189, 9–24–68, Cl. 260—621.
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- Schmermund, Alfred. Machines for wrapping block-like articles. 3,442,528, 9–24–68, Cl. 53—230.
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- Schmidt, William L., to Cocker Machine & Foundry Co. Pirn. 3,402,902, 9–24–68, Cl. 242—118.31.
- Schmidt, Wolfgang, to North American Philips Co., Inc. Waveguide resonator having various tuning ranges. 3,403,360, 9–24–68, Cl. 333—83.
- Schmitt, George J., and H. K. Reimschuessel, to Allied Chemical Corp. Anionic polymerization of lactams with N,N'-diphenyl-1,3-diaza-2,4-cyclobutanedione as promoter. 3,403,135 9–24–68, Cl. 260—78.

- Schneble, Frederick W., Jr., R. J. Zeblisky, J. F. McCormack, and J. D. Williamson, to Process Research Co. Process for stabilizing autocatalytic metal plating solutions 3,403,035, 9–24–68, Cl. 106—1.
- Scholl, Hermann, to R. Bosch G.m.b.H. Electromagnetic coupling arrangement. 3,402,793, 9–24–68, Cl. 192—.033
- Schramm, Robert M, R. F. Ptak, and D. L. Swindler, to Square D Co. Electromagnetically-operated, air-break, clapper-type high-voltage contactor. 3,403,239, 9–24–68, Cl. 200—147.
- Schreiber, Anthony J., to Avisun Corp. Apparatus for making continuous films. 3,402,428, 9–24–68, Cl. 18—15.
- Schroder, Hans, to Windmoller & Holscher. Printing cylinder and process for manufacturing the same. 3,402,449, 9–24–68, Cl. 29—123.
- Schroeder, George A., and H. E. Pearson, to The Gillette Co. Mixing container. 3,402,855, 9–24–68, Cl. 222—83.
- Schroeder, Manfred R., to Bell Telephone Laboratories, Inc. Processing of communications signals to reduce effects of noise. 3,403,224, 9–24–68, Cl. 179—1.
- Schroeter, Joachim W., to Buffalo Forge Co. Fan construction. 3,402,879, 9–24–68, Cl. 230—134.
- Schubel, Dieter: *See—*
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- Schultz, Ralph L., to Victor Comptometer Corp. Operating means for function control keys in calculating machines and the like. 3,402,884, 9–24–68, Cl. 235—60.
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- Schumm, Erich, K.-P. Lopata, and G. Schiffer, to Joh. Kleinewefers, Sohne. Method of and arrangement for washing textiles, especially endless towels. 3,402,410, 9–24–68, Cl. 8—152.
- Schwacke, Frederick H., Jr., and C. Giannone, to Interchemical Corp. Method of forming a water vapor permeable film and coating on a substrate. 8,403,046, 9–24–68, Cl. 117—102.
- Schwalm, Clair W., to Benjamin Booth Co. Method and apparatus for drafting and coiling sliver. 3,402,433, 9–24–68, Cl. 19—169.
- Schweizer, Paul E., and R. K. Thompson, Jr., to Bell Telephone Laboratories, Inc. Key operated lock. 3,402,581, 9–24–68, Cl. 70—355.
- Schwenzfeier, Otto, to Shell Oil Co. Gear engagement guide mechanism for gear-type orbiting-mass oscillator. 3,402,611, 9–24–68, Cl. 74—61.
- Schwiebert, Phillip D., to MacLean-Fogg Lock Nut Co. Impact energy absorption device. 3,402,925, 9–24–68, Cl. 267—71.
- Scibbe, Harold R., to TRW, Inc. Anti-skid modulated brake system responsive to rotational and linear deceleration. 3,402,978, 9–24–68, Cl. 303—21.
- Scott Paper Co.: *See—*
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  - Rohrback, Gilson H., and Scott. 3,403,081.
- Scovill Mfg. Co.: *See—*
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  - Kruger, James B., Sweeney, and Le Page. 3,402,442.
  - Woodacre, Richard. 3,402,440.
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- See, Jacques L. A. Self-suporting elements for erecting dismantleable constructions. 3,402,787, 9–24–68, Cl. 182—118.
- Seelbach, Charles W., E. G. M. Tornqvist, and A. W. Langer, Jr., to Esso Research and Engineering Co. Preparation of unsaturated oils with a crystalline violet titanium trichloride and ethyl aluminum dihalide catalyst. 3,403,197, 9–24–68, Cl. 260—683.15.
- Seidel, Harold, to Bell Telephone Laboratories, Inc. Plural channel optical memory with intensity modulation for discriminating among channels. 3,403,262, 9–24–68, Cl. 250—219.
- Seipos, Andrew G., to Wollard Aircraft Equipment, Inc. Conveyance loader. 3,402,412, 9–24–68, Cl. 14—71.
- Self-Organizing Systems, Inc.: *See—*
  - Peterson, John D., and Simpson. 3,403,204.
- Selzer, John, to International Harvester Co. Cornpicker safety device. 3,402,539, 9–24–68, Cl. 56—104.
- Selzer, Vladimir: *See—*
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- Senkofski, Thaddeus S., and J. T. Welch, to Becton, Dickinson and Co. Hypodermic syringe with improved retaining means. 3,402,713, 9–24–68, Cl. 128—221.
- Seur, Christian J., and J. E. Marquerinck, to North American Philips Co., Inc. Cathode ray tube beam suppression system for producing a raster which corresponds to a predetermined geometric shape. 3,403,287, 9–24–68, Cl. 315—22.
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- Shaw, Gilbert, and J. C. Lewis, Jr.; said Lewis, assor. to G. Shaw. Integrally connected brush fibres. 3,402,416, 9–24–68, Cl. 15—159.
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- Sherman Patsy O., and S. Smith, to Minnesota Mining and Mfg. Co. Emulsion polymerisation of water insoluble omega-(N-perfluoroalkanesulfonyl) aminoalkyl acrylates or methacrylates. 3,403,122, 9–24–68, Cl. 260—29.6.
- Sherwin-Williams Co., The: *See—*
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- Shimano, Keizo, and M. Nagano, to Shimano Kogyo Kabushiki Kaisha. Device for tensioning the driving chain in a bicycle equipped with coaster brake and exposed speed change gear. 3,402,942, 9–24–68, Cl. 280—236.
- Shimano Kogyo Kabushiki Kaisha: *See—*
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- Shivers, Rufus W., and E. L. Beckman, to United States of America, Atomic Energy Commission. Suit heater. 3,402,709, 9–24–68, Cl. 126—204.
- Shroyer, Harold F., to W. R. Grace & Co. Venturi loading system. 3,402,970, 9–24–68, Cl. 302—27.
- Siegla, Donald C., to General Motors Corp. Low heat control system for infrared surface heating unit. 3,403,244, 9–24–68, Cl. 219—448.
- Siemens Aktiengesellschaft: *See—*
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- Simon, Hans. Device for fastening bodies in the shape of square prisms and provided at opposite side faces respectively with grooves and ridges on a plate or the like. 3,402,954, 9–24–68, Cl. 287—189.36.
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- Simpson, Frank M.: *See—*
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- Sinclair, Harold, and H. A. Clements, to S.S.S. Patents Ltd. Synchronous self-shifting clutches. 3,402,794, 9–24–68, Cl. 192—67.
- Sinclair Research, Inc.: *See—*
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- Slater, Herbert A., and P. Haskelson, to Slater Electric, Inc. Mounting means for electrical wiring devices. 3,403,215, 9–24–68, Cl. 174—53.
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  - Maynard, John T. 3,403,315.
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Willis, William M. Indicating device. 3,402,690, 9–24–68, Cl. 116—70.
Willmann, Karl, to Rheinische Kalksteinwerke G.m.b.H. Plant for the simultaneous grinding of differently grindable materials. 3,402,895, 9–24–68, Cl. 241—36.
Willson, James R., to Robertshaw Controls Co. Flow control systems having combined modulation and pressure regulation of a fluid flow. 3,402,889, 9–24–68, Cl. 236—80.
Wilson, Burton D., to Eastman Kodak Co. Beta-ketoethyl onium salts as gelatin hardeners. 3,403,039, 9–24–68, Cl. 106—125.
Wilson, James R., Jr.: *See*—
Borrelli, Ronald N., Edwards, Lindberg, Noller, Stitt, and Wilson. 3,402,867.
Wilson, Walter, and H. May, to British Industrial Plastics Ltd. Process for preparing copolymers of trioxane with alicyclic olefinically unsaturated hydrocarbons and resultant product. 3,403,134, 9–24–68, Cl. 260—73.
Wilson, William A.: *See*—
Love, Herbert W. 3,402,702.
Wimel, Armand J.: *See*—
Ayrial, Jacques H. R., and Wimel. 3,402,892.
Winder, Robert O., to Radio Corp. of America. Flip-flop employing three interconnected majority-minority logic gates. 3,403,267, 9–24–68, Cl. 307—289.
Windmoller & Holscher: *See*—
Schroder, Hans. 3,402,449.
Wininger, John M., Jr., and R. F. Dyer, to Eastman Kodak Co. Process for fracturing flat ribbons and the product thereof. 3,402,548, 9–24–68, Cl. 57—140.
Wintringham, William T., to Bell Telephone Laboratories, Inc. Reduced bandwidth dual mode encoding of video signals. 3,403,226, 9–24–68, Cl. 179—15.55.
Wirtz, Ralph J.: *See*—
Steiff, Leon H., and Wirtz. 3,403,369.
Witt, Enrique R.: *See*—
Carpenter, Sammy, and Witt. 3,403,049.
Witt, George L., to My-T-Veyor Corp. Suspended carrier dispatch station and tripper. 3,402,675, 9–24–68, Cl. 104—88.
Witzky, Julius E., and J. M. Clark, Jr., to American Gas Association, Inc. Gaseous fuel engine. 3,402,704, 9–24–68, Cl. 123—32.
Wlodek, Stanley T, to General Electric Co. Cobalt base alloy. 3,403,021, 9–24–68, Cl. 75—171.
Wochnowski, Waldemar: *See*—
Hohm, Reinhard, Kuehn, and Wochnowski. 3,402,479.
Wogatzke, Horst, to Wenczler & Heidenhain. Apparatus for measuring of lengths by impulse counting. 3,403,392, 9–24–68, Cl. 840—347.
Wold, Aaron: *See*—
Ferretti, August, Kunnmann, and Wold. 3,402,993.
Wolf, Fredi: *See*—
Jacknau, Alex, Wolf, Scheffel, and Beyer. 3,402,635.
Wolgdmuth, Larry G., to Union Oil Co. of California. Preparation of glycol diesters from olefins and carboxylic acid anhydrides. 3,403,175, 9–24–68, Cl. 260—497.
Wollard Aircraft Equipment, Inc.: *See*—
Seipos, Andrew G. 3,402,412.
Wolt, John: *See*—
Theimer, Ernst T., Westbrook, Wolt, and Quinn. 3,402,721.
Womack, Charles P., to Collins Radio Co. Magnetic domain impressed coated wire attenuator with wide dynamic range. 3,403,350, 9–24–68, Cl. 330—144.
Woodacre, Richard, to Scovill Mfg. Co. Adjustable snap fastener. 3,402,440, 9–24–68, Cl. 24—206.
Woodring, Robert W.: *See*—
Panek, Bruno J., and Woodring. 3,402,641.
Woodruff, George N., to TRW Inc. Leak detection system. 3,402,696, 9–24–68, Cl. 73—40.7.
Woodson, Leslie A.: *See*—
Ballentine, John W., Woodson, and Shamban. 3,402,673.
Wooten, Stanley J., to United States of America, Navy. Transient pulse suppression tester including means for comparing generated transient voltages with output voltages from the network under test. 3,403,333, 9–24–68, Cl. 324—57.
Worsham, Charles H.: *See*—
Weiss, Malcolm A., Worsham, Horowiz, and Prager. 3,403,055.

Wright, Hubert A., Jr., and J. P. Tobey, Jr., to United States of America, Navy. Acoustic generator of the spark discharge type. 3,403,375, 9–24–68, Cl. 340—12.

Wright, William S., Jr., and A. W. Francis, to Pacific Scientific Co. Safety harness device. 3,402,899, 9–24–68, Cl. 242—107.4

Wrigley, Arthur N.: *See*—
 Jordan, Edmund F., Jr., Artymyshyn, and Wrigley. 3,403,172.

Wynosky, Thomas A., and K. L. Mueller, to United Aircraft Corp. Base-thrust nozzles. 3,402,894, 9–24–68, Cl. 239—265.17.

Wysong, Robert D, to Robertshaw Controls Co. Electrical switch having a one-piece actuator and spring arm structure. 3,403,237, 9–24–68, Cl. 200—67.

Xerox Corp.: *See*—
 Redding, Thomas P. 3,402,928.
 Redding, Thomas P., and Tates. 3,402,628.
 Turner, Lyman H. 3,402,660.

Xicom, Inc.: *See*—
 Wagner, Arthur M. 3,402,491.

Yamamoto, Shinji: *See*—
 Narita, Sho, and Yamamoto. 3,403,378.

Yamashiki, Takashi, and H. Ono, to Assahi Kasei Kogyo Kabushiki Kaisha. Process for regeneration of cation exchange resin. 3,403,097, 9–24–68, Cl. 210—33.

Yancho, Daniel F., ½ to A. A. Orme. Mechanism for extracting vapors from crankcase for use as a fuel saver and smog control. 3,402,706, 9–24–68, Cl. 123—119.

Yannuzzi, Anthony. Emergency medical information alarm. 3,402,808, 9–24–68, Cl. 206—42.

Yarsley Research Laboratories Ltd.: *See*—
 Flavell, William, and Nodar-Blanco. 3,403,127.

Yawata Iron & Steel Co., Ltd.: *See*—
 Ito, Teiji, Sato, Nakasugi, and Teluo. 3,403,060.
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Yissum Research Development Co.: *See*—
 Jungreis, Ervin, and Ben-Dor. 3,403,004.

Yokogawa-Hewlett-Packard, Ltd.: *See*—
 Nishida, Masahide, Kitoh, and Ontoh. 3,403,339.

Yost, Philipp R. Material arrangement for use as a floor covering. 3,403,068, 9–24–68, Cl. 161—130.

Yurdin, Alfred. Self-supporting, bendable, shape retaining discharge conduit. 3,402,741, 9–24–68, Cl. 138—118.

Zambelli, Adolfo: *See*—
 Natta, Giulio, Dall'Asta, Mazzanti, Paquon, Valvassori, and Zambelli. 3,403,139.

Zambrano, Ronald T., to American Cyanamid Co. Novel-7-(1,2-bis-substituted-hydrazino) tetracyclines and methods of preparing same. 3,403,179, 9–24–68, Cl. 260—559.

Zazzara, Joseph R. Writing implement holder. 3,402,984, 9–24–68, Cl. 401—8.

Zebe, Charles W., to Bell Telephone Laboratories, Inc. Telephone party-line isolation and range extension. 3,403,228, 9–24–68, Cl. 179—16.

Zeblisky, Rudolph J.: *See*—
 Schneble, Frederick W., Jr., Zeblisky, McCormack, and Williamson. 3,403,035.

Zelinski, Robert P., and F. E. Naylor, to Phillips Petroleum Co. Polymerization of 1,3-butadiene. 3,403,141, 9–24–68, Cl. 260—94.3.

Zerwes, Paul J., to Bell Electric Co. Articulated cover and face plate unit. 3,402,846, 9–24–68, Cl. 220—3.8.

Zima, Herbert, to Lonza Ltd. Preparation of metaldehyde. 3,403,168, 9–24–68, Cl. 260—340.

Zochil, Francesco: *See*—
 Colizza, Vincent P., and Zochil. 3,402,647.

Zoludow, Richard S., to Robertshaw Controls Co. Electrical switch having a one-piece actuator and spring arm structure. 3,403,236, 9–24–68, Cl. 200—67.

Zviak, Charles, and G. Ghilardi, to Societe Anonyme dite: Societe Monsavon-L'Oreal. Dyeing live human hair with direct dyes and alcohol solvents. 3,402,986, 9–24–68, Cl. 8—10.1.

Zweifel, Charles H., to Pacific Coast Engineering Co. Convertible cargo handling system. 3,402,824, 9–24–68, Cl. 212—17.

Zweig, Arnold, to American Cyanamid Co. Electrochemiluminescence of isoindoles. 3,403,296, 9–24–68, Cl. 315—246.

CLASSIFICATION OF PATENTS

ISSUED SEPTEMBER 24, 1968

NOTE.—First number, class; second number, subclass; third number, patent number

4–192 :	3,402,406
293 :	3,402,407
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Design Patents

6 : 212,281
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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
September 24, 1968 Volume 854 Number 4

TRADEMARKS

NOTICES

Termination of Daylight Saving Time

Attention is called to the Notice published in 849 O.G. 277, Apr. 9, 1968, as to the operation of the Patent Office on Daylight Saving Time. This operation will terminate on October 27, 1968.

Service by Publication

A petition to cancel the registration identified below having been filed, and the notice of such proceedings sent by registered mail to registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrant listed herein, his assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancelation will be proceeded with as in the case of default.

Walker Brothers, Conshohocken, Pa., Reg. No. 365,006, Canc. No. 9180.

EDWIN L. REYNOLDS,
First Assistant Commissioner of Patents.

Annual Index of Trademarks

The 1967 edition of the Annual Index of Trademarks has been published. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.

Price: Buckram bound, $2.75.

Annual Index of Patents

The 1967 edition of the Annual Index of Patents has been published. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.

Price: Buckram bound, Part I, $7.75; Part II, $3.50.

CONDITION OF TRADEMARK APPLICATIONS AS OF JULY 31, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	15, 049
Date of oldest new application	June 9, 1967
Date of oldest amended application (filing date)	June 15, 1964

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	9-7-67	4-21-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	11-1-67	5-16-66
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	10-27-67	6-15-64
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	6-9-67	3-14-66
Renewals (All Classes)	7-1-68	
Sec. 12(c) Publications (All Classes)	7-1-68	

Applications filed during the month of July 1968—2,564

Registrations Issued	424—No. 857,260 to No. 857,683
Renewals Issued	80

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[**NOTE:** For publication of marks presented in applications for registration in one class, see section 2.]

SN 246,016. Baton Broadcasting Limited, Toronto, Ontario, Canada. Filed May 19, 1966.

THE SPORTS HOT SEAT

The right to the exclusive use of the word "Sports" is disclaimed apart from the mark. Priority claimed under Sec. 44(d) on Canadian application filed Mar. 24, 1966; Reg. No. 149,488, dated Feb. 24, 1967.

Class 38—Prints and Publications

For Videotape Recordings and Kinescope Recordings of a Television Programme in Which Personalities in the Field of Sports Are Interviewed and Topics in the Field of Sports Are Discussed (Int. Cl. 9).

Class 107—Education and Entertainment

For Broadcasting and Transmission of Television Programmes in Which Personalities in the Field of Sports Are Interviewed and Topics in the Field of Sports Are Discussed (Int. Cl. 41).

SN 261,880. Prodelin, Inc., Hightstown, N.J. Filed Jan. 3, 1967.

PARA-BUOY

Class 19—Vehicles

For Buoy Without Telemetering Equipment, Towable Surface and Submersible Vehicle (Int. Cl. 12).

Class 26—Measuring and Scientific Appliances

For Buoy With Telemetering Equipment, Towable Surface and Submersible Vehicle Containing Telemetering Equipment (Int. Cl. 9).

First use May 1965.

SN 264,469. Louis Feraud, Paris, France. Filed Feb. 13, 1967.

ZIZI MILLE

Priority claimed under Sec. 44(d) on French Reg. No. 725,777, dated Jan. 13, 1967.

Class 39—Clothing

For Coats, Overcoats, Suits, Frocks, Waistcoats, Trousers, Skirts, Bodices, Hats, Scarves, Ties, Gloves, Underwear, Lingerie, Socks, Stockings, Shirts, Bathing Suits, Corsets, Girdles and Brassieres (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Textile Fabrics Made of Natural or Artificial Textile Fibers for Making Into Clothing (Int. Cl. 24).

SN 266,293. Filiclair S.p.A., Milan, Italy, by change of name from Alba-Siltex Societa per la Tessitura ed il Finissaggio di Fibre di Vetro S.p.A., Milan, Italy. Filed Mar. 9, 1967.

FILICLAIR

Priority claimed under Sec. 44(d) on Italian application filed Sept. 19, 1966; Reg. No. 186,427, dated Nov. 9, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Fabrics Made of Glass Fibers (Int. Cl. 24).

Class 43—Thread and Yarn

For Yarns and Threads Made of Glass Fibers (Int. Cl. 23).

SN 267,708. Yomeishu Seizo Co., Ltd., Shibuya-ku, Tokyo, Japan. Filed Mar. 28, 1967.

YOMEISHU

Class 18—Medicines and Pharmaceutical Preparations

For Medicinal Tonics (Int. Cl. 5).

Class 47—Wines

For Wines (Int. Cl. 33).
First use Nov. 7, 1919; in commerce January 1952.

SN 269,952. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning, Frankfurt am Main, Germany. Filed Apr. 25, 1967.

TREVIRA 2000

Owner of German Reg. No. 824,116, dated May 13, 1966; and U.S. Reg. Nos. 692,873 and 797,397.

Class 1—Raw or Partly Prepared Materials

For Spinnable Fibers, Spun and Non Spun Filaments (Int. Cl. 22).

Class 39—Clothing

For Coats, Suits, Dresses, Sweaters, Shirts, Blouses, Hosiery, Gloves, Shawls, Underwear, Ties, Beach Wear and Bathing Suits (Int. Cl. 25).

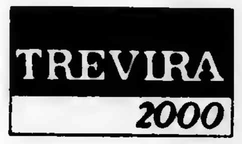
Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Table Linen and Bed Linen, Curtains, Lining and Interlining Material, Decorative Fabrics for Covering Cushions, Pillows, Toys and the Like (Int. Cl. 24).

Class 43—Thread and Yarn

For Yarns (Int. Cl. 23).

SN 269,953. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning, Frankfurt am Main, Germany. Filed Apr. 25, 1967.



Owner of German Reg. No. 824,117, dated May 14, 1966; and U.S. Reg. Nos. 692,873 and 797,397.

Class 1—Raw or Partly Prepared Materials

For Spinnable Fibers, Spun and Non-Spun Filaments (Int. Cl. 22).

Class 39—Clothing

For Coats, Suits, Dresses, Sweaters, Shirts, Blouses, Hosiery, Gloves, Shawls, Underwear, Ties, Beach Wear and Bathing Suits (Int. Cl. 25).

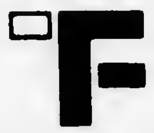
Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Table Linen and Bed Linen, Curtains, Lining and Interlining Material, Decorative Fabrics for Covering Cushions, Pillows, Toys and the Like (Int. Cl. 24).

Class 43—Thread and Yarn

For Yarns (Int. Cl. 23).

SN 272,531. Alsco, Inc., St. Louis, Mo. Filed May 29, 1967. The mark consists of the letters "TF."



Class 9—Explosives, Firearms, Equipments, and Projectiles

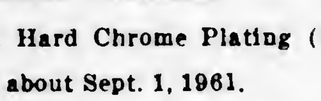
For Rocket Launchers (Int. Cl. 13).

Class 32—Furniture and Upholstery

For Case Goods, Office Furniture and Lounge Furniture (Int. Cl. 20).

First use Nov. 28, 1966.

SN 274,771. Power Engineering Company, Denver, Colo. Filed June 26, 1967.



Applicant disclaims the representation of the crankshaft apart from the mark as shown.

Class 103—Construction and Repair

For Complete Crankshaft and Camshaft Services (Int. Cl. 37).

Class 106—Material Treatment

For Industrial Hard Chrome Plating (Int. Cl. 40).

First use on or about Sept. 1, 1961.

SN 274,833. Ametek, Inc., New York, N.Y. Filed June 27, 1967.

MESERAN

Class 6—Chemicals and Chemical Compositions

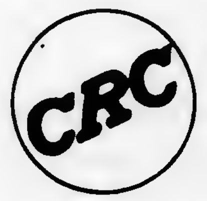
For Radioactive Test Solutions for Use in Surface Analyzing Equipment (Int. Cl. 1).

Class 26—Measuring and Scientific Appliances

For Surface Analyzer for the Measurement and Evaluation of Surface Phenomena, Such as the Amount and Kind of Residue, Topography of Surface Systems, and Degree of Cure of Thermal-Setting Resins Providing Test Data on Surfaces of Metal, Glass, Paper, Plastic, etc. (Int. Cl. 9).

First use Apr. 29, 1967.

SN 280,741. The Chemical Rubber Company, Cleveland, Ohio. Filed Sept. 20, 1967.



Owner of Reg. Nos. 579,259, 832,934, and others.

Class 26—Measuring and Scientific Appliances

For Line of Supplies and Equipment for Use in Scientific Laboratories—Namely, Temperature Measuring and Controlling Apparatus; Safety Glasses and Magnifiers; Volumetric Measuring and Dispensing Apparatus; Separatory Apparatus, viz, Electrodialysis Cells and Accessories, and Centrifugal Separators; Calipers; Magnetic Stirring Equipment and Accessories; Test Tube Holders; Desiccators; and Laboratory Glass and Plastic Ware (Int. Cl. 9).
First use at least as early as 1964; at least as early as 1952 as to the mark "CRC."

Class 38—Prints and Publications

For Reference Handbooks Sold Individually and in Sets (Int. Cl. 16).
First use at least as early as 1954.

SN 283,045. Vinolia A/S, Copenhagen, Denmark. Filed Oct. 20, 1967.

ELIDA

Owner of Danish Reg. No. 784/1919, dated Oct. 4, 1919; and U.S. Reg. No. 804,033.

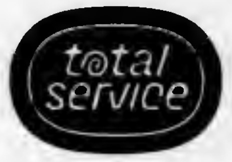
Class 51—Cosmetics and Toilet Preparations

For Hair Colorants, Hair Dressings, Hair Conditioning Agents, and Hair Sprays (Int. Cl. 3).

Class 52—Detergents and Soaps

For Hair Shampoos (Int. Cl. 3).

SN 289,231. Hunt-Wesson Foods, Inc., Fullerton, Calif. Filed Jan. 22, 1968.



Class 31—Filters and Refrigerators

For Filters for Liquid Shortening Used in Cooking (Int. Cl. 11).

Class 52—Detergents and Soaps

For Cleaner for Commercial Food Fryers (Int. Cl. 3).

First use Jan. 3, 1968.

SN 293,069. Amerock Corporation, Rockford, Ill. Filed Mar. 13, 1968.

CREATIVEWARE

Class 12—Construction Materials

For Moldings and Trim Made of Plastic, for Use as Edging on Walls, Panels, Room Doors, Cabinet Doors and the Like (Int. Cl. 19).
First use Feb. 22, 1968.

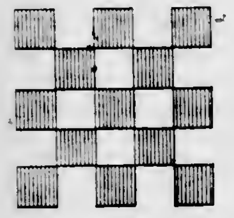
Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Cabinet Hardware—Namely, Pulls, Handles, Catches, Hinges and Latches (Int. Cl. 6).
First use August 1967.

Class 50—Merchandise Not Otherwise Classified

For Decorative Medallions Made of Plastic, for Application to Walls, Panels, Room Doors, Cabinet Doors, and the Like (Int. Cl. 20).
First use Feb. 22, 1968.

SN 293,612. Ralston Purina Company, St. Louis, Mo. Filed Mar. 4, 1968.



The drawing is lined for the color red, but no claim is made to color. Owner of Reg. Nos. 301,836, 582,371, and others.

Class 6—Chemicals and Chemical Compositions

For Proteins for General Use in the Industrial Arts (Int. Cl. 1).
First use June 1967.

Class 18—Medicines and Pharmaceutical Preparations

For Livestock Immunizing Agents and Medicated Animal and Poultry Feed (Int. Cl. 5).
First use Nov. 2, 1967.

Class 46—Foods and Ingredients of Foods

For Livestock and Poultry Feed and Edible Soy Protein Products (Int. Cl. 31).
First use 1957.

SN 298,279. R.F.D., Incorporated, Richwood, W. Va. Filed May 16, 1968.

SPORTING AMERICAN

Class 19—Vehicles

For Inflatable Boats—Namely, Liferafts (Int. Cl. 12).
First use Apr. 19, 1968.

Class 22—Games, Toys, and Sporting Goods

For Inflatable Life Jackets (Int. Cl. 9).
First use Apr. 9, 1968.

SN 298,665. The Akchurin Corporation, Hempstead, N.Y. Filed Nov. 9, 1967.

tAc

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Hardware Items—Namely, Machine, Stove, Carriage, Lag and Toggle Bolts, Barrel Bolts, Wood Screws, Hinges, Safety Hasps, Butts, Sash Pulleys, Template Butts, and Catches (Int. Cl. 6).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Sledgehammers (Int. Cl. 8).

First use on or about Dec. 30, 1965.

SN 300,309. Casual Corner Associates, Inc., Silver Spring, Md. Filed June 13, 1968.

CASUAL CORNER

Owner of Reg. Nos. 645,435 and 795,275.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Ladies Purses, Handbags and Wallets (Int. Cl. 18).
First use no later than Mar. 7, 1950.

Class 26—Measuring and Scientific Appliances

For Sunglasses (Int. Cl. 9).
First use no later than May 1955.

Class 28—Jewelry and Precious-Metal Ware

For Costume Jewelry of Non-Precious Metals (Int. Cl. 14).
First use no later than Mar. 7, 1950.

Class 39—Clothing

For Wearing Apparel and Dress Accessories for Women and Young Women—Namely, Dresses, Skirts, Outer Dress and Sport Shirts and Blouses, Culottes, Slacks, Outer Pants, Outer Shorts, Jackets and Dress and Sport Coats, Car Coats, Suits, Sweaters, Boots, Shoes and Sandals, Bathing Suits, Bathing Caps, Bathing Shoes, Beach Robes, Beach Jackets, Raincoats, Gloves, Belts, Hosiery and Stockings, Hats and Scarves (Int. Cl. 25).
First use no later than Mar. 7, 1950.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

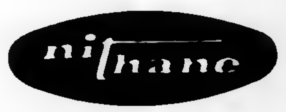
Class 1—Raw or Partly Prepared Materials

SN 260,585. Reiss Associates, Inc., Lowell, Mass. Filed Dec. 12, 1966.

VI-PLY

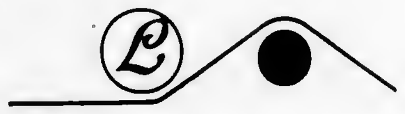
For Poly Vinyl Chloride Film in the Nature of a Surfacing Material for Use on Furniture, Wall and Interiors (Int. Cl. 17).
First use May 20, 1966.

SN 274,908. Unithane, Inc., Providence, R.I. Filed June 27, 1967.



For Polyurethane Elastomer (Int. Cl. 17).
First use on or about May 29, 1967.

SN 277,149. Columbian Carbon Company, New York, N.Y. Filed July 31, 1967.



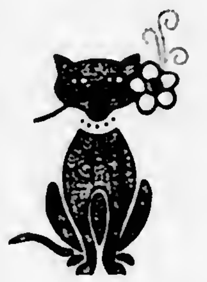
For Polyethylene Materials—Namely, Sheeting and Tubing, as Well as Various Materials Coated or Laminated With Polyethylene for General Use in the Industrial Arts (Int. Cl. 17).
First use at least as early June 1963.

SN 290,332. Rogers Corporation, Rogers, Conn. Filed Feb. 5, 1968.

PORON

Owner of Reg. Nos. 673,910 and 754,815.
For Microporous Plastic Material Used in the Manufacture of Synthetic Shoes and Parts Thereof (Int. Cl. 17).
First use on or about Sept. 30, 1954.

SN 296,078. Ralston Purina Company, St. Louis, Mo. Filed Apr. 22, 1968.



The drawing is lined for the colors, green and yellow, but no claim is made to color.
For Absorbent Animal Litter (Int. Cl. 31).
First use Dec. 21, 1967.

SN 296,079. Ralston Purina Company, St. Louis, Mo. Filed Apr. 22, 1968.

PRIM

For Absorbent Animal Litter (Int. Cl. 31).
First use Dec. 21, 1967.

SN 297,246. Crown Feather and Down Corp., Brooklyn, N.Y. Filed May 3, 1968.

CROWN

For Feathers and Down (Int. Cl. 22).
First use Mar. 9, 1968.

SN 300,541. United States Steel Corporation, Pittsburgh, Pa. Filed June 17, 1968.

ALWATE

For Iron Ore (Int. Cl. 6).
First use Nov. 17, 1967.

SN 300,871. General Mills, Inc., Minneapolis, Minn. Filed June 20, 1968.

MILVEX

For Synthetic Resins (Int. Cl. 1).
First use on or prior to Mar. 29, 1968.

Class 2—Receptacles

SN 270,683. Ipco Hospital Supply Corporation, New York, N.Y. Filed May 4, 1967.

WP

Owner of Reg. Nos. 787,586 and 809,287.
For Waste Bags Made of Paper (Int. Cl. 16).
First use in or about November 1966.

SN 273,589. Ballin Industrial Design & Development Corp., Merrick, N.Y. Filed June 12, 1967.

E·Z·M·T

For Flexible Plastic and Metal Tubes With Container Closures and Follower Type Expelling Mechanisms (Int. Cls. 6 and 20).
First use Feb. 13, 1967.

SN 276,094. Richard S. Bingham and Markham R. Bingham (joint venture), Sacramento, Calif. Filed July 17, 1967.

COR-LOCK BIN

The word "Bin" is disclaimed apart from the mark as shown.
For Wooden Bins, Crates, and Containers (Int. Cl. 20).
First use Feb. 27, 1962.

SN 282,872. Alton Box Board Company, Wilmington, Del. Filed Oct. 19, 1967.

FULL CIRCLE PACKAGING

The word "Packaging" is disclaimed apart from the mark as shown.
For Cartons and Containers Made in Whole or in Part From Paper or Paperboard (Int. Cl. 16).
First use Oct. 3, 1967.

SN 293,279. Keyes Fibre Company, Waterville, Maine. Filed Mar. 14, 1968.

POCKET CELL

The word "Cell" is disclaimed apart from the mark as shown. Owner of Reg. No. 825,548.
For Molded Pulp Packing Trays and Top Pads (Int. Cl. 16).
First use May 11, 1967.

SN 293,764. Wilbert, Inc., Forest Park, Ill. Filed Mar. 20, 1968.

TRIBUTE

For Cremation Urns (Int. Cl. 20).
First use on or about Jan. 25, 1968.

SN 293,765. Wilbert, Inc., Forest Park, Ill. Filed Mar. 20, 1968.

REGAL

For Cremation Urns (Int. Cl. 20).
First use on or about Jan. 25, 1968.

SN 297,504. Humboldt Products Corp., Columbus, Miss. Filed May 7, 1968.

For Laundry Bags, Lingerie Bags, Dampening Bags, Clothes Pin Bags, and Styled Laundry Bags (Int. Cl. 21).
First use July 10, 1967.

SN 299,810. Crate-Rite, Inc., Union City, Calif. Filed June 6, 1968.

ECS

For Shipping Containers (Int. Cl. 20).
First use Feb. 8, 1968.

Class 5 — Adhesives

SN 235,757. The Webtex Company, Wilmington, Mass. Filed Nov. 24, 1965.

COHESIVE MASTIC

For Adhesives for Attaching Wall Panels or Sheets to Solid Backings, Such as Walls (Int. Cl. 1).
First use Nov. 12, 1947.

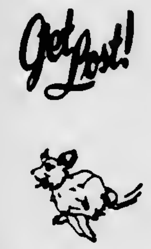
Class 6 — Chemicals and Chemical Compositions

SN 266,130. Ortho Pharmaceutical Corporation, d.b.a. Ortho Diagnostics, Raritan, N.J. Filed Mar. 7, 1967.

RHEUMINDEX

For Diagnostic Reagent for Rheumatoid Arthritis for Laboratory Use (Int. Cl. 1).
First use Oct. 26, 1966.

SN 287,141. Mary B. Burtis, d.b.a. The Jab Company, Portland, Oreg. Filed Dec. 18, 1967.



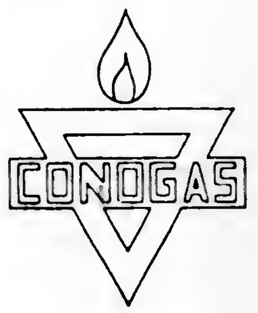
For Dog Repellent (Int. Cl. 5).
First use Aug. 15, 1967.

SN 288,506. Foseco International Limited, Birmingham, England. Filed Jan. 10, 1968.

INOTAB

Priority claimed under Sec. 44(d) on British Reg. No. 912,405, dated July 24, 1967.
For Preparation Consisting Principally of Ferro-Silicon in Pellet Form, To Be Introduced Into Iron Molds as an Inoculant (Int. Cl. 1).
First use July 10, 1967.

SN 289,784. Continental Oil Company, Ponca City, Okla. Filed Jan. 29, 1968.



Owner of Reg. Nos. 585,122 and 662,753.
For Liquefied Petroleum Gases (Int. Cl. 4).
First use Apr. 27, 1967.

SN 290,678. Witco Chemical Company, Inc., New York, N.Y. Filed Feb. 8, 1968.

WITCAMIDE

For Organic Surfactants (Int. Cl. 1).
First use January 1962.

SN 298,087. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed May 14, 1968.

BENLATE

For Fungicide (Int. Cl. 5).
First use Apr. 19, 1968.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 271,904. Atlas Chemical Industries, Inc., Wilmington, Del. Filed May 19, 1967.

AQUAFLO

For Explosives for Blasting (Int. Cl. 13).
First use Feb. 27, 1967.

SN 272,055. Hitco, Gardena, Calif. Filed May 22, 1967.

ROSETTE

For Components for Rockets, Re-Entry Vehicles and Space Vehicles—Namely, Multi-Ply Structural Ablative and Insulative Nose Cone Frustums and Heat Shield Frustums (Int. Cl. 12).
First use Feb. 19, 1964.

SN 282,784. The Dow Chemical Company, Midland, Mich. Filed Oct. 18, 1967.

STRATABLAST

Owner of Reg. No. 793,884.
For Blasting Agents (Int. Cl. 13).
First use Jan. 8, 1964.

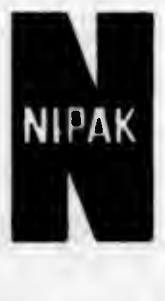
SN 293,239. Crosman Arms Company, Inc., Fairport, N.Y. Filed Mar. 14, 1968.

TRAPMASTER

For Gas-Powered Shotguns (Int. Cl. 13).
First use Jan. 8, 1968.

Class 10 — Fertilizers

SN 284,026. Nipak, Inc., Dallas, Tex. Filed Nov. 2, 1967.



Owner of Reg. Nos. 799,019, 799,095, and 799,210.
For Nitrogen, Phosphate and Potash Based Fertilizers (Int. Cl. 1).
First use July 11, 1967.

Class 11 — Inks and Inking Materials

SN 263,252. The Carter's Ink Company, Cambridge, Mass. Filed Jan. 25, 1967.

MICROPORE

Owner of Reg. No. 772,975.
For Stamp Pads (Int. Cl. 16).
First use Nov. 15, 1961.

SN 286,199. Sun Chemical Company, New York, N.Y. Filed Dec. 4, 1967.

HYDRO VEL

Owner of Reg. Nos. 765,327, 838,670, and others.
For Printing Ink (Int. Cl. 2).
First use Oct. 16, 1967.

SN 291,765. Old Town Corporation, Brooklyn, N.Y. Filed Feb. 23, 1968.

SCORE

For Carbon Paper (Int. Cl. 16).
First use in or about December 1965.

Class 12 — Construction Materials

SN 254,684. Interlake Steel Corporation, Chicago, Ill. Filed Sept. 19, 1966.

INTERLAKE

For Floor Plates, Non-Slip Deck Panel, Mechanical Structural Elements—Namely, Angle Plates, Panels and Channels (Int. Cl. 6).
First use at least as early as Feb. 21, 1966.

SN 260,588. Reiss Associates, Inc., Lowell, Mass. Filed Dec. 12, 1966.

HY-PLY

For Resinous Material Sold Only as Applied to Hardboard Panels (Int. Cl. 19).
First use December 1965.

SN 275,157. McAleer Manufacturing Corporation, Detroit, Mich. Filed June 30, 1967.

GR-RIP

For Plastic Auto Body Filler (Int. Cl. 17).
First use Jan. 17, 1967.

SN 275,387. Munters Corporation, Fort Myers, Fla. Filed July 5, 1967.

CELdek

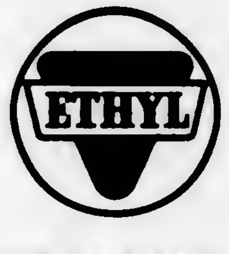
For Cooling Tower Fill Made of Sheets of Cellulosic Material (Int. Cl. 17).
First use June 20, 1967.

SN 275,388. Munters Corporation, Fort Myers, Fla. Filed July 5, 1967.

GLASdek

Owner of Reg. No. 806,242.
For Cooling Tower Fill Made of Sheets Containing Glass Fiber Material (Int. Cl. 17).
First use June 20, 1967.

SN 280,308. Ethyl Corporation, Richmond, Va. Filed Sept. 14, 1967.



Owner of Reg. Nos. 187,410, 399,427, and others.
For Polyethylene and Polyvinyl Chloride Film for Use as a Vapor Barrier and for Protection Against Weather and Polyvinyl Chloride Panels for Use in the Construction of Industrial, Commercial and Residential Buildings (Int. Cls. 12 and 17).
First use Dec. 16, 1963; June 8, 1964, in a different form.

SN 281,126. Southeastern Aluminum Products, Inc., Jacksonville, Fla. Filed Sept. 25, 1967.

SEALPRO

Owner of Reg. No. 738,475.
For Shower Doors—Namely, Aluminum and Glass or Plastic Sliding Enclosures for Mounting on Tubs and Pivotal Connecting Aluminum and Glass or Plastic Enclosures for Shower Stalls (Int. Cl. 19).
First use Apr. 3, 1963.

SN 288,953. Hastings Aluminum Products, Inc., Hastings, Mich. Filed Jan. 16, 1968.

SUPER SIL-A-COTE

For Baked Enamel Finish Incorporated in Aluminum Siding (Int. Cl. 6).
First use Nov. 27, 1967.

SN 295,846. H. H. Robertson Company, Pittsburgh, Pa. Filed Apr. 17, 1968.

DURASIL

For Painted Sheet Metal Building Sheathing Elements and Building Panels (Int. Cl. 6).
First use Mar. 25, 1968.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

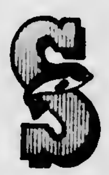
SN 254,685. Interlake Steel Corporation, Chicago, Ill. Filed Sept. 19, 1966.

INTERLAKE

For Metal and Plastic Strapping Employed by Reinforcing Objects Such as Boxes, Crates, Bales and Packages, and in Loading Transportation Vehicles; Strap Fastening Metal Seals; Corrugated Wood Fasteners; Freight Car Door Straps; Metal Barbed Box Straps; Framing Materials—Namely, Nuts, Bolts, Panel Clamps, Casters, and Framing Fixtures (Staples); Strap Anchor Plates; Stays; Stake Pocket Protectors; and Cargo Securement Fittings—Namely, Frame Clamps, Edge Protectors, Shackles, Shoring Hooks, Strap Takeup Spools, and Strap Anchor Bars (Int. Cls. 6 and 20).

First use at least as early as Feb. 21, 1966.

SN 263,612. Schaefer Equipment Company, Pittsburgh, Pa. Filed Jan. 30, 1967.



The lining on the drawing does not represent color.

For Marine Hardware—Namely, Yacht Blocks and Cleats (Int. Cl. 12).

First use Nov. 30, 1966.

SN 269,764. Kent Corporation, Princeton, N.J. Filed Apr. 21, 1967.

KENT KLIP

The word "Klip" is disclaimed apart from the mark as a whole.

For Wiring Harness Ties (Int. Cl. 6).

First use Mar. 8, 1964.

SN 271,654. George R. Stewart, d.b.a. Screen Patch Co., Philadelphia, Pa. Filed May 16, 1967.

SNAP-PATCH

For Screen Patches (Int. Cl. 6).

First use Dec. 12, 1944.

SN 278,441. Walter Kidde & Company, Inc., Belleville, N.J. Filed Aug. 16, 1967.

FARBERLON

Owner of Reg. No. 804,130.

For Non-Stick Coated Cooking Utensils (Int. Cl. 21).

First use on or about Oct. 15, 1966.

SN 279,753. The Salem Valve Company, Salem, Ohio. Filed Sept. 6, 1967.

SS^{99}

The drawing is lined for red, but no claim is made to color.

For Fluid Control Valves (Int. Cl. 6).

First use on or about Aug. 5, 1966.

SN 286,182. Ridge Products, Inc., Elkhart, Ind. Filed Dec. 4, 1967.

SPELLOUT

For House Number Plate (Int. Cl. 20).

First use July 1, 1967.

SN 287,205. Illinois Tool Works Inc., Chicago, Ill. Filed Dec. 14, 1967.

WHEREVER YOU ARE . . . WE ARE!

For Fasteners, Hole Plugs, Rivets, Washers, and Molding Clips (Int. Cl. 6).

First use Dec. 8, 1967.

SN 294,553. The Deltrol Corporation, Bellwood, Ill. Filed Apr. 1, 1968.

Easy Read

For Flow Control Valves (Int. Cl. 6).

First use December 1967.

Class 14 — Metals and Metal Castings and Forgings

SN 254,686. Interlake Steel Corporation, Chicago, Ill. Filed Sept. 19, 1966.

INTERLAKE

For Stapling Wire; and Hot and Cold Rolled Steel Strip (Int. Cl. 6).

First use at least as early as Jan. 20, 1966.

Class 15 — Oils and Greases

SN 289,765. The Barcolene Company, Boston, Mass. Filed Jan. 29, 1968.

START 'N' GO

For Internal Combustion Engine Starting Fluid (Int. Cl. 4).

First use Nov. 17, 1967.

Class 16 — Protective and Decorative Coatings

SN 279,288. The Dexter Corporation, Windsor Locks, Conn. Filed Aug. 29, 1967.

SYNERGIZER

For Coating Materials for Bowling Alley Lanes, Including Permanent Coatings—Namely, Lacquers and Varnishes; and Temporary Coatings, Namely, Oil Based Dressings (Int. Cl. 2).

First use June 12, 1967.

Class 17 — Tobacco Products

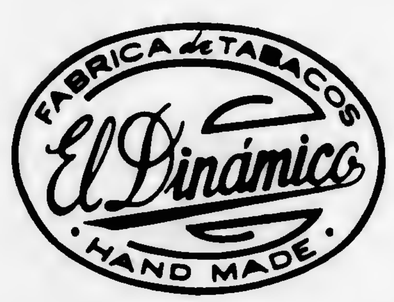
SN 270,135. The Imperial Tobacco Company (of Great Britain and Ireland), Limited, Bedminster, Bristol, England. Filed Apr. 27, 1967.

ENVOY

Owner of British Reg. No. 311,101, dated Mar. 8, 1909; and U.S. Reg. No. 377,335.

For Cigarettes (Int. Cl. 34).

SN 287,920. Don Joaquin Cigars Inc., Miami, Fla. Filed Jan. 2, 1968.



Applicant disclaims the words "Fabrica de Tabacos." The term "El Dinamico" translated into English means "the dynamic."

For Cigars (Int. Cl. 34).

First use Nov. 20, 1967.

SN 293,451. Alfresan Havana Cigars, Inc., Miami, Fla. Filed Mar. 18, 1968.

GISPERT

For Cigars (Int. Cl. 34).

First use May 27, 1964.

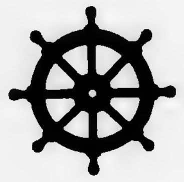
SN 298,819. The S. Frieder & Sons Company, Philadelphia, Pa. Filed May 22, 1968.

HELENA

For Cigars (Int. Cl. 34).

First use Apr. 16, 1968.

SN 299,433. Conwood Corporation, Memphis, Tenn. Filed May 31, 1968.



For Snuff (Int. Cl. 34).

First use Feb. 26, 1968.

Class 18 — Medicines and Pharmaceutical Preparations

SN 275,891. Youngs Drug Products Corporation, New York, N.Y. Filed July 12, 1967.

YOUNG PEOPLE

For Disposable Applicator Saturated With a Liquid Medicated Preparation for Topical Application for Aid in Acne Therapy (Int. Cl. 5).

First use on or about June 16, 1967.

SN 287,098. Porter & Dietsch, Inc., St. Paul, Minn. Filed Dec. 18, 1967.

X-11

For Medicinal Preparation Adapted for Use in Weight Reducing (Int. Cl. 5).

First use June 22, 1967.

SN 287,197. Veterinary Research Institute, Incorporated, Dallas, Tex. Filed Dec. 18, 1967.

HOOF-PAK

For Medicament for External Treatment of Fungus Infections and Wounds of Livestock (Int. Cl. 5).

First use May 1967.

SN 287,240. The Upjohn Company, Kalamazoo, Mich. Filed Dec. 19, 1967.

CORMOCIN

For Antibiotic (Int. Cl. 5).

First use Oct. 30, 1967.

SN 287,242. The Upjohn Company, Kalamazoo, Mich. Filed Dec. 19, 1967.

STROMOCIN

For Antibiotic (Int. Cl. 5).

First use Oct. 30, 1967.

SN 287,308. Meyer Laboratories Inc., Detroit, Mich. Filed Dec. 20, 1967.

SEDABID

For Sedative Compound (Int. Cl. 5).

First use Dec. 4, 1967.

SN 287,309. Meyer Laboratories Inc., Detroit, Mich. Filed Dec. 20, 1967.

TUSSABID

For Antitussive, Antihistamine, Decongestant Compound (Int. Cl. 5).

First use Dec. 4, 1967.

SN 287,409. Abbott Laboratories, North Chicago, Ill. Filed Dec. 22, 1967.

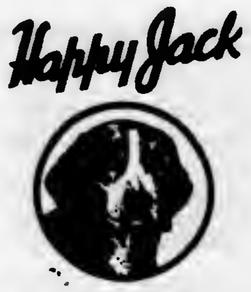
FERO-FROLIC-500

Owner of Reg. No. 796,301.

For Hematinic and Vitamin Preparation (Int. Cl. 5).

First use Oct. 31, 1967.

SN 292,157. Happy Jack, Inc., Snow Hill, N.C. Filed Feb. 29, 1968.



Owner of Reg. No. 414,789.

For Pharmaceutical Preparations for the Control of Skin Eczemas, Vermin, and Diarrhea in Animals; Pharmaceutical Preparations for the Toughening and Healing of Dogs' Feet, Worm Remedies and Vaccines; Pharmaceutical Preparations Containing Deodorants and Skin Conditioners for Dogs and Other Animals; and Antacid Vitamin Food Supplements for Female Animals (Int. Cl. 5).

First use Jan. 20, 1945.

SN 292,848. Hoffman-Taff, Inc., Springfield, Mo. Filed Mar. 11, 1968.

PANTOPLEX

For DL-Calcium Pantothenate Calcium Chloride Complex for Fortification of Poultry and Animal Feeds (Int. Cl. 5).
First use Oct. 7, 1965.

SN 295,087. Vitaminerals, Inc., Glendale, Calif. Filed Apr. 8, 1968.

GLENALGESIC

For Cream Base Balm for Temporary Relief of Minor Muscular Aches and Pains Due to Over-Exertion or Fatique, or Minor Pains of Rheumatism and Arthritis (Int. Cl. 5).
First use Oct. 16, 1967.

SN 295,209. Ralston Purina Company, St. Louis, Mo. Filed Apr. 9, 1968.

PURACEL

For Hog Cholera Vaccine (Int. Cl. 5).
First use Jan. 16, 1968.

SN 296,931. Smith Kline & French Laboratories, Philadelphia, Pa. Filed Apr. 30, 1968.

CENDEHILL

For Virus Strains Adapted for the Preparation of Rubella Virus Vaccines (Int. Cl. 5).
First use Mar. 18, 1966.

SN 299,412. Smith Kline & French Laboratories, Philadelphia, Pa. Filed May 31, 1968.

DUCON

For Cough-Cold Preparation (Int. Cl. 5).
First use May 20, 1968.

SN 300,528. Mead Johnson & Company, Evansville, Ind. Filed June 17, 1968.

CADRYN

Owner of Reg. No. 708,653.
For Pharmaceutical Preparation for Improving Blood Flow to the Myocardium (Int. Cl. 5).
First use on or prior to June 7, 1968.

SN 300,529. Mead Johnson & Company, Evansville, Ind. Filed June 17, 1968.

CADRYN-80

Owner of Reg. No. 708,653.
For Pharmaceutical Preparation for Improving Blood Flow to the Myocardium (Int. Cl. 5).
First use on or prior to June 7, 1968.

SN 300,531. Mead Johnson & Company, Evansville, Ind. Filed June 17, 1968.

CORODILAN

Owner of Reg. Nos. 669,810 and 769,063.
For Pharmaceutical Preparation for Improving Blood Flow to the Myocardium (Int. Cl. 5).
First use on or prior to June 7, 1968.

SN 300,532. Mead Johnson & Company, Evansville, Ind. Filed June 17, 1968.

CORODILAN-80

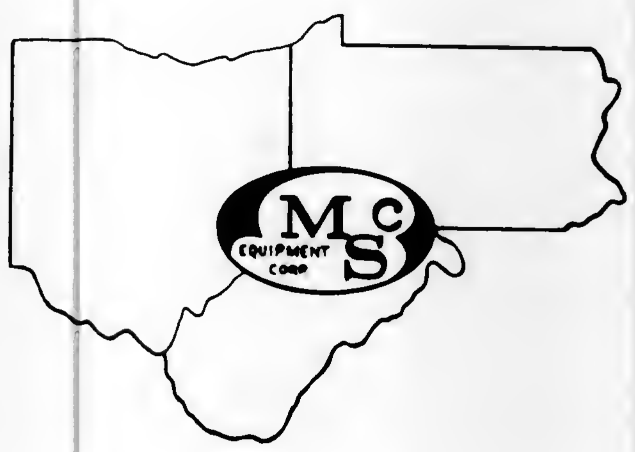
Owner of Reg. Nos. 669,810 and 769,063.
For Pharmaceutical Preparation for Improving Blood Flow to the Myocardium (Int. Cl. 5).
First use on or prior to June 7, 1968.

Class 19—Vehicles

SN 253,940. Woodside Engineering Co., Franklin Park, Ill. Filed Sept. 6, 1966.

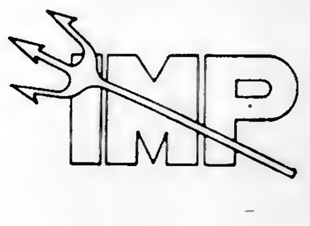
For Support and Positioning Rails for Mounting in Freight Vehicles for Holding Cargo in Place; and Metal Shapes—Namely, Airplane Frame Parts, and Truck Body Structural Components (Int. Cl. 12).
First use June 15, 1957.

SN 271,504. McKee-Stewart Equipment Corporation, Pittsburgh, Pa. Filed May 15, 1967.



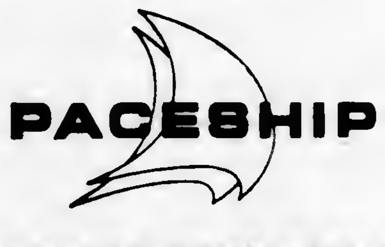
Applicant disclaims the outline map of the States of Pennsylvania, Ohio, and West Virginia, and the words "Equipment Corp."
For Hand Trucks, Dolly Trucks, Platform Trucks, and Utility Carts (Int. Cl. 12).
First use Jan. 15, 1967.

SN 275,035. Bob R. Clark, d.b.a. Clark Enterprises Manufacturing, Paramount, Calif. Filed June 29, 1967.



For Sailing Boats and Parts Thereof—Namely, Goosenecks, Rudders, Dagger Boards, and Sails (Int. Cls. 12 and 22).
First use Dec. 1, 1959.

SN 292,485. Industrial Shipping Company Limited, Mahone Bay, Nova Scotia, Canada. Filed Mar. 5, 1968.



Owner of U.S. Reg. Nos. 583,446 and 694,851.
For Wood and Fibreglass Sailboats, Motor Boats, Row Boats, and Unfinished Hulls of Boats (Int. Cl. 12).
First use Sept. 1, 1965; in commerce Sept. 1, 1965.

SN 292,729. United Marine Co., Inc., Kansas City, Mo. Filed Mar. 7, 1968.

HUCK FINN

For Camping Trailers (Int. Cl. 12).
First use on or about Jan. 30, 1968.

SN 295,402. General Motors Corporation, Detroit, Mich. Filed Apr. 11, 1968.

GM

Owner of Reg. Nos. 314,824, 636,392, and others.
For Automobiles, Motor Trucks, Truck Tractors, Buses, and Parts Thereof (Int. Cl. 12).
First use on or before Sept. 15, 1933.

Class 20—Linoleum and Oiled Cloth

SN 288,509. The General Tire & Rubber Company, Akron, Ohio. Filed Jan. 10, 1968.

genon

For Vinyl Wallcovering (Int. Cl. 27).
First use Nov. 27, 1967.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 253,300. Fisher Radio Corporation, Long Island City, N.Y. Filed Aug. 29, 1966.

AutoScan

For Radio Tuners With Automatic Tuning Circuitry (Int. Cl. 9).
First use May 12, 1964.

SN 256,851. Motorola, Inc., Franklin Park, Ill. Filed Oct. 20, 1966.

HEP

For Semiconductors—Namely, Transistors, Diodes, Rectifiers, and Integrated Circuits (Int. Cl. 9).
First use Apr. 22, 1965.

SN 259,538. Emerson Electric Co., St. Louis, Mo. Filed Nov. 28, 1966.

CONTRASTATIC

For Speed Control Systems and Components Therefor, Comprising Motors, Generators, Controllers, and Rectifiers (Int. Cl. 9).
First use Oct. 10, 1966.

SN 266,545. Jerrold Electronics Corporation, Philadelphia, Pa. Filed Mar. 13, 1967.

TELE-TROL

For Television Modulators and Demodulators (Int. Cl. 9).
First use on or about July 18, 1957.

SN 271,447. Conductron Corporation, MRC Division, Ann Arbor, Mich. Filed May 15, 1967.

MAGNESTAT

For Magnetic Servo Amplifiers (Int. Cl. 9).
First use Jan. 9, 1953.

SN 272,598. Essex Wire Corporation, Fort Wayne, Ind. Filed May 29, 1967.

MAGWIRE

For Insulated Electrical Wire for Battery-Powered Ignition Systems (Int. Cl. 9).
First use Mar. 31, 1967.

SN 274,864. Essex Wire Corporation, Fort Wayne, Ind. Filed June 27, 1967.

ALPIC

For Electric Cables (Int. Cl. 9).
First use July 27, 1966.

SN 274,866. Essex Wire Corporation, Fort Wayne, Ind. Filed June 27, 1967.

CUPIC

For Electric Cables (Int. Cl. 9).
First use June 9, 1966.

SN 283,014. James B. Lansing Sound, Inc., Los Angeles, Calif. Filed Oct. 20, 1967.

JBL

Owner of Reg. Nos. 782,327, 782,828, and 803,793.
For Loudspeakers, Speaker Systems, Stereo Reproducers, Dividing Networks for Speaker Systems, High Frequency Transducers, Energizers, Transducer Energizers, Acoustic Lenses for Loudspeaker Horns, Speaker Drivers, Baffles and Enclosures, Electronic Equipment Cabinets, Passive Radiators (Non-Energized Loudspeakers) for Stereo Enclosures, Stereo Control Centers, Amplifiers, Preamplifiers and Radio Tuners (Int. Cl. 9).
First use in 1949.

SN 286,910. The De Vilbiss Company, Toledo, Ohio. Filed Dec. 14, 1967.

DEVILBISS
Electro-Dip

Owner of Reg. Nos. 164,521, 771,830, and others.

For Apparatus for Coating Articles With Water-Base Paints by Electrophoretic Deposition of the Paint (Int. Cl. 9).

First use Aug. 9, 1967.

SN 286,919. Electric Machinery Mfg. Company, Minneapolis, Minn. Filed Dec. 14, 1967.

TRANS-START

For Transistorized All Static Automatic Engine Start Control (Int. Cl. 9).

First use Oct. 4, 1967.

SN 290,099. Import Associates of America, Inc., Chicago, Ill. Filed Feb. 1, 1968.

MUSICAIR

For Radios (Int. Cl. 9).

First use on or about Sept. 5, 1967.

SN 300,777. Fedtro, Inc., Rockville Centre, N.Y. Filed June 19, 1968.

REPEAT-O-MATIC

For Flashing Signal Lights for Automobiles (Int. Cl. 11).

First use Dec. 29, 1967.

SN 300,778. Fedtro, Inc., Rockville Centre, N.Y. Filed June 19, 1968.

PLUG-O-MATIC

Owner of Reg. Nos. 844,014 and 848,554.

For Adaptors Which Convert 110 Volt Alternating Current to 9 Volt Direct Current (Int. Cl. 9).

First use Nov. 14, 1967.

Class 22 — Games, Toys, and Sporting Goods

SN 294,165. Cordell Tackle, Inc., Hot Springs, Ark. Filed Mar. 26, 1968.

Super-Shad

Without relinquishing any of its common law rights, applicant disclaims the word "Shad" apart from the mark as shown.

For Artificial Fishing Lures (Int. Cl. 28).

First use Jan. 22, 1968.

SN 297,005. Donco Products Corp., Lakeview, Oreg. Filed May 1, 1968.

Twist Board

Applicant disclaims the word "Board" apart from the mark as shown.

For Exercise Board (Int. Cl. 28).

First use Nov. 30, 1966.

SN 298,856. Parker Brothers, Inc., Salem, Mass. Filed May 22, 1968.

SITUATION 4

For Equipment for Playing a Puzzle Game (Int. Cl. 28).

First use Mar. 21, 1968.

SN 299,248. Parker Brothers, Inc., Salem, Mass. Filed May 28, 1968.

HIP FLIP

For Equipment for Playing a Game for Entertainment and Exercise (Int. Cl. 28).

First use Mar. 29, 1968.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 254,907. American Sumatra Tobacco Corporation, East Hartford, Conn. Filed Sept. 22, 1966.

vend-a-stamp

For Stamp Vending Machines (Int. Cl. 9).

First use Jan. 26, 1959.

SN 258,558. Lihit Industrial Co., Ltd., Higashi-ku, Osaka, Japan. Filed Nov. 14, 1966.

LIHIT

For Apparatus for Drilling Holes Through Stack of Paper Sheets (Int. Cl. 7).

First use on or about Jan. 20, 1956; in commerce on or about Jan. 20, 1966.

SN 264,842. National Automotive Parts Association, Chicago, Ill. Filed Feb. 16, 1967. COLLECTIVE MARK.

NAPA

Owner of Reg. No. 571,129.

For Gears, Sprockets, Sprocket-Timing Chains, Bushings, Jacks, Cranes, Rams, Pumps, Lift Trucks, Automotive Repair Dollies, Stands, Jack Couplers, Hydraulic Spreaders, Mufflers, Cylinder Sleeve Assemblies, Pistons, Clutch Plates, Clutch Pressure Assemblies, Connecting Rods, Torque Converters, Torus Covers, Fluid Drive Units, Exhaust Pipes, Tail Pipes, Crankshafts, Carburetors and Carburetor Parts, Internal Combustion Engine Valves, Ring and Pinion Gears, Splined Axles, Cylinder Blocks, Cylinder Heads, Clutch Assemblies, Differential Assemblies, Power Transmissions, Universal Joints, Clutch Rebuilding Machines, Valve Guides, Valve Springs, Valve Stem Keys, Valve Seat Inserts, Bearings, Piston Pins, Piston Pin Locks, Vacuum Fans, Rocker Arm Assemblies, Spare, Replacement, and Repair Parts for the Foregoing; Fire Extinguishers; and Hand Tools—Namely, Power Operated and Manual Saws, Grinders, Drills, Wrenches, Sanders, Polishers, Hammers, Drivers, Pliers, Chisels, Punches, Sockets, and Scrapers (Int. Cls. 7, 8, 9, and 12).

First use January 1965.

SN 268,324. Nitto Kohki Company, Limited, Ohta-ku, Tokyo, Japan. Filed Apr. 4, 1967.

JETCHISEL

For Pneumatic Tools for Scale Removing, Rust Removing, Surface Cleaning, Scraping and Peening (Int. Cl. 7).

First use Jan. 15, 1965; in commerce Jan. 15, 1965.

SN 270,872. American Powerstage Company, Houston, Tex. Filed May 8, 1967.

WATER BLASTER

Owner of Reg. No. 781,875.

For Cleaning Machines Adapted To Discharge Water on Various Surfaces for Degreasing, Stripping Mastics, Removing Filth and Marine Growth, and for Other Similar Cleaning Operations (Int. Cl. 7).

First use June 3, 1960.

SN 275,137. Globar, Inc., Lincolnwood, Ill. Filed June 30, 1967.

AMERICAN LADY

For Women's Electric Shavers (Int. Cl. 8).

First use Apr. 3, 1967.

SN 282,138. Roof Manufacturing Company, Pontiac, Ill. Filed Oct. 9, 1967.

Lariat 30

For Riding Lawn Mowers (Int. Cl. 7).

First use on or before Aug. 11, 1967.

SN 283,161. Rose Patch & Label Company, Grand Rapids, Mich. Filed Oct. 23, 1967.

ROFAB

For Label Printing Machines (Int. Cl. 7).

First use on or about Aug. 31, 1967.

SN 283,617. Brewer Sewing Supplies Company, Chicago, Ill. Filed Oct. 30, 1967.

DECORA

For Sewing Machines (Int. Cl. 7).

First use 1961.

SN 285,182. American Hydrotherm Corporation, New York, N.Y. Filed Nov. 20, 1967.

HYDROTHERM SPRAY MIXER

Applicant disclaims the words "Spray Mixer" apart from the mark as shown. Owner of Reg. Nos. 523,426, 692,948, and others.

For Power Operated Combination Mixing and Spraying Apparatus for Producing Detergents, Cleansers, Inorganic Chemicals, Coated Inorganic Chemicals, Agglomerated Inorganic Chemicals, Coated Organic Chemicals, Agglomerated Organic Chemicals, Agglomerated Pharmaceuticals, and Agglomerated Foods (Int. Cl. 7).

First use June 30, 1967.

SN 285,902. Automated Building Components, Inc., Miami, Fla. Filed Nov. 30, 1967.

THE GANG-NAIL COMPONENT SYSTEM

The words "Component System" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 666,175, 796,773, and others.

For Wood Fastening and Joint Forming Devices—Namely, Presses and Jigs (Int. Cl. 7).

First use June 1963.

SN 287,960. Sellon, Inc., Toledo, Ohio. Filed Jan. 2, 1968. Owner of Reg. Nos. 509,480, 631,254, and 781,302.

LOCKWOOD

For Potato and Other Vegetable Processing Equipment and Implements—Namely, Graders, Washers, Sizers, Loaders, Elevators, Dryers, Waxers, Diggers, and Bag Sewing Machines (Int. Cl. 7).

First use July 25, 1966; Mar. 1, 1940, as to "Lockwood."

Class 26 — Measuring and Scientific Appliances

SN 255,608. Fisher Scientific Company, Pittsburgh, Pa. Filed Oct. 3, 1966.

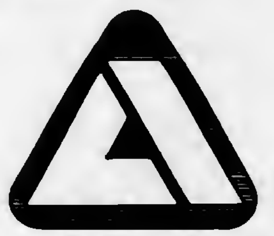
FISHER brand

The word "Brand" is disclaimed separate and apart from the mark as a whole.

For Laboratory Glassware, Such as Pipettes, Bottles, Beakers, Slides, Cover Glass, Blowpipes and Burets; Laboratory Instruments, Such as Spectrophotometer Cells, Flowmeters, Thermometers, Hydrometers, Balances and Pressure Gauges; Laboratory Utensils, Such as Spatulas, Dissecting Forceps, Scissors and Needles; and Laboratory Filters (Int. Cl. 9).

First use June 5, 1966.

SN 265,598. Associated Testing Laboratories, Inc., Wayne, N.J. Filed Feb. 28, 1967.



The mark consists of design simulating letter "A." The drawing is lined for the color blue, but color is not claimed as an integral part of the mark.

For Environmental and Reliability Testing Equipment—Namely, Environmental Test Chambers and Components Therefor, and Impact Simulators (Int. Cl. 9).

First use about Dec. 19, 1966.

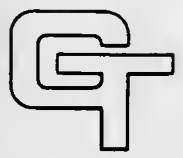
SN 274,406. R. P. Cargille Laboratories, Inc., Cedar Grove, N.J. Filed June 21, 1967.

SINK-FLOAT

For Laboratory Apparatus and Accessories—Namely, Capsules Used for Adjusting and Controlling Density Liquids (Int. Cl. 9).

First use May 1967.

SN 275,798. Tracor, Inc., Austin, Tex. Filed July 11, 1967.



For Frequency Standards, Frequency Sources, Power Supplies, Frequency Synthesizers, and Time Scale Selectors (Int. Cl. 9).
First use at least as early as Apr. 7, 1966.

SN 275,876. Sel-Rex Corporation, Nutley, N.J. Filed July 12, 1967.

MODULE-MATIC

For Automatic Electroplating Equipment—Namely, Machine Containing a Programming Mechanism for Automatically Dipping and Transferring Goods in and From Chemical Baths for Electroplating (Int. Cl. 9).
First use Apr. 28, 1967.

SN 277,554. General Precision Systems Inc., Glendale, Calif. Filed Aug. 4, 1967.

LIBRATROL

Owner of Reg. Nos. 372,767, 822,743, and others.
For Flow Computers for Measuring On-Line Gas Flow Under Varying Conditions of Pressure and Temperature (Int. Cl. 9).
First use June 19, 1967.

SN 279,711. Ascor Electronics, Inc., Miami, Fla. Filed Sept. 6, 1967.

AQUALUME

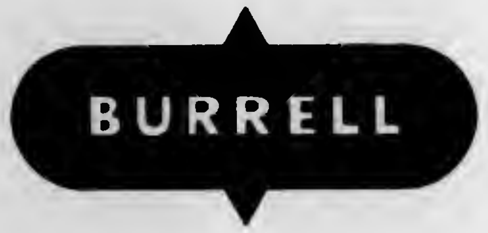
For Underwater Electronic Discharge Lamps for Photographic Purposes (Int. Cl. 9).
First use Aug. 24, 1967.

SN 280,851. American Standard Inc., New York, N.Y. Filed Sept. 21, 1967.

PERMA-CAL

For Fluid Pressure Test Gauges (Int. Cl. 9).
First use May 27, 1964.

SN 281,268. Burrell Corporation, Pittsburgh, Pa. Filed Sept. 27, 1967.



Owner of Reg. No. 605,104.
For Laboratory Equipment and Accessories for Chemical, Biological, Metallurgical, and Other Industrial Uses—Namely, Gas Mixing and Proportioning Apparatus, Fluid Shakers, Microscopes, Simple and Compound, Cameras, Lenses, Plates for Photographing Etched Metallographic Specimens, and Graphic Recording Instruments for Automatic Analysis of Gases (Int. Cls. 1 and 9).
First use December 1954.

SN 283,369. Amos Turk, New York, N.Y. Filed Oct. 25, 1967.

DESIKET

For Laboratory Desiccator Having a Diffusion Seal, Particularly for Chemical Laboratories, but Not Restricted Thereto (Int. Cl. 9).
First use on or about Jan. 23, 1967.

SN 283,767. Cambridge Scientific Industries, Incorporated, Cambridge, Md. Filed Oct. 31, 1967.

HyDAC

For Industrial Water Composition Control Apparatus Used in a Recirculating Water System To Test for and, If Necessary, Correct the Concentration of Ingredients in the Water (Int. Cl. 9).
First use June 28, 1967.

SN 284,845. Techmatic Corporation, New York, N.Y. Filed Nov. 14, 1967.

TECHMATIC

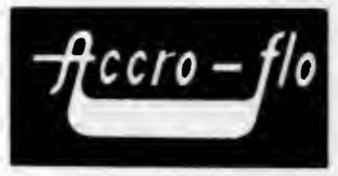
For Vehicle Weight Overload Sensing and Indicating Unit (Int. Cl. 9).
First use Oct. 15, 1967.

SN 286,005. The Fellows Gear Shaper Company, Springfield, Vt. Filed Dec. 1, 1967.

MICRODEX

For Gear Measuring and Testing Machines (Int. Cl. 9).
First use on or about Aug. 31, 1965.

SN 290,253. Thomas M. Byrne, Madison, Wis. Filed Feb. 5, 1968.



For Devices To Dispense Predetermined Amounts of Alcoholic Beverages at Points Spaced Apart From Containers for Said Beverages (Int. Cl. 9).
First use July 1, 1965.

SN 293,339. Bohn Benton, Inc., New York, N.Y. Filed Mar. 15, 1968.

INSTITOR

For Sound Motion Picture Projector and Cartridges (Int. Cl. 9).
First use June 1967.

SN 299,916. Liberty Optical Manufacturing Co. Inc., Newark, N.J. Filed June 7, 1968.

VERGOPOL

For Spectacle Lenses (Int. Cl. 9).
First use Apr. 30, 1968.

SN 300,224. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed June 12, 1968.

DYLUX

For Photosensitive Papers and Films (Int. Cl. 1).
First use Mar. 12, 1968.

Class 27 — Horological Instruments

SN 256,316. Solari & C./Udine S.p.A., Udine, Italy. Filed Oct. 12, 1966.

DATOR

Owner of Italian Reg. No. 144,142, dated June 17, 1959.
For Electromechanical Clocks With Shifting Indicating Blades (Int. Cl. 14).
First use June 1957; in commerce 1958.

Class 28 — Jewelry and Precious-Metal Ware

SN 282,085. Henry Showell Limited, Birmingham, England. Filed Oct. 9, 1967.

EXCALIBUR

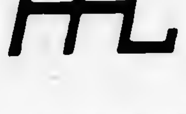
Priority claimed under Sec. 44(d) on British Reg. No. 913,396, dated Aug. 17, 1967. Owner of British Reg. No. 718,168, dated May 26, 1953.
For Jewelry and Watch Bracelets (Int. Cl. 14).

SN 282,224. Unidor G.m.b.H., Pforzheim, Germany. Filed Oct. 10, 1967.

Unidor

Owner of German Reg. No. 825,943, dated Nov. 9, 1966.
For Precious and Nonprecious Jewelry, Bracelets, and Metal Bracelets for Watches (Int. Cl. 14).

SN 288,045. Harry Levitch, d.b.a. Harry Levitch Jewelers, Memphis, Tenn. Filed Dec. 18, 1967.



The mark consists of a representation of the letters "HHL."
For Jewelry (Int. Cl. 14).
First use June 1, 1967.

SN 298,675. Nanasi Mfg. Inc., New York, N.Y. Filed May 21, 1968.

BEACON

For Jewelry—Namely, Rings (Int. Cl. 14).
First use May 17, 1968.

Class 29 — Brooms, Brushes, and Dusters

SN 286,904. Chemway Corporation, Wayne, N.J. Filed Dec. 14, 1967.

OWENS

Owner of Reg. Nos. 405,743 and 435,377.
For Hair Brushes, Hand Cleaning Brushes, Toothbrushes, Dental Plate Brushes, Nail Brushes, Complexion and Powder Brushes, Bath Brushes, and Military Brush Sets (Int. Cl. 21).
First use 1924.

Class 30 — Crockery, Earthenware, and Porcelain

SN 300,659. Nobility, Inc., Newark, N.Y. Filed June 18, 1968.

QUEEN'S BOUQUET

For China Dinnerware (Int. Cl. 21).
First use Apr. 19, 1968.

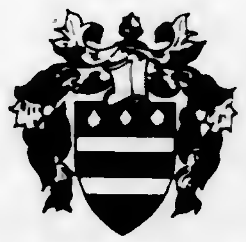
Class 32 — Furniture and Upholstery

SN 275,178. Standard Desk Limited, Montreal, Quebec, Canada. Filed June 30, 1967.

TASK

For Office Furniture, Consisting of Desks, Tables, Bookcases, Chairs, and Credenzas (Int. Cl. 20).
First use Sept. 30, 1966; in commerce Sept. 30, 1966.

SN 284,779. Earlon Furniture, Inc., High Point, N.C. Filed Nov. 3, 1967.



For Upholstered Furniture (Int. Cl. 20).
First use Dec. 30, 1966.

SN 298,183. Roger Office Furniture Co., Inc., Denver, Colo. Filed May 15, 1968.

ROFCO

For Office Furniture (Int. Cl. 20).
First use Sept. 30, 1965.

Class 33 — Glassware

SN 257,455. Brinn's China and Glassware Co., Pittsburgh, Pa. Filed Oct. 28, 1966.

BRINTON

For Glass Tableware—Namely, Dishes, Vases, Candle Holders, Salt and Pepper Shakers, Water Tumblers; and Decorative, Ornamental and Functional Glass Houseware—Namely, Vases, Brandy Snifters, Glass Figurines, Decanters, Mugs, Sugars and Creamers, Punch Sets, Candy Boxes, and Oven Baking Glassware (Int. Cl. 21).
First use May 1950.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 263,884. Aronson Machine Company, Inc., Arcade, N.Y. Filed Feb. 3, 1967.

LOCUST

For Welding Head Manipulators (Int. Cl. 9).
First use Jan. 15, 1967.

SN 265,355. Th. Goldschmidt A.-G., Essen, Germany. Filed Feb. 23, 1967.

ORGOWELD

Owner of German Reg. No. 819,344, dated May 9, 1966; and U.S. Reg. Nos. 801,666, 802,109, and 811,988.
For Welding and Heating Masses for Metals of the Kind Containing Metal and the Oxide of a Different Metal, Wherein the Metal Is Capable of Reducing the Metal Oxide Upon Heating to the Metallic State Under Liberation of Heat (Int. Cl. 6).

SN 281,077. Dalton D. Gunter, d.b.a. Gunter Enterprises, Greenville, S.C. Filed Sept. 25, 1967.

MAGIC-LITE

For Charcoal Fire Starter—Namely, a Portable Container Used for Igniting and Transporting Lighted Charcoal (Int. Cl. 11).
First use May 15, 1967.

SN 285,521. Callahan Mining Corporation, New York, N.Y. Filed Nov. 24, 1967.

BENDWAY

For Bendable Metal Duct for Air Fume and Gaseous Fluid for Use in Heating, Air Conditioning, Ventilating, and Exhaust Systems (Int. Cl. 11).
First use on or before July 3, 1967.

SN 289,782. Clarage Fan Company, Kalamazoo, Mich. Filed Jan. 29, 1968.

INTROLAIR

For Air-Handling Equipment—Namely, Centrifugal Fans (Int. Cl. 11).
First use Dec. 14, 1967.

SN 289,850. Weld Mold Company, Brighton, Mich. Filed Jan. 29, 1968.

POLYWELD

For Welding Electrodes (Int. Cl. 9).
First use Jan. 9, 1968.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 263,055. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Jan. 23, 1967.

TORQUE TEAM

For Drive Belts for Use With Machinery (Int. Cl. 7).
First use Feb. 25, 1966.

SN 285,007. The Fitzgerald Manufacturing Company, Torrington, Conn. Filed Nov. 16, 1967.

CUSHION-COATED

For Gaskets (Int. Cl. 17).
First use June 26, 1967.

SN 285,008. The Fitzgerald Manufacturing Company, Torrington, Conn. Filed Nov. 16, 1967.

CUSH-N-COATED

For Gaskets (Int. Cl. 17).
First use June 26, 1967.

SN 285,658. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Nov. 27, 1967.

TRACTION TORQUE

The word "Traction" is disclaimed apart from the mark as shown.
For Tires (Int. Cl. 12).
First use Oct. 30, 1967.

SN 287,637. R. & J. Dick Co., Inc., King of Prussia, Pa. Filed Dec. 27, 1967.

For Flat Belting for Power Transmission and Conveying Equipment (Int. Cl. 7).
First use in 1963.

SN 289,649. Albany Felt Company, Albany, N.Y. Filed Jan. 26, 1968.

DURAFAB

For Inner Belts Used in the Press Section of a Papermaking Machine (Int. Cl. 7).
First use on or about Dec. 15, 1965.

SN 292,700. La Favorite Rubber Manufacturing Company, Hawthorne, N.J. Filed Mar. 7, 1968.

MARVEL

For Rubber and Fabric Washers, Packing Rings, Hydraulic and Rod Packings (Int. Cl. 17).
First use prior to August 1899.

SN 293,016. The Armstrong Rubber Company, West Haven, Conn. Filed Mar. 12, 1968.

TRU-TRAC

For Pneumatic Tires (Int. Cl. 12).
First use on or about June 27, 1967.

SN 293,166. Nicolet Industries, Inc., Ambler, Pa. Filed Mar. 13, 1968.

HY-SWELL

For Asbestos Rubber Sheet Packing (Int. Cl. 17).
First use Feb. 8, 1968.

SN 293,383. Hewitt-Robins Incorporated, Stamford, Conn. Filed Mar. 15, 1968.

JetFlow

For Bulk Materials Handling Hose (Int. Cl. 17).
First use August 1965.

SN 293,488. Durametallic Corporation, Kalamazoo, Mich. Filed Mar. 18, 1968.

DURAFLON

For Mechanical Packing for Packing Rods, Shafts, and Stems (Int. Cl. 17).
First use Feb. 22, 1968.

SN 293,583. Ritz Rubber Company of America, Skokie, Ill. Filed Mar. 18, 1968.

BIARRITZ

For Automobile Tires (Int. Cl. 12).
First use Feb. 6, 1968.

Class 36 — Musical Instruments and Supplies

SN 252,337. Audio Fidelity Records, Inc., New York, N.Y. Filed Aug. 15, 1966.

Audio 20/20

Applicant disclaims the word "Audio" apart from the mark as shown. Owner of Reg. No. 658,815.
For Phonograph Records and Hi Fi Records (Int. Cl. 9).
First use June 21, 1966.

SN 274,229. N.V. Philips' Phonographische Industrie, Baarn, Netherlands. Filed June 19, 1967.

fontana

The word "Fontana" is equivalent to the English word "fountain." Owner of U.S. Reg. No. 736,806.
For Phonograph Records and Recorded Magnetic Tapes (Int. Cl. 9).
First use Dec. 30, 1957; in commerce July 5, 1959.

SN 280,446. Memorex Corporation, Santa Clara, Calif. Filed Sept. 15, 1967.

TENSAFLEX

For High Tensile Tape Which Forms a Component of Magnetic Recording Tape (Int. Cl. 9).
First use July 31, 1967.

SN 282,140. H. & A. Selmer, Inc., Elkhart, Ind. Filed Oct. 9, 1967.

LESHER

For Oboes, Bassoons, and Accessories Therefor (Int. Cl. 15).
First use 1950.

SN 285,120. De Jur-Amsco Corporation, Long Island City, N.Y. Filed Nov. 17, 1967.

MINI-MEMO

For Tape Recorders and Dictating Machines (Int. Cl. 9).
First use Sept. 20, 1967.

SN 285,350. Rex T. Sherry, d.b.a. Thoroughbred Records, Austin, Tex. Filed Nov. 21, 1967.

THORO GHBRED

For Phonograph Records (Int. Cl. 9).
First use Nov. 18, 1967.

SN 287,689. Western Merchandisers, Inc., Amarillo, Tex. Filed Dec. 27, 1967.

No claim is made to the representation of the phonograph record apart from the mark as shown.
For Phonograph Records (Int. Cl. 9).
First use Jan. 1, 1962.

Class 37 — Paper and Stationery

SN 264,420. Jackdaw Publications Limited, London, England. Filed Feb. 10, 1967.

JACKDAW

Priority claimed under Sec. 44(d) on British Reg. No. 898,339, dated Aug. 12, 1966.
For Envelopes and Document Holders (Int. Cl. 16).

SN 266,953. Lyle H. Van Dyke, Portland, Oreg. Filed Mar. 16, 1967.

DEX-A-PHONE

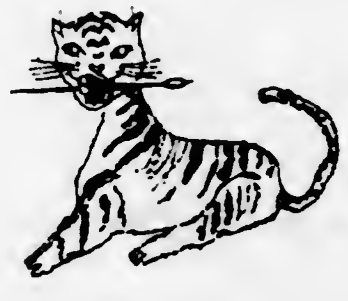
For Telephone Index (Int. Cl. 16).
First use March 1966.

SN 268,261. Ben N. Yasutomo, d.b.a. Yasutomo & Co., San Francisco, Calif. Filed Apr. 3, 1967.

NIJI

For Crayons, Marking Pens, and Erasers (Int. Cl. 16).
First use Nov. 18, 1965.

SN 275,329. Tiger Fabrics, Inc., New York, N.Y. Filed July 3, 1967.



Owner of Reg. No. 830,429.
For Accordion Files, Address Books, Autograph Books, Box Notes, Desk Notes, Desk Pads, Diaries, Memo Pads, Paper Coasters, Pen Bases, Reminder Pads, Scrap Pads, and Telephone Indexes (Int. Cl. 16).
First use Mar. 25, 1964.

SN 278,181. Austen Display, Inc., New York, N.Y. Filed Aug. 14, 1967.

FUN WITH TISSUE

No exclusive rights are claimed in the word "Tissue" apart from the mark as shown.
For Packages of Colored Tissue Paper for Arts and Craft Classwork (Int. Cl. 16).
First use June 19, 1967.

SN 278,407. Al Nyman & Son, Inc., New York, N.Y. Filed Aug. 16, 1967.

alco

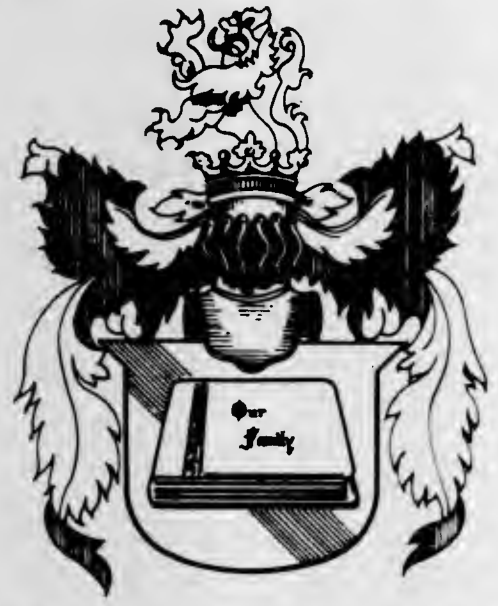
Owner of Reg. Nos. 703,262, 703,266, and 717,234.
For Pens, Crayons, Albums, Score Pads, Telephone and Address Books, Memo Pads, Appointment Pads, Boxed Stationery, Erasers, Desk Organizers, and Desk Caddies (Int. Cl. 16).
First use Nov. 18, 1966.

SN 278,529. Reynolds Metals Company, Richmond, Va. Filed Aug. 17, 1967.

SM

For Heat-Shrinkable, Polyvinyl Chloride Film for Wrapping or Packaging (Int. Cl. 16).
First use at least as early as Nov. 17, 1965.

SN 282,496. United Portrait Album Plan, Dallas, Tex. Filed Oct. 13, 1967.



No claim is made to the representation of the goods. The drawing is not lined for color, and the lining on the drawing is for shading only.
For Portrait Album (Int. Cl. 16).
First use on or about June 21, 1964.

SN 290,486. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed Feb. 7, 1968.

COMPUT-A-FORM

For Paper Business Forms and Envelopes (Int. Cl. 16).
First use Aug. 6, 1964.

SN 290,487. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed Feb. 7, 1968.

VISI-GUIDE

For Paper Business Forms and Envelopes (Int. Cl. 16).
First use May 29, 1958.

SN 291,257. Ethyl Corporation, Richmond, Va. Filed Feb. 16, 1968.

VIN-L-MATE

For Vinyl Casting Release Papers (Int. Cl. 16).
First use Oct. 25, 1967.

SN 291,793. Vornado, Inc., Garfield, N.J. Filed Feb. 23, 1968.

HARRISON PREMIUM

Applicant disclaims the use of the word "Premium" apart from this mark.
For Loose-Leaf Filler Paper, Spiral Bound Notebooks, and Memo Books (Int. Cl. 16).
First use on or about June 1, 1967.

SN 293,536. Manifold Supplies Company, d.b.a. Panama-Beaver Uni-Masters, Brooklyn, N.Y. Filed Mar. 18, 1968.

Tickled Pink

For Spirit Duplicating Combination of Master Paper and Coated Sheet (Int. Cl. 16).
First use June 1966.

SN 293,537. Manifold Supplies Company, d.b.a. Panama-Beaver Uni-Masters, Brooklyn, N.Y. Filed Mar. 18, 1968.

Mini-Master

For Spirit Duplicating Combination of Master Paper and Coated Sheet (Int. Cl. 16).
First use January 1968.

SN 293,653. Westab Inc., Dayton, Ohio. Filed Mar. 19, 1968.
Owner of Reg. No. 438,119.

SCHOOL-MATE

For Looseleaf Ring Binders and Contents Comprising Clip-Board Clip, Notebook Filler Paper, Theme Book, Dictionary, and Index Cards and Guides (Int. Cl. 16).
First use at least as early as Mar. 4, 1935, on loose writing paper.

SN 293,906. Computer Papers Incorporated, Des Moines, Iowa. Filed Mar. 22, 1968.

COPIMAILER

For Billing Forms With Combined Return Envelopes for Use in Computer Equipment (Int. Cl. 16).
First use Mar. 18, 1968.

SN 295,005. Astor Products Inc., Jacksonville, Fla. Filed Apr. 5, 1968.

ARROW

Owner of Reg. Nos. 669,721, 797,964, and 798,177.
For Paper Napkins, Paper Towels, Bathroom Tissue, and Facial Tissue (Int. Cl. 16).
First use Mar. 21, 1963.

SN 295,023. A. W. Faber-Castell Pencil Co., Inc., Newark, N.J. Filed Apr. 5, 1968.

PERSONAL TOUCH

For Ink Pens, Ball Point Pens, and Fiber Tipped Ink Pens (Int. Cl. 16).
First use Aug. 1, 1967.

SN 300,045. Uarco Incorporated, Barrington, Ill. Filed June 10, 1968.

UARCO IMPRESTO

Owner of Reg. Nos. 93,137, 779,831, and others.
For Carbonless Manifolding Paper (Int. Cl. 16).
First use Dec. 19, 1967.

Class 38 — Prints and Publications

SN 275,748. Drake University, Des Moines, Iowa. Filed July 11, 1967.

'SINE QUA NON'

The expression "Sine Qua Non" means in Latin "without which not."
For Law School News Bulletin (Int. Cl. 16).
First use Apr. 18, 1966.

SN 279,844. Newspaper Enterprise Association, Inc., Cleveland, Ohio. Filed Sept. 7, 1967.

ROBIN MALONE

The name "Robin Malone" is fictional and does not identify a living individual.
For Comic Strip (Int. Cl. 16).
First use at least as early as Mar. 19, 1967.

SN 282,111. Meredith Publishing Company, Des Moines, Iowa. Filed Oct. 9, 1967.

ipi

For Series of Educational Publications—Namely, Workbooks, Test Sheets, and Teachers' Books for Student Instruction (Int. Cl. 16).
First use Aug. 30, 1967.

SN 282,898. Charles Franc, New York, N.Y. Filed Oct. 19, 1967.

LITE-O-CARD

For Greeting Cards (Int. Cl. 16).
First use Oct. 5, 1967.

SN 283,413. American Hot Rod Association, Incorporated, Kansas City, Mo. Filed Oct. 26, 1967.

DRAG WORLD

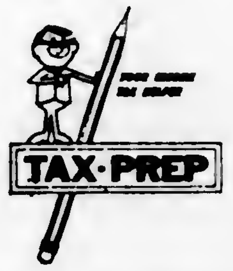
For Weekly Newspaper (Int. Cl. 16).
First use May 1, 1964.

SN 283,706. Postrib Corp., New York, N.Y. Filed Oct. 30, 1967.

BOOK WORLD

For Newspaper Supplement (Int. Cl. 16).
First use Sept. 10, 1967.

SN 283,996. William E. Drislane, d.b.a. Albany Tax Service, Albany, N.Y. Filed Nov. 2, 1967.



The words "Your Income Tax Helper" are disclaimed apart from the mark as shown.
For Printed Filing Folders and Filing Envelopes for Recording and Filing Tax Information (Int. Cl. 16).
First use Oct. 9, 1967.

SN 285,341. Milani Foods, Inc., Los Angeles, Calif. Filed Nov. 21, 1967.

THE WONDERFUL WORLD OF MILANI

For Company Newsletter, Issued Bi-Monthly (Int. Cl. 16).
First use June 2, 1966.

SN 285,403. EG & G, Inc., Bedford, Mass. Filed Nov. 22, 1967.

DESERT SCOPE

For Employee Information Magazine (Int. Cl. 16).
First use in or about April 1961.

SN 285,729. Ed-U-Cards Corporation, Commack, N.Y. Filed Nov. 28, 1967.

EDU-FILMS

For Slide and Motion Pictures for Use by Children for Educational Purposes (Int. Cl. 9).
First use November 1967.

SN 285,736. Harcourt, Brace & World, Inc., New York, N.Y. Filed Nov. 28, 1967.

HARBINGER

For Soft Cover or Paper Bound Books (Int. Cl. 16).
First use on or about Jan. 1, 1963.

SN 285,900. American Society for Metals, Metals Park, Ohio. Filed Nov. 30, 1967.

MATERIALS SHOWMAN

For Trade Newspaper (Int. Cl. 16).
First use on or about Sept. 18, 1967.

SN 286,496. Bank Services, Inc., Urbana, Ill. Filed Dec. 8, 1967.

THE LIVING PICTURE

For Newsletter Prepared for Distribution by Others (Int. Cl. 16).
First use Sept. 25, 1967.

SN 289,744. Camu Press, Halesite, N.Y. Filed Jan. 29, 1968.

PIANOVENTURES

For Music Books (Int. Cl. 16).
First use Oct. 19, 1967.

SN 290,608. Hitchcock Publishing Company, Wheaton, Ill. Filed Feb. 8, 1968.

DISC

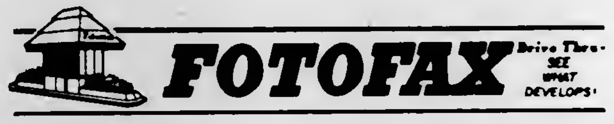
For Trade Catalog of Publications and Order Cards Therefor (Int. Cl. 16).
First use Oct. 31, 1967.

SN 291,176. Norcross, Inc., New York, N.Y. Filed Feb. 15, 1968.

VIOLETS FOR REMEMBRANCE

For Greeting Cards (Int. Cl. 16).
First use Dec. 13, 1967.

SN 300,522. Fotomat Corporation, La Jolla, Calif. Filed June 17, 1968.



For Corporate Newspaper Published Monthly (Int. Cl. 16).
First use May 1, 1968.

Class 39 — Clothing

SN 267,302 Chadbourn Gotham, Inc., Charlotte, N.C. Filed Mar. 22, 1967.

Sheerest
LIFT

Owner of Reg. No. 729,764.
For Ladies' Hosiery (Int. Cl. 25).
First use Mar. 15, 1967.

SN 283,941. Surprise/Corde Co., Inc., New York, N.Y., by change of name from Surprise Brassiere Co. Inc., New York, N.Y. Filed Nov. 1, 1967.

SURPRiSE/CORDÉ
de Parie

Applicant disclaims the expression "de Parie" apart from the mark as shown. Owner of Reg. Nos. 665,425, 671,239, and 717,217.
For Brassieres and Girdles (Int. Cl. 25).
First use Oct. 2, 1967.

SN 285,777. Wembley, Inc., New Orleans, La. Filed Nov. 28, 1967.

TREASURY COLLECTION

For Neckwear (Int. Cl. 25).
First use Oct. 4, 1967.

SN 287,826. The Middishade Company, Inc., Philadelphia, Pa. Filed Dec. 29, 1967.

MACDONALD & CAMPBELL

For Men's Suits, Sport Coats, Slacks, and Raincoats (Int. Cl. 25).
First use in 1895.

SN 291,648. John B. Stetson Company, Philadelphia, Pa. Filed Feb. 21, 1968.

KAMA-LUX

Owner of Reg. No. 389,277.
For Headwear, Hats and Caps, Footwear, Suits, Vests, Coats of All Types, Sweaters, Robes, Capes, Rainwear, Trousers, Shorts, Shirts, Underwear, Hosiery, Sleepwear, Swimwear, Neckwear, Belts, Gloves, and Handkerchiefs (Int. Cl. 25).
First use Mar. 11, 1941, on men's felt hats.

SN 291,756. The Manhattan Shirt Company, New York, N.Y. Filed Feb. 23, 1968.

D.Q.

For Outer Dress and Sport Shirts for Men and Women (Int. Cl. 25).
First use Jan. 25, 1964.

SN 292,017. J. A. Robertson & Sons (Dumfries) Limited Dumfries, Scotland. Filed Feb. 27, 1968.

Owner of British Reg. No. 895,698, dated June 10, 1966.
For Gloves, Ties, Stockings, Socks, Hats, Caps, Scarves, Sweaters, Pullovers, Jumpers, Jerseys, Cardigans, Waistcoats, Jackets, Vests, Trousers, Swim Wear, and Knickers (Int. Cl. 25).

SN 292,170. Barney's Clothes, Inc., New York, N.Y. Filed Feb. 29, 1968.

The "Jackcoat" by Barney's

Owner of Reg. Nos. 413,944 and 740,068.
For Sport Jackets for Men (Int. Cl. 25).
First use Nov. 1, 1967.

SN 292,815. Ronna, Inc., Nashville, Tenn. Filed Mar. 8, 1968.

MUSIC CITY KNITS

No claim is made to the word "Knits" apart from the mark as shown.
For Women's and Girls' Ready-To-Wear Clothing—Namely, Suits, Dresses, Shifts, Jumpers, Jackets, Skirts, Capri Pants, and Blouses (Int. Cl. 25).
First use Dec. 6, 1967.

SN 300,642. Berkley Shirt Co., Inc., New York, N.Y. Filed June 18, 1968.

BERKFIELD

For Men's Sport Shirts (Int. Cl. 25).
First use January 1968.

Class 40 — Fancy Goods, Furnishings, and Notions

SN 290,078. Dante's House of Wigs, Inc., Cincinnati, Ohio. Filed Feb. 1, 1968.

DANTE'S HOUSE OF WIGS

Applicant disclaims the words "House of Wigs" separate and apart from the mark itself, but without disclaiming any common law rights which the applicant might have therein.
For Wigs (Int. Cl. 26).
First use Dec. 4, 1966.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 272,438. A. Wimpfheimer & Bro., Inc., Stonington, Conn. Filed May 25, 1967.

WONDERVEL

For Pile Fabrics (Int. Cl. 24).
First use July 11, 1935.

SN 272,439. A. Wimpfheimer & Bro., Inc., Stonington, Conn. Filed May 25, 1967.

FAIRVEL

For Pile Fabrics (Int. Cl. 24).
First use Mar. 17, 1933.

SN 272,440. A. Wimpfheimer & Bro., Inc., Stonington, Conn. Filed May 25, 1967.

SHADOVEL

For Pile Fabrics (Int. Cl. 24).
First use Dec. 14, 1932.

SN 272,441. A. Wimpfheimer & Bro., Inc., Stonington, Conn. Filed May 25, 1967.

GALAVEL

For Pile Fabrics (Int. Cl. 24).
First use May 5, 1938.

SN 273,918. United Merchants and Manufacturers, Inc., New York, N.Y., assignee of McAuley Enterprises, Inc., New York, N.Y. Filed June 15, 1967.

TERRYTUFT

Owner of Reg. No. 833,124.
For Cotton Fabrics, Bath Towels, Face Towels, Wash Cloths; and Bathroom Accessories—Namely, Tank, Lid, and Seat Covers (Int. Cl. 24).
First use on or about Dec. 31, 1950.

SN 280,307. Ethyl Corporation, Richmond, Va. Filed Sept. 14, 1967.

ETHYL

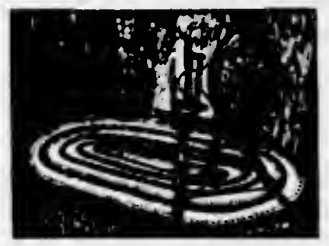
Owner of Reg. Nos. 187,410, 399,427, and others.
For Plastic Netting (Int. Cl. 22).
First use Nov. 18, 1964.

SN 281,316. Mac M. Rothkopf and Co., Inc., Brooklyn, N.Y. Filed Sept. 27, 1967.

FABRIC 24

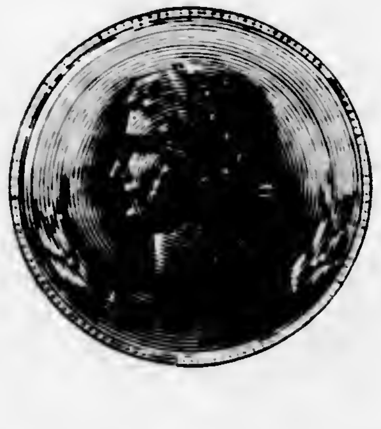
No claim is made to the word "Fabric" apart from the mark as shown.
For Woven and Knitted Piece Goods for Making Into Men's Suits, Jackets and Trousers; Outer Shirts for Men and Women; Ladies' Dresses; and Trousers for Children (Int. Cl. 24).
First use June 6, 1967.

SN 287,344. A. Leon Capel & Sons, Incorporated, Troy, N.C. Filed Dec. 21, 1967.



Applicant disclaims the representation of the rug apart from the mark as shown.
For Braided Rugs (Int. Cl. 27).
First use on or about Jan. 2, 1965.

SN 291,837. Coin Sales Corporation, New York, N.Y. Filed Feb. 26, 1968.



Owner of Reg. No. 771,953.
For Laminated Fabrics for Use in Making Wearing Apparel and the Like (Int. Cl. 24).
First use May 9, 1967.

Class 44—Dental, Medical, and Surgical Appliances

SN 294,556. RCI-Danavox North America, Inc., Wayzata, Minn. Filed Apr. 1, 1968.

RCI

For Hearing Aids and Hearing Aid Accessories Such as Air Conduction Receivers, Bone Conduction Oscillators and Head Bands, Receiver Cords, Barrette Attachments, Dummy Housings, and Fashion Mounting Plates (Int. Cl. 10).
First use Oct. 26, 1966.

SN 294,709. Mead Johnson & Company, Evansville, Ind. Filed Apr. 2, 1968.

MAXI-MYST

Owner of Reg. Nos. 762,625, 775,655, and 790,059.
For Device To Administer Medicated Nebulae, and Parts and Accessories Therefor (Int. Cl. 44).
First use on or prior to Mar. 26, 1968.

Class 46—Foods and Ingredients of Foods

SN 264,540. Harrisons (London) Limited, London, England. Filed Feb. 13, 1967.

RED DUCHESS

No claim is made to the exclusive use of the word "Red" apart from the mark as a whole. Owner of British Reg No. 798,603, dated Dec. 1, 1959.
For Canned and Frozen Salmon (Int. Cl. 29).

SN 267,656. Pacific Union Association of Seventh-Day Adventists, d.b.a. Loma Linda Foods, Glendale, Calif. Filed Mar. 27, 1967.

Loma Linda FOODS

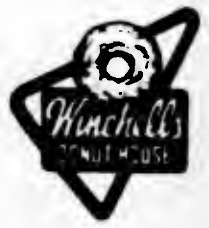
No claim is made to the exclusive use of the word "Foods" apart from the mark as shown. Owner of Reg. No. 714,470.
For Vegetable Base Links of Sausage Form; Canned Vegetable Base Protein Food Patties in Liquid; Canned Vegetable Base Protein Food Patties in Gravy; Canned Vegetable Base Protein Cutlets; Canned Vegetable Base Protein Roll for Slicing Into Patties for Sandwiches and the Like; Canned Lentils; Canned Navy Beans; Canned Garbanzos; Canned Soy Beans; Canned Soy Bean Base Cheese-Like Food; Soy Bean Base Powdered Milk; Canned Soy Bean Base Concentrated Milk; Canned High-Protein Soy Milk; Canned Soy Milk With Added Mineral and Vitamins; Soy Sauce; Soy Flour; Wheat Germ; Oven-Cooked Wheat; Yeast and Vegetable Base Seasoning; Dry Mix for Gravy; Jelling Type Dessert Mixes; Jelling Type Salad Mixes; Canned Fruit Juices; Canned Fruit Juice Punch Base; Canned Olives; Breading Meal; and Chili With Beans (Int. Cls. 29 and 30).
First use on or about Oct. 1, 1934.

SN 271,299. Ward Foods, Inc., New York, N.Y. Filed May 11, 1967.

TIP TOP yoyo

Owner of Reg. Nos. 49,697, 836,379, and others.
For Bakery Products—Namely, Snack Cakes (Int. Cl. 30).
First use November 1961.

SN 272,971. Winchell Donut House, Inc., South El Monte, Calif. Filed June 2, 1967.



The term "Donut House" and the representation of a doughnut are disclaimed apart from the mark as shown.
For Doughnuts, Pastries, Cream-Filled Bars, Turnovers, Cinnamon Rolls, Raised-Dough Bakery Products Such as Pastries and Sweet Rolls (Int. Cl. 30).
First use Jan. 12, 1962.

SN 276,758. Meredith & Drew Limited, London, England. Filed July 25, 1967.

MEREDITH & DREW

For Cookies (Int. Cl. 30).
First use on or about Jan. 1, 1891; in commerce on or about Sept. 1, 1964.

SN 283,154. The Pillsbury Company, Minneapolis, Minn. Filed Oct. 23, 1967.

Owner of Reg. Nos. 662,329 and 849,095.
For Prepared, Refrigerated Food Product, Dough-Like in Character, With or Without a Filling, To Be Warmed in a Toaster (Int. Cl. 30).
First use July 20, 1966.

SN 284,614. Churny Company, Inc., Somerville, Mass. Filed Nov. 13, 1967.

TOWN CRIER

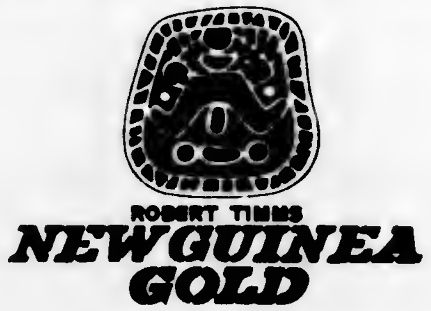
For Margarine, Cheese, Vegetable Derived Dips, Coffee Lighteners, Sour Cream, and Vegetable Derived Whipped Toppings (Int. Cl. 29).
First use June 1954.

SN 286,191. Sternco Industries, Inc., Harrison, N.J. Filed Dec. 4, 1967.

CYCLOPS

For Fish Food (Int. Cl. 31).
First use Oct. 4, 1967.

SN 287,469. Robert Timms Proprietary Limited, Port Melbourne, Victoria, Australia. Filed Dec. 22, 1967.



The words "New Guinea" are disclaimed apart from the mark as shown.
For Coffee (Int. Cl. 30).
First use Mar. 5, 1967; in commerce May 24, 1967.

SN 288,940. Costa Ice Cream Company, Woodbridge, N.J. Filed Jan. 16, 1968.

POLAR WHIP

The word "Whip" is disclaimed apart from the mark as shown.
For Non-Dairy Whipped Topping (Int. Cl. 29).
First use Nov. 29, 1967.

SN 290,585. Custom Pet Food Packers, Inc., Princess Anne, Md. Filed Feb. 8, 1968.

WINCHESTER

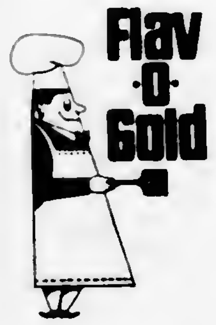
For Dog Food (Int. Cl. 31).
First use May 4, 1966.

SN 291,440. Staff Supermarket Associates, Jericho, N.Y. Filed Feb. 19, 1968.

STAFF

Owner of Reg. No. 844,219.
For Meat, Bacon, Frankfurters; Canned Meat—Namely, Corned Beef Hash, Luncheon Meat, Potted Meat, Vienna Sausage, Beef Stew, Chili Con Carne; Frozen Meat—Namely, Beef Steak, Breaded Veal Steak, Chuck Wagon Steaks, Beef Burgers; Various Prepared Foods With Meat Gravy or Sauce—Namely, Beef Gravy, Chicken Gravy, Meat Sauce, Beef Ravioli, Spaghetti With Meat Balls, Spaghetti Sauce With Meat, Pork and Beans (Int. Cls. 29 and 30).
First use Jan. 18, 1959.

SN 291,786. Stokely-Van Camp, Inc., Columbus, Ohio. Filed Feb. 23, 1968.



For Hydrogenated Vegetable Oils (Int. Cl. 29).
First use Feb. 7, 1968.

SN 292,604. Murphy Products Company, Inc., Burlington, Wis. Filed Mar. 6, 1968.

MINI-MIX

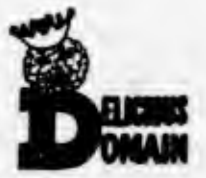
For Dairy Cattle Feed (Int. Cl. 31).
First use Feb. 29, 1968.

SN 293,676. Agway, Inc., DeWitt, N.Y. Filed Mar. 20, 1968.

HARMONY FARMS

For Fresh Fruits—Namely, Apples, Peaches, Pears, Plums, Cherries, Nectarines, and Prunes; and Fresh Vegetables—Namely, Potatoes, Cauliflower, Brussels Sprouts, Onions, Cabbage, Cucumbers, Peas, Beans, Corn, and Tomatoes (Int. Cl. 31).
First use Feb. 15, 1967.

SN 299,278. Mark G. Gehlar, d.b.a. Oregon Fruit Products Co., Salem, Oreg. Filed May 29, 1968.



No claim is made to the word "Delicious" apart from the mark as shown.
For Canned Berries (Int. Cl. 29).
First use April 1968.

SN 301,006. The Coca-Cola Company, Atlanta, Ga. Filed June 21, 1968.

Chime

Owner of Reg. Nos. 757,442, 771,187, and 805,288.
For Freeze Dried Coffee (Int. Cl. 30).
First use June 6, 1968.

SN 301,007. The Coca-Cola Company, Atlanta, Ga. Filed June 21, 1968.

Javique

For Freeze Dried Coffee (Int. Cl. 30).
First use June 6, 1968.

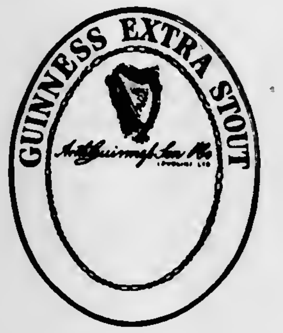
Class 48—Malt Beverages and Liquors

SN 273,397. Theo. Hamm Brewing Co., St. Paul, Minn. Filed June 8, 1967.

FROM THE LAND OF SKY BLUE WATERS COMES THE WATER BEST FOR BREWING

Applicant disclaims the phrase "Water Best for Brewing," apart from the mark as shown, reserving all common law rights which it may have or arise in said term. Owner of Reg. Nos. 611,870 and 647,603.
For Beer (Int. Cl. 32).
First use May 17, 1967.

SN 290,238. Arthur Guinness Son & Company Limited, London, England. Filed Feb. 5, 1968.



Applicant disclaims the words "Extra Stout" and "Dublin" apart from the mark as shown. Owner of U.S. Reg. Nos. 63,040, 729,538, and others.
For Stout (Int. Cl. 32).
First use February 1966; in commerce February 1966; Mar. 29, 1862, in a different form.

SN 300,237. Jos. Schlitz Brewing Company, Milwaukee, Wis. Filed June 12, 1968.

GALENA STREET

For Beer (Int. Cl. 32).
First use May 24, 1968.

Class 49 — Distilled Alcoholic Liquors

SN 274,222. Mar-Salle Chicago Co., d.b.a. Jerome Company, Chicago, Ill. Filed June 19, 1967.

JEROME

For Brandies, Kummel, Prepared Alcoholic Cocktails, and Grain Alcohol for Beverage Purposes (Int. Cl. 33).
First use Jan. 20, 1934, on kummel.

SN 284,818. Heaven Hill Distilleries, Inc., d.b.a. Nelson Distilleries, Bardstown, Ky. Filed Nov. 14, 1967.

NELSON RESERVE

The word "Reserve" is disclaimed apart from the mark as shown.
For Bottled Whiskey (Int. Cl. 33).
First use June 21, 1957.

SN 284,819. Heaven Hill Distilleries, Inc., d.b.a. Nelson Distilleries, Bardstown, Ky. Filed Nov. 14, 1967.

NELSON DELUXE

The word "Deluxe" is disclaimed apart from the mark as shown.
For Bottled Whiskey (Int. Cl. 33).
First use July 31, 1957.

SN 285,402. Destileria Serralles, Inc., Mercedita, Puerto Rico. Filed Nov. 22, 1967.

ELDORADO

Owner of Reg. No. 707,886.
For Rum (Int. Cl. 33).
First use July 28, 1959.

SN 300,403. E. Martinoni Co., d.b.a. MF Co., South San Francisco, Calif. Filed June 14, 1968.

MISSION FATHERS

For Brandy (Int. Cl. 33).
First use May 29, 1968.

Class 50 — Merchandise Not Otherwise Classified

SN 283,794. Hassenfeld Bros. Inc., Pawtucket, R.I. Filed Oct. 31, 1967.

CANNIBAL ANIMALS!

Applicant disclaims the word "Animals" separate and apart from the mark as shown, without waiving any of its common law rights.
For Toy Kit for Making Confections, Including Molds and Food Ingredients (Int. Cl. 28).
First use on or about Sept. 21, 1967.

SN 295,795. Hawk Model Company, Chicago, Ill. Filed Apr. 17, 1968.

HUMMINGBIRD

For Hobby or Craft Kits Comprising Prepunched Backing Strips and Stringing Materials for Making Decorative Pictures or Plaques (Int. Cl. 28).
First use Mar. 11, 1968.

Class 51 — Cosmetics and Toilet Preparations

SN 269,700. Textron Inc., Providence, R.I. Filed Apr. 20, 1967.

Spanish Gold

For Men's Cologne and After Shave Lotion (Int. Cl. 3).
First use Mar. 15, 1967.

SN 278,697. Houbigant, Inc., New York, N.Y. Filed Aug. 21, 1967.

MAN SHOWER

For Men's Toiletries—Namely, After-Shave Lotion, Eau de Cologne, Body Powder, Hair Dressing, Pre-Shave Lotion, and Electric Shave Lotion (Int. Cl. 3).
First use May 15, 1967.

SN 280,186. Turner Hall Corporation, New York, N.Y. Filed Sept. 12, 1967.

ADJUST-A LOTION

Owner of Reg. No. 768,546.
For Additive for a Cold Permanent Wave (Int. Cl. 3).
First use Aug. 14, 1962.

SN 280,233. Kay Chemical Corporation, Cleveland, Ohio. Filed Sept. 13, 1967.

MILK-DEW

For Skin Lotion (Int. Cl. 3).
First use on or about July 27, 1967.

SN 282,269. Clairol Incorporated, New York, N.Y. Filed Oct. 11, 1967.

SEARCHER KIT

Applicant disclaims the right to the exclusive use of the word "Kit" apart from the mark as shown.
For Cologne (Int. Cl. 3).
First use Apr. 18, 1967.

SN 283,506. Avon Products, Inc., New York, N.Y. Filed Oct. 27, 1967.

FRAGRANCE SHADES

Applicant disclaims the word "Fragrance" apart from the mark as shown.
For Perfume and Cologne (Int. Cl. 3).
First use Oct. 13, 1967.

SN 283,765. John H. Breck, Inc., Wayne, N.J. Filed Oct. 31, 1967.

MODEST BLONDE

Applicant disclaims the word "Blonde" apart from the mark as shown.
For Hair Coloring Preparation (Int. Cl. 3).
First use Oct. 19, 1967.

SN 284,685. L'Oreal, Paris, France. Filed Nov. 13, 1967.

UPHOLD

For Permanent Wave Preparation (Int. Cl. 3).
First use Aug. 21, 1967; in commerce Aug. 21, 1967.

SN 289,116. Paalo Cervantes, Ltd., Merrick, N.Y. Filed Jan. 18, 1968.

Paãlo

For Men's Cosmetics—Namely, Colognes and Perfumes (Int. Cl. 3).
First use Aug. 18, 1967.

SN 289,473. Bristol-Myers Company, New York, N.Y. Filed Jan. 24, 1968.

CHAMPAGNE SWIZZLE

For Cosmetic-Bath Oil (Int. Cl. 3).
First use Dec. 14, 1967.

SN 289,613. Richard Hudnut, Morris Plains, N.J. Filed Jan. 25, 1968.

COLORSET

For Setting Lotion (Int. Cl. 3).
First use Jan. 19, 1968.

SN 295,768. Royal Hawaiian Perfumes, Ltd., Honolulu, Hawaii. Filed Apr. 16, 1968.

OUTRIGGER

For After Shave Lotion (Int. Cl. 3).
First use Apr. 10, 1968.

SN 296,663. Helene Curtis Industries, Inc., Chicago, Ill. Filed Apr. 26, 1968.

NITE-WASH

For Cleansing Creme (Int. Cl. 3).
First use on or about Mar. 13, 1968.

SN 300,228. Richard Hudnut, Morris Plains, N.J. Filed June 12, 1968.

MR. LONDON

For After-Shave Lotion (Int. Cl. 3).
First use June 10, 1968.

SN 300,517. Chesebrough-Pond's Inc., New York, N.Y. Filed June 17, 1968.

RAIN BARREL

For Skin Lotion, Bath Oil, and Skin Cream (Int. Cl. 3).
First use May 29, 1968.

SN 300,520. Chesebrough-Pond's Inc., New York, N.Y. Filed June 17, 1968.

STORMY WEATHER

For Skin Lotion, Bath Oil, and Skin Cream (Int. Cl. 3).
First use May 29, 1968.

SN 300,647. The Gillette Company, Boston, Mass. Filed June 18, 1968.

TROPICAL SURF

For Body Lotion (Int. Cl. 3).
First use Apr. 15, 1968.

SN 300,648. The Gillette Company, Boston, Mass. Filed June 18, 1968.

WARM CHAMPAGNE

For Skin Lotion (Int. Cl. 3).
First use Apr. 15, 1968.

SN 300,649. The Gillette Company, Boston, Mass. Filed June 18, 1968.

BE SHARP

For Deodorant for Personal Use (Int. Cl. 5).
First use Apr. 11, 1968.

SN 300,650. The Gillette Company, Boston, Mass. Filed June 18, 1968.

FEEL SHARP

For After Shave Lotion (Int. Cl. 3).
First use Apr. 11, 1968.

SN 300,651. The Gillette Company, Boston, Mass. Filed June 18, 1968.

LOOK SHARP

For Hair Spray (Int. Cl. 3).
First use Apr. 11, 1968.

SN 300,652. The Gillette Company, Boston, Mass. Filed June 18, 1968.

CLOUD BURST

For Skin Lotion (Int. Cl. 3).
First use Apr. 15, 1968.

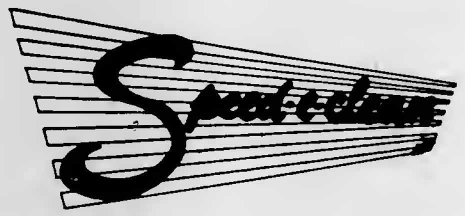
SN 300,653. The Gillette Company, Boston, Mass. Filed June 18, 1968.

COLD FRONT

For Body Lotion (Int. Cl. 3).
First use Apr. 15, 1968.

Class 52 — Detergents and Soaps

SN 235,724. Speedrite Products, Inc., Wichita, Kans. Filed Jan. 3, 1966.



For Liquid Detergent for Cleaning the Hands, Sold in Jars and Cans to Businesses in the Merchandising of Instant Dry Ink Sign Making Materials (Int. Cl. 3).
First use on or about Nov. 1, 1965.

SN 266,692. Riteoff, Inc., Plainview, N.Y. Filed Mar. 14, 1967.

RITE-OFF

For Industrial and Institutional Cleaners in Aerosol Spray Cans for Sale in Institutional Supply Houses for Removing Paint, Scuff Marks, Crayon and Ink Markings, and the Like, From Rigid Surfaces, Such as Brick, Marble, Concrete, Laminated Plastics, and Metals (Int. Cl. 3).
First use Dec. 13, 1965.

SN 269,800. Specialized Coatings, Inc., Passaic, N.J. Filed Apr. 21, 1967.

4·4·1

For Wax Remover and Cleaner for Wood or Metal Surfaces (Int. Cl. 3).
First use Apr. 10, 1967.

SN 284,477. Robert W. Hocks, d.b.a. Hocks Laboratories, Portland, Oreg. Filed Nov. 9, 1967.

CASH

For Hand Cleaning Composition Which May Be Applied To Form a Protective Coating on Hands or May Be Applied to Dirty Hands and Utilized as Emulsifying Agent To Remove Dirt, Grime and Stains (Int. Cl. 3).
First use July 23, 1967.

SN 288,561. Universal Oil Products Company, Des Plaines, Ill. Filed Jan. 10, 1968.

KOOLSOL

For Industrial Solvent Cleaner (Int. Cl. 1).
First use Jan. 18, 1961.

SN 288,906. Yale Engineering Company, Chicago, Ill. Filed Jan. 15, 1968.

SEE-CLEER

For Windshield Washer Antifreeze and Solvent (Int. Cl. 3).
First use July 12, 1967.

SN 290,090. J. C. Garet, Inc., Los Angeles, Calif. Filed Feb. 1, 1968.

ZOUT

For Stain Removers (Int. Cl. 3).
First use July 1967.

SN 290,399. John J. Mulry, d.b.a. Vanguard Chemical Company, Worcester, Mass. Filed Feb. 6, 1968.

FLITE

For Synthetic Chemical Degreasing and Cleaning Fluid (Int. Cl. 3).
First use on or about Oct. 31, 1958.

SN 290,527. Puritan Chemical Company, Atlanta, Ga. Filed Feb. 7, 1968.

OPELLA

For Liquid Toilet Soap (Int. Cl. 3).
First use at least as early as Apr. 1, 1949.

SN 290,528. Puritan Chemical Company, Atlanta, Ga. Filed Feb. 7, 1968.

ROBUST

For Heavy Duty Cleaner and Wax Stripper (Int. Cl. 3).
First use on or about Jan. 6, 1966.

SN 290,531. Puritan Chemical Company, Atlanta, Ga. Filed Feb. 7, 1968.

PISTOL

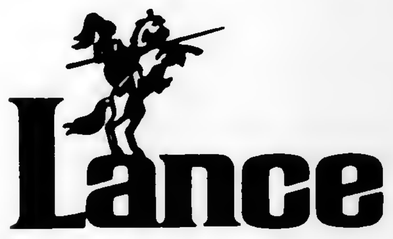
For Concentrated Industrial and Institutional Detergents (Int. Cl. 1).
First use on or about Sept. 25, 1967.

SN 291,053. Dynasurf Chemical Corporation, Baltimore, Md. Filed Feb. 14, 1968.

DYNABRITE

For Rug Shampoo (Int. Cl. 3).
First use Nov. 11, 1967.

SN 292,936. Jancyn Manufacturing Corp., East Northport, N.Y. Filed Mar. 11, 1968.



For Cesspool and Septic Tank Cleaners and Drain Cleaners (Int. Cl. 3).
First use Jan. 30, 1968.

SN 301,015. Huntington Laboratories, Inc., Huntington, Ind. Filed June 21, 1968.

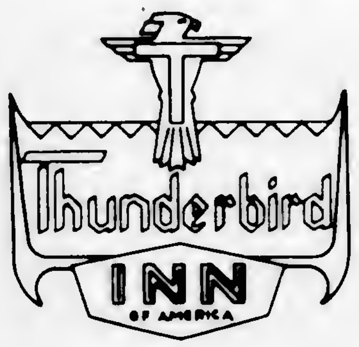
SOL-U-SAN

Owner of Reg. No. 277,187.
For Spot Cleaner for Rugs and Upholstery (Int. Cl. 3).
First use June 12, 1968.

SERVICE MARKS

Class 100 — Miscellaneous

SN 219,763. Cor-Ban, Inc., d.b.a. Thunderbird Inns of America, Morrilton, Ark. Filed May 26, 1965.



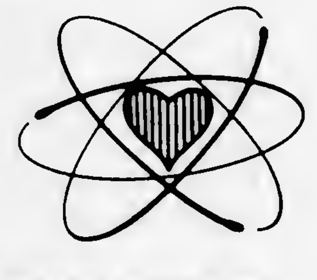
For Motel Services (Int. Cl. 42).
First use Feb. 25, 1965.
Subj. to Intf. with SN 234,657.

SN 234,657. Thunderbird Inn of America, Pensacola, Fla. Filed Dec. 15, 1965.

THUNDERBIRD INN OF AMERICA

Applicant makes no claim to the words "of America" apart from the mark shown in the drawing.
For Lodging Services (Int. Cl. 42).
First use Oct. 10, 1962.
Subj. to Intf. with SN 219,763.

SN 278,397. Methodist Hospital of Brooklyn, Brooklyn, N.Y. Filed Aug. 16, 1967.



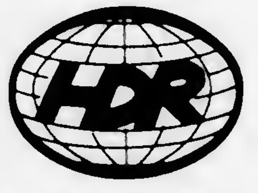
The drawing is lined for the color red.
For Hospital Services (Int. Cl. 42).
First use June 1967.

SN 285,296. The Psychological Corporation, New York, N.Y. Filed Nov. 21, 1967.

CAST

For Services Rendered in Connection With Testing of Persons' Knowledge, Skills, and Mental Abilities (Int. Cl. 42).
First use Mar. 17, 1967.

SN 289,677. Henningson, Durham & Richardson, Inc., Omaha, Nebr. Filed Jan. 26, 1968.



For Consulting Engineering and Architectural Services (Int. Cl. 42).
First use Dec. 8, 1967.

Class 101 — Advertising and Business

SN 265,678. Pic n' Save Drug Co., Inc., Jacksonville, Fla. Filed Mar. 1, 1967.

PIC N' SAVE

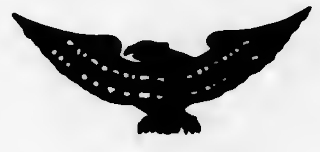
Owner of Reg. No. 833,430.
For Drug Store Services, Specifically Discount Merchandising of Drugs, Sundries, Hardware, Clothes, Shoes, Furniture, Appliances, and General Merchandise (Int. Cl. 35).
First use Mar. 14, 1955.

SN 268,344. Systemation, Inc., Scottsdale, Ariz. Filed Apr. 4, 1967.

SYSTEMATION

For Management Consulting Services to the Laundry and Dry Cleaning Industry (Int. Cl. 35).
First use 1962.

SN 274,881. Mitchell-Ivey Management, Reno, Nev. Filed June 27, 1967.



The wording "Antiques Shows" is disclaimed apart from the mark as shown.
For Organizing and Managing Antique Shows (Int. Cl. 36).
First use Oct. 1, 1966.

SN 279,485. J. B. Ivey & Company, Charlotte, N.C. Filed Aug. 31, 1967.

IVEY'S

For Department Store Services (Int. Cl. 35).
First use February 1900.

SN 281,938. Carolyn Moffitt Henderson, d.b.a. Hi-Neighbor Welcoming Service, Denver, Colo. Filed Oct. 6, 1967.

NANCY NEIGHBOR

For Promoting the Sale of Goods and Services of Various Sponsors by Locating and Training Hostesses and Having Hostesses Call on New Residents (Int. Cl. 35).
First use in or about March 1967.

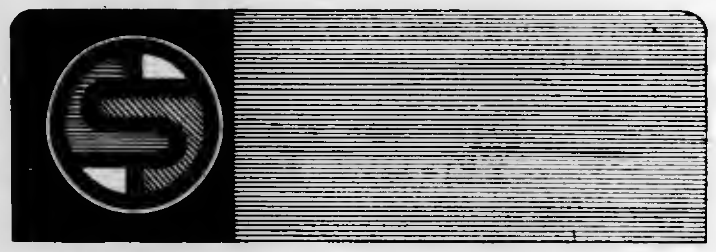
SN 287,139. Broadway-Hale Stores, Inc., Los Angeles, Calif. Filed Dec. 18, 1967.

THE BROADWAY

For Retail Department Store Services (Int. Cl. 35).
First use at least as early as 1897.

Class 102 — Insurance and Financial

SN 258,896. Midwest Bank Card System, Inc., Chicago, Ill., assignee of Continental Illinois National Bank and Trust Company of Chicago, Chicago, Ill. Filed Nov. 17, 1966.

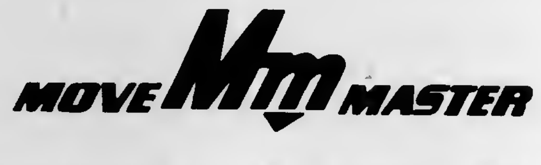


The drawing is lined for the colors blue and green. Applicant makes no claim to the exclusive rights to use "Midwest Bank Card," but the applicant waives none of its common law rights therein.

For Providing a Credit Card Service for Consumers and Vendors of Goods and Services (Int. Cl. 36).

First use as early as Sept. 27, 1966.

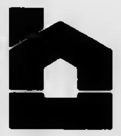
SN 286,262. General Fire and Casualty Company, New York, N.Y. Filed Dec. 5, 1967.



For Underwriting of Travel Accident Insurance (Int. Cl. 36).

First use Mar. 1, 1967.

SN 290,294. Home Beneficial Life Insurance Company, Richmond, Va. Filed Feb. 5, 1968.



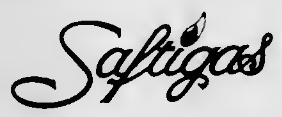
The mark consists of a fanciful design of the letters "hbL."

For Underwriting and Writing of Life Insurance (Int. Cl. 36).

First use Jan. 1, 1968.

Class 103 — Construction and Repair

SN 282,339. American Dynamics International, Inc., Fort Lauderdale, Fla. Filed Oct. 12, 1967.



For Services Relating to Gas Leakage Detection in the Fuel Gas Transmission Industry (Int. Cl. 37).

First use Sept. 1, 1967.

SN 283,511. Frank Di Nardo, Woodside, N.Y. Filed Oct. 27, 1967.

JET THUMB

Applicant disclaims the exclusive right to use of the word "Thumb" apart from the mark as shown, and without disclaiming or waiving any rights at common law.

For Drilling Special Holes Into Bowling Balls (Int. Cl. 37).

First use May 17, 1967.

Class 105 — Transportation and Storage

SN 299,855. Mohawk Airlines, Inc., Utica, N.Y. Filed June 6, 1968.

GOLD CHIP SERVICE

No claim of exclusive use is made to the word "Service" apart from the mark as a whole.

For Air Transport Service for the Carriage of Passengers, Goods, and Mail (Int. Cl. 39).

First use Jan. 21, 1968.

SN 299,856. Mohawk Airlines, Inc., Utica, N.Y. Filed June 6, 1968.

WE'RE ON YOUR SIDE

For Air Transport Service for the Carriage of Passengers, Goods, and Mail (Int. Cl. 39).

First use Jan. 21, 1968.

SN 300,160. Western Air Lines, Inc., Los Angeles, Calif. Filed June 11, 1968.

THE ROYAL CANADIAN

For Transportation of Passengers by Air (Int. Cl. 39).

First use Mar. 4, 1968.

Class 107 — Education and Entertainment

SN 259,772. Star Enterprises, Inc., Greenville, S.C. Filed Nov. 30, 1966.

BOWL-GOLF

For Organizing and Conducting Bowling Tournaments and Games (Int. Cl. 41).

First use July 7, 1966.

SN 276,365. Larry L. Stewart & Associates, Inc., Coral Gables, Fla. Filed July 19, 1967.

"ABOVE AND BEYOND"

For Radio Programs—Namely, Depiction of the Famous and Outstanding Americans, Who Have Been Awarded the Congressional Medal of Honor (Int. Cl. 41).

First use Apr. 7, 1964.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

857,260. PLANT-A-ROSE. Geo. J. Ball, Inc. SN 266,851. Pub. 7-9-68. Filed 3-16-67.

857,261. SCHMIDT SELECTED PROCESS BY FUR SEAL CO AND DESIGN. The Fur Seal Processing Corporation. MULTIPLE CLASS (Classes 1 and 39). SN 272,136. Pub. 7-9-68. Filed 5-23-67.

857,262. TENNECO AND DESIGN. Tenneco Inc. MULTIPLE CLASS (Classes 1, 2, 4, 5, 6, 10, 11, 12, 15, 16, 18, 20, 23, 26, 37 46, 50, 52, 100, 103, and 105). SN 273,347. Pub. 7-9-68. Filed 6-8-67.

857,263. CAREFREE GERANIUMS. Geo. J. Ball, Inc., d.b.a. Pan-American Seed Company. SN 274,116. Pub. 7-9-68. Filed 6-16-67.

857,264. GILMORE AND DESIGN. The Gilmore Plant & Bulb Company, Incorporated. SN 275,256. Pub. 7-9-68. Filed 7-3-67.

857,265. REBAND. Southeastern Products, Inc. SN 275,310. Pub. 7-9-68. Filed 7-3-67.

857,266. SULFATATE. Rayonier Incorporated. SN 276,690. Pub. 7-9-68. Filed 7-24-67.

857,267. AVILOID. FMC Corporation. SN 280,406. Pub. 7-9-68. Filed 9-15-67.

857,268. XYLEE. Glanzstoff AG. SN 281,068. Pub. 7-9-68. Filed 9-25-67.

857,269. BAYSILONE. Farbenfabriken Bayer Aktiengesellschaft. SN 281,976. Pub. 7-9-68. Filed 10-6-67.

857,270. Y AND DESIGN. York Feather & Down Corp. MULTIPLE CLASS (Classes 1, 22, 32, and 39). SN 291,691. Pub. 7-9-68. Filed 2-23-68.

857,271. SHERWOOD FOREST. International Milling Company Inc. MULTIPLE CLASS (Classes 1 and 46). SN 295,590. Pub. 7-9-68. Filed 4-15-68.

Class 2 — Receptacles

857,262. (See Class 1 for this trademark.)

857,272. ADJUST-O-MIST. Clairol Incorporated. SN 254,238. Pub. 7-9-68. Filed 9-12-66.

857,273. CORNELIUS COFFEE-CADDY AND DESIGN. The Cornelius Company. SN 257,256. Pub. 7-9-68. Filed 10-26-66.

857,274. AMERICAN HOSPITAL SUPPLY A AND DESIGN. American Hospital Supply Corporation. SN 259,791. Pub. 7-9-68. Filed 12-1-66.

857,275. ADAPT-A-CASE. Ikelheimer-Ernst, Inc. SN 267,155. Pub. 7-9-68. Filed 3-20-67.

857,276. FLIP-IT. United States Box Crafts, Inc. SN 271,551. Pub. 7-9-68. Filed 5-15-67.

857,277. TWIN MAILER. Chase Bag Company. SN 271,596. Pub. 7-9-68. Filed 5-16-67.

857,278. CAMPUS QUEEN. King-Seeley Thermos Co. SN 271,814. Pub. 7-9-68. Filed 5-18-67.

857,279. COOL-CORNER. General Foods Corporation. SN 276,934. Pub. 7-9-68. Filed 7-27-67.

857,280. AQUACEL. Jacuzzi Bros., Incorporated. SN 278,700. Pub. 7-9-68. Filed 8-21-67.

857,281. MERRY GO BIN. Beatrice Bliss, d.b.a. Blisscraft of Hollywood. SN 282,260. Pub. 7-9-68. Filed 10-11-67.

857,282. HUDSON BAY. Herter's, Inc. MULTIPLE CLASS (Classes 2 and 13). SN 285,020. Pub. 7-9-68. Filed 11-16-67.

857,283. HATCH/PAK. International Paper Company. SN 285,428. Pub. 7-9-68. Filed 11-22-67.

857,284. AERO-CEL. Celanese Corporation. SN 285,522. Pub. 7-9-68. Filed 11-24-67.

857,285. ZERO COLD. Eonware Pty. Limited. SN 288,293. Pub. 7-9-68. Filed 1-8-68.

857,286. HUMPER. Plattner Industries, Inc. SN 288,536. Pub. 7-9-68. Filed 1-10-68.

857,287. SNAP-A-CAN. Edward J. Massey. SN 288,838. Pub. 7-9-68. Filed 1-15-68.

857,288. THERMOVAT. Continental Plastics of Oklahoma, Incorporated. SN 289,280. Pub. 7-9-68. Filed 1-22-68.

857,289. SATURN. Roper Plastics, Inc. SN 289,337. Pub. 7-9-68. Filed 1-22-68.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

857,290. EVERLAST. Everlast Industries, Inc. MULTIPLE CLASS (Classes 3 and 37). SN 273,549. Pub. 7-9-68. Filed 6-12-67.

857,291. DISCOVERY. Reliable Luggage, Inc. SN 285,061. Pub. 7-9-68. Filed 11-16-67.

857,292. CRICKET. Atlantic Products Corporation. SN 288,180. Pub. 7-9-68. Filed 1-5-68.

Class 4 — Abrasives and Polishing Materials

857,262. (See Class 1 for this trademark.)

857,293. SANITATION FOR THE NATION. G. H. Wood and Company Limited. MULTIPLE CLASS (Classes 4, 6, 16, and 52). SN 180,256. Pub. 4-19-66. Filed 10-31-63.

857,294. POWER LOCK AND DESIGN. Merit Products, Inc. SN 267,052. Pub. 7-9-68. Filed 3-17-67.

857,295. DRI-GLO. The Drackett Company. SN 267,409. Pub. 7-9-68. Filed 3-23-67.

857,296. W AND DESIGN. Warner Electric Company, Inc. MULTIPLE CLASS (Classes 4, 6, 21, and 23). SN 269,140. Pub. 7-9-68. Filed 4-14-67.

857,297. POLY BUFF. Masury-Columbia Co. SN 276,331. Pub. 7-9-68. Filed 7-19-67.

857,298. UCAR. Union Carbide Corporation. SN 276,592. Pub. 7-9-68. Filed 7-21-67.

857,299. ELGRISAL. Midwest Commercial Laboratory, Inc. SN 278,982. Pub. 7-9-68. Filed 8-24-67.

857,300. OXICON. Transelco, Inc. SN 281,249. Pub. 7-9-68. Filed 9-8-67.

857,301. TRANS-OXIDE. Transelco, Inc. SN 281,250. Pub. 7-9-68. Filed 9-8-67.

857,302. STYLIZED S. Simoniz Company. MULTIPLE CLASS (Classes 4 and 52). SN 289,865. Pub. 7-9-68. Filed 1-30-68.

857,303. ECHO. The Procter & Gamble Company. SN 291,952. Pub. 5-28-68. Filed 2-27-68.

857,304. VIRTU. Alberto-Culver Company. SN 294,117. Pub. 7-9-68. Filed 3-26-68.

Class 5 — Adhesives

857,262. (See Class 1 for this trademark.)

857,305. WONDER BOND. The Borden Company. SN 274,403. Pub. 7-9-68. Filed 6-21-67.

857,306. BP AND DESIGN. Burhop Paper Company. SN 276,307. Pub. 7-9-68. Filed 7-19-67.

Class 6—Chemicals and Chemical Compositions

857,262. (See Class 1 for this trademark.)

857,293. (See Class 4 for this trademark.)

857,296. (See Class 4 for this trademark.)

857,307. CETONAL. Givaudan Corporation. SN 257,050. Pub. 1-23-68. Filed 10-24-66.

857,308. LEMON VELVET. Avon Products, Inc. SN 277,783. Pub. 7-9-68. Filed 8-8-67.

857,309. COSAN. Cosan Chemical Corporation. SN 278,471. Pub. 7-9-68. Filed 8-17-67.

857,310. TILLY FOSTER FARMS. Duke & Benedict, Inc. SN 278,477. Pub. 7-9-68. Filed 8-17-67.

857,311. CLINDROL. Clintwood Chemical Company. SN 281,554. Pub. 7-9-68. Filed 10-2-67.

857,312. EX-AL. Extermital Chemicals, Inc. SN 281,692. Pub. 7-9-68. Filed 10-3-67.

857,313. INDICON. Fairmount Chemical Co., Inc. SN 281,693. Pub. 7-9-68. Filed 10-3-67.

857,314. PROTOXAL. Societe Francaise des Produits pour Catalyse-"Pro-Catalyse" (Societe Anonyme). SN 282,216. Pub. 7-9-68. Filed 10-10-67.

857,315. SAN-SPUN. Martens Chemical Corp. SN 282,378. Pub. 7-9-68. Filed 10-12-67.

857,316. CARTASOL. Sandoz, Inc. SN 282,629. Pub. 7-9-68. Filed 10-16-67.

857,317. BOILERTROL. Hercules Incorporated. SN 283,442. Pub. 7-9-68. Filed 10-26-67.

857,318. GALVASMOOTH. R. H. Miller Company. SN 284,216. Pub. 7-9-68. Filed 11-6-67.

857,319. CIRCLE AND DESIGN. Circle Research Laboratories, Inc. MULTIPLE CLASS (Classes 6, 10, and 52). SN 284,530. Pub. 7-9-68. Filed 11-13-67.

857,320. CHINOSOL. Chinosolfabrik GmbH. MULTIPLE CLASS (Classes 6 and 18). SN 288,463. Pub. 7-9-68. Filed 1-10-68.

857,321. SOLUTEK. Solutek Corporation. SN 289,428. Pub. 7-9-68. Filed 1-23-68.

857,322. METEOR. Purex Corporation, Ltd. SN 289,945. Pub. 7-9-68. Filed 1-31-68.

857,323. GROTAN. Sterling Drug Inc. SN 295,412. Pub. 7-9-68. Filed 4-11-68.

857,324. PROPITAL-90. The Shock Proof Corporation. SN 295,488. Pub. 7-9-68. Filed 4-12-68.

857,325. FELTON AND DESIGN. Felton International, Inc. SN 296,070. Pub. 7-9-68. Filed 4-22-68.

Class 7—Cordage

857,326. SHARK SKIN. Puritan Cordage Mills. SN 283,158. Pub. 7-9-68. Filed 10-23-67.

857,327. BERMCO. The Mead Corporation. MULTIPLE CLASS (Classes 7 and 37). SN 289,054. Pub. 7-9-68. Filed 1-18-68.

Class 8—Smokers' Articles, Not Including Tobacco Products

857,328. BENTLEY. Bentley Lighter Corporation. SN 281,435. Pub. 7-9-68. Filed 9-29-67.

Class 9—Explosives, Firearms, Equipments, and Projectiles

857,329. MICROJET. MB Associates. SN 275,675. Pub. 7-9-68. Filed 7-10-67.

857,330. MISCELLANEOUS DESIGN. The Lyman Gun Sight Corporation. SN 279,840. Pub. 7-9-68. Filed 9-7-67.

Class 10—Fertilizers

857,262. (See Class 1 for this trademark.)

857,319. (See Class 6 for this trademark.)

857,331. DINOFARM. Sinclair Petrochemicals, Inc. SN 278,827. Pub. 7-9-68. Filed 8-22-67.

857,332. SINCLAIR AND DINOSAUR DESIGN. Sinclair Refining Company. SN 279,419. Pub. 7-9-68. Filed 8-30-67.

857,333. NU-PLEX. Abbott Laboratories. SN 279,998. Pub. 7-9-68. Filed 9-11-67.

857,334. PHOS-NITE. F. S. Royster Guano Co. SN 282,211. Pub. 7-9-68. Filed 10-10-67.

Class 11—Inks and Inking Materials

857,262. (See Class 1 for this trademark.)

857,335. KARTON KING. Interchemical Corporation. SN 280,231. Pub. 7-9-68. Filed 9-13-67.

857,336. NU-KOTE. Burroughs Corporation. SN 282,975. Pub. 7-9-68. Filed 10-20-67.

857,337. UNI-PLEX. Martin Marietta Corporation. SN 283,808. Pub. 7-9-68. Filed 10-31-67.

857,338. SUN KRAFT. Sun Chemical Corporation. SN 286,195. Pub. 7-9-68. Filed 12-4-67.

857,339. MICROSET. Sun Chemical Corporation. SN 287,388. Pub. 7-9-68. Filed 12-21-67.

Class 12—Construction Materials

857,262. (See Class 1 for this trademark.)

857,340. WITMER. Witco Chemical Company, Inc. SN 265,131. Pub. 7-9-68. Filed 2-20-67.

857,341. SANDFEX. Bitucote Products Company. SN 270,543. Pub. 5-14-68. Filed 5-3-67.

857,342. TENNANT. G. H. Tennant Company. SN 274,004. Pub. 7-9-68. Filed 6-15-67.

857,343. GAMMAPAR. The American Novawood Corporation. SN 274,926. Pub. 7-9-68. Filed 6-28-67.

857,344. AQUA-DRI PLUS. Silcoa Products Inc. SN 277,305. Pub. 7-9-68. Filed 8-1-67.

857,345. THERMOFILL. United States Gypsum Company. SN 280,187. Pub. 7-9-68. Filed 9-12-67.

857,346. 604 MACHINE BOND AND DESIGN. The Carter-Waters Corporation. SN 282,055. Pub. 7-9-68. Filed 10-9-67.

857,347. WC (DESIGN). Wood Components Company. SN 282,648. Pub. 7-9-68. Filed 10-16-67.

857,348. EXACT-O-BOARD. Johns-Manville Corporation. SN 285,430. Pub. 7-9-68. Filed 11-22-67.

857,349. THERMO-STUD. Quik Lok Trim Corporation. SN 285,576. Pub. 7-9-68. Filed 11-24-67.

857,350. SPEEDLAG. Raybestos-Manhattan, Inc. SN 285,856. Pub. 7-9-68. Filed 11-29-67.

857,351. PANLWEB. Macomber, Incorporated. SN 287,031. Pub. 5-14-68. Filed 12-15-67.

857,352. PLY-DECK. U.S. Plywood-Champion Papers Inc. SN 287,865. Pub. 7-9-68. Filed 1-2-68.

857,353. MEDITERRANEAN. General Plywood Corporation. SN 295,136. Pub. 7-9-68. Filed 4-8-68.

857,354. CRESCENT SAWN. Georgia-Pacific Corporation. SN 295,137. Pub. 7-9-68. Filed 4-8-68.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

857,282. (See Class 2 for this trademark.)

857,355. TOYO AND DESIGN. Toyovalve Company Limited. SN 262,524. Pub. 5-21-68. Filed 1-13-67.

857,356. ROSAN. José Rosán, Sr. SN 267,980. COLLECTIVE MARK. Pub. 7-9-68. Filed 3-30-67.

857,357. RAINMASTER. Sunbeam Corporation. SN 268,900. Pub. 7-9-68. Filed 4-11-67.

857,358. BUTTITE SPACERS AND DESIGN. C.E.M. Company, Inc. SN 270,888. Pub. 7-9-68. Filed 5-8-67.

857,359. MF AND DESIGN. MacLean-Fogg Lock Nut Company. SN 272,936. Pub. 7-9-68. Filed 6-2-67.

857,360. POSI-CLAMP. Robert A. Gilmour, d.b.a. Gilmour Manufacturing Co. SN 273,762. Pub. 7-9-68. Filed 6-13-67.

857,361. SPIROL SPRING PIN AND DESIGN. C.E.M. Co., Inc. SN 276,308. Pub. 7-9-68. Filed 7-19-67.

857,362. LEVELOC. Josam Manufacturing Co. SN 276,379. Pub. 7-9-68. Filed 7-7-67.

857,363. BLISS EAGLE SIGNAL AND DESIGN. E. W. Bliss Company. SN 276,918. Pub. 7-9-68. Filed 7-27-67.

857,364. MINI-WELDOLET. Bonney Forge and Foundry Incorporated. SN 278,575. Pub. 7-9-68. Filed 8-18-67.

857,365. POWERLOK. Research Engineering & Manufacturing, Inc. SN 279,411. Pub. 7-9-68. Filed 8-30-67.

Class 14—Metals and Metal Castings and Forgings

857,366. CALLOY. Calumet & Hecla, Inc. SN 256,064. Pub. 7-9-68. Filed 10-10-66.

857,367. BALCAR. Booth, Inc. SN 289,381. Pub. 7-9-68. Filed 1-23-68.

Class 15—Oils and Greases

857,262. (See Class 1 for this trademark.)

857,368. TKO. Versatek Industries, Inc. SN 273,912. Pub. 7-9-68. Filed 6-14-67.

857,369. HUDSON BAY. Herter's, Inc. SN 285,021. Pub. 7-9-68. Filed 11-16-67.

857,370. POW-R-QUIK. Olin Mathieson Chemical Corporation. SN 287,702. Pub. 7-9-68. Filed 12-28-67.

Class 16—Protective and Decorative Coatings

857,262. (See Class 1 for this trademark.)

857,293. (See Class 4 for this trademark.)

857,371. URESPRAY. Charell Consulting Company, Inc. SN 259,807. Pub. 7-9-68. Filed 12-1-66.

Class 17—Tobacco Products

857,372. ST. MORITZ. Turmac Tobacco Company N.V. SN 269,704. Pub. 7-9-68. Filed 4-20-67.

857,373. CROWN (DESIGN). Gallaher Limited. SN 280,154. Pub. 7-9-68. Filed 9-12-67.

857,374. MEDALLION (DESIGN). Brown & Williamson Tobacco Corporation. SN 287,478. Pub. 3-26-68. Filed 12-26-67.

857,375. MEDALLION (DESIGN). Brown & Williamson Tobacco Corporation. SN 287,479. Pub. 7-9-68. Filed 12-26-67.

Class 18—Medicines and Pharmaceutical Preparations

857,262. (See Class 1 for this trademark.)

857,320. (See Class 6 for this trademark.)

857,376. SL AND DESIGN. Scientific Laboratories, Incorporated. SN 260,592. Pub. 5-14-68. Filed 12-12-66.

857,377. DYNAPIN. Bristol-Myers Company. SN 264,298. Pub. 7-9-68. Filed 2-9-67.

857,378. THIODIDE. Ciba Corporation, d.b.a. The Gland-O-Lac Company. SN 265,168. Pub. 4-16-68. Filed 2-21-67.

857,379. ARCOTINIC. Arco Pharmaceuticals, Inc. SN 267,389. Pub. 7-9-68. Filed 3-23-67.

857,380. THIOZOL. Eastern Shore Laboratories, Inc. SN 273,624. Pub. 5-14-68. Filed 6-12-67.

857,381. SOLARPLEX. Allergan Pharmaceuticals. SN 274,112. Pub. 7-9-68. Filed 6-16-67.

857,382. MED-I-CAPS AND DESIGN. Med-I-Caps Incorporated. SN 274,223. Pub. 7-9-68. Filed 6-19-67.

857,383. OCU-BATH. Commerce Drug Co., Inc. SN 275,638. Pub. 7-9-68. Filed 7-10-67.

857,384. SWEET BUBBLES. The Altman Group, Inc. SN 278,859. Pub. 7-9-68. Filed 8-23-67.

857,385. PRO-BLOOM. Rico Liquids, Inc. SN 284,529. Pub. 7-9-68. Filed 11-13-67.

Class 19—Vehicles

857,386. NAVIGATOR. Alfred S. Bloomingdale. SN 250,349. Pub. 7-9-68. Filed 7-15-66.

857,387. AWHILE-A-WIPE. Lester M. Tibbetts, Jr., d.b.a. Tibbetts Electronics. SN 265,126. Pub. 7-9-68. Filed 2-20-67.

857,388. HIWAYMAN. Xtron Manufacturing Corp. SN 267,216. Pub. 7-9-68. Filed 3-20-67.

857,389. TRUCK MATE. Chemplate Corporation. SN 277,540. Pub. 7-9-68. Filed 8-4-67.

857,390. GUARDIAN. Guardian Mobile Homes, Inc. SN 281,885. Pub. 7-9-68. Filed 10-5-67.

857,391. ROYAL EMBASSY. Guerdon Industries, Inc. SN 284,013. Pub. 7-9-68. Filed 11-2-67.

857,392. DIAMOND REO. White Motor Corporation. SN 284,059. Pub. 7-9-68. Filed 11-2-67.

Class 20—Linoleum and Oiled Cloth

857,262. (See Class 1 for this trademark.)

857,393. THERLON AND DESIGN. Thermaline Corporation. SN 274,786. Pub. 7-9-68. Filed 6-26-67.

Class 21 — Electrical Apparatus, Machines, and Supplies

857,296. (See Class 4 for this trademark.)

857,394. EARS. Carroll Edwin Satchfield. SN 249,256. Pub. 7-9-68. Filed 6-29-66.

857,395. TRAINERETTE. Frederick A. Rose, d.b.a. Wisconsin Audio Equipment Co. SN 262,628. Pub. 12-19-67. Filed 1-16-67.

857,396. TELEWAND. Euphonics Corporation. SN 266,520. Pub. 7-9-68. Filed 3-13-67.

857,397. STARLINE. Jerrold Electronics Corporation. SN 266,544. Pub. 7-9-68. Filed 3-13-67.

857,398. GLENN. Glenn Door Operators, Inc., d.b.a. Glenn Door Operators. SN 269,659. Pub. 7-9-68. Filed 4-20-67.

857,399. LI LITTON AND DESIGN. Litton Industries, Inc. SN 272,618. Pub. 7-9-68. Filed 5-29-67.

857,400. SENTAL. The Rank Organisation Limited. SN 275,784. Pub. 7-9-68. Filed 7-11-67.

857,401. MOVATOR. Maschinenfabrik Hans Lenze K.G. SN 276,149. Pub. 7-9-68. Filed 7-17-67.

857,402. ARB AND DESIGN. Neptune Meter Company. MULTIPLE CLASS (Classes 21, 26, and 36). SN 276,463. Pub. 7-9-68. Filed 7-20-67.

857,403. HI FI BOXER. IMC Magnetics Corp. SN 278,492. Pub. 7-16-68. Filed 8-17-67.

857,404. UNIHEAT. Gulton Industries, Inc. SN 277,666. Pub. 7-9-68. Filed 8-7-67.

857,405. TITAN. Federal Sign and Signal Corporation. SN 284,183. Pub. 7-9-68. Filed 11-6-67.

857,406. SLIMLINE. Parelco, Inc. SN 285,252. Pub. 7-9-68. Filed 11-20-67.

857,407. FLIC-FLAC. Noirot Electro-Menager et Thermique S.A. SN 285,613. Pub. 7-9-68. Filed 11-24-67.

857,408. TBM. Tsubame Radio Co., Ltd. SN 285,959. Pub. 7-9-68. Filed 11-30-67.

Class 22 — Games, Toys, and Sporting Goods

857,270. (See Class 1 for this trademark.)

857,409. SANI/GARD. Sears, Roebuck and Co. SN 181,569. Pub. 7-9-68. Filed 11-20-63.

857,410. NUDNIK. William L. Snyder, d.b.a. Rembrandt Films. SN 234,083. Pub. 10-4-66. Filed 12-6-65.

857,411. SURF-XER. Gordon Manufacturing Enterprises, Inc. SN 259,242. Pub. 7-9-68. Filed 11-22-66.

857,412. FLYAROO. John Weiss. SN 267,275. Pub. 7-9-68. Filed 3-21-67.

857,413. PRO-FORM. Brunswick Corporation. SN 267,503. Pub. 10-24-67. Filed 3-24-67.

857,414. PGD. Princess Grace Doll Inc. SN 268,762. Pub. 7-9-68. Filed 4-10-67.

857,415. MAGIC WOOD. Guild Toys Inc. SN 270,677. Pub. 7-9-68. Filed 5-4-67.

857,416. ANCHORLOK. Everlast World's Boxing Headquarters Corporation. SN 272,370. Pub. 7-9-68. Filed 5-25-67.

857,417. ADD-A-MAT. Everlast World's Boxing Headquarters Corporation. SN 272,372. Pub. 7-9-68. Filed 5-25-67.

857,418. SNO-FLING AND DESIGN. Eagle Gate Corporation. SN 276,422. Pub. 7-9-68. Filed 7-20-67.

857,419. DYNAMIC DE-ENERGIZER. Shooting Equipment, Inc. SN 276,698. Pub. 7-9-68. Filed 7-24-67.

857,420. BOOZ-BAROMETER AND DESIGN. The Northwestern Corporation. SN 277,412. Pub. 7-9-68. Filed 8-3-67.

857,421. REPLI-CARS. Bayshore Industries, Inc. SN 278,080. Pub. 7-9-68. Filed 8-11-67.

857,422. CHAMPIONSHIP BASEBALL. Championship Games, Inc. SN 279,136. Pub. 7-9-68. Filed 8-28-67.

857,423. DA CAT AND DESIGN. Greg Noll Surfboards, Inc. SN 280,049. Pub. 7-9-68. Filed 9-11-67.

857,424. CLASSMATE. American Seating Company. SN 284,568. Pub. 7-9-68. Filed 11-13-67.

857,425. HOLIDAY AND DESIGN. Houston Fishing Tackle Company. SN 288,819. Pub. 7-9-68. Filed 1-15-68.

857,426. BABY SOFT-TALK. Mattel, Inc. SN 289,450. Pub. 7-9-68. Filed 1-24-68.

857,427. CREPTILES. Mattel, Inc. SN 292,854. Pub. 7-9-68. Filed 3-11-68.

857,428. SLITHEREES. Mattel, Inc. SN 292,855. Pub. 7-9-68. Filed 3-11-68.

857,429. MAKERY BAKERY. Mattel, Inc. SN 292,857. Pub. 7-9-68. Filed 3-11-68.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

857,262. (See Class 1 for this trademark.)

857,296. (See Class 4 for this trademark.)

857,430. BUHLER. The Buhler Corporation. MULTIPLE CLASS (Classes 23, 31, 34, and 103). SN 228,622. Pub. 7-9-68. Filed 9-27-65.

857,431. CONSUL. Consolidated Merchandising Corp., assignee of General Consolidated Ltd. SN 251,032. Pub. 7-25-67. Filed 7-25-66.

857,432. TY-HUKKI. W. S. Tyler, Incorporated. SN 256,019. Pub. 7-9-68. Filed 10-7-66.

857,433. ASHLAND. Electro Engineering Products Co., Inc. SN 259,820. Pub. 11-21-67. Filed 12-1-66.

857,434. ANTICIPATING TOMORROW. Barber-Greene Company. SN 261,358. Pub. 7-9-68. Filed 12-23-66.

857,435. MILL-WIDE. Bijur Lubricating Corporation. SN 261,452. Pub. 1-23-68. Filed 12-27-66.

857,436. SENSOMATIC. Jeffrey Galion Manufacturing Company. SN 263,919. Pub. 7-9-68. Filed 2-3-67.

857,437. ERMANCO. Ermanco Incorporated. SN 264,729. Pub. 7-9-68. Filed 2-15-67.

857,438. ERMANCO CONVEYORS AND DESIGN. Ermanco Incorporated. SN 264,730. Pub. 7-9-68. Filed 2-15-67.

857,439. MISCELLANEOUS DESIGN. Southern Saw Service, Inc. SN 266,367. Pub. 7-9-68. Filed 3-9-67.

857,440. SCALE O MATIC AND DESIGN. Cook Machinery Co., Inc. SN 266,509. Pub. 7-9-68. Filed 3-13-67.

857,441. AUTO-TOTE. Gemco Electric Company. SN 267,417. Pub. 7-9-68. Filed 3-23-67.

857,442. RED CAP AND DESIGN. R.C. Industries, Inc. SN 270,154. Pub. 7-9-68. Filed 4-27-67.

857,443. BEAVER GEAR AND DESIGN. Beaver Gear Works, Inc. SN 271,431. Pub. 7-9-68. Filed 5-15-67.

857,444. POWER COOLER. Karmazin Products Corporation. SN 278,109. Pub. 7-9-68. Filed 8-11-67.

857,445. AUTO-HEAD. Vogel Tool & Die Corporation. SN 280,496. Pub. 7-9-68. Filed 9-15-67.

857,446. SUNBEAM. Sunbeam Corporation. SN 281,405. Pub. 7-9-68. Filed 9-28-67.

857,447. MICRO-LEVEL. Vibrodynamics Corporation. SN 281,651. Pub. 7-9-68. Filed 10-2-67.

857,448. VARI-CHAIN AND DESIGN. Fairchild Hiller Corp. SN 281,653. Pub. 7-9-68. Filed 9-20-67.

857,449. MEDALLION. Omark Industries, Inc. SN 283,700. Pub. 7-9-68. Filed 10-30-67.

Class 26 — Measuring and Scientific Appliances

857,262. (See Class 1 for this trademark.)

857,402. (See Class 21 for this trademark.)

857,450. MINIT-MAN. Integrated Electronics Corporation. SN 251,430. Pub. 7-9-68. Filed 8-1-66.

857,451. SENTINEL. Integrated Electronics Corporation. SN 251,431. Pub. 7-9-68. Filed 8-1-66.

857,452. PHOTOMATE. Robertson Photo-Mechanix, Inc. SN 254,560. Pub. 7-9-68. Filed 9-15-66.

857,453. MALLOVAC. P. R. Mallory & Co. Inc. SN 268,917. Pub. 7-9-68. Filed 4-12-67.

857,454. MIDAS. Science Accessories Corporation. SN 269,572. Pub. 3-19-68. Filed 4-19-67.

857,455. COLORSTAT. International Telephone and Telegraph Corporation (Delaware corporation), by merger and change of name from International Telephone and Telegraph Corporation (Maryland corporation). SN 269,663. Pub. 7-9-68. Filed 4-20-67.

857,456. ABC. Carl Rune Wern, d.b.a. System Wern AB. SN 271,195. Pub. 7-9-68. Filed 5-10-67.

857,457. SOLI-TRONIC. The Vendo Company. SN 285,077. Pub. 7-9-68. Filed 11-16-67.

857,458. RAIL-CON AND DESIGN. American Cyanamid Company. SN 286,800. Pub. 7-9-68. Filed 12-13-67.

Class 27 — Horological Instruments

857,459. ORIENT STAR. Orient Watch Co., Ltd. SN 268,985. Pub. 7-9-68. Filed 4-12-67.

857,460. IMPEXTRA. Impextra Corporation. SN 269,661. Pub. 7-9-68. Filed 4-20-67.

857,461. ISOREX. S.A.R.L. Fabrique Savoisienne de Spiraux. SN 270,283. Pub. 7-9-68. Filed 4-28-67.

857,462. MOVASONIC. Movado Watch Agency, Inc. SN 277,563. Pub. 7-9-68. Filed 8-4-67.

857,463. HEMA AQUASPOT. Hema Watch Co. S.A. SN 279,482. Pub. 7-9-68. Filed 8-31-67.

857,464. TRISPORT. Wyler Watch Corporation. SN 279,768. Pub. 7-9-68. Filed 9-6-67.

Class 28 — Jewelry and Precious-Metal Ware

857,465. FAMILY CIRCLE. Page-Walker Co. SN 269,557. Pub. 7-9-68. Filed 4-19-67.

857,466. CHRISTIAN HERITAGE. Uncas Manufacturing Company. SN 271,897. Pub. 7-9-68. Filed 5-19-67.

857,467. BV. Bruno Vaccato. SN 275,187. Pub. 7-9-68. Filed 6-30-67.

857,468. WOODCLIFF. Oneida Ltd. SN 282,718. Pub. 7-9-68. Filed 10-17-67.

857,469. P-S. Grace L. Dearing, d.b.a. The Grace Company. SN 283,991. Pub. 7-9-68. Filed 11-2-67.

Class 29 — Brooms, Brushes, and Dusters

857,470. SIR ARTHUR. Ruskin Sponge Co., Inc. SN 275,692. Pub. 7-9-68. Filed 7-10-67.

Class 31 — Filters and Refrigerators

857,430. (See Class 23 for this trademark.)

857,471. DOUBLE CHECK. Elgin Softener, Inc. SN 277,548. Pub. 7-9-68. Filed 8-4-67.

857,472. "SOURCE-TO-SILO." Diamond Shamrock Corporation, by change of name from Diamond Alkali Company. SN 278,062. Pub. 7-9-68. Filed 8-11-67.

857,473. AVGF. Ritter Pfaudler Corporation. SN 281,921. Pub. 7-9-68. Filed 10-5-67.

857,474. NUCLEPORE. General Electric Company. SN 282,185. Pub. 7-9-68. Filed 10-10-67.

857,475. LANDA. L. & A. Products, Inc. SN 284,374. Pub. 7-9-68. Filed 11-8-67.

857,476. LANDA SOFT AND DESIGN. L. & A. Products, Inc. SN 284,375. Pub. 7-9-68. Filed 11-8-67.

857,477. SCOTT AND DESIGN. Scott Laboratories, Inc. SN 284,741. Pub. 7-9-68. Filed 11-13-67.

Class 32 — Furniture and Upholstery

857,270. (See Class 1 for this trademark.)

857,478. DI MODA. Drexel Enterprises, Inc. SN 262,744. Pub. 7-9-68. Filed 1-18-67.

857,479. MISCELLANEOUS DESIGN. Turney Wood Products, Inc. SN 283,474. Pub. 7-9-68. Filed 10-26-67.

857,480. TURNEY AND DESIGN. Turney Wood Products, Inc. SN 284,848. Pub. 7-9-68. Filed 11-14-67.

Class 33 — Glassware

857,481. TIGER TUMBLER. M.F.A. Oil Company. SN 281,096. Pub. 7-9-68. Filed 9-25-67.

857,482. CRISTALLERIE LORRAINE. Les Fils de Theodore Heitzmann. SN 288,994. Pub. 7-9-68. Filed 1-17-68.

Class 34 — Heating, Lighting, and Ventilating Apparatus

857,430. (See Class 23 for this trademark.)

857,483. DIELEX. Hexacon Electric Company. SN 282,461. Pub. 7-9-68. Filed 10-13-67.

857,484. SLIM JR. Hexacon Electric Company. SN 282,584. Pub. 7-9-68. Filed 10-16-67.

857,485. AQUATRON. Slant/Fin Corporation. SN 283,363. Pub. 7-9-68. Filed 10-25-67.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

857,486. DELUXE LAWN. The General Tire & Rubber Company. SN 245,189. Pub. 5-30-67. Filed 5-9-66.

857,487. XL FORMULA 100. Rexall Drug and Chemical Company, d.b.a. Colorite Plastics Company. SN 258,840. Pub. 2-6-68. Filed 11-16-66.

857,488. FELBESTO-PRENE. Felt Products Mfg. Co. SN 268,720. Pub. 7-9-68. Filed 4-10-67.

857,489. ATLAS. Atlas Supply Company. SN 277,339. Pub. 7-9-68. Filed 8-2-67.

857,490. POLARFLEX. The Gates Rubber Company. SN 279,818. Pub. 7-9-68. Filed 9-7-67.

857,491. C/R AND DESIGN. Chicago Rawhide Manufacturing Company. SN 280,019. Pub. 7-9-68. Filed 9-11-67.

857,492. C/R AND DESIGN. Chicago Rawhide Manufacturing Company. SN 281,034. Pub. 7-9-68. Filed 9-25-67.

857,493. POWER TORQUE. The Goodyear Tire & Rubber Company. SN 285,657. Pub. 7-9-68. Filed 11-27-67.

Class 36 — Musical Instruments and Supplies

857,402. (See Class 21 for this trademark.)

857,494. LHI RECORDS AND DESIGN. Lee Hazlewood Industries, Inc. SN 261,735. Pub. 7-9-68. Filed 12-30-66.

857,495. SQUIER. Columbia Broadcasting System, Inc. SN 270,193. Pub. 7-9-68. Filed 4-28-67.

857,496. RODIN RECORDS AND DESIGN. Rodin Organization, Inc. SN 277,384. Pub. 7-9-68. Filed 8-2-67.

857,497. MUSICRAFT. Educational Audio Visual, Inc. SN 285,730. Pub. 7-9-68. Filed 11-28-67.

857,498. EAV MUSICRAFT AND DESIGN. Educational Audio Visual, Inc. SN 285,731. Pub. 7-9-68. Filed 11-28-67.

857,499. H (DESIGN). Hammond Corporation. SN 285,735. Pub. 7-9-68. Filed 11-28-67.

857,500. IMMEDIATE. Immediate Records, Inc. SN 286,678. Pub. 7-9-68. Filed 12-11-67.

857,501. SHOW BIZ. Show Biz, Inc. SN 291,291. Pub. 7-9-68. Filed 2-16-68.

857,502. DICTAMATE. Dictaphone Corporation. SN 291,548. Pub. 7-9-68. Filed 2-21-68.

Class 37 — Paper and Stationery

857,262. (See Class 1 for this trademark.)

857,290. (See Class 3 for this trademark.)

857,327. (See Class 7 for this trademark.)

857,503. A. W. FABER AND DESIGN. A. W. Faber-Castell Pencil Co., Inc. SN 257,477. Pub. 3-19-68. Filed 10-28-66.

857,504. ANGORA. Business Supplies Corporation of America. SN 274,129. Pub. 7-9-68. Filed 6-16-67.

857,505. WESCOR AND DESIGN. Wescor Corporation. SN 275,969. Pub. 7-9-68. Filed 7-13-67.

857,506. VR. S. E. & M. Vernon, Inc. SN 276,373. Pub. 7-9-68. Filed 7-19-67.

857,507. TRU-RITE. Riverside Paper Corporation. SN 277,474. Pub. 7-9-68. Filed 8-3-67.

857,508. COLORTONE. Riverside Paper Corporation. SN 277,936. Pub. 7-9-68. Filed 8-9-67.

857,509. VELVETFOLD. John Sexton & Co. SN 283,167. Pub. 7-9-68. Filed 10-23-67.

857,510. SUNRAY SIERRA. Georgia-Pacific Corporation. SN 283,245. Pub. 7-9-68. Filed 10-24-67.

857,511. BULKAMAIL. Quality Park Envelope Company. SN 283,275. Pub. 7-9-68. Filed 10-24-67.

857,512. A (DESIGN). Westab Inc. SN 285,079. Pub. 7-9-68. Filed 11-16-67.

857,513. WARREN AND DESIGN. Scott Paper Company. SN 285,946. Pub. 7-9-68. Filed 11-30-67.

857,514. RAIL-CON AND DESIGN. American Cyanamid Company. SN 286,801. Pub. 7-9-68. Filed 12-13-67.

857,515. HOPPER SKYTONE. Georgia-Pacific Corporation. SN 287,289. Pub. 7-9-68. Filed 12-20-67.

857,516. E. FABER. Eberhard Faber Inc. SN 287,854. Pub. 7-9-68. Filed 1-2-68.

857,517. EBERHARD FABER. Eberhard Faber Inc. SN 287,855. Pub. 7-9-68. Filed 1-2-68.

Class 38 — Prints and Publications

857,518. INSTANT BRAINS AND DESIGN. Phillip A. Younes. SN 258,955. Pub. 7-9-68. Filed 11-17-66.

857,519. TIMELY WRIST CALENDAR. MBM Company. SN 263,279. Pub. 7-9-68. Filed 1-25-67.

857,520. MARKS OF QUALITY AND DESIGN. Ellen Moore. SN 266,347. Pub. 7-9-68. Filed 3-9-67.

857,521. ASTRO-COMP PROJECTIONS AND DESIGN. Computer Research, Inc. SN 271,129. Pub. 7-9-68. Filed 5-10-67.

857,522. CHARGE A VICE. Federal Pharmacal Supply, Inc., d.b.a. Federal Premium Mfg. Co. SN 271,141. Pub. 7-9-68. Filed 5-10-67.

857,523. TEACHER'S CREEPERS. Richard J. Thompson. SN 271,979. Pub. 7-9-68. Filed 3-22-67.

857,524. INSURANCEWEEK. Insuranceweek, Inc. SN 274,873. Pub. 7-9-68. Filed 6-27-67.

857,525. ELEGANT. Elmcraft Inc. SN 276,109. Pub. 3-19-68. Filed 7-17-67.

857,526. ENGINEERING OPPORTUNITIES. Press-Tech, Inc. SN 276,686. Pub. 7-9-68. Filed 7-24-67.

857,527. IHD AND DESIGN. International Hotel Directory, Inc. SN 277,557. Pub. 7-9-68. Filed 8-4-67.

857,528. V/A (DESIGN). Artemis Verlags Aktiengesellschaft. SN 277,766. Pub. 7-9-68. Filed 8-8-67.

857,529. AQUASPHERE. New England Aquarium Corporation. SN 279,319. Pub. 7-9-68. Filed 8-29-67.

857,530. AVCOM. A-V Communications, Inc. SN 280,846. Pub. 7-9-68. Filed 9-21-67.

857,531. WORKSHOP CARD. Workshop Cards Corporation. SN 291,955. Pub. 7-9-68. Filed 2-27-68.

857,532. BONER'S ARK. The Hearst Corporation. SN 295,887. Pub. 7-9-68. Filed 4-18-68.

857,533. LAUGH TIME. The Hearst Corporation. SN 295,888. Pub. 7-9-68. Filed 4-18-68.

Class 39 — Clothing

857,261. (See Class 1 for this trademark.)

857,270. (See Class 1 for this trademark.)

857,534. SANI/GARD. Sears, Roebuck and Co. SN 181,570. Pub. 7-9-68. Filed 11-20-63.

857,535. ALBERT'S. Albert Hayes, d.b.a. Albert's Hosiery Stores. SN 226,912. Pub. 7-11-67. Filed 9-1-65.

857,536. AT-HOME. L. B. Evans' Son Company. SN 249,964. Pub. 7-9-68. Filed 7-11-66.

857,537. SUN GOD (DESIGN). G. H. Bass & Co. SN 265,060. Pub. 7-9-68. Filed 2-20-67.

857,538. P. N. HIRSCH & CO. Interco Incorporated. SN 266,540. Pub. 7-9-68. Filed 3-13-67.

857,539. SEALCUNA. Steffi Fashions, Inc. SN 268,239. Pub. 7-9-68. Filed 4-3-67.

857,540. GOLD'N SOFT AND DESIGN. Amsterdam Associates, Inc. SN 268,280. Pub. 7-9-68. Filed 4-4-67.

857,541. FROM THE HOUSE OF RONNIE AND DESIGN. Jack Paparo & Son, Inc. SN 271,508. Pub. 7-9-68. Filed 5-15-67.

857,542. TAFFETEX. Top Form-Yolande, Inc. SN 272,966. Pub. 7-9-68. Filed 6-2-67.

857,543. FARM & FUN. Springfoot, Inc. SN 274,251. Pub. 7-9-68. Filed 6-19-67.

857,544. THE PC-7 COAT. Apparel Corporation of America. SN 274,486. Pub. 7-9-68. Filed 6-22-67.

857,545. HANESLIM. Hanes Corporation. SN 274,516. Pub. 7-9-68. Filed 6-22-67.

857,546. TOP PERFORMER. Leath, McCarthy & Maynard, Inc. SN 274,804. Pub. 7-9-68. Filed 6-26-67.

857,547. WINTHROP AND DESIGN OF GOLDEN EAGLE. Interco Incorporated. SN 275,378. Pub. 7-9-68. Filed 7-5-67.

857,548. FOREIGN AFFAIRS. Suburban Shoe Stores, Inc. SN 280,107. Pub. 7-9-68. Filed 9-11-67.

857,549. DOUBLE TALK. Lewel Manufacturing Co., Inc. SN 280,609. Pub. 7-9-68. Filed 9-18-67.

857,550. CARI. Cari Classics Company. SN 280,763. Pub. 7-9-68. Filed 9-20-67.

857,551. MEDAL PLAY. M. Nirenberg Sons, Inc. SN 282,602. Pub. 7-9-68. Filed 10-16-67.

857,552. MATCH PLAY. M. Nirenberg Sons, Inc. SN 282,604. Pub. 7-9-68. Filed 10-16-67.

857,553. SPAN-DE-SHEEN. Kayser-Roth Corporation. SN 282,706. Pub. 7-9-68. Filed 10-17-67.

857,554. DOW AND DESIGN. The Dow Chemical Company. SN 282,783. Pub. 7-9-68. Filed 10-18-67.

857,555. PANIK BUTTON AND DESIGN. U.S. Knitwear Co. SN 283,445. Pub. 7-9-68. Filed 10-26-67.

857,556. SNIPER. Gentex Corporation. SN 283,886. Pub. 7-9-68. Filed 11-1-67.

857,557. TUF AND DESIGN. G. B. Britton & Sons Limited. SN 284,079. Pub. 7-9-68. Filed 11-3-67.

857,558. KEY CLUB. R. P. Hazzard Co. SN 284,125. Pub. 7-9-68. Filed 10-10-67.

857,559. MINIATURES IN FASHION. Baby Togs, Inc. SN 285,644. Pub. 7-9-68. Filed 11-27-67.

857,560. CRAGAR. Roy Richter, Inc. SN 288,031. Pub. 7-9-68. Filed 1-3-68.

857,561. ZAN-ZAN. Robert Miles Sherman, d.b.a. De Martel, Dressmaker. SN 288,476. Pub. 7-9-68. Filed 1-10-68.

857,562. SILHOUETTE SLACKS. Arthur Winer, Incorporated. SN 288,734. Pub. 6-25-68. Filed 1-12-68.

857,563. CONTE GINO CRAVATTE ETC. AND DESIGN. Forster Neckwear Co., Inc. SN 290,434. Pub. 7-9-68. Filed 2-1-68.

857,564. ATELLO D'ITALIA ETC. AND DESIGN. Forster Neckwear Co., Inc. SN 290,435. Pub. 7-9-68. Filed 2-1-68.

857,565. BIG SPORT. Diener Knitting Mills, Inc. SN 294,135. Pub. 7-9-68. Filed 3-26-68.

Class 40 — Fancy Goods, Furnishings, and Notions

857,566. SANI/GARD. Sears, Roebuck and Co. SN 181,571. Pub. 7-9-68. Filed 11-20-63.

857,567. CMC. California Merchandise Company. SN 275,624. Pub. 7-9-68. Filed 7-10-67.

857,568. EXCLUSIVELY YOURS. Cosmetically Yours, Inc. MULTIPLE CLASS (Classes 40 and 51). SN 278,630. Pub. 7-9-68. Filed 8-21-67.

857,569. BORDERBLOOMS. Charles Bloom, Inc. SN 280,689. Pub. 7-9-68. Filed 9-19-67.

857,570. PRYMONIC. William Prym, Inc. SN 294,207. Pub. 7-9-68. Filed 3-26-68.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

857,571. OPENING NIGHT. Burlington Industries, Inc. SN 282,284. Pub. 5-28-68. Filed 10-11-67.

857,572. BLAZON. Deering Milliken, Inc. SN 284,964. Pub. 1-23-68. Filed 11-16-67.

857,573. POLISETA. Orsi, Inc. SN 286,365. Pub. 7-9-68. Filed 12-6-67.

Class 43 — Thread and Yarn

857,574. DULOFT. The Duplan Corporation. SN 284,635. Pub. 7-9-68. Filed 11-13-67.

Class 44 — Dental, Medical, and Surgical Appliances

857,575. FANCIFUL S. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company. SN 266,093. Pub. 7-9-68. Filed 3-6-67.

857,576. PRINCESS AND DESIGN. Kaz Manufacturing Co., Inc. SN 266,666. Pub. 7-9-68. Filed 3-14-67.

857,577. KINDNESS. Clairol Incorporated. SN 278,375. Pub. 7-9-68. Filed 8-16-67.

857,578. MISCELLANEOUS DESIGN. Smith Kline & French Laboratories. SN 279,337. Pub. 7-9-68. Filed 8-29-67.

857,579. THERMACORDER. Barnes Engineering Company. SN 284,290. Pub. 7-9-68. Filed 11-7-67.

857,580. SPOZADRAPE. Foremost-McKesson, Inc., d.b.a. Gentec Hospital Supply Company. SN 289,581. Pub. 7-9-68. Filed 1-25-68.

857,581. NUGGET. Nugget Distributors' Cooperative of America, Inc., d.b.a. Nugget Distributors, Inc. SN 293,990. Pub. 7-9-68. Filed 3-25-68.

Class 46 — Foods and Ingredients of Foods

857,262. (See Class 1 for this trademark.)

857,271. (See Class 1 for this trademark.)

857,582. SQUARES AND RECTANGLES (DESIGN). National Dairy Products Corporation. SN 223,901. Pub. 11-7-67. Filed 7-21-65.

857,583. BERKSHIRE HILLS. Butler Wholesale Products, Inc. SN 237,807. Pub. 4-23-68. Filed 2-2-66.

857,584. SPAGHETTIOS. Campbell Soup Company. SN 247,002. Pub. 8-8-67. Filed 6-1-66.

857,585. THE MIXMAKER. Clyde A. Harbin. SN 254,388. Pub. 5-28-68. Filed 9-13-66.

857,586. MAID-RITE. Maid-Rite Products, Inc. SN 265,427. Pub. 7-9-68. Filed 2-24-67.

857,587. LONE STAR. North Pacific Canners & Packers, Inc. SN 265,553. Pub. 7-9-68. Filed 2-27-67.

857,588. WONDER WORMS. Sternco Industries, Inc. SN 266,369. Pub. 2-27-68. Filed 3-9-67.

857,589. AMERICAN BEAUTY AND DESIGN. American Beauty Macaroni Company. SN 267,385. Pub. 4-16-68. Filed 3-23-67.

857,590. SS DOUBLE BRAND AND DESIGN. Superior Steaks, Inc. SN 268,241. Pub. 7-9-68. Filed 4-3-67.

857,591. FUN'N GAMES. Sunshine Biscuits, Inc. SN 270,431. Pub. 7-9-68. Filed 5-1-67.

857,592. BOY (DESIGN). Taco Grande, Inc. SN 273,128. Pub. 7-9-68. Filed 6-5-67.

857,593. PURE PRO. Wilson Pharmaceutical & Chemical Corporation, assignee of Wilson & Co., Inc. SN 273,437. Pub. 7-9-68. Filed 6-8-67.

857,594. STADOS AND DESIGN. Fidencio Luna, d.b.a. Stados Baking Co. SN 274,962. Pub. 7-9-68. Filed 6-28-67.

857,595. VOILA! Copexsallenne S.A.R.L. SN 279,052. Pub. 7-9-68. Filed 8-25-67.

857,596. MR. VITAMAN. The Quaker Oats Company. SN 279,905. Pub. 11-14-67. Filed 9-8-67.

857,597. BLUE-J. Raney Packers. SN 280,091. Pub. 7-9-68. Filed 9-11-67.

857,598. EL EXIGENTE. S. A. Schonbrunn & Company, Inc. SN 281,644, Pub. 7-9-68. Filed 10-2-67.

857,599. PLUMPET. The Pillsbury Company. SN 284,727. Pub. 7-9-68. Filed 11-13-67.

857,600. DESIGN OF ROOSTER. Kellogg Company. SN 286,473. Pub. 5-14-68. Filed 12-8-67.

857,601. WHISPS. General Mills, Inc. SN 288,157. Pub. 7-9-68. Filed 1-5-68.

857,602. ARAB. H & R Citrus. SN 290,850. Pub. 7-9-68. Filed 2-12-68.

Class 49 — Distilled Alcoholic Liquors

857,603. PENNY PACKER. The American Distilling Company, d.b.a. The American Distilling Co., Inc. SN 268,140. Pub. 3-12-68. Filed 4-3-67.

857,604. JAGERMEISTER. Curt Mast. SN 271,632. Pub. 7-9-68. Filed 5-16-67.

857,605. BELUGA. Continental Distilling Corporation, d.b.a. Continental Distilling Co. SN 282,443. Pub. 7-9-68. Filed 10-13-67.

Class 50—Merchandise Not Otherwise Classified

857,262. (See Class 1 for this trademark.)

857,606. BUTTON FACTORY. Fleer Corp., by change of name from Frank H. Fleer Corporation. SN 277,649. Pub. 7–2–68. Filed 8–7–67.

857,607. SAFE RAY. General Steel Industries, Inc., d.b.a. Flex-O-Lite Division. SN 281,066. Pub. 7–9–68. Filed 9–25–67.

857,608. FLORART. Duncan Tong, d.b.a. Reliance Trading Corporation. SN 288,726. Pub. 7–9–68. Filed 1–12–68.

857,609. ARDEE. R. D. Werner Co., Inc. SN 289,636. Pub. 7–9–68. Filed 1–25–68.

857,610. SCULPTORCRAFT. Seamer Products (Sculptorcraft) Ltd. SN 289,720. Pub. 7–9–68. Filed 1–26–68.

857,611. SAN-STOPPER. Koneta Rubber Co., Inc. SN 292,940. Pub. 7–9–68. Filed 3–11–68.

857,612. BLACK DIAMOND. Margolis Nursery Incorporated. SN 293,289. Pub. 7–9–68. Filed 3–14–68.

857,613. NUGGET. Nugget Distributors' Cooperative of America, Inc., d.b.a. Nugget Distributors, Inc. SN 293,988. Pub. 7–9–68. Filed 3–25–68.

857,614. MINI-BRITE. General Plastics Corporation. SN 295,403. Pub. 7–9–68. Filed 4–11–68.

Class 51—Cosmetics and Toilet Preparations

857,568. (See Class 40 for this trademark.)

857,615. BHB AND DESIGN. Beautymasters, Inc. SN 252,807. Pub. 4–2–68. Filed 8–22–66.

857,616. CORRECTION. Clairol Incorporated. SN 258,048. Pub. 1–16–68. Filed 11–7–66.

857,617. ACQUA DI SELVA. Gruppo Industriale Giuseppe Visconti di Modrone S.p.A. SN 265,420. Pub. 7–9–68. Filed 2–24–67.

857,618. PLY AND DESIGN. Milburn Company. SN 266,060. Pub. 7–9–68. Filed 3–6–67.

857,619. NUMERO UNO. Clairol Incorporated. SN 271,352. Pub. 5–21–68. Filed 5–12–67.

857,620. MARVEL·ICE. Humphreys Medicine Company, Incorporated. SN 272,184. Pub. 7–9–68. Filed 5–23–67.

857,621. LE MASQUE BY VANDA. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company. SN 272,748. Pub. 7–9–68. Filed 5–31–67.

857,622. LEMON VELVET. Avon Products, Inc. SN 277,785. Pub. 7–9–68. Filed 8–8–67.

857,623. FINISH LINE. Avon Products, Inc. SN 278,359. Pub. 7–9–68. Filed 8–16–67.

857,624. EXCALIBUR. Avon Products, Inc. SN 278,360. Pub. 7–9–68. Filed 8–16–67.

857,625. SIMPATICO. Les Parfums de Dana, Inc., d.b.a. Dana. SN 278,504. Pub. 4–16–68. Filed 8–17–67.

857,626. DIRECT LINE. Avon Products, Inc. SN 278,364. Pub. 7–9–68. Filed 8–16–67.

857,627. AGENDA. Avon Products, Inc. SN 278,368. Pub. 7–9–68. Filed 8–16–67.

857,628. POT. Parker Laboratories, Inc., d.b.a. Gilmar Laboratories. SN 278,606. Pub. 7–9–68. Filed 8–18–67.

857,629. OH SO EASY. Helene Curtis Industries, Inc. SN 278,690. Pub. 7–9–68. Filed 8–21–67.

857,630. BLOCK & HOLD. L.B. Laboratories, Inc. SN 279,202. Pub. 7–9–68. Filed 8–28–67.

857,631. COLOR CLUSTER. Avon Products, Inc. SN 279,922. Pub. 7–9–68. Filed 9–8–67.

857,632. AQUA NET. Rayette-Faberge, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 280,193. Pub. 7–9–68. Filed 9–13–67.

857,633. SUNBURST (DESIGN). Miles Laboratories, Inc. SN 280,807. Pub. 7–9–68. Filed 9–20–67.

Class 52—Detergents and Soaps

857,262. (See Class 1 for this trademark.)

857,293. (See Class 4 for this trademark.)

857,302. (See Class 4 for this trademark.)

857,319. (See Class 6 for this trademark.)

857,632. (See Class 51 for this trademark.)

857,634. CHEMTRONICS AND DESIGN. Chemtronics Inc. SN 241,032. Pub. 4–16–68. Filed 3–15–66.

857,635. VIS. Cecil A. van Wyck. SN 252,434. Pub. 5–14–68. Filed 8–15–66.

857,636. WHISTLE. The Drackett Company, d.b.a. The Drackett Products Company. SN 262,688. Pub. 7–9–68. Filed 1–17–67.

857,637. LEMON VELVET. Avon Products, Inc. SN 277,784. Pub. 7–9–68. Filed 8–8–67.

857,638. EPAULET. Avon Products, Inc. SN 278,369. Pub. 7–9–68. Filed 8–16–67.

857,639. U.S. BORAX. United States Borax & Chemical Corporation. SN 280,113. Pub. 7–9–68. Filed 9–11–67.

857,640. DELIVER. H. P. Hood & Sons, Inc., d.b.a. H. P. Hood & Sons. SN 284,307. Pub. 7–9–68. Filed 11–7–67.

857,641. DERMALINE. Curley Company, Inc. SN 284,863. Pub. 5–14–68. Filed 11–15–67.

857,642. LIFT. Armour Grocery Products Company. SN 294,133. Pub. 7–9–68. Filed 3–26–68.

Service Marks

Class 100—Miscellaneous

857,262. (See Class 1 for this trademark.)

857,643. AEROSCOPE. Reid H. Ray Film Industries, Inc. SN 271,640. Pub. 7–9–68. Filed 5–16–67.

857,644. GO REENSBOR AND DESIGN. The Greensboro Chamber of Commerce, Inc. SN 281,574. Pub. 7–9–68. Filed 10–2–67.

857,645. MISCELLANEOUS DESIGN. Wometco Blue Circle, Inc. SN 282,336. Pub. 7–9–68. Filed 10–12–67.

857,646. RO-MAC. Ro-Mac & Associates, Inc. SN 282,479. Pub. 7–9–68. Filed 10–13–67.

857,647. GEORGIA BOY AND DESIGN. Georgia Boy, Inc. SN 293,778. Pub. 7–9–68. Filed 3–21–68.

Class 101—Advertising and Business

857,648. ALBERT'S. Albert Hayes, d.b.a. Albert's Hosiery Stores. SN 226,913. Pub. 7–25–67. Filed 9–1–65.

857,649. AUTOMATED PERSONNEL INTERNATIONAL. Automated Personnel International, Inc. SN 258,881. Pub. 7–9–68. Filed 11–17–66.

857,650. P. N. HIRSCH & CO. Interco Incorporated. SN 266,541. Pub. 7–9–68. Filed 3–13–67.

857,651. SPENCER GIFTS. Spencer Gifts, Inc. SN 276,293. Pub. 7–9–68. Filed 7–19–67.

857,652. INTERNATIONAL IDEAS. International Ideas. SN 276,752. Pub. 7–9–68. Filed 7–25–67.

857,653. COMPUTER-EASE. Computer-Ease Systems, Inc., d.b.a. Computer-Ease Farm Systems. SN 282,441. Pub. 7–9–68. Filed 10–13–67.

857,654. SUPER AND A DESIGN. Associated Food Stores, Inc. SN 283,214. Pub. 7–9–68. Filed 10–24–67.

857,655. THE PEOPLE PLACERS. Schneider, Hill and Spangler, Inc. SN 284,398. Pub. 7–9–68. Filed 11–8–67.

Class 102—Insurance and Financial

857,656. 3-2-1 PLAN. The Bank of California, National Association. SN 273,023. Pub. 7–9–68. Filed 6–5–67.

857,657. PERMAPLAN. Provident Life and Accident Insurance Company. SN 276,171. Pub. 7–9–68. Filed 7–17–67.

857,658. YOUNG CHICAGOANS CLUB. Central National Bank in Chicago. SN 277,101. Pub. 7–9–68. Filed 7–31–67.

857,659. THE BANK OF CALIFORNIA. The Bank of California, National Association. SN 278,863. Pub. 7–9–68. Filed 8–23–67.

Class 103—Construction and Repair

857,262. (See Class 1 for this trademark.)

857,430. (See Class 23 for this trademark.)

857,660. M (DESIGN). Maisbary Manufacturing Company. MULTIPLE CLASS (Classes 103 and 107). SN 258,440. Pub. 7–9–68. Filed 11–14–66.

857,661. DESIGN OF A LADY'S HEAD. Glam-O-Rama, Incorporated. SN 266,753. Pub. 7–9–68. Filed 3–15–67.

Class 105—Transportation and Storage

857,262. (See Class 1 for this trademark.)

857,662. COLD FLOW AND DESIGN. Air Reduction Company, Incorporated. SN 180,629. Pub. 7–9–68. Filed 11–7–63.

857,663. EASTERN TRAVEL CLUB. Eastern Air Lines, Inc. SN 277,855. Pub. 7–9–68. Filed 8–9–67.

Class 107—Education and Entertainment

857,660. (See Class 103 for this trademark.)

857,664. THE FREUDIAN SLIPS AND DESIGN. Teda Marie Bracci. SN 269,852. Pub. 7–9–68. Filed 4–24–67.

857,665. DREAM BOWL GAME. Triangle Publications, Inc. SN 275,088. Pub. 7–9–68. Filed 6–29–67.

857,666. RHYTHMATIC TOUCH. Litton Business Systems, Inc. SN 280,433. Pub. 7–9–68. Filed 9–15–67.

857,667. DISNEYLAND. Walt Disney Productions. SN 280,735. Pub. 7–9–68. Filed 9–19–67.

857,668. ASK. Christadelphian Ecclesia of Cranston, R.I., Inc. SN 294,881. Pub. 7–9–68. Filed 4–4–68.

Certification Mark

Class A—Goods

857,699. WINTUK. E. I. du Pont de Nemours and Company. SN 280,672. Pub. 7–9–68. Filed 9–19–67.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

857,670 Morabito Boutique, Paris, France. SN 260,349. Filed P.R. 12–8–66; Am. S.R. 2–16–68.

MORABITO

Owner of French Reg. No. 716,216, dated June 3, 1966.

Class 1—Raw or Partly Prepared Materials

For Hides (Int. Cl. 18).

Class 2—Receptacles

For Jewelry Boxes (Int. Cl. 20).

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Trunks, Valises, Handbags and Carrying Cases, Billfolds, Wallets and Coin Purses (Int. Cl. 18).

Class 27—Horological Instruments

For Watches and Chronometers (Int. Cl. 14).

Class 28—Jewelry and Precious-Metal Ware

For Jewelry, Precious Stones and Artificial Pearls (Int. Cl. 14).

Class 29—Brooms, Brushes, and Dusters

For Hair Brushes (Int. Cl. 21).

Class 30—Crockery, Earthenware, and Porcelain

For Porcelain Tableware and Earthen Tableware (Int. Cl. 21).

Class 33—Glassware

For Table Glassware (Int. Cl. 21).

Class 37—Paper and Stationery

For Book Covers and Desk Sets Consisting of Blotter Holders, Pen and Pencil Holders, Letter Holders, and Paper Clip Holders (Int. Cl. 16).

Class 39—Clothing

For Belts, Dresses, Coats, Scarves, Headwear, Neckwear, Shirts, Blouses, Sweaters and Footwear (Int. Cl. 25).

Class 40—Fancy Goods, Furnishings, and Notions

For Combs (Int. Cl. 21).

Class 41—Canes, Parasols, and Umbrellas

For Umbrellas, Parasols and Canes (Int. Cl. 18).

Class 50—Merchandise Not Otherwise Classified

For Porcelain Statuettes (Int. Cl. 21).

857,679. Old England Watches Limited, London, England. SN 271,572. Filed P.R. 5–16–67; Am. S.R. 4–11–68.

OLD ENGLAND

Class 27—Horological Instruments

For Watches and Clocks (Int. Cl. 14).

Class 28—Jewelry and Precious-Metal Ware

For Jewelry (Int. Cl. 14).

First use in the year 1966; in commerce Feb. 27, 1967.

SECTION 2

Class 1 — Raw or Partly Prepared Materials

857,670. See Section 1 (Combined Certificate).

Class 2 — Receptacles

857,670. See Section 1 (Combined Certificate).

857,671. Inland Container Corporation, Indianapolis, Ind. SN 278,067. Filed P.R. 8-11-67; Am. S.R. 3-27-68.

FAMILY MILK PACK

For Shipping Containers for Shipping Milk, the Containers Being Formed of Fiberboard, and Liners Therefor (Int. Cl. 16).
First use Jan. 9, 1964.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

857,670. See Section 1 (Combined Certificate).

Class 12 — Construction Materials

857,672. Industrial Acoustics Company, Inc., Bronx, N.Y. SN 261,927. Filed P.R. 1-4-67; Am. S.R. 6-21-68.

TRACKWALL

For Movable Wall Room Dividers (Int. Cl. 19).
First use July 1963.

Class 21 — Electrical Apparatus, Machines, and Supplies

857,673. Chromalloy American Corporation, West Nyack, N.Y., by change of name from Chromalloy Corporation, West Nyack, N.Y. SN 223,085. Filed P.R. 7-12-65; Am. S.R. 10-19-67.

POCKET FONE

For Cordless Telephone Accessory for Remote Control of Telephone and for Remote Two-Way Communications (Int. Cl. 9).
First use Nov. 25, 1964.

857,674. Superior Continental Corporation, Hickory, N.C., by change of name from Superior Cable Corporation, Hickory, N.C. SN 277,723. Filed P.R. 8-7-67; Am. S.R. 7-22-68.

COPPERGARD

For Coaxial Cables (Int. Cl. 9).
First use Feb. 4, 1963.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

857,675. The Reliance Electric and Engineering Company, Mishawaka, Ind., by merger from Dodge Manufacturing Corporation, Mishawaka, Ind. SN 263,031. Filed P.R. 1-23-67; Am. S.R. 4-10-68.

SPRINGLOK

For Pillow Block Collars (Int. Cl. 7).
First use Dec. 22, 1966.

857,676. Murdock, Inc., Compton, Calif. SN 267,174. Filed P.R. 3-20-67; Am. S.R. 6-3-68.

MURDOCK

For Machinery—Namely, Metal Forming Presses (Int. Cl. 7).
First use July 1966.

Class 26 — Measuring and Scientific Appliances

857,677. Perspective, Inc., Seattle, Wash. SN 259,149. Filed P.R. 11-21-66; Am. S.R. 7-11-68.

PRECISION PERSPECTIVE

For Perspective Grids for Isometric Drawings (Int. Cl. 16).
First use September 1955.

857,678. Spaulding Fibre Company, Inc., Tonawanda, N.Y. SN 284,324. Filed P.R. 11-7-67; Am. S.R. 7-25-68.

PERMAGRID

For Layout Guides Used in Graphic Arts (Int. Cl. 16).
First use on or about July 6, 1966.

Class 27 — Horological Instruments

857,670. See Section 1 (Combined Certificate).

857,679. See Section 1 (Combined Certificate).

Class 28 — Jewelry and Precious-Metal Ware

857,670. See Section 1 (Combined Certificate).

857,679. See Section 1 (Combined Certificate).

Class 29 — Brooms, Brushes, and Dusters

857,670. See Section 1 (Combined Certificate).

Class 30 — Crockery, Earthenware, and Porcelain

857,670. See Section 1 (Combined Certificate).

Class 33 — Glassware

857,670. See Section 1 (Combined Certificate).

Class 34 — Heating, Lighting, and Ventilating Apparatus

857,680. Alfred B. Christopher, d.b.a. The Christopher Company, Rosamond, Calif. SN 271,013. Filed P.R. 5-9-67; Am. S.R. 6-21-68.

CAMP-R-COOLER

For Electric Evaporative Air-Conditioning Cooler (Int. Cl. 11).
First use Dec. 15, 1966.

Class 36 — Musical Instruments and Supplies

857,681. Mass. Motion Picture Service, Inc., Lynn, Mass. SN 262,950. Filed P.R. 1-20-67; Am. S.R. 7-22-68.

SHAYNE

For Magnetic Recording Tape (Int. Cl. 9).
First use May 6, 1966.

Class 37 — Paper and Stationery

857,670. See Section 1 (Combined Certificate).

Class 38 — Prints and Publications

857,682. Industrial Research, Inc., Beverly Shores, Ind. SN 266,887. Filed P.R. 3-16-67; Am. S.R. 7-19-68.

MATERIALS
APPLICATIONS

For Section of a Magazine and as a Separate Publication Issued Monthly (Int. Cl. 16).
First use around Feb. 1, 1967.

Class 39 — Clothing

857,670. See Section 1 (Combined Certificate).

Class 40 — Fancy Goods, Furnishings, and Notions

857,670. See Section 1 (Combined Certificate).

Class 41 — Canes, Parasols, and Umbrellas

857,670. See Section 1 (Combined Certificate).

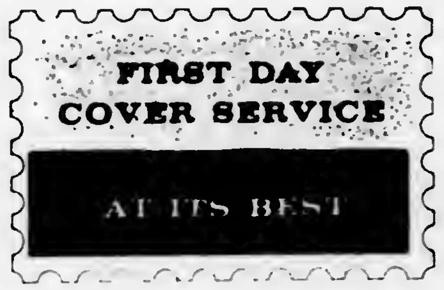
Class 50 — Merchandise Not Otherwise Classified

857,670. See Section 1 (Combined Certificate).

Service Mark

Class 100 — Miscellaneous

857,683. James Albert Helzer, Cheyenne, Wyo. SN 280,160. Filed P.R. 9-11-67; Am. S.R. 7-22-68.



For First Day Cover Service in the Field of Philately (Int. Cl. 42).
First use July 22, 1965.

TRADEMARK REGISTRATIONS RENEWED

243,525. VICTORIA. Cl. 46 (Int. Cl. 31). 6-26-28.
244,941. "MULTIPOWER" AND DESIGN. Cl. 15 (Int. Cl. 4). 7-31-28.
245,188. HALLBROOK. Cl. 39 (Int. Cl. 25). 8-7-28.
245,388. RO. Cl. 50 (Int. Cl. 6). 8-14-28.
245,564. CAVIARETTE. Cl. 46 (Int. Cl. 30). 8-14-28.
245,759. LO-TENS. Cl. 4 (Int. Cl. 7). 8-21-28.
245,760. HY-TENS. Cl. 4 (Int. Cl. 7). 8-21-28.
246,323. DIX KNIT. Cl. 39 (Int. Cl. 25). 9-4-28.
246,368. TRIPLEX. Cl. 13 (Int. Cl. 6). 9-4-28.
246,884. DESIGN WITH FOUR PARALLEL LINES. Cl. 38 (Int. Cl. 16). 9-18-28.
246,945. "BLUE JAY" REPRESENTATION OF BIRD AND BACKGROUND DESIGN. Cl. 37 (Int. Cl. 16). 9-18-28.
247,739. JUMBO. Cl. 46 (Int. Cls. 29 and 30). 10-2-28.
247,948. RATTAN. Cl. 21 (Int. Cl. 9). 10-9-28.
249,761. RAILWAY AGE. Cl. 38 (Int. Cl. 16). 11-20-28.
250,260. "JEDDO AND HIGHLAND COAL" ETC. AND DESIGN. Cl. 1 (Int. Cl. 4). 12-4-28.
250,539. JAMESWAY. Cl. 12 (Int. Cl. 6). 12-11-28.
250,742. POTONIQUE. Cl. 51 (Int. Cl. 3). 12-18-28.
251,527. "COPPER KING" AND DESIGN. Cl. 39 (Int. Cl. 25). 1-8-29.
251,563. "7-11" AND REPRESENTATION OF PAIR OF DICE. Cl. 46 (Int. Cl. 31). 1-8-29.
251,608. BANNER. Cl. 46 (Int. Cl. 29). 1-8-29.
435,636. D.C.L.S. AGAR ETC. AND DESIGN. Cl. 6 (Int. Cl. 1). 1-6-48.
435,637. T.S.I. AGAR ETC. AND DESIGN. Cl. 6 (Int. Cl. 1). 1-6-48.
436,358. LUSTRALITES. Cl. 21 (Int. Cl. 11). 2-3-48.
440,020. GSM. Cl. 35 (Int. Cl. 6). 8-3-48.
440,188. SPACE SHOE. Cl. 39 (Int. Cl. 25). 8-17-48.
440,602. ADMIRA. Cl. 28 (Int. Cl. 14). 9-14-48.
440,779. PIONEER. Cl. 35 (Int. Cls. 7 and 17). 9-28-48.
440,807. O-CEL-O. Cl. 1 (Int. Cl. 21). 9-28-48.
440,963. DRAKE AND DESIGN. Cl. 17 (Int. Cl. 34). 10-12-48.
441,073. BLACK BEAUTY. Cl. 28 (Int. Cls. 14, 21, and 26). 10-19-48.
441,277. PERM-A-FLEX. Cl. 12 (Int. Cl. 19). 11-9-48.
441,515. FIGURE OF A WOMAN DIPPING CANDLES. Cl. 15 (Int. Cl. 4). 11-30-48.

441,561. AIR KING. Cl. 13 (Int. Cl. 6). 12-7-48.
500,358. PRECISION BRAND. Cl. 14 (Int. Cl. 6). 5-11-48.
500,442. TUPPER. Cl. 23 (Int. Cl. 8). 5-18-48.
501,138. OB. Cl. 21 (Int. Cl. 12). 7-27-48.
501,224. LOHENGRIN. Cl. 28 (Int. Cl. 14). 7-27-48.
501,227. OROGLAS. Cl. 1 (Int. Cls. 1 and 17). 7-27-48.
501,325. ARMADILLO. Cl. 35 (Int. Cl. 17). 8-3-48.
501,373. KELFLEX. Cl. 35 (Int. Cl. 12). 8-3-48.
501,392. MAC AND DESIGN. Cl. 28 (Int. Cl. 14). 8-3-48.
501,409. CADETS. Cl. 44 (Int. Cl. 10). 8-3-48.
501,417. GEMMER. Cl. 19 (Int. Cl. 12). 8-3-48.
501,445. VAN MERRITT. Cl. 48 (Int. Cl. 32). 8-10-48.
501,646. SILVERWING. Cl. 37 (Int. Cl. 16). 8-17-48.
501,653. STITCH IN TIME AND DESIGN. Cl. 42 (Int. Cl. 24). 8-17-48.
501,666. MILANO. Cl. 8 (Int. Cl. 34). 8-17-48.
501,674. LE GALION. Cl. 51 (Int. Cl. 3). 8-17-48.
501,680. WHITALOPE. Cl. 3 (Int. Cl. 18). 8-17-48.
501,948. WFMC. Cl. 14 (Int. Cl. 6). 8-31-48.
502,206. MISS CHICKEN. Cl. 46 (Int. Cl. 29). 9-14-48.
502,643. DR. FRENCH'S. Cl. 44 (Int. Cl. 10). 10-5-48.
502,088. MONOTHEAMIN. Cl. 18 (Int. Cl. 5). 9-14-48.
502,903. RICHARDSON. Cl. 45 (Int. Cl. 32). 10-12-48.
502,904. RICHARDSON. Cl. 45 (Int. Cl. 32). 10-12-48.
503,047. PRYM. Cl. 40 (Int. Cl. 26). 10-19-48.
503,052. KU-RILL. Cl. 18 (Int. Cl. 5). 10-19-48.
503,109. KERR. Cl. 50 (Int. Cl. 6). 10-19-48.
503,110. KERR. Cl. 33 (Int. Cl. 21). 10-19-48.
503,117. HOMOFLEX. Cl. 35 (Int. Cls. 7 and 17). 10-19-48.
503,225. TOPOCIDE. Cl. 18 (Int. Cl. 5). 10-19-48.
503,396. ALL WEATHER. Cl. 35 (Int. Cl. 12). 10-26-48.
503,893. KELLOGG. Cl. 29 (Int. Cl. 21). 11-16-48.
504,001. GRIFFIN A.B.C. Cl. 4 (Int. Cl. 3). 11-16-48.
504,070. LUCKY 13. Cl. 22 (Int. Cl. 28). 11-23-48.
504,154. RIVER-RUNT. Cl. 22 (Int. Cl. 28). 11-23-48.
504,217. CHEROKEE AND DESIGN. Cl. 1 (Int. Cl. 4). 11-23-48.
504,260. LIN PAK. Cl. 35 (Int. Cl. 17). 11-30-48.
504,458. FUTURA. Cl. 43 (Int. Cl. 23). 11-30-48.
504,533. CRAFTEX. Cl. 42 (Int. Cl. 24). 12-7-48.
504,619. DESIGN OF INDIAN HEAD. Cl. 45 (Int. Cl. 32). 12-7-48.
504,657. SEALTOP AND DESIGN. Cl. 32 (Int. Cl. 20). 12-7-48.
504,813. ORIETTA. Cl. 42 (Int. Cl. 24). 12-14-48.
504,814. SANJHARA. Cl. 42 (Int. Cl. 24). 12-14-48.
504,974. MANHATTAN MR. Cl. 22 (Int. Cl. 28). 12-21-48.
505,037. U.S. WEEKLY. Cl. 38 (Int. Cl. 16). 12-21-48.
505,201. EAGLE CLAW HOOKS. Cl. 22 (Int. Cl. 28). 12-28-48.
505,328. MARCAL AND DESIGN. Cl. 37 (Int. Cl. 16). 1-4-49.
505,450. TAYLOR TOT. Cl. 19 (Int. Cl. 12). 1-4-49.
505,616. AD-TY. Cl. 7 (Int. Cl. 22). 1-11-49.

TRADEMARK REGISTRATIONS CANCELED

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709,570. ENCO. Cl. 21. 1-10-61.
825,684. GEMINI. Cl. 23. 3-14-67.
826,685. VISTA-PANEL AND DESIGN. Cl. 12. 4-4-67.
837,785. VISTRON. Cl. 15. 10-31-67.
801,398. STAF FOIL AND DESIGN. Cl. 42. 1-4-66.

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154,015. VENTUBE. Cl. 42. 4-4-22.
337,968. ARROWBILT AND DESIGN. Cl. 32. 8-25-36.
391,971. COLORPLUS. Cl. 43. 12-2-41.
402,684. "BULL-DOG." Cl. 36. 8-10-43.

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735,504. EMERALD BEAUTY ETC. AND DESIGN. Cl. 1.
735,506. REPRESENTATION OF A HUMAN MALE. Cl. 1.
735,508. HELIODOR. Cl. 1.
735,512. ANILSOFT. Cl. 1.
735,519. KYTREL. Cl. 1.
735,522. EASY-USE. Cl. 2.
735,523. LUTOX. Cl. 6.
735,525. V VICTOR AND DESIGN. Cl. 6.
735,544. FORM·A·SEAL. Cl. 12.
735,545. SEAL-MASTER. Cl. 12.
735,548. OLD SOUTH. Cl. 12.
735,549. PERMAFIL. Cl. 12.
735,552. TERM-O-PRUF. Cl. 13.
735,554. M.O.S.-12. Cl. 15.
735,557. MAYPOXY. Cl. 16.
735,559. CLOUD CLUB. Cl. 17.
735,561. FUNDAMYCIN. Cl. 18.
735,563. NELSON-BOYER COMPANY AND DESIGN. Cl. 18.
735,564. ABRAC. Cl. 18.
735,565. BAXEN. Cl. 18.
735,567. TRANSPHARM. Cl. 18.
735,568. EARTH IRON. Cl. 18.
735,571. DOLITRONE. Cl. 18.
735,574. ORGAMETRIL. Cl. 18.
735,575. STRON-BRELLA AND DESIGN. Cl. 18.
735,582. FIXED CAPACITOR SYMBOL IN HEXAGONAL DESIGN. Cl. 21.
735,583. CALOR. Cl. 21.
735,584. KINGLITE. Cl. 21.
735,587. SNO-PAD. Cl. 21.
735,588. VARI-REG. Cl. 21.
735,590. GO-POWER AND DESIGN. Cl. 21.
735,595. ADCOLITE. Cl. 21.
735,600. FUN IN THE SUN. Cl. 22.
735,601. MISS MARIE. Cl. 22.
735,602. WITZY. Cl. 22.
735,603. ASTRO ANTICS. Cl. 22.
735,604. CLICK-A-WORD. Cl. 22.
735,614. TENION. Cl. 23.
735,626. PORTER BOY. Cl. 23.
735,631. MEASURE-MASTER. Cl. 26.
735,632. SYL-A-SCOPE. Cl. 26.
735,634. LUXRAY. Cl. 26.
735,639. BETAPOT. Cl. 26.
735,640. PRM. Cl. 26.
735,642. W & C AND DESIGN. Cl. 26.
735,643. LST. Cl. 26.
735,644. GEOMETRIC DESIGN. Cl. 26.
735,645. GEOMETRIC DESIGN. Cl. 26.
735,646. EMBLEM (DESIGN). Cl. 26.
735,648. ISD. Cl. 26.
735,657. AIR CUSHIONED. Cl. 28.
735,660. HAL. Cl. 30.
735,664. MUG AND DESIGN. Cl. 33.
735,665. RESIST-O-SHIELD. Cl. 34.
735,676. TELE-PAD. Cl. 37.
735,678. DICTAFAX. Cl. 37.
735,679. CIMSCO. Cl. 37.
735,682. TROWBRIDGE. Cl. 37.
735,687. SCHEHERAZADE. Cl. 37.
735,690. FLEXITIP. Cl. 37.
735,691. REPRESENTATION OF MALE HEAD AND HAND. Cl. 38.
735,692. INTERNATIONAL SCIENCE & TECHNOLOGY. Cl. 38.
735,693. THE CHARIOTEER. Cl. 38.
735,696. REACH AND DESIGN. Cl. 38.
735,698. BUBBLE BIB. Cl. 39.
735,699. KIDDIEKUFFS AND DESIGN. Cl. 39.
735,700. CASTRO & CO. Cl. 39.
735,705. DEL BENE. Cl. 39.
735,716. NSC. Cl. 42.
735,720. HELIODOR. Cl. 43.
735,726. SCOTT COM PAK AIR-PAK AND DESIGN. Cl. 44.
735,728. SCOTT COM PAK AND DESIGN. Cl. 44.
735,731. FIGURE CYCLE. Cl. 44.
735,733. PAN AND DESIGN. Cl. 44.
735,735. CRACKIT-PACKIT. Cl. 46.
735,736. DEB. Cl. 46.
735,739. ADAMS YOGI BREAD—IT PULLS APART AND DESIGN. Cl. 46.
735,740. HOLY SMOKE. Cl. 46.
735,741. HEAVENLY DAY! Cl. 46.
735,742. DESIGN OF A WOMAN'S HEAD. Cl. 46.
735,743. ROGERS QUICK AND DESIGN. Cl. 46.
735,745. RON'S ETC. AND DESIGN. Cl. 46.
735,750. FIESTA. Cl. 46.
735,754. OVALCOLA. Cl. 46.
735,759. VEGE BASE. Cl. 46.

735,762. RED OX. Cl. 46.
735,764. OPEN SESAME AND DESIGN. Cl. 46.
735,769. BUTTERKIST. Cl. 46.
735,770. SESA-BURGER. Cl. 46.
735,771. SESA-BREAD. Cl. 46.
735,772. SESA-WHEAT. Cl. 46.
735,773. SESA-FRANK. Cl. 46.
735,774. SESA-RYE. Cl. 46.
735,778. DANCING COUPLE WITHIN A CIRCLE (DESIGN). Cl. 48.
735,781. SAFE T BATH. Cl. 50.
735,785. BURBON. Cl. 51.
735,789. POCA-DOT AND DESIGN. Cl. 51.
735,791. PYGMALION. Cl. 51.
735,796. FLUOROCLENE. Cl. 52.
735,797. FAB AND DESIGN. Cl. 52.
735,798. LAMB-O-KIN. Cl. 52.
735,806. KRATTER AND DESIGN. Cl. 101.
735,812. FSC AND DESIGN. Cl. 106.
735,813. SATELLITES. Cl. 107.
735,814. MAYOR ART'S ALMANAC. Cl. 107.
735,815. MONOGRAM OR LOGO DESIGN OF THE LOWER CASE LETTERS DAVI. Cl. 200.
735,817. PHOTOFACT-EQUIPPED ELECTRONIC TECHNICIAN. Cl. B.
735,819. KAMP KARD. Cl. 37.
735,820. GRAPE MAID. Cl. 45.
735,821. IT'S PINK. Cl. 51.

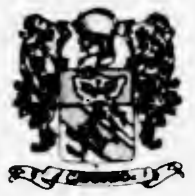
TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

586,100. FLAIR. Cl. 37. 2-23-54. Waterman Pen Company, Inc. Paper Mate Manufacturing Company, Santa Monica, Calif. Amended: In the statement, column 1, line 6, "ball point" is deleted.

657,430. TEXBORO. Cl. 32. 1-21-58. Texboro Cabinet Corporation. Boro Industries, Inc., Mineral Wells, Tex. Amended: In the statement, column 1, line 1, after "Corporation" *, now by change of name Boro Industries, Inc.* is inserted.

750,254. CARANDO'S AND DESIGN. Cl. 46. 5-28-63. Peter Carando, Inc., doing business as Carando's, Inc., Springfield, Mass. Amended to appear:

CARANDO



822,191. CYCLOPS AND DESIGN. Cls. 2, 12, 13, 14, 23. 1-17-67. Cyclops Corporation, Bridgeville, Pa. Corrected: In the statement, column 1, line 12, "Class 2" should be deleted and *Class 14* should be inserted, in line 16, "Class 12" should be deleted and *Class 2* should be inserted, in column 2, line 5, "Class 13" should be deleted and *Class 12* should be inserted and in line 9, "Class 14" should be deleted and *Class 13* should be inserted.

833,067. CHIENCHA. Cl. 51. 8-1-67. Abram Tenenbaum, doing business as Marc Tenens, Boulogne-sur Seine, France. Corrected: In the statement, column 1, line 1, "Abraham" should be deleted and *Abram* should be inserted.

838,472. UNIFRANCK. Cl. 46. 11-7-67. Unifranck Lebensmittelwerke G.m.b.H., Ludwigsburg, Germany. Corrected: In the statement, column 1, line 12, after "fats;" *coffee and* should be inserted.

841,887. NA. Cl. 12. 1-9-68. Nichols Wire & Aluminum Co., Davenport, Iowa. Corrected: In the statement, column 1, line 1, "Missouri" should be deleted and *Delaware* should be inserted.

846,874. DURA-TEK. Cl. 2. 4-2-68. Stainless Products Corporation, Belding, Mich. Corrected: In the statement, column 1, line 1, "Michigan" should be deleted and *New York* should be inserted.

850,513. HAMLIN. Cl. 21. 6-11-68. Hamlin, Inc., Lake Mills, Wis. Corrected: In the statement, column 1, line 1, "Wisconsin" should be deleted and *Illinois* should be inserted.

852,177. CLASSI-TIQUE PRODUCTS AND DESIGN. Cl. 15. 7-9-68. George J. Liddell, doing business as Classi-Tique Products, Springfield, Pa. Corrected: In the statement, column 1, line 1, "Liddel" should be deleted and *Liddell* should be inserted.

852,935. FF (DESIGN). Cl. 102. 7-16-68. Fidelity Federal Savings and Loan Association of Jacksonville, Jacksonville, Fla. Corrected: In the statement, column 2, line 3, "1065" should be deleted and *1965* should be inserted.

853,152. HDC AND DESIGN. Cl. 23. 7-23-68. Hastings Dynamold Corporation, Hastings, Nebr. Corrected: In the statement, column 2, line 3, after "products" *concrete saws, concrete planers and concrete lifting tongs* should be inserted.

853,153. HASTY DYNAMOLD. Cl. 23. 7-23-68. Hastings Dynamold Corporation, Hastings, Nebr. Corrected: In the statement, column 2, line 3, after "products" *and concrete saws, concrete planers and concrete lifting tongs* should be inserted.

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SEPTEMBER 24, 1968

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Abbott Laboratories, North Chicago, Ill. 857,333, pub. 7-9-68. Cl. 10.
Adams Bakeries : *See*—
  Adams, Thomas J.
Adams, Thomas J., d.b.a. Adams Bakeries, Jackson, Ohio. 735,739, canc. Cl. 46.
Adco Sign Co., Portland, Oreg. 735,595, canc. Cl. 21.
Agostini, Dominic J., d.b.a. Regina Products, Pawtucket, R.I. 735,698, canc. Cl. 39.
Air Reduction Co., Inc., New York, N.Y. 857,662, pub. 7-9-68. Cl. 105.
Albert's Hosiery Stores : *See*—
  Hayes, Albert.
Alberto-Culver Co., Melrose Park, Ill. 857,304, pub. 7-9-68. Cl. 4.
Allergan Pharmaceuticals, Santa Ana, Calif. 857,381, pub. 7-9-68. Cl. 18.
Allstate Paper Products, Inc., Woodhaven, N.Y. 735,522, canc. Cl. 2.
Alsan Mfg. Co. : *See*—
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Alsan Mfg. Co., Inc. : *See*—
  Frackman, Hy.
Altman Group, Inc., The, Chicago, Ill. 857,384, pub. 7-9-68. Cl. 18.
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American Beauty Macaroni Co., Kansas City, Kans. 857,589, pub. 4-16-68. Cl. 46.
American Cyanamid Co., Wayne, N.J. 857,458, pub. 7-9-68. Cl. 26.
American Cyanamid Co., Wayne, N.J. 857,514, pub. 7-9-68. Cl. 37.
American Distilling Co., Inc., The : *See*—
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American Distilling Co., The, d.b.a. The American Distilling Co., Inc., New York, N.Y. 857,603, pub. 3-12-68. Cl. 49.
American Home Products Corp. : *See*—
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American Hospital Supply Corp., Evanston, Ill. 857,274, pub. 7-9-68. Cl. 2.
American Novawood Corp., The, Lynchburg, Va. 857,343, pub. 7-9-68. Cl. 12.
American Parfums Corp. : *See*—
  Cigogne, Inc.
American Seating Co., Grand Rapids, Mich. 857,424, pub. 7-9-68. Cl. 22.
American-Marietta Co. : *See*—
  Martin-Marietta Corp.
American-Wheaton Glass Corp., Millville, N.J. 735,664, canc. Cl. 33.
Amsterdam Associates, Inc., New York, N.Y. 857,540, pub. 7-9-68. Cl. 39.
Anderson, Clayton & Co., d.b.a. Paymaster Farms and Paymaster Feed Mills, Houston, Tex. 735,742, canc. Cl. 46.
Apparel Corp. of America, Knoxville, Tenn. 857,544, pub. 7-9-68. Cl. 39.
Arco Pharmaceuticals, Inc., Plainview, N.Y. 857,379, pub. 7-9-68. Cl. 18.
Armour & Co., from Armour and Co., d.b.a. Armour Creameries, Chicago, Ill. 735,736, canc. Cl. 46.
Armour Creameries : *See*—
  Armour & Co.
Armour Grocery Products Co., Chicago, Ill. 857,642, pub. 7-9-68. Cl. 52.
Aronheim, Walter, New York, N.Y., to Rodi & Wienenberger Aktiengesellschaft, Pforzheim, Germany. 440,602, ren. 9-24-68. Cl. 28.
Arrow Upholstery Co., Inc., New York, N.Y. 337,968, canc. Cl. 32.
Artemis Verlags Aktiengesellschaft, Zurich, Switzerland. 857,528, pub. 7-9-68. Cl. 38.
Associated Food Stores, Inc., Jamaica, N.Y. 857,654, pub. 7-9-68. Cl. 101.
Atlantic Products Corp., Trenton, N.J. 857,292, pub. 7-9-68. Cl. 3.
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  Rattan Mfg. Co., The.
Atlas Industries Co. : *See*—
  Rattan Mfg. Co., The.
Atlas Supply Co., Springfield, N.J. 857,489, pub. 7-9-68. Cl. 35.
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  National Education Association of the United States.
Automated Personnel International, Inc., New York, N.Y. 857,649 pub. 7-9-68. Cl. 101.
Automated Plastic Products Co. : *See*—
  Bingham, George C.
Avon Products, Inc., New York, N.Y. 857,308, pub. 7-9-68. Cl. 6.
Avon Products, Inc., New York, N.Y. 857,622-7, pub. 7-9-68. Cl. 51.
Avon Products, Inc., New York, N.Y. 857,631, pub. 7-9-68. Cl. 51.
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Baby Togs, Inc., New York, N.Y. 857,559, pub. 7-9-68. Cl. 39.
Ball, Geo. J., Inc., West Chicago, Ill. 857,260, pub. 7-9-68. Cl. 1.
Ball, Geo. J., Inc., d.b.a. Pan-American Seed Co., West Chicago, Ill. 857,263, pub. 7-9-68. Cl. 1.
Baltimore Biological Laboratory : *See*—
  Carski, Theodore J.
Bank of California, The, National Association, San Francisco, Calif. 857,656, pub. 7-9-68. Cl. 102.
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Barber-Greene Co., Aurora, Ill. 857,434, pub. 7-9-68. Cl. 23.
Barnes Engineering Co., Stamford, Conn. 857,579, pub. 7-9-68. Cl. 44.
Bass, G. H., & Co., Wilton, Maine. 857,537, pub. 7-9-68. Cl. 39.
Bayshore Industries, Inc., New York, N.Y. 857,421, pub. 7-9-68. Cl. 22.
Beautymasters, Inc., Detroit, Mich. 857,615, pub. 4-2-68. Cl. 51.
Beaver Gear Works, Inc., Rockford, Ill. 857,443, pub. 7-9-68. Cl. 23.
Becton, Dickinson & Co. : *See*—
  Carski, Theodore J.
Beecham Research Laboratories Ltd., Brentford, England. 735,561, canc. Cl. 18.
Bentley Lighter Corp., New York, N.Y. 857,328, pub. 7-9-68. Cl. 8.
Bijur Lubricating Corp., Rochelle Park, N.J. 857,435, pub. 1-23-68. Cl. 23.
Bingham, George C., d.b.a. Automated Plastic Products Co., Roosevelt, N.Y. 735,657, canc. Cl. 28.
Bitucote Products Co., St. Louis, Mo. 857,341, pub. 5-14-68. Cl. 12.
Blackwell Wielandy Co., St. Louis, Mo. 246,945, ren. 9-24-68. Cl. 37.
Blancard & Co., Inc., New York, N.Y., to Columbia Diamond Ring Co., Inc., Jamaica, N.Y. 501,224, ren. 9-24-68. Cl. 28.
Bliss, Beatrice, d.b.a. Blisscraft of Hollywood, Gardena, Calif. 857,281, pub. 7-9-68. Cl. 2.
Bliss, E. W., Co., Davenport, Iowa. 857,363, pub. 7-9-68. Cl. 13.
Blisscraft of Hollywood : *See*—
  Bliss, Beatrice.
Bloom, Charles, Inc., New York, N.Y. 857,569, pub. 7-9-68. Cl. 40.
Bloomingdale, Alfred S., Los Angeles, Calif. 857,386, pub. 7-9-68. Cl. 19.
Boake, A., Roberts & Co. Ltd., Stratford, London, England. 735,564, canc. Cl. 18.
Boehringer, C. H., Sohn, Ingelheim (Rhine), Germany. 735,785, canc. Cl. 51.
Bonney Forge & Foundry Inc., Allentown, Pa. 857,364, pub. 7-9-68. Cl. 13.
Booth, Inc., Dallas, Tex. 857,367, pub. 7-9-68. Cl. 14.
Borden Co., The, New York, N.Y. 857,305, pub. 7-9-68. Cl. 5.
Bristol-Myers Co., New York, N.Y. 857,377, pub. 7-9-68. Cl. 18.
Britton, G. B., & Sons Ltd., Bristol, England. 857,557, pub. 7-9-68. Cl. 39.
Brothers Tobacco Corp., Brooklyn, N.Y., to Riggio Tobacco Corp. of New York, Ltd., New York, N.Y. 440,963, ren. 9-24-68. Cl. 17.
Brown & Williamson Tobacco Corp., Louisville, Ky. 857,374-5, pub. 3-26-68. Cl. 17.
Brunswick Corp., Chicago, Ill. 857,413, pub. 10-24-67. Cl. 22.
Buhler Corp., The, Minneapolis, Minn. 857,430, pub. 7-9-68. Multiple Class (Classes 23, 31, 34, and 103).
Burhop Paper Co., Chicago, Ill. 857,306, pub. 7-9-68. Cl. 5.
Burlington Brewing Co., Burlington, Wis., and Chicago, Ill., to Van Merritt Co., Chicago, Ill. 501,445, ren. 9-24-68. Cl. 48.
Burlington Industries, Inc., Bridgeport, Pa. 857,571, pub. 5-28-68. Cl. 42.
Burroughs Corp., Detroit, Mich. 857,336, pub. 7-9-68. Cl. 11.
Business Supplies Corp. of America, New York, N.Y. 857,504, pub. 7-9-68. Cl. 37.
Bussard, R. D., & Son, Albany, Oreg. 801,398, canc. Cl. 42.
Butler Mfg. Co. : *See*—
  James Mfg. Co.
Butler Wholesale Products, Inc., Adams, Mass. 857,583, pub. 4-23-68. Cl. 46.
C.E.M. Co., Inc., Danielson, Conn. 857,358, pub. 7-9-68. Cl. 13.
C.E.M. Co., Inc., Danielson, Conn. 857,361, pub. 7-9-68. Cl. 13.
California Merchandise Co., Los Angeles, Calif. 857,567, pub. 7-9-68. Cl. 40.
"Calor" Appareils Electro-Domestiques, Societe Anonyme, Lyon, France. 735,583, canc. Cl. 21.
Calumet & Hecla, Inc., Calumet, Mich. 857,366, pub. 7-9-68. Cl. 14.
Campbell Soup Co., Camden, N.J. 857,584, pub. 8-8-67. Cl. 46.
Carando, Peter, Inc., d.b.a. Carando's, Inc., Springfield, Mass. 750,254. Am. 7(d). Cl. 46.
Carl Classics Co., Portal, Ga. 857,550, pub. 7-9-68. Cl. 39.

Carski, Theodore J., d.b.a. Baltimore Biological Laboratory, Baltimore, Md., to Becton, Dickinson & Co., Rutherford, N.J. 435,636-7, ren. 9-24-68. Cl. 6.
Carter-Waters Corp., The, Kansas City, Mo. 857,346, pub. 7-9-68. Cl. 12.
Castro, C. L. & Co., Inc., New York, N.Y. 735,700, canc. Cl. 39.
Cavanaugh Morris Advertising, Inc., d.b.a. United Breweries of America, Pittsburgh, Pa. 735,691, canc. Cl. 38.
Celanese Corp., New York, N.Y. 857,284, pub. 7-9-68. Cl. 2.
Central National Bank in Chicago, Chicago, Ill. 857,658, pub. 7-9-68. Cl. 102.
Challenge Cream & Butter Association, Los Angeles, Calif. 251,608, ren. 9-24-68. Cl. 46.
Championship Games, Inc., Southport, Conn. 857,422, pub. 7-9-68. Cl. 22.
Charell Consulting Co., Inc., Westbury, N.Y. 857,371, pub. 7-9-68. Cl. 16.
Chase Bag Co., New York, N.Y. 857,277, pub. 7-9-68. Cl. 2.
Chemagro Corp., New York, N.Y. 735,523, canc. Cl. 6.
Chemplate Corp., Los Angeles, Calif. 857,389, pub. 7-9-68. Cl. 19.
Chemtronics Inc., Brooklyn, N.Y. 857,634, pub. 4-16-68. Cl. 52.
Cherokee Coal Co., Louisville, Ky. 504,217, ren. 9-24-68. Cl. 1.
Chicago Rawhide Mfg. Co., Chicago, Ill. 857,491-2, pub. 7-9-68. Cl. 35.
Chicago Spring Hinge Co., Chicago, Ill. 246,368, ren. 9-24-68. Cl. 13.
Chinosolfabrik G.m.b.H., Seelze, near Hannover, Germany. 857,320, pub. 7-9-68. Multiple Class (Classes 6 and 18).
Chippewa Springs Co.: *See*—
  Chippewa Springs Corp.
Chippewa Springs Corp., Minneapolis, Minn., to D. R. Williams, d.b.a. Chippewa Springs Co., Chippewa Falls, Wis. 504,649, ren. 9-24-68. Cl. 45.
Christadelphian Ecclesia of Cranston, R.I., Inc., Cranston, R.I. 857,668, pub. 7-9-68. Cl. 107.
Christopher, Alfred B., d.b.a. The Christopher Co., Rosamond, Calif. 857,680. Cl. 34.
Christopher Co., The: *See*—
  Christopher, Alfred B.
Chromalloy American Corp., from Chromalloy Corp., West Nyack, N.Y. 857,673. Cl. 21.
Chromalloy Corp.: *See*—
  Chromalloy American Corp.
Ciba Corp., d.b.a. The Gland-O-Lac Co., New York, N.Y. 857,378, pub. 4-16-68. Cl. 18.
Cigogne, Inc., New York, N.Y., to American Parfums Corp., Carson City, Nev. 501,674, ren. 9-24-68. Cl. 51.
Circle Research Laboratories, Inc., Glen Ridge, N.J. 857,319, pub. 7-9-68. Multiple Class (Classes 6, 10, and 52).
Clairol Inc., New York, N.Y. 857,272, pub. 7-9-68. Cl. 2.
Clairol Inc., New York, N.Y. 857,577, pub. 7-9-68. Cl. 44.
Clairol Inc., New York, N.Y. 857,616, pub. 1-16-68. Cl. 51.
Clairol Inc., New York, N.Y. 857,619, pub. 5-21-68. Cl. 51.
Clicker, Inc., Brockton, Mass. 735,604, canc. Cl. 22.
Clintwood Chemical Co., Chicago, Ill. 857,311, pub. 7-9-68. Cl. 6.
Colgate-Palmolive Co., New York, N.Y. 735,797, canc. Cl. 52.
Colonial Candle Co. of California, San Rafael, Calif., to Victrylite Candle Co., Oshkosh, Wis. 441,515, ren. 9-24-68. Cl. 15.
Colorite Plastics Co.: *See*—
  Rexall Drug & Chemical Co.
Columbia Broadcasting System, Inc., New York, N.Y. 857,495, pub. 7-9-68. Cl. 36.
Columbia Diamond Ring Co., Inc.: *See*—
  Blancard & Co., Inc.
Commerce Drug Co., Inc., Farmingdale, N.Y. 857,383, pub. 7-9-68. Cl. 18.
Computer Research, Inc., Mesa, Ariz. 857,521, pub. 7-9-68. Cl. 38.
Computer-Ease Farm Systems: *See*—
  Computer-Ease Systems, Inc.
ComputerEase Systems, Inc., d.b.a. ComputerEase Farm Systems, Manhattan, Kans. 857,653, pub. 7-9-68. Cl. 101.
Conover-Mast Publications, Inc., New York, N.Y. 735,692, canc. Cl. 38.
Consolidated Merchandising Corp., New York, N.Y., from General Consolidated Ltd., Lodi, N.J. 857,431, pub. 7-25-67. Cl. 23.
Continental Distilling Co.: *See*—
  Continental Distilling Corp.
Continental Distilling Corp., d.b.a. Continental Distilling Co., Philadelphia, Pa. 857,605, pub. 7-9-68. Cl. 49.
Continental Plastics of Oklahoma, Inc., Oklahoma City, Okla. 857,288, pub. 7-9-68. Cl. 2.
Cook Machinery Co., Inc., Dallas, Tex. 857,440, pub. 7-9-68. Cl. 23.
Copexsalienne S.A.R.L., Paris, France. 857,595, pub. 7-9-68. Cl. 46.
Cornelius Co., The, Anoka, Minn. 857,273, pub. 7-9-68. Cl. 2.
Coro, Inc., New York, N.Y. 441,073, ren. 9-24-68. Cl. 28.
Cosan Chemical Corp., Clifton, N.J. 857,309, pub. 7-9-68. Cl. 6.
Cosmetically Yours, Inc., Yonkers, N.Y. 857,568, pub. 7-9-68. Multiple Class (Classes 40 and 51).
Coty, Inc., Wilmington, Del., to Chas. Pfizer & Co., Inc., New York, N.Y. 250,742, ren. 9-24-68. Cl. 51.
Craftex Mills, Inc. of Pennsylvania, Philadelphia, Pa. 504,533, ren. 9-24-68. Cl. 42.
Curley Co., Inc., Camden, N.J. 857,641, pub. 5-14-68. Cl. 52.
Curtis, Helene, Industries, Inc., Chicago, Ill. 857,629, pub. 7-9-68. Cl. 51.
Cyclops Corp., Bridgeville, Pa. 822,191, cor. Multiple Class (Classes 2, 12, 13, 14, and 23).
Dana: *See*—
  Les Parfums de Dana, Inc.
Davidson, Marvin B., d.b.a. Davidsons, North Plainfield, N.J. 735,819, canc. Cl. 37.
Davidsons: *See*
  Davidson, Marvin B.
De Martel, Dressmaker: *See*
  Sherman, Robert M.
Dearing, Grace L., d.b.a. The Grace Co., Venice, Calif. 857,469, pub. 7-9-68. Cl. 28.
Deering Milliken, Inc., New York, N.Y. 857,572, pub. 1-23-68. Cl. 42.
Demuth, William, & Co., Inc., New York, N.Y. 501,666, ren. 9-24-68. Cl. 8.
Diamond Alkali Co.: *See*
  Diamond Shamrock Corp.
Diamond Shamrock Corp., from Diamond Alkali Co., Cleveland, Ohio. 857,472, pub. 7-9-68. Cl. 31.
Dictaphone Corp., Bridgeport, Conn. 735,678, canc. Cl. 37.
Dictaphone Corp., Rye, N.Y. 857,502, pub. 7-9-68. Cl. 36.
Diener Knitting Mills, Inc., New York, N.Y. 857,565, pub. 7-9-68. Cl. 39.
Disney, Walt, Productions, Burbank, Calif. 857,667, pub. 7-9-68. Cl. 107.
Dixon Valve & Coupling Co., Philadelphia, Pa. 441,561, ren. 9-24-68. Cl. 13.
Dodge Mfg. Corp.: *See*
  Reliance Electric & Engineering Co., The.
Dow Chemical Co., The, Midland, Mich. 857,554, pub. 7-9-68. Cl. 39.
Drackett Co., The, Cincinnati, Ohio. 857,295, pub. 7-9-68. Cl. 4.
Drackett Co., The, d.b.a. The Drackett Products Co., Cincinnati, Ohio. 857,636, pub. 7-9-68. Cl. 52.
Drackett Products Co., The: *See*
  Drackett Co., The.
Drexel Enterprises, Inc., Drexel, N.C. 857,478, pub. 7-9-68. Cl. 32.
Dude Ranch Foods, Los Angeles, Calif. 735,769, canc. Cl. 46.
Duke & Benedict, Inc., New York, N.Y. 857,310, pub. 7-9-68. Cl. 6.
Duncan Electronics, Inc., Costa Mesa, Calif. 735,639, canc. Cl. 26.
Duplan Corp., The, Winston-Salem, N.C. 857,574, pub. 7-9-68. Cl. 43.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 154,015, canc. Cl. 42.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 857,669, pub. 7-9-68. Cl. 4.
Eagle Gate Corp., Salt Lake City, Utah. 857,118, pub. 7-9-68. Cl. 22.
Eastern Air Lines, Inc., New York, N.Y. 857,663, pub. 7-9-68. Cl. 105.
Eastern Shore Laboratories, Inc., Laurel, Del. 857,380, pub. 5-14-68. Cl. 18.
Eberhard Faber Inc., Crestwood, Wilkes-Barre, Pa. 857,516-17, pub. 7-9-68. Cl. 37.
Educational Audio Visual, Inc., Pleasantville, N.Y. 857,497-8, pub. 7-9-68. Cl. 36.
Effankay Perfumers: *See*—
  Kopstain, George J.
Electro Engineering Products Co., Inc., Chicago, Ill. 857,433, pub. 11-21-67. Cl. 23.
Elgin Softener, Inc., Elgin, Ill. 857,471, pub. 7-9-68. Cl. 31.
Elmcraft Inc., Chicago, Ill. 857,525, pub. 3-19-68. Cl. 38.
Eloesser Heynemann Co.: *See*
  Neustadter Brothers.
Eonware Pty. Ltd., Beverly Hills, near Sydney, Australia. 857,285, pub. 7-9-68. Cl. 2.
Erie Resistor Corp., Erie, Pa. 735,640, canc. Cl. 26.
Ermanco Inc., Grand Haven, Mich. 857,437-8, pub. 7-9-68. Cl. 23.
Euphonics Corp., Guaynabo, Puerto Rico. 857,396, pub. 7-9-68. Cl. 21.
Evans', L. B., Son Co., Wakefield, Mass. 857,536, pub. 7-9-68. Cl. 39.
Evans, Robert, Co.: *See*—
  Sonntag, Robert E.
Everlast Industries, Inc., Woodside, N.Y. 857,290, pub. 7-9-68. Multiple Class (Classes 3 and 37).
Everlast World's Boxing Headquarters Corp., Bronx, N.Y. 857,416-17, pub. 7-9-68. Cl. 22.
Evirpure Processors Corp., New York, N.Y. 735,791, canc. Cl. 51.
Extermital Chemicals, Inc., Dayton, Ohio. 857,312, pub. 7-9-68. Cl. 6.
FMC Corp., Philadelphia, Pa. 857,267, pub. 7-9-68. Cl. 1.
Faber Castell, A. W., Pencil Co., Inc., Newark, N.J. 857,503, pub. 3-19-68. Cl. 37.
Fabrique Savoisienne de Spiraux, S.A.R.L., Annemasse, France. 857,461, pub. 7-9-68. Cl. 27.
Fairchild Hiller Corp., Bay Shore, N.Y. 857,448, pub. 7-9-68. Cl. 23.
Fairmount Chemical Co., Inc., Newark, N.J. 857,313, pub. 7-9-68. Cl. 6.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany. 857,269, pub. 7-9-68. Cl. 1.
Federal Pharmacal Supply, Inc., d.b.a. Federal Premium Mfg. Co., Chicago, Ill. 857,522, pub. 7-9-68. Cl. 38.
Federal Premium Mfg. Co.: *See*—
  Federal Pharmacal Supply, Inc.
Federal Sign & Signal Corp., Blue Island, Ill. 857,405, pub. 7-9-68. Cl. 21.
Felt Products Mfg. Co., Skokie, Ill. 857,488, pub. 7-9-68. Cl. 35.
Felton International, Inc., Brooklyn, N.Y. 857,325, pub. 7-9-68. Cl. 6.
Fidelity Federal Savings & Loan Association of Jacksonville, Jacksonville, Fla. 852,935, cor. Cl. 102.

Film Service Centers, Inc., Rochester, N.Y. 735,812, canc. Cl. 106.
Finger, Arthur I., d.b.a. Art Finley, San Francisco, Calif. 735,814, canc. Cl. 107.
Finley, Art: *See*—
  Finger, Arthur I.
Fleer Corp., from Frank H. Fleer Corp., Philadelphia, Pa. 857,606, pub. 7-2-68. Cl. 50.
Fleer, Frank H., Corp.: *See*—
  Fleer Corp.
Fleisher Yarns, Inc., Long Island City, to Indian Head Inc., New York, N.Y. 504,458, ren. 9-24-68. Cl. 43.
Flex-O-Lite Division: *See*—
  General Steel Industries, Inc.
Foremost-McKesson, Inc., d.b.a. Gentec Hospital Supply Co., New York, N.Y. 857,580, pub. 7-9-68. Cl. 44.
Forster Neckwear Co., Inc., New York, N.Y. 857,563-4, pub. 7-9-68. Cl. 39.
Forstmann Woolen Co., Passaic, N.J., to J. P. Stevens & Co., New York, N.Y. 504,813-14, ren. 9-24-68. Cl. 42.
Frackman, Hy, d.b.a. Alsan Mfg. Co., to Alsan Mfg. Co., Inc., New York, N.Y. 501,392, ren. 9-24-68. Cl. 28.
Frank Tea & Spice Co. The, Cincinnati, Ohio. 247,739, ren. 9-24-68. Cl. 46.
Frederick, Marc A., Sr., Long Beach, Calif. 735,679, canc. Cl. 37.
Fuels Research Corp., Denver, Colo. 735,554, canc. Cl. 15.
Fun in the Sun of Florida, Inc., Miami, Fla. 735,600, canc. Cl. 22.
Fur Seal Processing Corp., The, New York, N.Y. 857,261, pub. 7-9-68. Multiple Class (Classes 1 and 39).
Gallaher Ltd., Belfast, Northern Ireland. 857,373, pub. 7-9-68. Cl. 17.
Gameland, Inc., St. Louis, Mo. 735,603, canc. Cl. 22.
Gates Rubber Co., The, Denver, Colo. 857,490, pub. 7-9-68. Cl. 35.
Gemco Electric Co., Clawson, Mich. 857,441, pub. 7-9-68. Cl. 23.
Gemmer Mfg. Co., Detroit, Mich., to TRW, Inc., Cleveland, Ohio. 501,417, ren. 9-24-68. Cl. 19.
General Consolidated Ltd.: *See*—
  Consolidated Merchandising Corp.
General Controls Co., Glendale, Calif. 735,634, canc. Cl. 26.
General Electric Co., San Jose, Calif. 857,474, pub. 7-9-68. Cl. 31.
General Foods Corp., White Plains, N.Y. 857,279, pub. 7-9-68. Cl. 2.
General Mills, Inc.: *See*
  O-Cel-O, Inc.
General Mills, Inc., Minneapolis, Minn. 857,601, pub. 7-9-68. Cl. 46.
General Plastics Corp., Marion, Ind. 857,614, pub. 7-9-68. Cl. 50.
General Plywood Corp., Louisville, Ky. 857,353, pub. 7-9-68. Cl. 12.
General Printed String Co., Milwaukee, Wis. 505,646, ren. 9-24-68. Cl. 7.
General Steel Industries, Inc., d.b.a. Flex-O-Lite Division, St. Louis, Mo. 857,607, pub. 7-9-68. Cl. 50.
General Tire & Rubber Co., The, Akron, Ohio. 857,486, pub. 5-30-67. Cl. 35.
Gentec Hospital Supply Co.: *See*
  Foremost-McKesson, Inc.
Gentex Corp., New York, N.Y. 857,556, pub. 7-9-68. Cl. 39.
Georgia Boy, Inc., Bremen, Ga. 857,647, pub. 7-9-68. Cl. 100.
Georgia-Pacific Corp., Portland, Oreg. 857,354, pub. 7-9-68. Cl. 12.
Georgia-Pacific Corp., Portland, Oreg. 857,510, pub. 7-9-68. Cl. 37.
Georgia-Pacific Corp., Portland, Oreg. 857,515, pub. 7-9-68. Cl. 37.
Gilmar Laboratories: *See*—
  Parker Laboratories, Inc.
Gilmore Plant & Bulb Co., Inc., The, Julian, N.C. 857,264, pub. 7-9-68. Cl. 1.
Gilmour Mfg. Co.: *See*—
  Gilmour, Robert A.
Gilmour, Robert A., d.b.a. Gilmour Mfg. Co., Somerset, Pa. 857,360, pub. 7-9-68. Cl. 13.
Givaudan Corp., Clifton, N.J. 857,307, pub. 1-23-68. Cl. 6.
Glam-O-Rama, Inc., Benson, N.C. 857,661, pub. 7-9-68. Cl. 103.
Gland-O-Lac Co., The: *See*—
  Ciba Corp.
Glanzstoff AG, Glanzstoff-Haus, Germany. 857,268, pub. 7-9-68. Cl. 1.
Glenn Door Operators: *See*—
  Glenn Door Operators, Inc.
Glenn Door Operators, Inc., d.b.a. Glenn Door Operators, Philadelphia, Pa. 857,398, pub. 7-9-68. Cl. 21.
Gold Medal Candy Corp., Brooklyn, N.Y. 735,735, canc. Cl. 46.
Goodall Semi-Metallic Hose & Mfg. Co., Philadelphia, Pa. 440,020, ren. 9-24-68. Cl. 35.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 501,325, ren. 9-24-68. Cl. 35.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 503,396, ren. 9-24-68. Cl. 35.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 857,493, pub. 7-9-68. Cl. 35.
Gordon Mfg. Enterprises, Inc., Seattle, Wash. 857,411, pub. 7-9-68. Cl. 22.
Gordon, Nels, Inc., Akron, Ohio. 735,696, canc. Cl. 38.
Gossen, P., & Co. Gesellschaft mit beschrankter Haftung, Bavaria, Germany. 735,644-5, canc. Cl. 26.
Grace Co., The: *See*—
  Dearing, Grace L.
Great Lakes Carbon Corp., New York, N.Y. 735,549, canc. Cl. 12.
Greensboro Chamber of Commerce, Inc., The, Greensboro, N.C. 857,644, pub. 7-9-68. Cl. 100.
Griffin Buggy Co., to Griffin-Jaco Mills, Inc., Griffin, Ga. 246,323, ren. 9-24-68. Cl. 39.
Griffin Mfg. Co., Inc., Brooklyn, to American Home Products Corp., New York, N.Y. 504,001, ren. 9-24-68. Cl. 4.
Griffin-Jaco Mills, Inc.: *See*—
  Griffin Buggy Co.
Griffith Laboratories: *See*—
  Griffith Laboratories, Inc.
Griffith Laboratories, Inc., The, d.b.a. Griffith Laboratories, Chicago, Ill. 735,762, canc. Cl. 46.
Gruppo Industriale Guiseppe Visconti di Modrone S.p.A., Milan, Italy. 857,617, pub. 7-9-68. Cl. 51.
Guardian Mobile Homes, Inc., Omaha, Nebr. 857,390, pub. 7-9-68. Cl. 19.
Guerdon Industries, Inc., Southfield, Mich. 857,391, pub. 7-9-68. Cl. 19.
Guild Toys Inc., Paterson, N.J. 857,415, pub. 7-9-68. Cl. 22.
Gulton Industries, Inc., Metuchen, N.J. 857,404, pub. 7-9-68. Cl. 21.
H & R Citrus, Orange Cove, Calif. 857,602, pub. 7-9-68. Cl. 46.
Hamilton Paper Co., Miquon, Pa. 735,682, canc. Cl. 37.
Hamlin, Inc., Lake Mills, Wis. 850,513, cor. Cl. 21.
Hammond Corp., Chicago, Ill. 857,499, pub. 7-9-68. Cl. 36.
Hanes Corp., Winston-Salem, N.C. 857,545, pub. 7-9-68. Cl. 39.
Harbin, Clyde A., Whitehaven, Tenn. 857,585, pub. 5-28-68. Cl. 46.
Harris, John L., d.b.a. National Latex Co., Nashville, Tenn. 735,733, canc. Cl. 44.
Hart, Charles C., Seed Co., The, Wethersfield, Conn. 735,504, canc. Cl. 1.
Hastings Dynamold Corp., Hastings, Nebr. 853,152-3, cor. Cl. 23.
Hayes, Albert, d.b.a. Albert's Hosiery Stores, New York, N.Y. 857,535, pub. 7-11-67. Cl. 39.
Hayes, Albert, d.b.a. Albert's Hosiery Stores, New York, N.Y. 857,648, pub. 7-25-67. Cl. 101.
Hays Mfg. Co., Erie, Pa. 735,552, canc. Cl. 13.
Hazlewood, Lee, Industries, Inc., New York, N.Y. 857,494, pub. 7-9-68. Cl. 36.
Hazzard, R. P., Co., Augusta, Maine. 857,558, pub. 7-9-68. Cl. 39.
Hearst Corp., The, New York, N.Y. 857,532-3, pub. 7-9-68. Cl. 38.
Heddon's, James, Sons, Dowagiac, Mich., to Victor Comptometer Corp., Chicago, Ill. 504,070, ren. 9-24-68. Cl. 22.
Heddon's, James, Sons, Dowagiac, Mich., to Victor Comptometer Corp., Chicago, Ill. 504,154, ren. 9-24-68. Cl. 22.
Helzer, James A., Cheyenne, Wyo. 857,683. Cl. 100.
Hema Watch Co. S.A., Neuchatel, Switzerland. 857,463, pub. 7-9-68. Cl. 27.
Hercules Inc., Wilmington, Del. 857,317, pub. 7-9-68. Cl. 6.
Herter's, Inc., Waseca, Minn. 857,282, pub. 7-9-68. Multiple Class (Classes 2 and 13).
Herter's, Inc., Waseca, Minn. 857,369, pub. 7-9-68. Cl. 15.
Hexacon Electric Co., Roselle Park, N.J. 857,483-4, pub. 7-9-68. Cl. 34.
Hood, H. P., & Sons: *See*—
  Hood, H. P., & Sons, Inc.
Hood, H. P., & Sons, Inc., d.b.a. H. P. Hood & Sons, Boston, Mass. 857,640, pub. 7-9-68. Cl. 52.
Houston Fishing Tackle Co., Houston, Tex. 857,425, pub. 7-9-68. Cl. 22.
Hughes, E. Griffiths, Ltd., Manchester, England. 735,565, canc. Cl. 18.
Humble Oil & Refining Co., Houston, Tex., from Penola Oil Co., New York, N.Y. 709,570, canc. Cl. 21.
Humphreys Medicine Co., Inc., Rutherford, N.J. 857,620, pub. 7-9-68. Cl. 51.
Hygrade Food Products Corp., Detroit, Mich. 735,750, canc. Cl. 46.
Hynd, A. C., Corp., Dayton, Ohio. 503,052, ren. 9-24-68. Cl. 18.
IMC Magnetics Corp., Westbury, N.Y. 857,403, pub. 7-16-68. Cl. 21.
Ikelheimer-Ernst, Inc., New York, N.Y. 857,275, pub. 7-9-68. Cl. 2.
Immediate Records, Inc., Sherman, Calif. 857,500, pub. 7-9-68. Cl. 36.
Imperial Industries, Inc., Stillwater, Okla. 735,648, canc. Cl. 26.
Imperial Knife Associated Co., Inc., Providence, R.I. 825,684, canc. Cl. 23.
Impextra Corp., New York, N.Y. 857,460, pub. 7-9-68. Cl. 27.
Indian Head Inc.: *See*—
  Fleisher Yarns, Inc.
Industrial Acoustics Co., Inc., Bronx, N.Y. 857,672. Cl. 12.
Industrial Research, Inc., Beverly Shores, Ind. 857,682. Cl. 38.
Inland Container Corp., Indianapolis, Ind. 857,671. Cl. 2.
Insuranceweek, Inc., Seattle, Wash. 857,524, pub. 7-9-68. Cl. 38.
Integrated Electronics Corp., Wharton, N.J. 857,450-1, pub. 7-9-68. Cl. 26.
Interchemical Corp., New York, N.Y. 857,335, pub. 7-9-68. Cl. 11.
Interco Inc., St. Louis, Mo. 857,538, pub. 7-9-68. Cl. 39.
Interco Inc., St. Louis, Mo. 857,547, pub. 7-9-68. Cl. 39.
Interco Inc., St. Louis, Mo. 857,650, pub. 7-9-68. Cl. 101.
International Hotel Directory, Inc., New York, N.Y. 857,527, pub. 7-9-68. Cl. 38.
International Ideas, Sherman Oaks, Calif. 857,652, pub. 7-9-68. Cl. 101.
International Milling Co., Inc., Minneapolis, Minn. 857,271, pub. 7-9-68. Multiple Class (Classes 1 and 46).
International Paper Co., New York, N.Y. 857,283, pub. 7-9-68. Cl. 2.
International Telephone & Telegraph Corp.: *See*—
  Lustra Corp. of America.

International Telephone & Telegraph Corp., from International Telephone & Telegraph Corp., New York, N.Y. 857,455, pub. 7-9-68. Cl. 26.
Jacuzzi Bros., Inc., Little Rock, Ark. 857,280, pub. 7-9-68. Cl. 2.
James Mfg. Co., Fort Atkinson, Wis., to Butler Mfg. Co., Kansas City, Mo. 250,539, ren. 9-24-68. Cl. 12.
Jeddo-Highland Coal Co., Jeddo, Pa. 250,260, ren. 9-24-68. Cl. 1.
Jeffrey Galion Mfg. Co., Columbus, Ohio. 857,436, pub. 7-9-68. Cl. 23.
Jerrold Electronics Corp., Philadelphia, Pa. 857,397, pub. 7-9-68. Cl. 21.
Jersey City Tobacco Co., Jersey City, N.J. 735,559, canc. Cl. 17.
Johns-Manville Corp., New York, N.Y. 857,348, pub. 7-9-68. Cl. 12.
Josam Mfg. Co., Michigan City, Ind. 857,362, pub. 7-9-68. Cl. 13.
Karmazin Products Corp., Wyandotte, Mich. 857,444, pub. 7-9-68. Cl. 23.
Kayser-Routh Corp., New York, N.Y. 857,553, pub. 7-9-68. Cl. 39.
Kaz Mfg. Co., Inc., New York, N.Y. 857,576, pub. 7-9-68. Cl. 44.
Kellogg Brush Mfg. Co., Easthampton, Mass. 503,893, ren. 9-24-68. Cl. 29.
Kellogg Co., Battle Creek, Mich. 857,600, pub. 5-14-68. Cl. 46.
Kelly-Springfield Tire Co., The, Cumberland, Md. 501,373, ren. 9-24-68. Cl. 35.
Kerr Glass Mfg. Corp., Los Angeles, Calif. 503,109-10, ren. 9-24-68. Cl. 50.
Keuffel & Esser Co., Hoboken, N.J. 735,643, canc. Cl. 26.
Kingbird Products, Inc., El Monte, Calif. 735,584, canc. Cl. 21.
King-Seeley Thermos Co., Ann Arbor, Mich. 857,278, pub. 7-9-68. Cl. 2.
Koneta Rubber Co., Inc., Wapakoneta, Ohio. 857,611, pub. 7-9-68. Cl. 50.
Kopstain, George J., d.b.a. Effankay Perfumers, Des Plaines, Ill. 735,789, canc. Cl. 51.
Kratter Corp., The, New York, N.Y. 735,806, canc. Cl. 101.
L. & A. Products, Inc., St. Paul, Minn. 857,475-6, pub. 7-9-68. Cl. 31.
L.B. Laboratories, Inc., Glendale, Calif. 857,630, pub. 7-9-68. Cl. 51.
Lawrence, A. C., Leather Co.: *See*—
  Swift & Co.
Leath, McCarthy & Maynard, Inc., Burlington, N.C. 857,546, pub. 7-9-68. Cl. 39.
Lefax, Philadelphia, Pa. 246,884, ren. 9-24-68. Cl. 38.
Les Fils de Theodore Heltzmann, Lemberg, Moselle, France. 857,482, pub. 7-9-68. Cl. 33.
Les Parfums de Dana, Inc., d.b.a. Dana, New York, N.Y. 857,625, pub. 4-16-68. Cl. 51.
Lewel Mfg. Co., Inc., New York, N.Y. 857,549, pub. 7-9-68. Cl. 39.
Liddell, George J., d.b.a. Classi-Tique Products, Springfield, Pa. 852,177, cor. Cl. 15.
Lilly, Eli, & Co., Indianapolis, Ind. 502,088, ren. 9-24-68. Cl. 18.
Lilly, Eli, & Co., Indianapolis, Ind. 503,225, ren. 9-24-68. Cl. 18.
Lincoln Engineering Co., St. Louis, Mo., to McNeil Corp., Akron, Ohio. 504,260, ren. 9-24-68. Cl. 35.
Lin-Mac Hat Co. Inc., New York, N.Y. 735,705, canc. Cl. 39.
~~Litton Business~~ Systems, Inc., Orange, N.J. 857,666, pub. 7-9-68. Cl. 107.
Litton Industries, Inc., Beverly Hills, Calif. 857,399, pub. 7-9-68. Cl. 21.
Luna, Fidencio, d.b.a. Stados Baking Co., Dallas, Tex. 857,594, pub. 7-9-68. Cl. 46.
Lustra Corp. of America, to International Telephone & Telegraph Corp., New York, N.Y. 436,358, ren. 9-24-68. Cl. 21.
Lyman Gun Sight Corp., The, Middlefield, Conn. 857,330, pub. 7-9-68. Cl. 9.
MB Associates, San Ramon, Calif. 857,329, pub. 7-9-68. Cl. 9.
MBM Co., Mason City, Iowa. 857,519, pub. 7-9-68. Cl. 38.
M.F.A. Oil Co., Columbia, Mo. 857,481, pub. 7-9-68. Cl. 33.
MHD Research, Inc., Newport Beach, Calif. 735,646, canc. Cl. 26.
MacEnerney, Ruth, Hyannis, Mass. 501,653, ren. 9-24-68. Cl. 42.
Maschinenfabrik Hans Lenze K.G., Bosingfeld (Lippe), Germany. 857,401, pub. 7-9-68. Cl. 21.
MacLean Fogg Lock Nut Co., Mundelein, Ill. 857,359, pub. 7-9-68. Cl. 13.
Macomber, Inc., Canton, Ohio. 857,351, pub. 5-14-68. Cl. 12.
Maid-Rite Products, Inc., Muscatine, Iowa. 857,586, pub. 7-9-68. Cl. 46.
Mallory, P. R., & Co. Inc., Indianapolis, Ind. 857,453, pub. 7-9-68. Cl. 26.
Maloney, Harold J., Kalamazoo, Mich. 735,660, canc. Cl. 30.
Malsbary Mfg. Co., Oakland, Calif. 857,660, pub. 7-9-68. Multiple Class (Classes 103 and 107).
Marathon Oil Co.: *See*—
  Transcontinental Oil Co.
Marcal Paper Mills, Inc.: *See*—
  Marcalus Mfg. Co., Inc.
Marcalus Mfg. Co., Inc., to Marcal Paper Mills, Inc., East Paterson, N.J. 505,328, ren. 9-24-68. Cl. 37.
Margolis Nursery Inc., Ypsilanti, Mich. 857,612, pub. 7-9-68. Cl. 50.
Martens Chemical Corp., Middle Village, N.Y. 857,315, pub. 7-9-68. Cl. 6.
Martin-Marietta Corp., New York, N.Y. 857,337, pub. 7-9-68. Cl. 11.
Martin-Marietta, from American-Marietta Co., Chicago, Ill. 735,544, canc. Cl. 12.
Massachusetts Motion Picture Service, Inc., Lynn, Mass. 857,681. Cl. 36.
Massey, Edward J., Chicago, Ill. 857,287, pub. 7-9-68. Cl. 2.
Masury-Columbia Co., Melrose Park, Ill. 857,297, pub. 7-9-68. Cl. 4.
Mast, Curt, Wolfenbuttel, Germany. 857,604, pub. 7-9-68. Cl. 49.
Mattel, Inc., Hawthorne, Calif. 857,426-9, pub. 7-9-68. Cl. 22.
May, Otto B., Inc., Newark, N.J. 735,557, canc. Cl. 16.
McMillan, Donald C.: *See*—
  Victoria Avenue Citrus Association.
McNeil Corp.: *See*—
  Lincoln Engineering Co.
Mead Corp., The, Dayton, Ohio. 857,327, pub. 7-9-68. Multiple Class (Classes 7 and 37).
Meat Industry Suppliers, Inc., Northfield, Ill. 502,206, ren. 9-24-68. Cl. 46.
Med-I-Caps Inc., Los Angeles, Calif. 857,382, pub. 7-9-68. Cl. 18.
Merit Products, Inc., Los Angeles, Calif. 857,294, pub. 7-9-68. Cl. 4.
Meyer & Lange, Inc., New York, N.Y., to Reese Finer Foods, Inc., Chicago, Ill. 245,564, ren. 9-24-68. Cl. 46.
Midwest Commercial Laboratory, Inc., Lima, Ohio. 857,299, pub. 7-9-68. Cl. 4.
Milburn Co., Detroit, Mich. 857,618, pub. 7-9-68. Cl. 51.
Miles Laboratories, Inc., Elkhart, Ind. 857,633, pub. 7-9-68. Cl. 51.
Miller, R. H., Co., Homer, N.Y. 857,318, pub. 7-9-68. Cl. 6.
Modern Venetian Blinds, Inc., New York, N.Y. 504,657, ren. 9-24-68. Cl. 32.
Moore, Ellen, Glen Rock, N.J. 857,520, pub. 7-9-68. Cl. 38.
Morabito Boutique, Paris, France. 857,670. Multiple Class (Classes 1, 2, 3, 27, 28, 29, 30, 33, 37, 39, 40, 41, and 50).
Morrill, Harry L., Jr., Marietta, Ga. 735,690, canc. Cl. 37.
Movado Watch Agency, Inc., New York, N.Y. 857,462, pub. 7-9-68. Cl. 27.
Murdock, Inc., Compton, Calif. 857,676. Cl. 23.
Murray, Alan E., Long Island City, N.Y. 440,188, ren. 9-24-68. Cl. 39.
Musser, Inc., Graham, Tex. 735,626, canc. Cl. 23.
NJE Corp., Kenilworth, N.J. 735,588, canc. Cl. 21.
National Dairy Products Corp., New York, N.Y. 857,582, pub. 11-7-67. Cl. 46.
National Education Association of the United States, d.b.a. Department of Audiovisual Instruction, NEA, Washington, D.C. 735,815, canc. Cl. 200.
National Latex Co.: *See*—
  Harris, John I.
National Rayon Dyeing Co., Inc., Newark, N.J. 391,971, canc. Cl. 43.
Nelson-Boyer Co., Inc., Glendale, Calif. 735,563, canc. Cl. 18.
Neptune Meter Co., New York, N.Y. 857,402, pub. 7-9-68. Multiple Class (Classes 21, 26, and 36).
Nethercutt Laboratories, from Nethercutt Laboratories, Los Angeles, Calif. 735,821, canc. Cl. 51.
Neustadter Brothers, San Francisco, to Eloesser-Heynemann Co., South San Francisco, Calif. 251,527, ren. 9-24-68. Cl. 39.
New England Aquarium Corp., Boston, Mass. 857,529, pub. 7-9-68. Cl. 38.
Nichols Wire & Aluminum Co., Davenport, Iowa. 841,887, cor. Cl. 12.
Nirenberg, M., Sons, Inc., New York, N.Y. 857,551-2, pub. 7-9-68. Cl. 39.
Noirot Electro Menager et Thermique S.A., Paris, France. 857,407, pub. 7-9-68. Cl. 21.
Noll, Greg, Surfboards, Inc., Hermosa Beach, Calif. 857,423, pub. 7-9-68. Cl. 22.
North Pacific Canners & Packers, Inc., Portland, Oreg. 857,587, pub. 7-9-68. Cl. 46.
Northwestern Corp., The, Morris, Ill. 857,420, pub. 7-9-68. Cl. 22.
Nugget Distributors' Cooperative of America, Inc., d.b.a. Nugget Distributors, Inc., Stockton, Calif. 857,581, pub. 7-9-68. Cl. 44.
Nugget Distributors' Cooperative of America, Inc., d.b.a. Nugget Distributors, Inc., Stockton, Calif. 857,613, pub. 7-9-68. Cl. 50.
Nugget Distributors, Inc.: *See*—
  Nugget Distributors' Cooperative of America, Inc.
O-Cel-O, Inc., Buffalo, N.Y., to General Mills, Inc., Minneapolis, Minn. 440,807, ren. 9-24-68. Cl. 1.
Ohio Brass Co., The, Mansfield, Ohio. 501,138, ren. 9-24-68. Cl. 21.
Old England Watches Ltd., London, England. 857,679. Multiple Class (Classes 27 and 28).
Olin Mathieson Chemical Corp., New York, N.Y. 857,370, pub. 7-9-68. Cl. 15.
Omark Industries, Inc., Portland, Oreg. 857,449, pub. 7-9-68. Cl. 23.
Oneida Ltd., Oneida, N.Y. 857,468, pub. 7-9-68. Cl. 28.
Organon, N.V., Oss, Netherlands. 735,574, canc. Cl. 18.
Orient Watch Co., Ltd., Tokyo, Japan. 857,459, pub. 7-9-68. Cl. 27.
Orsi, Inc., New York, N.Y. 857,573, pub. 7-9-68. Cl. 42.
Outlet Co., The, Providence, R.I. 245,188, ren. 9-24-68. Cl. 39.
Ovaltine Food Products: *See*—
  Wander Co., The.
Page-Walker Co., Providence, R.I. 857,465, pub. 7-9-68. Cl. 28.
Pan-American Seed Co.: *See*—
  Ball, Geo. J., Inc.
Paparo, Jack, & Son, Inc., Brooklyn, N.Y. 857,541, pub. 7-9-68. Cl. 39.
Parelco, Inc., San Juan Capistrano, Calif. 857,406, pub. 7-9-68. Cl. 21.
Parker Laboratories, Inc., d.b.a. Gilmar Laboratories, Newark, N.J. 857,628, pub. 7-9-68. Cl. 51.

Parmelee Party Line, Inc., d.b.a. Parmelee's Party-Line, Grand Rapids, Mich., from David M. Parmelee, Morganton, N.C. 735,740-1, canc. Cl. 46.
Parmelee's Party-Line: *See*—
  Parmelee Party Line, Inc.
Parnassos, Greek Cultural Society of New York, Inc., New York, N.Y. 735,693, canc. Cl. 38.
Paymaster Farms: *See*—
  Anderson, Clayton & Co.
Paymaster Feed Mills: *See*—
  Anderson, Clayton & Co.
Pennsalt Chemicals Corp., Philadelphia, Pa. 735,519, canc. Cl. 1.
Permaflex Products Co., to Permaflex Products Co., Inc., Philadelphia, Pa. 441,277, ren. 9-24-68. Cl. 12.
Permaflex Products Co., Inc.: *See*—
  Permaflex Products Co.
Perspective, Inc., Seattle, Wash. 857,677. Cl. 26.
Pfizer, Chas., & Co., Inc.: *See*—
  Coty, Inc.
Pillsbury Co., The, Minneapolis, Minn. 857,599, pub. 7-9-68. Cl. 46.
Pioneer Rubber Mills, San Francisco, Calif., to H. K. Porter Co., Inc., Pittsburgh, Pa. 440,779, ren. 9-24-68. Cl. 35.
Plattner Industries, Inc., North Kansas City, Mo. 857,286, pub. 7-9-68. Cl. 2.
Port Huron Paper Co.: *See*—
  Port Huron Sulphite & Paper Co.
Port Huron Sulphite & Paper Co., to Port Huron Paper Co., Port Huron, Mich. 501,646, ren. 9-24-68. Cl. 37.
Porter, H. K., Co., Inc.: *See*—
  Pioneer Rubber Mills.
Precision Grinding Wheel Co., Inc., Philadelphia, Pa. 245,759-60, ren. 9-24-68. Cl. 4.
Precision Steel Warehouse, Inc., Franklin Park, Ill. 500,358, ren. 9-24-68. Cl. 14.
Press-Tech, Inc., Evanston, Ill. 857,526, pub. 7-9-68. Cl. 38.
Princess Grace Doll Inc., New York, N.Y. 857,414, pub. 7-9-68. Cl. 22.
Procter & Gamble Co., The, Cincinnati, Ohio. 857,303, pub. 5-28-68. Cl. 4.
Provident Life & Accident Insurance Co., Chattanooga, Tenn. 857,657, pub. 7-9-68. Cl. 102.
Prym, William, Inc., Dayville, Conn. 503,047, ren. 9-24-68. Cl. 40.
Prym, William, Inc., Dayville, Conn. 857,570, pub. 7-9-68. Cl. 40.
Purex Corp., Ltd., Lakewood, Calif. 857,322, pub. 7-9-68. Cl. 6.
Puritan Cordage Mills, Louisville, Ky. 857,326, pub. 7-9-68. Cl. 7.
Quaker Oats Co., The, Chicago, Ill. 857,596, pub. 11-14-67. Cl. 46.
Quality Park Envelope Co., St. Paul, Minn. 857,511, pub. 7-9-68. Cl. 37.
Quik Lok Trim Corp., New Brighton, Minn. 857,349, pub. 7-9-68. Cl. 12.
R.C. Industries, Inc., Linden, N.J. 857,442, pub. 7-9-68. Cl. 23.
Radiant Electric Heat Co., Centerville, Iowa. 735,587, canc. Cl. 21.
Raney Packers, Porterville, Calif. 857,597, pub. 7-9-68. Cl. 46.
Rank Organisation Ltd., The, London, England. 857,400, pub. 7-9-68. Cl. 21.
Rasberry Enterprises, Grand Rapids, Mich. 735,813, canc. Cl. 107.
Rattan Mfg. Co., The, New Haven, Conn., to Atlas Electrical Fittings Co., d.b.a. Atlas Industries Co., Scranton, Pa. 247,948, ren. 9-24-68. Cl. 21.
Ray, Reid H., Film Industries, Inc., St. Paul, Minn. 857,643, pub. 7-9-68. Cl. 100.
Raybestos-Manhattan, Inc., Passaic, N.J. 503,117, ren. 9-24-68. Cl. 35.
Raybestos-Manhattan, Inc., Passaic, N.J. 504,974, ren. 9-24-68. Cl. 22.
Raybestos-Manhattan, Inc., Manheim, Pa. 857,350, pub. 7-9-68. Cl. 12.
Rayco Mfg. Co., Paramus, N.J. 735,590, canc. Cl. 21.
Rayette-Faberge, Inc., New York, N.Y. 857,632, pub. 7-9-68. Multiple Class (Classes 51 and 52).
Rayonier Inc., New York, N.Y. 857,266, pub. 7-9-68. Cl. 1.
Reese Finer Foods, Inc.: *See*—
  Meyer & Lange, Inc.
Regina Products: *See*—
  Agostini, Dominic J.
Reliable Luggage, Inc., West Pittsburg, Pa. 857,291, pub. 7-9-68. Cl. 3.
Reliance Electric & Engineering Co., The, from Dodge Mfg. Corp., Mishawaka, Ind. 857,675. Cl. 23.
Reliance Trading Corp.: *See*—
  Tong, Duncan.
Rembrandt Films: *See*—
  Snyder, William L.
Republic-Transcon Industries, Inc., Beverly Hills, Calif. 735,665, canc. Cl. 34.
Research Engineering & Mfg. Inc., New Bedford, Mass. 857,365, pub. 7-9-68. Cl. 13.
Rexall Drug & Chemical Co.: *See*—
  Tupper Corp.
Rexall Drug & Chemical Co., d.b.a. Colorite Plastics Co., Los Angeles, Calif. 857,487, pub. 2-6-68. Cl. 35.
Rexall Drug & Chemical Co., d.b.a. The Seamless Rubber Co., Los Angeles, Calif. 857,575, pub. 7-9-68. Cl. 44.
Rexall Drug & Chemical Co., d.b.a. Vanda Cosmetics Co., Los Angeles, Calif. 857,621, pub. 7-9-68. Cl. 51.
Richardson Corp., Rochester, N.Y. 502,903-4, ren. 9-24-68. Cl. 45.
Richardson-Merrell Inc., Cincinnati, Ohio. 735,571, canc. Cl. 18.
Richter, Roy, Inc., South Gate, Calif. 857,560, pub. 7-9-68. Cl. 39.
Rico Liquids, Inc., Aliceville, Ala. 857,385, pub. 7-9-68. Cl. 18.
Riggio Tobacco Corp. of New York Ltd.: *See*—
  Brothers Tobacco Corp.
Ringmaster Inc., St. Louis, Mo. 735,687, canc. Cl. 37.
Ritter Pfaudler Corp., Rochester, N.Y. 857,473, pub. 7-9-68. Cl. 31.
Riverside Paper Corp., Appleton, Wis. 857,507-8, pub. 7-9-68. Cl. 37.
Robert Hosiery Mills, Inc., Collegeville, Pa. 735,699, canc. Cl. 39.
Robertson Photo-Mechanix, Inc., Des Plaines, Ill. 857,452, pub. 7-9-68. Cl. 26.
Robins Industries Corp., Flushing, N.Y. 735,632, canc. Cl. 26.
Rodi & Wienenberger Aktiengesellschaft: *See*—
  Aronheim, Walter.
Rodin Organization, Inc., New York, N.Y. 857,496, pub. 7-9-68. Cl. 36.
Rogers Bros. Co., Idaho Falls, Idaho. 735,743, canc. Cl. 46.
Rohm & Haas Co., Philadelphia, Pa. 501,227, ren. 9-24-68. Cl. 1.
Rolimpex Centrala Handlu Zagranicznego, Warsaw, Poland. 735,778, canc. Cl. 48.
Ro-Mac & Associates, Inc., Newton, Mass. 857,646, pub. 7-9-68. Cl. 100.
Roper Plastics, Inc., Los Angeles, Calif. 857,289, pub. 7-9-68. Cl. 2.
Rosan, Jose, Sr., Newport Beach, Calif. 857,356, pub. 7-9-68. Cl. 13.
Rose, Frederick A., d.b.a. Wisconsin Audio Equipment Co., Madison, Wis. 857,395, pub. 12-19-67. Cl. 21.
Royster, F. S., Guano Co., Norfolk, Va. 857,334, pub. 7-9-68. Cl. 10.
Ruskin Sponge Co., Inc., Philadelphia, Pa. 857,470, pub. 7-9-68. Cl. 29.
Sams, Howard W., & Co., Inc., Indianapolis, Ind. 735,817, canc. Cl. B.
Sandoz, Inc., Hanover, N.J. 857,316, pub. 7-9-68. Cl. 6.
Sani-Products, Inc.: *See*—
  Sani-Products of Texas, Inc.
Sani-Products of Texas, Inc., d.b.a. Sani-Products, Inc., Austin, Tex. 735,764, canc. Cl. 46.
Satchfield, Carroll E., Memphis, Tenn. 857,394, pub. 7-9-68. Cl. 21.
Schapiro, A., Oakland, Calif. 735,820, canc. Cl. 45.
Schmid, Julius, Inc., New York, N.Y. 501,409, ren. 9-24-68. Cl. 44.
Schneider, Hill & Spangler, Inc., Philadelphia, Pa. 857,655, pub. 7-9-68. Cl. 101.
Schonbrunn, S. A., & Co., Inc., Palisades Park, N.J. 857,598, pub. 7-9-68. Cl. 46.
Science Accessories Corp., Southport, Conn. 857,454, pub. 3-19-68. Cl. 26.
Scientific Laboratories, Inc., Oklahoma City, Okla. 857,376, pub. 5-14-68. Cl. 18.
Scott Aviation Corp., Lancaster, N.Y. 735,726, canc. Cl. 44.
Scott Aviation Corp., Lancaster, N.Y. 735,728, canc. Cl. 44.
Scott Laboratories, Inc., Richmond, Calif. 857,477, pub. 7-9-68. Cl. 31.
Scott Paper Co., Boston, Mass. 857,513, pub. 7-9-68. Cl. 37.
Seamer Products (Sculptorcraft) Ltd., Hull, England. 857,610, pub. 7-9-68. Cl. 50.
Seamless Rubber Co., The: *See*—
  Rexall Drug & Chemical Co.
Sears, Roebuck & Co., Chicago, Ill. 857,409, pub. 7-9-68. Cl. 22.
Sears, Roebuck & Co., Chicago, Ill. 857,534, pub. 7-9-68. Cl. 39.
Sears, Roebuck & Co., Chicago, Ill. 857,566, pub. 7-9-68. Cl. 40.
Sequoia Foothill Fruit Growers, Woodlake, Calif. 251,563, ren. 9-24-68. Cl. 46.
Sesa-Kraft, Inc., Paris, Tex. 735,770-4, canc. Cl. 46.
Sexton, John, & Co., Chicago, Ill. 857,509, pub. 7-9-68. Cl. 37.
Sherman, Robert M., d.b.a. De Martel Dressmaker, New York, N.Y. 857,561, pub. 7-9-68. Cl. 39.
Shock Proof Corp., The, Fort Lauderdale, Fla. 857,324, pub. 7-9-68. Cl. 6.
Shooting Equipment, Inc., Chicago, Ill. 857,419, pub. 7-9-68. Cl. 22.
Show Biz, Inc., Nashville, Tenn. 857,501, pub. 7-9-68. Cl. 36.
Silcoa Products Inc., New York, N.Y. 857,344, pub. 7-9-68. Cl. 12.
Simmons-Boardman Publishing Co., to Simmons-Boardman Publishing Corp., New York, N.Y. 249,761, ren. 9-24-68. Cl. 38
Simmons-Boardman Publishing Corp.: *See*—
  Simmons-Boardman Publishing Co.
Simoniz Co., Chicago, Ill. 857,302, pub. 7-9-68. Multiple Class (Classes 4 and 52).
Sinclair Petrochemicals, Inc., New York, N.Y. 857,331-2, pub. 7-9-68. Cl. 10.
Slant/Fin Corp., Greenvale, N.Y. 857,485, pub. 7-9-68. Cl. 34.
Smith Kline & French Laboratories, Philadelphia, Pa. 857,578, pub. 7-9-68. Cl. 44.
Snyder, William L., d.b.a. Rembrandt Films, New York, N.Y. 857,410, pub. 10-4-66. Cl. 22.
Societe De La Viscose Suisse, Emmenbrucke, Switzerland. 735,508, canc. Cl. 1.
Societe De La Viscose Suisse, Emmenbrucke, Switzerland. 735,720, canc. Cl. 43.
Societe Francaise des Produits Pour Catalyse-"Pro-Catalyse" (Societe Anonyme), Paris, France. 857,314, pub. 7-9-68. Cl. 6.
Solutek Corp., Boston, Mass. 857,321, pub. 7-9-68. Cl. 6.
Sonntag, Robert E., d.b.a. Robert Evans Co., Jacksonville, Fla. 735,575, canc. Cl. 18.

Southeastern Products, Inc., Knoxville, Tenn. 857,265, pub. 7-9-68. Cl. 1.
Southern Saw Service, Inc., Atlanta, Ga. 857,439, pub. 7-9-68. Cl. 23.
Southern Venetian Blind Co., North Miami, Fla. 735,548, canc. Cl. 12.
Spaulding Fibre Co., Inc., Tonawanda, N.Y. 857,678. Cl. 26.
Specialty Food Co., Inc., Reynoldsburg, Ohio. 735,745, canc. Cl. 46.
Specifide, Inc., from Specifide, Inc., Indianapolis, Ind. 735,568, canc. Cl. 18.
Spencer Chemical Co., Kansas City, Mo. 735,506, canc. Cl. 1.
Spencer Gifts, Inc., Atlantic City, N.J. 857,651, pub. 7-9-68. Cl. 101.
Springfoot, Inc., Charleston, W. Va., 857,543, pub. 7-9-68. Cl. 39.
Stados Baking Co.: *See*—
  Luna, Fidencio.
Stainless Products Corp., Belding, Mich. 846,874, cor. Cl. 2.
Stamford Chemical Industries Inc., Stamford, Conn. 735,796, canc. Cl. 52.
Standard Oil Co., The, Cleveland, Ohio. 837,785, canc. Cl. 15.
Stanley, John T., Co. Inc., New York, N.Y. 735,798, canc. Cl. 52.
Stauffer Chemical Co., New York, N.Y. 735,525, canc. Cl. 6.
Steffi Fashions, Inc., New York, N.Y. 857,539, pub. 7-9-68. Cl. 39.
Sterling Drug Inc., New York, N.Y. 857,323, pub. 7-9-68. Cl. 6.
Sternco Industries, Inc., Harrison, N.J. 857,588, pub. 2-27-68. Cl. 46.
Stevens, J. P., & Co., Inc.: *See*—
  Forstmann Woolen Co.
Stevens, J. P., & Co., Inc., New York, N.Y. 735,716, canc. Cl. 42.
Suburban Shoe Stores, Inc., Cambridge, Mass. 857,548, pub. 7-9-68. Cl. 39.
Sun Chemical Corp., New York, N.Y. 857,338-9, pub. 7-9-68. Cl. 11.
Sunbeam Corp., Chicago, Ill. 857,357, pub. 7-9-68. Cl. 13.
Sunbeam Corp., Chicago, Ill. 857,446, pub. 7-9-68. Cl. 23.
Sunshine Biscuits, Inc., Long Island City, N.Y. 857,591, pub. 7-9-68. Cl. 46.
Superior Cable Corp.: *See*—
  Superior Continental Corp.
Superior Continental Corp., from Superior Cable Corp., Hickory, N.C. 857,674. Cl. 21.
Superior Steaks, Inc., Dallas, Tex. 857,590, pub. 7-9-68. Cl. 46.
Swift & Co., d.b.a. A. C. Lawrence Leather Co., Chicago, Ill. 735,512, canc. Cl. 1.
System Wern AB: *See*—
  Wern, Carl R.
TRW, Inc.: *See*—
  Gemmer Mfg. Co.
Taco Grande, Inc., Wichita, Kans. 857,592, pub. 7-9-68. Cl. 46.
Taylor, Frank F., Co., The, Frankfort, Ky. 505,450, ren. 9-24-68. Cl. 19.
Techni Electronics, Inc., Orange, N.J. 735,731, canc. Cl. 44.
Teda Marie Bracci, Redwood City, Calif. 857,664, pub. 7-9-68. Cl. 107.
Tele-Pad Corp., Silver Spring, Md. 735,676, canc. Cl. 37.
Tenenbaum, Abram, d.b.a. Marc Tenens, Boulogne-sur-Seine, France. 833,067, cor. Cl. 51.
Tenion Cutlery Co., St. Paul, Minn. 735,614, canc. Cl. 23.
Tennant, G. H., Co., Minneapolis, Minn. 857,342, pub. 7-9-68. Cl. 12.
Tenneco Inc., Houston, Tex. 857,262, pub. 7-9-68. Multiple Class (Classes 1, 2, 4, 5, 6, 10, 11, 12, 15, 16, 18, 20, 23, 26, 37, 46, 50, 52, 100, 103, and 105).
Texas Instruments Inc., Dallas, Tex. 735,582, canc. Cl. 21.
Texboro Cabinet Corp., to Boro Industries, Inc., Mineral Wells, Tex. 657,430, Am. 7(d). Cl. 32.
Thermaline Corp., Lake Zurich, Ill. 857,393, pub. 7-9-68. Cl. 20.
Thompson, Richard J., Las Vegas, Nev. 857,523, pub. 7-9-68. Cl. 38.
Tibbetts Electronics: *See*—
  Tibbetts, Lester M., Jr.
Tibbetts, Lester M., Jr., d.b.a. Tibbetts Electronics, Emporium, Pa. 857,387, pub. 7-9-68. Cl. 19.
Tong, Duncan, d.b.a. Reliance Trading Corp., Hong Kong. 857,608, pub. 7-9-68. Cl. 50.
Top Form-Yolande, Inc., New York, N.Y. 857,542, pub. 7-9-68. Cl. 39.
Toyovalve Co. Ltd., Chuo-ku, Tokyo, Japan. 857,355, pub. 5-21-68. Cl. 13.
Transcontinental Oil Co., Tulsa, Okla., to Marathon Oil Co., Findlay, Ohio. 244,941, ren. 9-24-68. Cl. 15.
Transelco, Inc., Penn Yan, N.Y. 857,300-1, pub. 7-9-68. Cl. 4.
Transpharm G.m.b.H., Ludwigshafen (Rhine), Germany. 735,567, canc. Cl. 18.
Triangle Publications, Inc., Philadelphia, Pa. 857,665, pub. 7-9-68. Cl. 107.
Tsubame Radio Co., Ltd., Tokyo, Japan. 857,408, pub. 7-9-68. Cl. 21.
Tucker Aluminum Products Inc., Hialeah, Fla. 735,545, canc. Cl. 12.
Tupper Corp., Farnumsville, Mass., to Rexall Drug & Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 500,442, ren. 9-24-68. Cl. 23.
Tupperware: *See*—
  Tupper Corp.
Turmac Tobacco Co. N.V., Amsterdam, Netherlands. 857,372, pub. 7-9-68. Cl. 17.
Turney Wood Products, Inc., Harrison, Ark. 857,479-80, pub. 7-9-68. Cl. 32.
Tyler, W. S., Inc., Mentor, Ohio. 857,432, pub. 7-9-68. Cl. 23.
Uncas Mfg. Co., Providence, R.I. 857,466, pub. 7-9-68. Cl. 28.
Unifranck Lebensmittelwerke G.m.b.H., Ludwigsburg, Germany. 838,472, cor. Cl. 46.
Union Carbide Corp., New York, N.Y. 857,298, pub. 7-9-68. Cl. 4.
United Breweries of America: *See*—
  Cavanaugh Morris Advertising, Inc.
United-Greenfield Corp., Chicago, Ill. 735,631, canc. Cl. 26.
United States Borax & Chemical Corp., Los Angeles, Calif. 857,639, pub. 7-9-68. Cl. 52.
United States Box Crafts, Inc., Brooklyn, N.Y. 857,276, pub. 7-9-68. Cl. 2.
United States Gypsum Co., Chicago, Ill. 857,345, pub. 7-9-68. Cl. 12.
U.S. Knitwear Co., New York, N.Y. 857,555, pub. 7-9-68. Cl. 39.
United States News Publishing Corp., to U.S. News & World Report, Inc., Washington, D.C. 505,037, ren. 9-24-68. Cl. 38.
U.S. News & World Report, Inc.: *See*
  United States News Publishing Corp.
U.S. Plywood-Champion Papers Inc., New York, N.Y. 857,352, pub. 7-9-68. Cl. 12.
Universal Dental Co., Philadelphia, Pa. 502,643, ren. 9-24-68 Cl. 44.
Vaccato, Bruno, New York, N.Y. 857,467, pub. 7-9-68. Cl. 28.
Van Merritt Co.: *See*
  Burlington Brewing Co.
Van Wyck, Cecil A., Pasadena, Calif. 857,635, pub. 5-14-68. Cl. 52.
Vanda Cosmetics Co.: *See*—
  Rexall Drug & Chemical Co.
Vendo Co., The, Kansas City, Mo. 857,457, pub. 7-9-68. Cl. 26.
Vernon, S. E. & M., Inc., New York, N.Y. 857,506, pub. 7-9-68. Cl. 37.
Versatek Industries, Inc., Indianapolis, Ind. 857,368, pub. 7-9-68. Cl. 15.
Vibrodynamics Corp., Brookfield, Ill. 857,447, pub. 7-9-68. Cl. 23.
Victor Comptometer Corp.: *See*
  Heddon's, James, Sons.
Victoria Avenue Citrus Association, to D. C. McMillan, d.b.a. Victoria Citrus Co., Riverside, Calif. 243,525, ren. 9-24-68. Cl. 46.
Victoria Citrus Co.: *See*—
  Victoria Avenue Citrus Association.
Victrylite Candle Co.: *See*—
  Colonial Candle Co. of Calif.
Vista-Lux Hardboard Co., The, Baltimore, Md. 826,685, canc. Cl. 12.
Vogel Tool & Die Corp., Stone Park, Ill. 857,145, pub. 7-9-68. Cl. 23.
Vogue Cuisine, Inc., New York, N.Y. 735,759, canc. Cl. 46.
Wander Co., The, d.b.a. Ovaltine Food Products, Chicago, Ill. 735,754, canc. Cl. 46.
Warner Electric Co., Inc., Chicago, Ill. 857,296, pub. 7-9-68. Multiple Class (Classes 4, 6, 21, and 23).
Waterman Pen Co., Inc., to Paper Mate Mfg. Co., Santa Monica, Calif. 586,100, Am. 7(d). Cl. 37.
Weighing & Controls, Inc., King Of Prussia, Pa. 735,642, canc. Cl. 26.
Weiss, John, New York, N.Y. 857,412, pub. 7-9-68. Cl. 22.
Wern, Carl R., d.b.a. System Wern AB, Stockholm, Sweden. 857,156, pub. 7-9-68. Cl. 26.
Werner, R. D., Co., Inc., Greenville, Pa. 857,609, pub. 7-9-68. Cl. 50.
Wescor Corp., Hawesville, Ky. 857,505, pub. 7-9-68. Multiple Class (Classes 36 and 37).
Westab Inc., Dayton, Ohio. 857,512, pub. 7-9-68. Cl. 37.
Whitacre, Orris, Woodland, Calif. 735,781, canc. Cl. 50.
White, Morris, Fashions, Inc., New York, N.Y. 501,680, ren. 9-24-68. Cl. 3.
White Motor Corp., Cleveland, Ohio. 857,392, pub. 7-9-68. Cl. 19.
Whittle Music Co., Dallas, Tex. 402,684, canc. Cl. 36.
Williams, Donald R.: *See*—
  Chippewa Springs Corp.
Wilson & Co., Inc.: *See*—
  Wilson Pharmaceutical & Chemical Corp.
Wilson Pharmaceutical & Chemical Corp., from Wilson & Co., Inc., Chicago, Ill. 857,593, pub. 7-9-68. Cl. 46.
Winer, Arthur, Inc., Gary, Ind. 857,562, pub. 6-25-68. Cl. 39.
Wisconsin Audio Equipment Co.: *See*—
  Rose, Frederick A.
Wisconsin Foundry & Machine Co., Madison, Wis. 501,948, ren. 9-24-68. Cl. 14.
Witco Chemical Co., Inc., New York, N.Y. 857,340, pub. 7-9-68. Cl. 12.
Witzy Toy Mfg. Corp., Santa Ana, Calif. 735,602, canc. Cl. 22.
Wood Components Co., Eugene, Oreg. 857,347, pub. 7-9-68. Cl. 12.
Wood, G. H., & Co. Ltd., Toronto, Ontario, Canada. 857,293, pub. 4-19-66. Multiple Class (Classes 4, 6, 16, and 52).
Wometco Blue Circle, Inc., Knoxville, Tenn. 857,645, pub. 7-9-68. Cl. 100.
Woolworth, F. W., Co., New York, N.Y. 735,601, canc. Cl. 22.
Workshop Cards Corp., Concord, N.H. 857,531, pub. 7-9-68. Cl. 38.
Wright & McGill Co., Denver, Colo. 505,204, ren. 9-24-68. Cl. 22.
Wyler Watch Corp., New York, N.Y. 857,464, pub. 7-9-68. Cl. 27.
Xtron Mfg. Corp., Hillside, N.J. 857,388, pub. 7-9-68. Cl. 19.
York Feather & Down Corp., Brooklyn, N.Y. 857,270, pub. 7-9-68. Multiple Class (Classes 1, 22, 32, and 39).
Younes, Phillip A., Anaheim, Calif. 857,518, pub. 7-9-68. Cl. 38.

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